THE OHIO STATE UNIVERSITY
FISHER COLLEGE OF BUSINESS

Student Investment Report: Marathon Petroleum Corporation

Company Overview

Marathon Petroleum Corporation (MPC) was founded in 1887 and it is one of the largest petroleum products refiners in the United States. Its midstream and downstream petroleum operations comprise of 3 segments, as Refining & Marketing, Retail, and Midstream. It purchases crude oil & feedstock from producers, transports it to its refineries and makes refined product available for sale at its retail outlets. The company is expanding its operations through organic as well as inorganic growth.

Investment Rationale

MPC's closing stock price on March 25 was $61.17. After analyzing Marathon Petroleum' business model, key drivers and risk factors, I arrived at an intrinsic value of $77.62 per share. This makes the company significantly under-valued and so I have a "BUY" recommendation for it. With 27% upside in the stock price and 3% dividend yield, MPC surely seems to be a good investment. Additionally, at current price levels it seems to be a good bargain with a higher "margin of safety".

Key Assumptions

At current price levels and considering the significant underperformance of energy industry when compared with S&P 500, I think that MPC is a value investment opportunity. I have built a two stage DCF model where its free cash flows are expected to grow by 7% (on an average) over next eight years. Following this first stage, the company is expected to experience mild free cash flow growth, 4% in perpetuity. Considering 2% inflation rate, the real growth rate for free cash flows would be 2% in perpetuity.

Risks

The cyclicity of business along with the heavy dependence on oil and natural gas prices makes MPC a comparatively risky bet. Additionally, its higher leverage might be a concern. However, its growing operating income seems to be enough to serve its obligations.

Marathon Petroleum Corporation

Recommendation: Buy	
Share Price (USD)	61.3
Target Price (USD)	77.6
Upside	27%

Market Data	
Ticker	MPC
Sector	Energy
Industry	Oil & Gas
Market Cap (USD)	41.2B
Shares Outstanding	690.85M
52-Week High (USD)	88.45
52-Week Low (USD)	54.29
Average Daily Volume (90 Day)	6.8M
Beta	1.37
YTD Total Return	0.35%

Financial Data	
Avg. Revenue Growth (2019-2022)	10.70%
Operating Margin (2019-2022)	6.30%
Dividend Yield	3.46%
FCFF Growth (2022-2029)	7.20%

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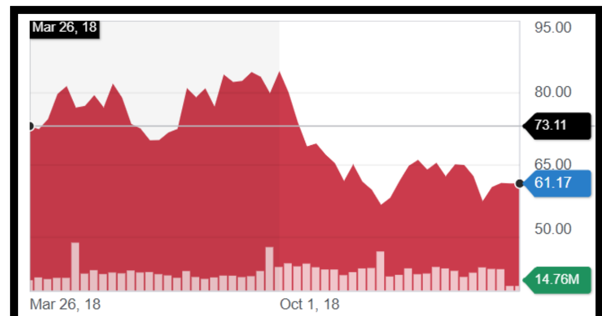

Figure 1: MPC Stock Performance over past 1 year

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Company Overview

Marathon Petroleum Corporation (MPC), headquartered in Findlay, Ohio is a leading downstream energy company in oil & gas space. It was founded in 1887 and thus has around 131 years of experience in the business. MPC operates with integrated business model that creates value and focuses on organic as well as inorganic growth. Extensive capital investments fuel MPC's organic growth whereas continuous acquisitions make it recognize synergies and improve operational performance.

MPC operates in petroleum refining, marketing, and midstream businesses. It provides these services in the Midwest, Gulf Coast, East Coast, Northeast and Southeast regions of the United States. With cyclical business, its topline is vulnerable to the oil price movement. MPC operates in the markets, that have higher demand for gasoline, diesel fuel and asphalt during spring and summer. This higher demand is driven by the heightened highway traffic and construction during the season. As a result, the Refining & Marketing segment performs better during second and third quarter of the year.

The company has 63.6% ownership in MPLX which is a publicly traded limited partnership. Through this partnership, MPC acquired and developed midstream energy infrastructure assets. Speedway and Marathon are the two retail brands operated by the company. Speedway has 2,750 convenience stores across 22 states in the US.

Business Segments

MPC operates in three different reportable segments viz. Refining & Marketing, Retail, and Midstream. During fiscal year 2018, MPC' total revenue from sale and other operating activities stood at $112.8 billion.[1]

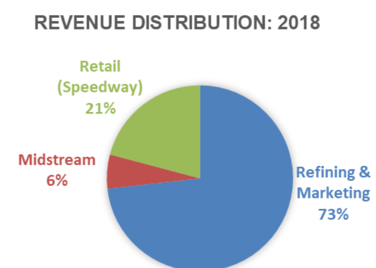
Refining & Marketing

In Refining & Marketing business MPC is an industry leader in safety, reliability and environmental stewardship. MPC owns and operates 16 refineries located in the Gulf Coast, Mid-Continent and West Coast regions of the United States. As on September 30, 2018, MPC owned six refineries in the United States and these refineries have a total crude oil refining capacity of around 1.9 million barrels per calendar day. Its refining capacity has been on a continuous rise, reaching to 3,021 thousand barrels per calendar day (mbpcd) in 2018 from 1,817 mbpcd in FY 2018. Following Andeavor acquisition, MPC now has 16 refineries with more than 3 million barrels per day refining capacity, making it the largest refiner in North America.

Refining & Marketing segment contributes more than 70% to the total revenue of the company and is associated with refining crude oil and other feedstocks at refineries. The segment also deals with the purchase of refined products and ethanol for resale and distribution of refined products. MPC produces refined products such as transportations fuel, heavy fuel oil and asphalt.

During the fiscal year 2018, revenue from Refining & Marketing segment jumped to $82.6 billion, presenting ~ 28% increase over the previous year.

Figure 2: Revenue Distribution in 2018



Source: Marathon Petroleum Corporation 10-K filing

During the fiscal year 2018, income from operations from Refining & Marketing segment jumped to $2.5 billion. Despite being a major business segment that contributes over 70% to the overall revenue of the company, its share in income from operations stood at ~40% in FY 2018 (Figure 2).

The income from operations for this segment heavily depends upon Refining & Marketing margin, refinery throughputs and changes in refinery direct operating costs. The difference between the cost of crude oil (raw material) and price of refined product (finished product) is Refining & Marketing margin. Along with its purchase price, the crude oil cost also includes the transportation cost to bring it to refineries.

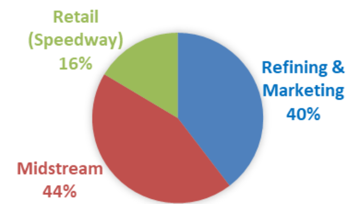
MPC's refineries can process sour as well as sweet crude oil. This sweet and sour differential affects the Refining & Marketing margin. Sour crude oil can be purchased at discount to sweet crude oil, and so can improve Refining & Marketing margin. This offers a competitive advantage to MPC. This margin also depends upon multiple factors such as refinery yields, cost of products that are purchased for resale, selling price for refined products, and impact of derivative instruments.

Retail: Retail segment sells transportation fuels and convenience products in retail markets and it makes up around 20% of the company's total revenue. MPC has two complementary retail platforms as Speedway and Marathon which provide integration value to the company. At the end of December 31, 2018, MPC owned and operated 3,923 convenience stores across the United States. Of this, 1,100 were acquired via Andeavor acquisition.

The revenue from Retail segment rose to $23.6 billion, ~21% of total revenue, presenting 24% annual growth during the fiscal year 2018.

Figure 3: Segmental Income from Operations

INCOME FROM OPERATIONS: 2018



Source: Marathon Petroleum Corporation 10-K filing

Retail segment's profitability depends upon Retail fuel margin for gasoline and distillate. It is the difference between the price paid by the consumer or direct dealer and cost of refined products. Retail fuel margin is affected by local competition, seasonal demand fluctuations, the available wholesale supply, the level of economic activity in the marketing area of the firm and weather conditions. Income from Retail segment was around $1 billion, 16% of the total income from operations of the company (Figure 2).

Midstream: MPC's Midstream business comprises of operations of its sponsored master limited partnerships, MPLX and ANDX. The activities include storage, transportation, marketing and distribution of the crude oil and refined products, primarily for Refining & Marketing segment. The Midstream segment has long term fee based commercial agreements with Refining & Marketing segment.

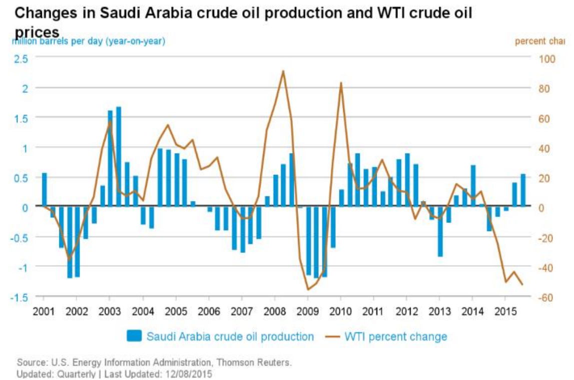
The segment earned $6.7 billion total revenue during the fiscal year 2018, up from $3.8 billion in FY 2017. The contribution remained at ~6% of total revenue during 2018.

Midstream segment reported income from operations of $2.8 billion during the fiscal year 2018. The segment contributed ~4% to MPC' top line in 2018; however, its share in income from operations stood at 44%. We believe that midstream operations present significant growth opportunities in terms of margin expansion.

Industry Overview

As per Morningstar "Energy Sector Report" dated September 27, 2017, there were 104 companies operating in the industry with total revenue of $2.2 trillion.[2] In 2018, the Global Oil & Gas exploration and production industry declined to $2 trillion.[3]

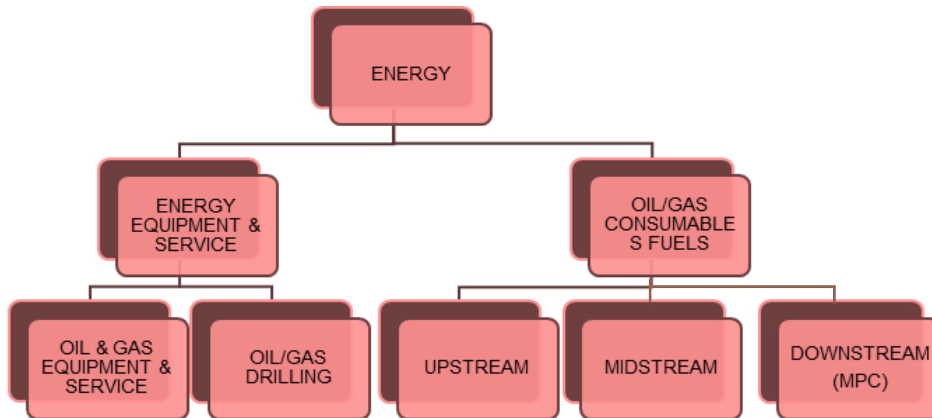
Figure 4: Saudi Arabia Crude Oil Production and WTI Price Change



Energy industry is heavily affected by fluctuating oil prices. With increasing global GDP, there is usually a higher demand for the crude oil; however, oversupply might hurt the prices. Organization of Petroleum Exporting Countries (OPEC) and non-OPEC nations are the two major groups that control the supply of crude oil. Saudi Arabia, being the dominant OPEC member, influences oil prices significantly. According to a U. S. Energy Information Administration report, whenever Saudi Arabia has cut oil production, oil prices have risen significantly (Figure 3).

Impact of these oil prices differs across the sub industries of Energy Sector. Energy industry can be further classified into 2 sub industries as Energy Equipment & Services Industry and Oil/Gas & Consumable Fuels Industry.

Figure 5: Industry Classification

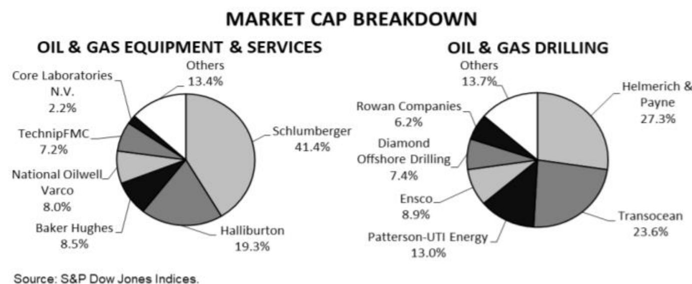


The firms that have operations spread over the entire value chain from upstream-energy service-to-downstream are considered as "integrated oil" firms. Exxon Mobile is a good example of such 'integrated oil' company.

Energy Equipment & Services Industry

The Energy Equipment & Services industry includes Oil/Gas Equipment & Services (upstream) and Oil/Gas drilling players. The energy equipment & services has four different types of players such as offshore oil rigs, onshore oil rigs, drilling equipment, and services.

Figure 6: CFRA Market Cap Breakdown: Energy Equipment & Services[4]



As per CFRA Industry Survey for Energy Equipment & Services Industry, the revenue of the industry should grow by 6.3% in 2019.[4] In comparison with 2018, this sluggish growth can be attributed to slowed capital expenditure growth of exploration and production companies.[4]

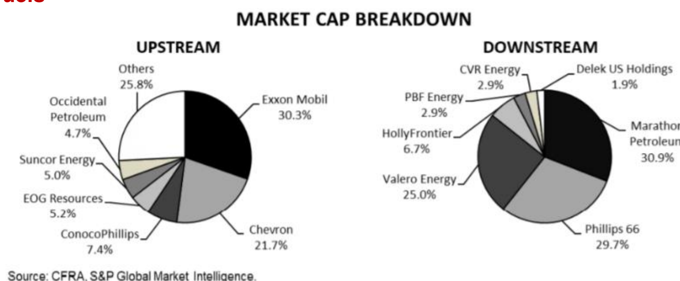
Meanwhile according to CFRA report, there should be EBITDA margin expansion for the industry. Rising oil prices affect favorably to this industry. As a result, companies that operate in this space such as Schlumberger, Halliburton and Baker Hughes have earned higher earnings and spent over a billion dollar on share repurchases.

As per market cap breakdown, Schlumberger holds almost 41% of the total market share in Oil/Gas Equipment services whereas Helmerich & Payne is the market leader in Oil/Gas drilling.

Oil/Gas & Consumable Fuels Industry

Oil/Gas & Consumable Fuels Industry includes Upstream, Midstream and downstream space.

Figure 7: CFRA Market Cap Breakdown for Oil/Gas & Consumable Fuels[5]



As per CFRA Research Report, the revenue of the upstream companies is expected to decline by 5% in 2019 while downstream business is expected to grow by 7.2% in 2019.[5] Also, the crude oil focused upstream business is expected to generate more free cash flow than gas focused business.

The key industry drivers for Oil/Gas Consumables Fuels industry include prices for crude oil and gas, volume, interest rates, proved margins and service margins.

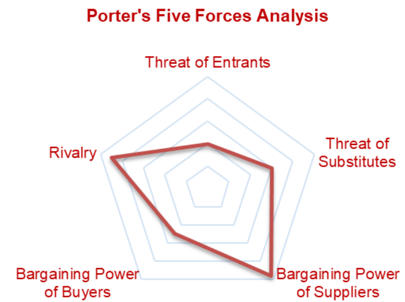
MPC is part of Oil/Gas Consumables Fuels sub industry and it operates in downstream as well as midstream space. Growth in downstream business should help MPC in growing its topline.

In terms of market cap, MPC holds around 31% of the share of the total downstream petroleum business. Its competitors Phillips 66 & Valero Energy hold around 30% and 25% of the total market in terms of market cap. It seems that downstream space is dominated by these 3 players.

Industry Competitive Analysis - Porter's Five Forces Model

Threat of new entrants: Low

Figure 8: Oil & Gas Industry Analysis



Energy is industry has lower threat of new entrants. This is based on three major elements. Firstly, it is a highly capital-intensive industry and so setting up a new extraction unit is extremely difficult for companies. Secondly, large scale companies are benefited from economies of scale and it is not an easy task for any company to compete with the existing players. In addition, this industry's performance depends heavily upon the oil price fluctuations. Along with demand and supply mechanism, oil prices are affected by the geopolitical pressure amongst countries. Large companies can sustain this environment as they can increase production and simultaneously reduce costs with the help of technology advancement. This creates additional barrier for new firms.

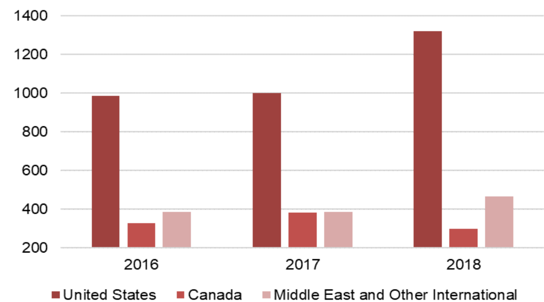
MPC invests heavily in its property, plant and machinery. Over 3.5% of its total revenue and operating income is invested in Capital expenditure. As MPC is operating at over 95% of its utilization rate, I believe that such kind of high capital investment is necessary for expanding its refining capacity.

Threat of substitutes: Low

The threat of substitutes for energy industry is low. The industry faces threat from electricity, nuclear, coal, hydrogen and biofuels. The clean energy alternatives have not yet been credible. Additionally, transportation industry depends heavily upon traditional energy sources such as gasoline. As alternative clean energy is still in development stage, the threat from it is comparatively lower.

Bargaining power of buyers: Low

Figure 9: Crude Oil Supply for MPC



Oil producers control oil prices and so, buyers do not hold much bargaining power. Oil producing countries such as Saudi Arabia control the production. In these cases, buyers such as general consumers or marketing and distribution companies do not have any control over prices. However, if oil marketing companies buy in large quantities, they might exert small buying power.

MPC purchases crude oil through negotiated term contracts with the producers. Also, it purchases or exchanges crude oil on the spot market. As a purchaser of crude oil, MPC does not have much power for bargaining. It purchases almost 63% of crude oil from the United States.

Bargaining power of suppliers: Moderate to High

The suppliers of Oil & Gas include companies that drill, extract and produce oil from oil fields. OPEC countries own 80% of proven reserves and so they have significant control over the oil prices. If oil prices

fall below their expectations, OPEC decides to cut down production. This in turn contracts the oil supply and as a result oil prices go up.

Higher oil prices affect MPC adversely. It is vulnerable to rising oil prices and so it hedges this exposure by using derivatives.

Competition: Medium to High

The high intensity of rivalry amongst competitors limits the industry profitability. Oil & gas companies form joint ventures with their competitors, and probably the purpose of such move is to have the competitors as allies.

In downstream petroleum business, MPC competes with its peers in acquiring crude oil and other feedstock for refining and later marketing and distributing its refined products. For the sale of refined products, MPC specifically competes in 4 markets as wholesale, spot, branded and retail distribution.

The companies that have integrated operations are better positioned than MPC and perhaps that is the reason behind MPC's inorganic growth. Following Andeavor acquisition, MPC has enhanced its scale and has integrated midstream, retail and refining operations. With its nationwide footprint, MPC enjoys connectivity to key supply sources and demand hubs. Additionally, its expanded logistics system helps in lowering crude oil purchase costs (with lower transportation cost) and simultaneously increases its speed to make the refined product available to the market. I believe that these factors distinguish MPC from its peers and offer it an advantage.

Competitive Positioning

ConocoPhillips, Exxon Mobile, Philips 66, Valero Energy Corporation, and Chevron Corporation are some of MPC's primary competitors. Competitors such as Exxon Mobile Corporation, and Chevron are integrated oil companies while MPC, Valero Energy Corporation and Philips 66 are mostly into downstream business.

Table 1: Total Revenue & Other Income comparison (Source: 10-K Filings of Firms)

Year	2013	2014	2015	2016	2017	2018
Total Revenue & Other Income						
DOWNSTREAM FIRMS						
Marathon Petroleum Corporation	100,254	98,102	72,258	63,364	75,369	97,102
Y/Y Growth			**-26.3%**	**-12.3%**	**18.9%**	**28.8%**
Valero Energy Corporation	138,074	130,844	87,804	75,659	93,980	117,033
Y/Y Growth			**-32.9%**	**-13.8%**	**24.2%**	**24.5%**
Philips 66	174,809	164,093	100,949	85,777	104,622	114,217
Y/Y Growth			**-38.5%**	**-15.0%**	**22.0%**	**9.2%**
UPSTREAM FIRMS						
Exxon Mobile Corporation	438,255	411,939	249,248	208,114	244,363	290,212
Y/Y Growth			**-39.5%**	**-16.5%**	**17.4%**	**18.8%**
ConocoPhillips	58,248	55,517	30,935	24,360	32,584	38,727
Y/Y Growth			**-44.3%**	**-21.3%**	**33.8%**	**18.9%**
Chevron Corporation	228,848	211,970	138,477	114,472	141,722	166,339
Y/Y Growth			**-34.7%**	**-17.3%**	**23.8%**	**17.4%**

Considering past five year's performance of companies operating in Energy sector, it is evident that MPC has performed better than its peers.

In 2018, MPC reported annual revenue growth boy ~29%, which was much higher than its peer's revenue growth. Over past 4 years, total revenue and other income for MPC grew by 2.7% on average whereas its peers in the upstream industry experienced a decline of over 2.5% over the same period. In the downstream industry, Valero's revenue and other income grew by 0.5% whereas Phillips 66 recorded

a 5.6% decline in its topline. MPC's topline growth was driven by its strategy of a combination of organic and inorganic growth.

Based on adjusted EBITDA obtained from Bloomberg, the average EBITDA for MPC grew by 15% over past 4 years whereas it jumped by 34% for Phillips 66. Valero's average EBITDA declined by 0.7% over past 4 years.

Table 2: Adjusted EBITDA Comparison (Source: Bloomberg)

Year	2013	2014	2015	2016	2017	2018
Adjusted EBITDA ($ million)						
DOWNSTREAM FIRMS						
Marathon Petroleum Corporation		4,964	5,956	5,205	6,149	8,272
Y/Y Growth			20.0%	-12.6%	18.1%	34.5%
Valero Energy Corporation		7,512	8,200	5,522	5,549	6,676
Y/Y Growth			9.2%	-32.7%	0.5%	20.3%
Philips 66		3,412	5,726	2,714	3,179	6,529
Y/Y Growth			67.8%	-52.6%	17.1%	105.4%
UPSTREAM FIRMS						
Exxon Mobile Corporation		50,965	30,931	26,669	33,488	40,073
Y/Y Growth			-39.3%	-13.8%	25.6%	19.7%
ConocoPhillips		16,652	6,721	5,223	8,355	14,011
Y/Y Growth			-59.6%	-22.3%	60.0%	67.7%
Chevron Corporation		34,006	19,789	16,933	21,028	34,773
Y/Y Growth			-41.8%	-14.4%	24.2%	65.4%

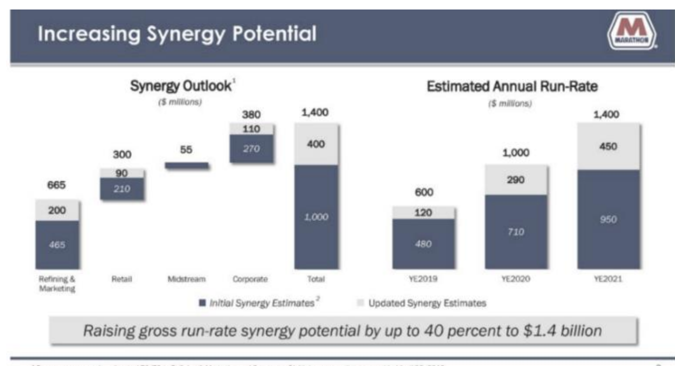
In the upstream industry, Exxon Mobile had 2% decline in its average adjusted EBITDA while ConocoPhillips and Chevron experienced a growth of 11% and 8%, respectively. Upstream businesses are hurt the most when oil process go down. As oil prices were below $50 per barrel in FY 2015 and FY 2016, upstream operations lost revenue. With bounce in oil prices, upstream companies did better in FY 2017 and FY 2018.

Key Value Drivers

Inorganic Growth

MPC is growing inorganically. Its recent key strategic investments had a focus on capacity upgradation, yield flexibility and conversion capacity. These investments had an IRR of around 30%. Such good investments create value for the shareholders and market might look at them as potential drivers for the company. Following investments to upgrade capacity, MPC is now ahead of its competitors in resid upgrading and distillate hydrotreating. During the last quarter of FY 2018, MPC completed acquisition of Andeavor for a total consideration of $23.4 billion, and Express Mart brand for $266 million. In September 2018, it acquired eastern U.S. Gulf Coast export terminal for $451 million.

Figure 10: Synergy Run rate[7]



Andeavor had highly integrated marketing, logistics and refining operations. For selling its final refined products, it had 3,300 marketing stations under fuel brand ARCO. With this acquisition, MPC strengthened its presence in downstream industry. Some of the major objectives of this transaction include geographic diversification, scale enhancement and increasing footprint in Permian Basin. Within first three years of integration of this acquisition, MPC plans to realize annual gross run-rate synergies of approximately $1.4 billion. MPC plans to achieve cost efficiencies amounting $315

Marathon Petroleum Corporation

million. Improvements related to capital and maintenance efficiency are expected to add $340 million of savings while integrated system optimization should further save $245 million.

Improved Operational Efficiency

Its flexibility to switch crude plates and optimize production yields offers MPC a significant advantage over its peers. The operating efficiency of MPC' Refinery business is continuously on rise. The company reduced the planned turnaround and major maintenance of refineries from $1.83 per barrel in FY 2017 to $1.59 per barrel in FY 2018. Refinery total direct operating costs moved down by $0.29 per barrel in FY 2018 when compared with 2017. With addition of 10 refineries following Andeavor acquisition, MPC enjoyed economies of scale and lowered its operating costs.

During FY 2018, MPC recorded operating margin of 5.8% while its net income margin dropped by 25 basis point to 2.86%. The absence of tax benefit was the major reason behind net margin contraction. With capacity expansion and improved operational efficiency, the operating margin should jump to 7.8% by 2021. Over next 3 years, the net income margin should grow to 4.7%. (Figure 15)

Disciplined Capital Allocation

MPC has disciplined capital allocation strategy that involves share repurchases, growing dividends and investing in projects with higher IRR. During FY 2018, MPC returned around $4.2 billion to shareholders that included $675 million share repurchases. Also, the dividend per share grew from $1.52 in FY 2017 to $1.84 in FY 2018. The dividends are continuously growing and providing around 3% dividend yield to the shareholders. I expect the dividends to grow annually by around 10% over the next 3 years.

A targeted payout ratio of over 50% of discretionary free cash flow, certainly makes MPC an attractive stock for those who are looking for steady earnings stream.

Table 3: Capital Allocation

	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
Share Repurchases ($ million)	2,131	965	197	2,372	3,287
DPS ($ Per Share)	1.52	1.84	2.02	2.23	2.45

Strong Fundamentals

Table 4: Key Financials

Key Financials ($ million)	2017	2018	2019E	2020E	2021E
Total Revenue & Other Income	75,369	97,102	125,028	134,650	128,803
Operating Income	4,018	5,571	7,426	8,447	8,312
Net Income	3,432	2,780	3,929	4,765	4,823
FCFF			2,127	2,428	2,622

I believe that strong fundamentals of the company where it is consistently generating higher operating and net income would be a major valuation driver for it. I see MPC as a value stock, and the key financials in the table above indicate, the growing topline as well as operating and net income.

Financial Analysis

During FY 2018, MPC reported total revenues & other income amounting $97 billion, that represented ~29% jump in comparison with the previous year. Andeavor acquisition was the major driver behind this growth.

Figure 11: Total Revenue & Other Income

With Andeavor acquisition, MPC added 10 refineries and expanded its refining capacity by 1,117 mbpcd. I expect this to be a major revenue driver during 2019. With 29% jump, the total revenues and operating income should amount $125 billion in FY 2019. In FY 2020, the revenue growth is expected to moderate to 8% and the following year, MPC might report a slight decline in revenue.

Figure 12: Refining & Marketing

In FY 2018, its crude oil capacity utilization rate stood at 96%. As MPC operating at maximum utilization rate, it might need to invest heavily in physical assets to keep up with the growing revenue. MPC has planned to invest 4.7% of its revenue in capital expenditure during 2019.

Refining & Marketing: During FY 2018, revenue from Refining & Marketing segment jumped by 28% to $83 billion from $65 billion in 2017. The growth came from higher volume and higher average price for the refined products during the year. The refined products volume rose by 402 mbpd while average price increased by $0.34 per gallon.

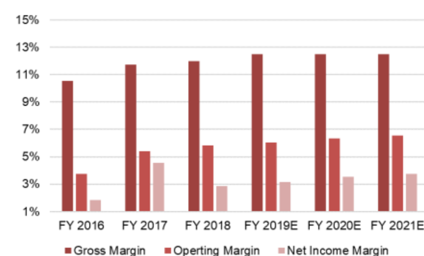
Figure 13: Retail

I project that the total revenues and operating income from the segment should grow by 12% to $77 billion in 2019. This growth would be fueled by third party sales. During FY 2018, third party sales from Refining & Marketing segment grew by 31% to $69 billion. The contribution from the segment is expected to remain stable at around 73%-74% over the next three years. The income from operations grew as a result of higher throughput and wider sour and sweet differential.

Figure 14: Midstream

The key drivers for the segment should be refinery optimization and increased capacity coupled with production of higher value products. Additionally, MPC can improve its margins as its refineries can process a cheaper sour crude oil. The product mix in terms of sour and sweet crude oil is a major driver for Refining & Marketing margin.

Figure 15: Operating Margins



Retail: The revenue from Retail segment increased to $24 billion in FY 2018. The segment is focused on growth opportunities that add high value to the company. During FY 2018, the revenue from third party jumped by 24% to $24 billion. The key revenue drivers for the segment include quality acquisitions, conversion of acquired stores to Speedway brand, growth in end market, and commercial fueling/diesel expansion while its profitability is

driven by Retail fuel margin for gasoline & distillates. Following conversion of acquired stores to Speedway brand, I expect revenue from Retail to go up by 10% to 26 billion in 2019.

Midstream: Midstream segment recorded revenues of around $7 billion during FY 2018. The revenue from third party for Midstream segment grew by 41% to $3 billion. This growth was on account of fees charged for fuels distribution and refining logistics services. The segment emphasizes on meeting the market needs in Permian, Marcellus and Utica basins. Additionally, it focuses on investments in export opportunities and long-haul pipelines. With footprint expansion and growing Refining & Marketing segment, Midstream revenue should grow to amount $7 billion in FY 2019.

Potential Risks

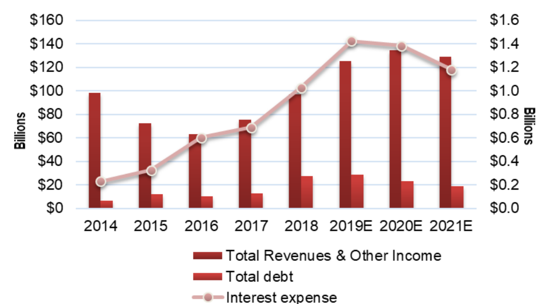
Volatility of Refining & Marketing Margins: The major risk to MPC's business is the volatility associated with refining and marketing margins. It is the difference between sales revenue and cost of refinery inputs along with purchased products. The crack spread, difference between market prices for refined products and crude oil, is a proxy for refining and marketing margins and it has been very volatile historically. MPC does not produce crude oil and purchases it from manufacturers for refining purpose. Thus, the price difference between the purchase price of crude oil (raw material for MPC) and sale price of refined product (finished product for MPC) determines the crack spread and MPC does not have any control over it.

Rising crude oil prices: With rising crude oil prices MPC's refining and marketing and midstream businesses benefit; however, it impacts adversely to its retail business. With fluctuating oil price volatility, MPC's topline is exposed to higher variability.

Cyclicality: MPC operates in highly cyclical industry. Higher demand for gasoline, diesel fuel and asphalt during spring and summer results in increased highway traffic and construction during the season. So, its Refining & Marketing segment performs better during second and third quarter of the year.

Interest Rate Risk: MPC operates in a highly capital-intensive industry. As of December 31, 2018, its total debt jumped to $27.5 billion, 2.5x its last 12 month adjusted EBITDA. During the fourth quarter of FY 2018, to finance Andeavor transaction, MPC issued long-term debt amounting $ 13.5 billion. Simultaneously, it repaid around $8 billion.

Figure 16: Leverage with respect to Revenue

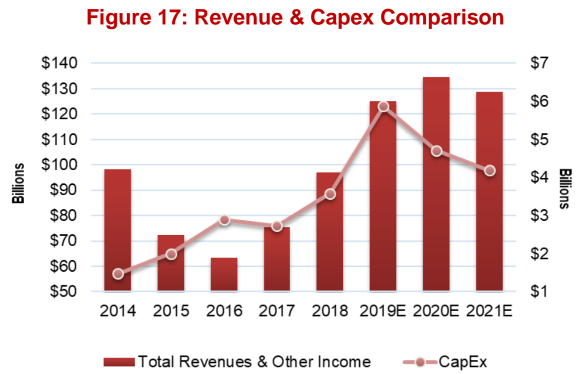


Of this total debt, MPLX had debt of $13.4 billion while ANDX had $5 billion. As per the debt covenants, MPLX needs to maintain consolidated Total Debt to Consolidated EBITDA of no greater than 5 to 1 and during FY 2018, and it maintained the ratio of 3.8 to 1. It seems that analysts see this high leverage as a big concern for MPC.

At the end of December 2018, MPC held $1.7 billion of cash. This additional debt would increase the financing costs for MPC. Its total interest expense for FY 2018 rose to $1 billion from $688 million in FY 2017. With rising operating income, MPC should reduce the total long-term debt burden to $19 billion by FY 2021.

Higher Capex: As per its 2019 capital investment plan, MPC expects to invest $5.9 billion in its operations. This high capital spending would need to be supported by additional debt issuance along with the internally generated cash flows. MPC plans to invest $1.8 billion in its Refining & Marketing operations. Of this around $1 billion would go towards refinery optimization and capacity expansion. Maintenance Capex for the segment is around $730 million. Midstream business would need additional $2.2 billion investment for organic growth. This investment would result in increase in MPLX's capacity in the Permian Basin and the STACK shale play of Oklahoma. Although I expect the capital expenditure to come down beginning FY 2020, I do expect it to remain on the higher side, ~3.2% of total revenue and other income.

Figure 17: Revenue & Capex Comparison



Revenue Model Assumptions

Revenue Model: MPC generates revenue from 3 segments, Refining & Marketing, Retail and Midstream. Further, each segment revenue comprises of third-party sales, intersegment sales and related party sales. The revenue from Refining & Marketing third party sales should grow in double digits for next two years. However, in 2021, we expect that MPC might report a slight decline of 8% in revenue from the segment. (Appendix 1)

MPC is already operating at maximum utilization rate of over 96% and it might need to expand capacity. The company does plan to invest $5.9 billion in capital expenditure in FY 2019. However, there would some time lapse to obtain a utilization rate of over 90%.

Retail segment should grow by 10% during 2019 followed by a moderated growth in FY 2020. Midstream business reported the largest growth of around 41% during FY 2018. As this growth was following Andeavor acquisition, the revenue from third party should grow at a moderate rate over next three years.

MPC plans to spend $3.6 billion on investments in Midstream segment and with higher asset base, the revenue from the segment should rise over the next three years.

DCF Assumptions

Cost Assumptions: From FY 2018, MPC started clubbing consumer exercise taxes with its cost of revenue. Over past three years, average gross margin has been around 11.4%. In FY 2018, it jumped to 12%. With expected synergies from Andeavor acquisition, there should be continuous margin expansion over next three years. The gross margin should reach 12.5% in FY 2019. The operating margin of MPC jumped to 5.8% in FY 2018, reflecting 40 basis point expansion. The synergies amounting $1.4 billion by FY 2021 should support the operating margin expansion. The operating margin should reach 6.4% by FY 2020 and later should normalize to 6% from FY 2022 to FY 2026.

Other significant operating expenses for the company are selling, general & administrative (SG&A) and depreciation and amortization of assets. Over past three years, average SG&A expense is around 2.4%

of total revenue and other income. To support increasing revenue base, SG&A expense should go up to 2.5% of revenue over next 2 years. Later it should increase at a decreasing pace.

WACC and Terminal Growth Rate– MPC is highly leveraged company with a capital structure that comprises of almost 40% debt and 60% equity. Due to the highly cyclical nature of the industry affected immensely by macroeconomic factors such as oil prices, we expect a very high cost of equity, around 14%. Post tax-shield cost of debt is around 4%. Using these inputs, we calculated weighted average cost of capital (WACC) to be around 11%. The assumed terminal growth rate is 4% which is in line with the growth of a mature economy. As the cash flows grow by nominal rate, 4% terminal growth rate factors in 2% expected inflation over the projected period. And so, in real terms, the cash flows are expected to grow by 2% which is in line with long term growth of a developed economy.

Income Tax Rate – The revised US Statutory tax rate since January 2018 is 21%. However, in its earnings call, MPC mentioned that the company expects an effective tax rate of around 22% going ahead.[6] We expect the income tax rate to remain around 22% over the forecast period.

Capital Expenditure and Depreciation: MPC plans to invest heavily in expanding its capacity and grow organically. As Oil & Gas is a capital-intensive industry, MPC would need to invest around 3.2% of its total revenue and other income in Capital investments. During the last period of forecast, the Capex is assumed to be equal to depreciation to avoid the bias of growing Capex indiscriminately.

Working Capital Assumptions: During FY 2018, MPC reported receivables amounting $5.8 billion, 6% of its total revenue and other income. Although there was jump in receivables on absolute basis, the ratio of receivables with respect to sales declined by 0.2%. I think that MPC is improving its receivables collection and so going ahead I expect receivables to fluctuate from 5.7% to 6% for next 3 years.

During FY 2018, inventories as percentage of sales increased significantly from 7.4% in FY 2017 to 10.1%. This resulted from purchase accounting related adjustment for inventory. I expect inventories as percentage of sales to come down over the next 3 years.

MPC reported payables amounting $9.4 billion in FY 2018. This decrease was following lower crude oil payable prices. I expect payables to vary from 9% to 9.5% of the total revenue and other income over the next 3 years.

DCF Result

In our two-stage DCF model, free cash flows are expected to grow at an average rate of 16% until FY 2029. This growth is expected to moderate, and the cash flows are expected to grow by 4% in perpetuity. As per our DCF model, the intrinsic value of MPC should be $77.62 per share. This presents around 27% upside to the stock. As per our intrinsic value analysis, MPC stock is highly undervalued and it presents a significant margin of safety for investment.

As DCF price is quite sensitive to assumptions related to terminal growth as well as discount rate, we conducted sensitivity analysis. (Figure 19)

As shown in the sensitivity analysis figure, the DCF price of $77.62 lies in the middle of the multiple scenarios.

Figure 18: DCF Valuation

Marathon Petroleum Corporation (MPC)
Analyst: Jayaprabha Dhavale
3/25/2019

Terminal Discount Rate = 11.0%
Terminal FCF Growth = 4.0%

Year	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E
($ million)											
Revenue	125,028	134,650	128,803	136,531	144,040	151,243	158,502	166,110	173,585	181,049	188,291
% Growth		7.7%	-4.3%	6.0%	5.5%	5.0%	4.8%	4.8%	4.5%	4.3%	4.0%
Operating Income	7,426	8,447	8,312	8,533	8,642	9,075	9,510	9,634	10,068	10,139	10,544
Operating Margin	5.9%	6.3%	6.5%	6.3%	6.0%	6.0%	6.0%	5.8%	5.8%	5.6%	5.6%
Interest Income	40	51	59	63	66	70	73	77	80	84	87
Interest % of Sales	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Taxes	1,341	1,577	1,593	1,891	1,916	2,012	2,108	2,136	2,233	2,249	2,339
Tax Rate	21.1%	22.0%	22.0%	22.0%	22.0%	22.0%	22.0%	22.0%	22.0%	22.0%	22.0%
Net Income	3,929	4,765	4,823	6,579	6,660	6,993	7,329	7,421	7,755	7,806	8,119
% Growth		21.3%	1.2%	36.4%	1.2%	5.0%	4.8%	1.3%	4.5%	0.7%	4.0%
Add Depreciation/Amort	3,626	3,636	3,220	3,550	3,745	4,084	4,280	4,651	5,034	5,250	5,837
% of Sales	2.9%	2.7%	2.5%	2.6%	2.6%	2.7%	2.7%	2.8%	2.9%	2.9%	
Plus/(minus) Changes WC	448	(1,260)	(1,236)	(956)	(864)	(907)	(793)	(831)	(868)	(724)	(753)
% of Sales	0.4%	-0.9%	-1.0%	-0.7%	-0.6%	-0.6%	-0.5%	-0.5%	-0.5%	-0.4%	-0.4%
Subtract Cap Ex	5,876	4,713	4,186	4,437	4,681	4,840	5,072	5,316	5,381	5,613	5,837
Capex % of sales	4.7%	3.5%	3.3%	3.3%	3.3%	3.2%	3.2%	3.2%	3.1%	3.1%	3.1%
Free Cash Flow	2,127	2,428	2,622	4,736	4,859	5,329	5,744	5,926	6,540	6,720	7,365
% Growth		14.2%	8.0%	80.7%	2.6%	9.7%	7.8%	3.2%	10.4%	2.7%	9.6%

NPV of Cash Flows	28,126	42%	
NPV of terminal value	38,539	58%	
Projected Equity Value	66,665	100%	
Free Cash Flow Yield	6.60%		
Current P/E	8.2	6.8	6.7
Projected P/E	*10.4*	*8.6*	*8.5*
Current EV/EBITDA	5.3	4.8	5.0
Projected EV/EBITDA	*6.0*	*5.5*	*5.8*
Shares Outstanding	526		
Current Price	$ 61.30	premarket after preannouncement	
Implied equity value/share	$ 77.62		
Upside/(Downside) to DCF	26.6%		
Debt	27,524		
Cash	1,687		
Cash/share	3.21		

Terminal Value	109,429
Free Cash Yield	6.73%
Terminal P/E	13.5
Terminal EV/EBITDA	8.3

Figure 19: Valuation Model Sensitivity Analysis

DCF Value Sensitivity Analysis

Terminal growth rate	Discount Rate (Weighted Average Cost of Capital)				
	9%	10%	11%	12%	13%
2%	96.29	75.96	60.24	47.76	37.61
3%	111.64	86.56	67.84	53.37	41.85
4%	133.13	100.70	77.62	60.38	47.03
5%	165.37	120.49	90.65	69.40	53.50
6%	219.09	150.19	108.90	81.42	61.83

Relative Valuation

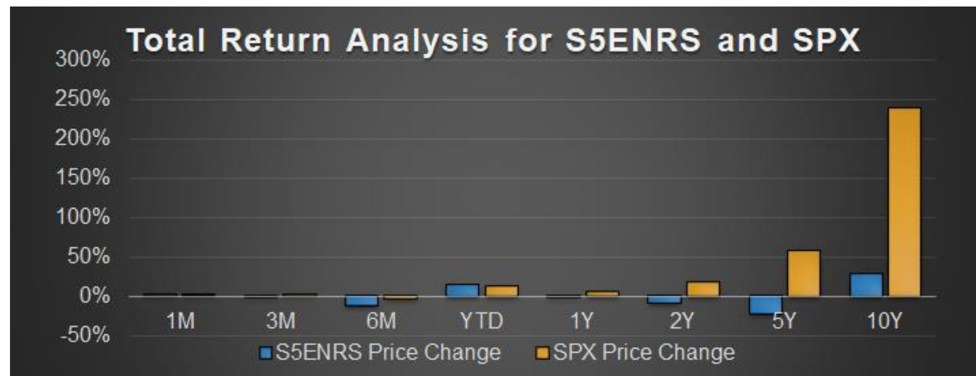
Industry Valuation

Table 5: Valuation Multiple on Relative basis

Relative to S&P 500	Low	Average	Current
P/E	0.45x	1.27x	0.98x
P/B	0.52x	0.80x	0.54x
P/S	0.52x	0.75x	0.58x
P/EBITDA	0.59x	1.39x	0.66x

After comparing S&P 500 and energy sector, based on various valuation multiples, it seems that Energy is significantly undervalued and is trading at a discount when compared with S&P 500. The average relative P/E ratio for energy sector is 1.27x of its earnings. However, currently the sector is trading at a P/E multiple of 0.98x of its earnings. As per P/E multiple, the sector seems to be fairly-valued when compared with S&P 500. However, based on Price/Book, Price/Sales and P/EBITDA, the sector is at a significant discount.

Figure 20: Return Comparison: SPX and ENRS[8]



When compared with S&P 500 performance over past 10 years, Energy has been one of the worst performing sectors. As per figure 20, S&P 500 has offered 237% return whereas the price change for energy industry is around 28% over past 10 years. Considering mean reversion or long-term reversion concept in Behavioral Finance, I think that Energy sector should outperform S&P 500 over the next 5 years.

Historical performance comparison

Table 6: Valuation Multiple on Absolute basis

Absolute Basis	Low	Median	Current
P/E	7.59x	16.03x	17.44x
P/B	1.53x	1.90x	1.68x
P/S	0.76x	1.09x	1.07x
P/EBITDA	3.80x	6.68x	6.78x

Based on its past 10-year average, the median P/E ratio of the sector is 16x of its earnings. Currently it is trading at a premium, 17x of its earnings. The sector seems to be closer to its low levels on median Price/Book or Price/ Sales multiple basis.

Company Valuation

MPC Valuation

As MPC operates in downstream industry, I have selected peers based on industry. Considering past 12-month P/E, MPC seems to be fairly-valued. However, by a glimpse at Price/Sales, Price/Book, Price/Cash Flows and EV/EBITDA, it is significantly undervalued in comparison with its peers. I believe that EV/EBITDA is a good ratio to compare MPC with its peers as it considers the leverage and we can compare companies across the industry after factoring in the leverage effect.

Table 7: Valuation Multiple Comparison

Valuation Multiple	P/S TTM	P/B	P/CF TTM	EV/ EBITDA TTM
Marathon Petroleum Corporation	0.50x	2.29x	5.06x	13.59x
Valero Energy Corporation	0.46x	1.81x	7.41x	12.17x
Philips 66	0.58x	2.03x	14.28x	34.56x
Formosa Petrochemicals	1.76x	3.22x	13.30x	11.33x
NESTE OYJ	1.03x	3.22x	12.48x	11.86x

Recommendation

I believe that MPC has significant upside potential, around 30% (27% price appreciation and 3% dividend yield) over next 3 years. MPC has not only strong fundamental but also core values that focus on environmental stewardship, and health & safety of its employees, contractors and communities. With its highest standards of ethics, integrity and transparency, coupled with improving performance in terms of profitability ratios, I expect MPC to earn a higher return, over next 2/3 years.

The energy index offers 4.1% free cash flow yield while MPC offers the highest free cash flow yield of 9.7%. When compared with its peers, MPC is indeed outperforming on various parameters.

MPC is a mature company operating in a capital-intensive industry. It has stable and continuously growing dividend with a target annual growth rate of over 10%. The company's dividends have grown with a CAGR of 24% since the third quarter of 2011. It regularly pays dividends and targets a payout ratio of over 50% of its discretionary free cash flow. With significant diversification, MPC's non-refining segment contributes ~50% to the total EBITDA. When compared with past 5 years profitability ratios, MPC seems to be recovering.[9]

MPC has a PEG ratio of 0.62 whereas Oil & Gas Refining & Marketing has a PEG ratio of 1.18.[10] Considering this ratio, I see MPC as a significantly undervalued company with good investment prospects.

Figure 21: Free Cash Flow Yield Comparison[7]

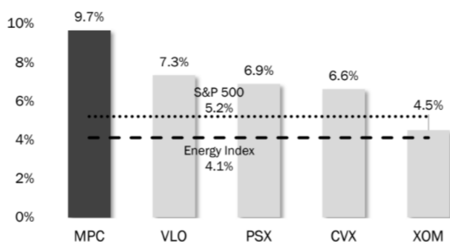


Table 8: Profitability Ratio[9]

In %	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
Return on Common Equity	23.26	23.78	8.76	24.88	11.30
Return on Assets	8.58	7.76	2.68	7.34	3.92
Return on Capital	16.55	12.43	5.09	12.78	8.23
Return on Invested Capital	13.69	10.70	4.74	11.63	7.60

Appendix 1

Revenue Model

Marathon Petroleum Corporation (MPC)

(in millions, $)	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019E	FY 2020E	FY 2021E
Total revenue	109,489	85,009	75,202	87,490	112,814	125,028	134,650	128,803
Refining & Marketing Segment	91,733	64,198	53,817	64,691	82,599	91,965	100,005	93,503
Third Party	80,821	52,168	43,167	52,761	68,939	77,212	84,933	78,138
% Growth		-35%	-17%	22%	31%	12%	10%	-8%
Intersegment	10,912	12,024	10,589	11,309	12,914	13,947	14,226	14,511
% Growth		10%	-12%	7%	14%	8%	2%	2%
Related Party	-	6	61	621	746	806	846	854
% Growth			917%	918%	20%	8%	5%	1%
Retail	16,932	19,693	18,286	19,033	23,553	25,907	27,201	27,745
Third Party	16,927	19,690	18,282	19,021	23,538	25,892	27,186	27,730
% Growth		16%	-7%	4%	24%	10%	5%	2%
Intersegment	5	3	3	4	6	7	7	7
% Growth		-40%	0%	33%	50%	10%	5%	5%
Related Party	-	-	1	8	8	8	8	8
Midstream	824	1,119	3,099	3,765	6,662	7,157	7,443	7,554
Third Party	71	187	1,828	2,322	3,273	3,600	3,780	3,818
% Growth		163%	878%	27%	41%	10%	5%	1%
Intersegment	753	930	1,262	1,443	3,387	3,556	3,663	3,736
% Growth		24%	36%	14%	135%	5%	3%	2%
Related Party	-	-	-	-	-	-	-	-

Appendix 2

Income Statement

Marathon Petroleum Corporation (MPC)

(in millions USD)	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019E	FY 2020E	FY 2021E
Revenues and other income:									
Sales and other operating revenues (including consumer excise taxes)	100,160	97,817	72,045	63,277	74,104	95,750	123,287	132,775	127,010
Sales to related parties			6	62	629	754	971	1,046	1,000
Income (loss) from equity method investments	36	153	88	(185)	306	373	480	517	495
Net gain on disposal of assets	6	21	7	32	10	23	30	32	31
Other income	52	111	112	178	320	202	260	280	268
Total revenues and other income	100,254	98,102	72,258	63,364	75,369	97,102	125,028	134,650	128,803
Consensus							*125,437*	*134,397*	*127,664*
Costs and expenses:									
Cost of revenues (excludes items below)	55,433	55,855	56,862	56,676	66,519	85,456	109,400	117,819	112,703
Gross Profit	44,821	42,247	15,396	6,688	8,850	11,646	15,629	16,831	16,100
Purchases from related parties	357	505	308	509	570	610	590	600	595
Inventory market valuation adjustment	-	-	370	(370)	-	-	-	-	-
Consumer excise taxes	6,263	6,685	7,692	7,506	7,759				
Impairment expense	-	-	144	130	-	-	-	-	-
Depreciation and amortization	1,220	1,326	1,502	2,001	2,114	2,490	3,626	3,636	3,220
Selling, general and administrative expenses	1,248	1,375	1,576	1,597	1,694	2,418	3,251	3,366	3,220
Other taxes	340	390	391	435	454	557	736	783	754
Total costs and expenses	64,861	66,136	68,845	60,978	71,351	91,531	117,602	126,203	120,491
Operating Income	35,393	31,966	3,413	2,386	4,018	5,571	7,426	8,447	8,312
Net interest and other financial income (costs)	179	216	318	564	674	1,003	1,329	1,279	1,069
Income Before Income Taxes	35,214	31,750	3,095	1,822	3,344	4,568	6,097	7,168	7,243
Provision for Taxes	1,113	1,280	1,506	609	(460)	962	1,341	1,577	1,593
Net Income	34,101	30,470	1,589	1,213	3,804	3,606	4,755	5,591	5,649
Less net income (loss) attributable to:									
Redeemable noncontrolling interest	-	-	-	41	65	75	75	75	75
Noncontrolling interests	21	31	16	(2)	307	751	751	751	751
Net Income	34,080	30,439	1,573	1,174	3,432	2,780	3,929	4,765	4,823
EPS									
Basic	3.34	4.42	5.29	2.22	6.76	5.36	7.59	9.20	9.31
Diluted	3.32	4.39	5.26	2.21	6.70	5.28	7.47	9.06	9.17
Consensus - GAAP							*6.66*	*9.23*	*8.59*
Shares Outstanding									
Basic	630	570	538	528	507	518	518	518	518
Diluted	634	574	542	530	512	526	526	526	526
Dividends paid	0.77	0.92	1.14	1.36	1.52	1.84	2.02	2.23	2.45

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