

**Energen Corporation
(NYSE: EGN) Valuation and
Analysis of Acquisition
Premium Paid by
Diamondback Energy
(NYSE:FANG)**

Honors Thesis - Finance – Spring 2019

Timothy Sakabu

BHON 4990 - 31319

Readers:

Dr. Gregory Eaton – Thesis Director

Dr. Betty Simkins – Second Reader

Abstract

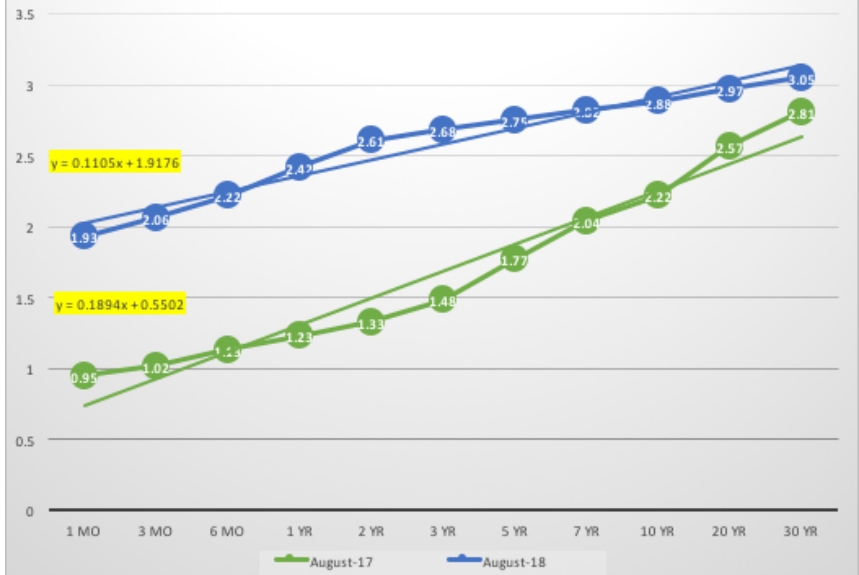
On August 14th, 2018, Diamondback Energy announced the acquisition of Energen Corporation in an all-stock deal that would convert each eligible share of Energen to .6442 shares of Diamondback. By completing a valuation using methods learned during my coursework, my thesis will work to highlight the premium paid by Diamondback during its acquisition. Valuation is a key skill that I have learned during my undergraduate coursework because it combines the quantitative along with the qualitative in order to provide a picture of what a company is worth. In my report I use the comparable company's method, the precedent transaction method and the net asset value method.

Macroeconomic Analysis (as of August 13, 2018)

Current Economic Conditions

Economic growth in the United States remains strong despite headwinds from the trade dispute with China. The annualized GDP growth rate for the Q2 of 2018 was 4.2% which beat expectations and is the highest since Q3 2014. The strong economy has led to an unemployment rate of 3.9% and nonfarm payroll employment rose by 157,000 in July (“Employment Situation News Release”). The Consumer Confidence Index rose to 127.4 in July 2018, up from 127.1 in June 2018 (“The Conference Board Consumer Confidence Index Increased Marginally in July.”). GDP growth, a strong labor market and the Consumer Confidence Index all signal that the United States economy is currently in good condition. The United States Treasury Yield Curve has flattened year-over-year and its slope seems to be trending downwards with the difference between the 10 year and 2 year treasuries narrowing from 2017 to 2018 (“U.S. Department of the Treasury.”) The United States appears to be in the late stage of the business cycle based on all leading indicators. The global GDP growth rate in 2017 was 3.15% and overall the global economy is remains healthy.

August 2017 vs August 2018 Yield Curves



United States Economic Growth Outlook

The Congressional Budget Office projects real GDP growth for 2018 to be 3.1%, this is down from the annualized rate of 4.2% of Q2. The Congressional Budget office is not overly optimistic about GDP numbers because they hypothesize that growth in consumer spending and the surge in agricultural exports seen in Q2 will not be sustained in the second half of 2018. Excess demand due to low unemployment rates and higher wages will lead to upward pressure on prices, wages, and interest rates over the next several years. The Congressional Budget Office estimates that from 2023 to 2028 the real GDP will grow at 1.7% which is slower than potential output, the difference between potential output and actual output arises from the slowdown in actual output from 2025 – 2026 caused by the expiration of provisions from the Tax Cut and Jobs act of 2017 (“An Update to the Economic Outlook: 2018 to 2028”).

Global Economic Growth Outlook

Global growth is projected at 3.9% for 2018 but at a less uniform pace across the globe with some countries pulling ahead while others lag. Growth projections have been reduced in the Euro area, Japan, and United Kingdom since April 2018. Medium term growth outlooks have been dampened because of increasing risks due to worsening United States-China trade relations, increased oil prices, and markets pricing in a halt in rate hikes within the United States (“World Economic Outlook Update, July 2018: Less Even Expansion, Rising Trade Tensions.”). The implication of uneven growth is that the economy is in the late stages of the business cycle as mentioned earlier in my analysis. Long term growth prospects are still positive which bodes well for the energy industry.

Industry Analysis

West Texas Intermediate: \$67.25/bbl

Henry Hub: \$2.96/mbtu

US Oil Rig count: 869

Weekly U.S. Ending Stocks of Crude Oil and Petroleum Products: 1,887,319

2018 Energy Market

Oil has rebounded since its 2016 lows leading to a rebound in business related activity in the sector. Following the recent downturn many firms have focused their attention on capital discipline and cost control. This has led to many firms lowering their production costs and pursuing projects with larger margins built into their assumptions. As of August 1st, 2018 oil and gas merger and acquisition activity is up 17.9%, marking a healthy shift as companies ramp up activity in the Permian and other plays in the United States. The IEA has been claiming since 2016 that there is a threat of a supply crunch due to increased demand from non-OECD countries in conjunction with a gradual decrease in new discoveries. Between 2014 and 2016 oil and gas capital expenditures dropped 44% due to the decline in oil prices. This has since begun to rebound and is projected to grow 6% annually through the near future. According to the an IEA's 2017 outlook, "the world needs to find an additional 2.5 million bbls/d of new production each year, just for conventional output to remain flat (IEA 2017)". In PwC's strategic report, it is stated that BP has taken the approach of only accepting projects that are profitable when prices are at \$40/bbl or more. This is an extremely conservative approach but will prevent the volatile employment nature that sent many people packing in 2016, leading to a talent crunch that during the recovery years. PwC also pointed out that smaller firms need to focus on the commercial viability of projects rather than technical viability. (Biscardini, Giorgio, et al.)

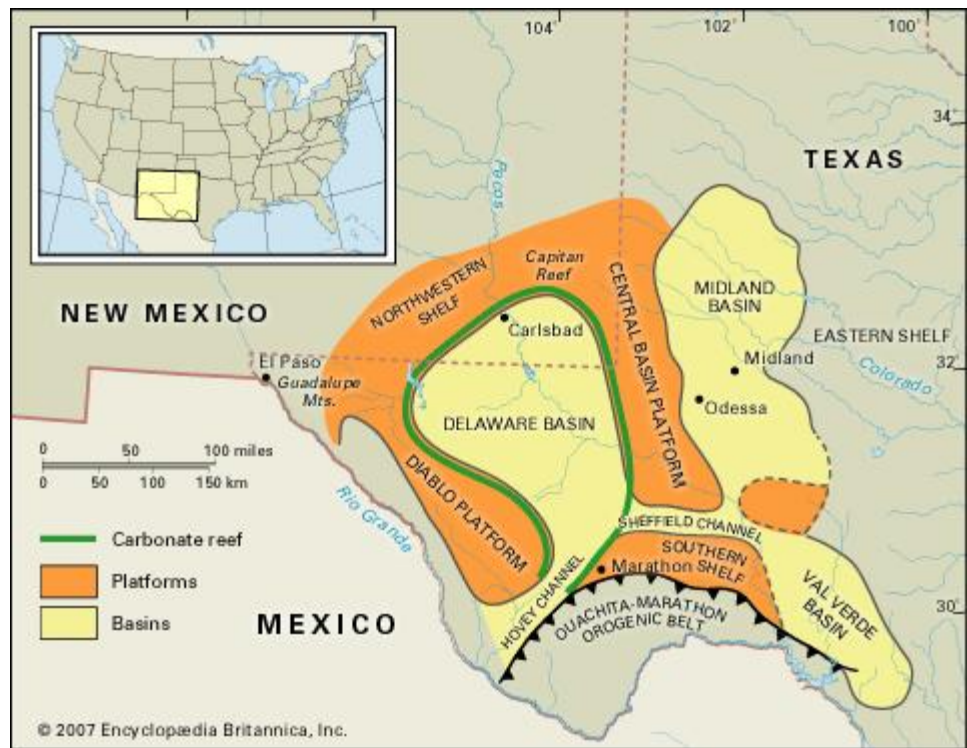
Permian Basin

The Permian Basin is located in West Texas and expands into the southeast corner of New Mexico. The Permian has been a hot bed of oil and gas activity ever since the 1920's when the first well was drilled and is responsible for approximately 20% of the oil activity and 7% of the natural gas activity in the United States respectively. Production in the region has increased over the years reaching 1.9 million barrels of oil per day and 6.5 billion cubic feet of natural gas per day as of 2017 ("Permian Basin Production."). The Permian is crucial to United States production and as unconventional continues to gain momentum, many operators are making strategic acquisitions to gain access.

Permian Basin Top 10 Operators 2016

OIL		
Rank	Operator Name	Crude Oil (BBL)
1	PIONEER NATURAL RES. USA, INC.	59,359,738
2	OCCIDENTAL PERMIAN LTD.	42,697,587
3	APACHE CORPORATION	30,098,087
4	XTO ENERGY INC.	25,279,187
5	COG OPERATING LLC	20,336,309
6	OXY USA WTP LP	19,121,487
7	KINDER MORGAN PRODUCTION CO LLC	18,647,309
8	ENERGEN RESOURCES CORPORATION	16,483,466
9	CHEVRON U. S. A. INC.	16,283,952
10	ENCANA OIL & GAS(USA) INC.	14,047,502

GAS		
Rank	Operator Name	Total Gas (MCF)
1	PIONEER NATURAL RES. USA, INC.	118,457,785
2	APACHE CORPORATION	116,698,106
3	COG OPERATING LLC	97,078,060
4	CIMAREX ENERGY CO.	96,287,736
5	ANADARKO E&P ONSHORE LLC	80,434,523
6	XTO ENERGY INC.	77,279,750
7	OCCIDENTAL PERMIAN LTD.	64,127,631
8	KINDER MORGAN PRODUCTION CO LLC	63,542,367
9	LAREDO PETROLEUM, INC.	56,942,940
10	CHEVRON U. S. A. INC.	50,670,957



(Tang) (Top Ten Operators 2016)

Business

Company Description

Energen Corporation, through its subsidiary, Energen Resources Corporation, engages in the exploration, development, and production of oil, natural gas liquids, and natural gas. The company has operations within the Midland Basin, the Delaware Basin, and the Central Basin Platform areas of the Permian Basin in west Texas and New Mexico. As of December 31, 2017, it had a total proved reserves of 444 million barrel of oil equivalent. The company was founded in 1929 and is headquartered in Birmingham, Alabama. As of November 29, 2018, Energen Corporation operates as a subsidiary of Diamondback Energy, Inc. (“Energen Corporation 10K.”).

Segments:

Oil and Natural Gas operations:

Energen’s operations focus on increasing production and adding proved reserves through the development of oil, natural gas liquids and natural gas properties. In addition, Energen explores for and develops new reservoirs, primarily in areas in which it has an operating presence. All oil, natural gas liquids and natural gas production is sold to third parties. Energen operates its properties for its own interest and that of its joint interest owners. This role includes overall project management and day-to-day decision-making relative to project operations.

At the end of 2017, Energen’s proved reserves totaled 444 million barrels of oil equivalent.

Substantially all of these proved reserves are located in the Permian Basin in west Texas and New Mexico. Approximately 57 percent of Energen’s year-end proved reserves are proved developed reserves. Energen’s proved reserves have a year-end proved reserves-to-production

ratio of 16 years. Oil, natural gas liquids and natural gas represent approximately 58 percent, 20 percent and 22 percent, respectively, of Energen's proved reserves ("Energen Corporation 10K.")

Property Acquisitions and Dispositions:

During 2017, Energen completed a total of \$273.3 million in various purchases and renewals of unproved acquisitions, which are accounted for as asset acquisitions, including approximately \$217.4 million in the Delaware Basin and approximately \$36.9 million in the Midland Basin for unproved leasehold and \$19.0 million for mineral purchases primarily in the Delaware Basin. Energen completed an estimated \$143.7 million in various purchases and renewals of unproved leasehold largely in the Permian Basin, including approximately \$77 million of acreage purchased in Lea County, New Mexico, during 2016. Energen completed an estimated total of \$85.7 million in various purchases of unproved leasehold largely in the Permian Basin during 2015 ("Energen Corporation 10K.").

During 2016, Energen completed a series of asset sales of certain non-core Permian Basin assets in the Delaware Basin in Texas and in the San Juan Basin in New Mexico for an aggregate purchase price of \$552 million. These transactions had closing dates of June 3, 7, 30, July 15 and August 9 of 2016 with various effective dates ranging from March 1, 2016 to June 30, 2016. Minor portions of the assets were transferred to other parties upon the exercise of preferential purchase rights under pre-existing joint operating agreements in the ordinary course of business. Pre-tax proceeds to Energen were approximately \$532.2 million after purchase price adjustments of approximately \$19 million related to the operations of the properties subsequent to the effective dates and other one-time adjustments including transfer payments and certain amounts due the buyer, but before consideration of transaction costs of approximately \$5

million. In the years ended December 31, 2017 and 2016, Energen recognized pre-tax post-closing adjustment losses of \$0.6 million and pre-tax gains of \$246.3 million, respectively, on the sales. Energen used the proceeds from the sale to fund ongoing operations (“Energen Corporation 10K.”)

Growth Strategy:

Energen is focused on increasing its oil, natural gas liquids and natural gas production and proved reserves largely through active development and/or exploratory programs in the Permian Basin. The Company seeks to expand its footprint primarily through acquisitions of proved properties and unproved leasehold within areas of existing operations. Energen operated approximately 97 percent of its proved reserves at December 31, 2017 (“Energen Corporation 10K.”)

Recent Acquisition:

As of June 30 2018, Energen acquired 670 net acres of unproved leasehold property in the Delaware Basin.

PROVED RESERVES YEAR-END 2017 (MMBOE)	
Midland Basin	294
Delaware Basin	108
Platform/Other	42
TOTAL	444

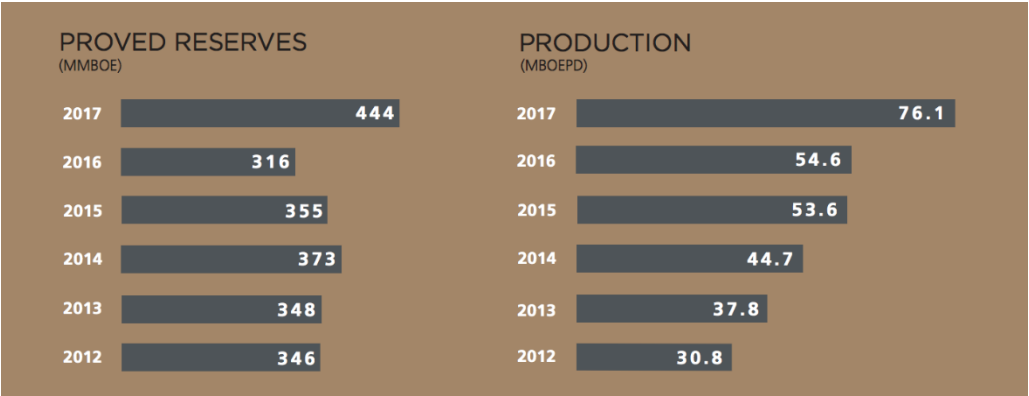


Image Source: Energen 2017 Summary Annual Report

Valuation – Comparable Companies Method

Explanation of Comps Set:

During the selection process for comparable companies I used Capital IQ's suggested set and eliminated companies with operations that were not within the United States as well as companies with significantly higher assets as this would give off higher multiples and would not be directly comparable to Energen's operations. I chose companies that were exploration and production companies with roughly similar amounts of assets as Energen.

Comps Set:

EP Energy Corporation (NYSE:EPE)

EP Energy Corporation, an independent exploration and production company, engages in the acquisition and development of unconventional onshore oil and natural gas properties in the United States. Its assets are located primarily in three areas, such as the Eagle Ford Shale in South Texas; Northeastern Utah in the Uinta basin; and the Permian basin in West Texas. As of December 31, 2018, EP Energy Corporation had proved reserves of 324.5 million barrels of oil equivalent; and had average net daily production of 80,654 barrel of oil equivalent per day. The company primarily sells its oil and natural gas production to third parties. EP Energy Corporation was founded in 2013 and is headquartered in Houston, Texas. ("Capital IQ.")

Oasis Petroleum Inc. (NYSE:OAS)

Oasis Petroleum Inc., an independent exploration and production company, focuses on the acquisition and development of onshore unconventional oil and natural gas resources in the North Dakota and Montana regions of the Williston Basin and the Texas region of the Delaware Basin, respectively. As of December 31, 2018, the company had 413,552 net leasehold acres in the Williston Basin; and 23,366 net leasehold acres in the Delaware Basin, as well as

approximately 320.5 million barrels of oil equivalent of estimated net proved reserves. It also operates midstream services and a well services businesses. (“Capital IQ.”)

Parsley Energy, Inc. (NYSE:PE)

Parsley Energy, Inc., an independent oil and natural gas company, engages in the acquisition, development, exploration, production, and sale of crude oil and natural gas properties in the Permian Basin in west Texas and Southeastern New Mexico. As of December 31, 2018, its acreage position consisted of 198,946 net acres, including 154,107 net acres in the Midland Basin and 44,839 net acres in the Delaware Basin; and operated 425.3 net acres of the horizontal wells and 735.7 net acres of the vertical wells, as well an estimated proved oil, natural gas, and natural gas liquid reserves of 521.7 million barrels of oil equivalent. (“Capital IQ.”)

Whiting Petroleum Corporation (NYSE:WLL)

Whiting Petroleum Corporation engages in the acquisition, exploration, development, and production of crude oil, natural gas liquids, and natural gas primarily in the Rocky Mountains region of the United States. The company sells its oil and gas production to end users, marketers, and other purchasers. As of December 31, 2018, it had interests in 2,097 net productive wells on approximately 539,300 net developed acres, as well as total estimated proved reserves of 520.1 million barrels of oil equivalent. (“Capital IQ.”)

Transaction Value

According to CNBC the Energen-Diamondback deal was worth approximately \$9.2 billion dollars (“Diamondback to Buy Energen in \$9.2 Billion Deal to Boost Its Permian Presence”). I am of the opinion that this number is not exactly precise because when viewing the average share price for Diamondback in the last six months, the implied value of the deal equates to \$7.98 billion. I believe \$7.98 billion is a more accurate valuation and better reflects the valuation and premium of the deal. I took the six-month average share price multiplied by .6442 (Diamondback’s exchange ratio for Energen common stock shareholders) and multiplied this number by eligible shares. In the DEFM14A for this transaction, Tudor Pickering Holt and Co. defined eligible shares as the common stock issued and outstanding at the time of the merger agreement (“DEFM14A.”). Based on this calculation, \$7.98 billion will be the figure I use to calculate the premium paid by Diamondback.

Time	Share Price	Exchange Ratio	Common Shares Outstanding	Implied Deal Value
8/13/2018	\$ 131.43	0.6442	97,527,659	\$ 8,257,394,395.25
6 month average	\$ 127.04	0.6442	97,527,659	\$ 7,981,854,721.26

EV/EBITDA and EV/EBITDAX Implied Valuation Based on Peer Group Multiples

<u>Level</u>	<u>EBITDA Multiple</u>	<u>EGN Enterprise Value</u>	<u>EGN Equity Value</u>
High	12.2x	\$ 9,456.59	\$ 8,628.68
Median	7.9x	\$ 6,084.77	\$ 5,256.86
Low	7.1x	\$ 5,503.42	\$ 4,675.51
Mean	8.8x	\$ 6,782.39	\$ 5,954.48
	<u>EBITDAX Multiple</u>	<u>EGN Enterprise Value</u>	<u>EGN Equity Value</u>
High	11.3x	\$ 8,837.74	\$ 8,009.83
Median	7.7x	\$ 6,015.14	\$ 5,187.23
Low	6.9x	\$ 5,372.61	\$ 4,544.70
Mean	8.4x	\$ 6,560.16	\$ 5,732.25
	<u>BOE/D Multiple</u>	<u>EGN Enterprise Value</u>	<u>EGN Equity Value</u>
High	147.6x	\$ 11,231.08	\$ 10,403.17
Median	80.2x	\$ 6,100.26	\$ 5,272.35
Low	56.1x	\$ 4,267.52	\$ 3,439.61
Mean	91.0x	\$ 6,924.78	\$ 6,096.87

Inputs

As-Of August 13, 2018	Capitalization			EBITDAX TTM						
<u>Company Name</u>	<u>Net Debt</u>	<u>Market Cap</u>	<u>Enterprise Value</u>	<u>EBITDA</u>	<u>Exp Costs</u>	<u>EBITDAX</u>	<u>EV/EBITDAX</u>	<u>EV/EBITDA</u>	<u>Average Daily BOE Prod</u>	<u>Ev/BOE/D</u>
EP Energy Corporation (NYSE:EPE)	\$4,201.00	\$ 414.20	\$ 4,615.20	\$586.00	\$ 5.00	\$591.00	7.8x	7.9x	82.30	56.08
Oasis Petroleum Inc.	\$2,740.40	\$ 3,946.30	\$ 6,686.70	\$965.70	\$ 8.03	\$973.73	6.9x	7.1x	66.10	101.16
Parsley Energy, Inc. (NYSE:PE)	\$1,881.60	\$ 8,139.30	\$10,020.90	\$885.40	\$ 1.71	\$887.11	11.3x	12.2x	67.90	147.58
Whiting Petroleum Corporation	\$2,761.60	\$ 4,225.40	\$ 6,987.00	\$901.20	\$ 22.08	\$923.28	7.6x	7.8x	118.10	59.16

Comparable Companies Valuation Discussion

I used the comparable companies' method because it gives a straight forward picture of what the company is worth based on what other market participants are currently paying. Based on the multiples generated by the peer companies, Energen is worth approximately \$5.95 billion, \$5.73 billion, \$6.10 billion for EV/EBITDA, EV/EBITDAX, EV/BOE/D respectively. I prefer to give more weight to the EBITDAX multiple because it excludes the exploration costs of the firm and gives a clear picture of the operations less the cost to find the sources of the cash flows. I added the BOE/D multiple because it is indicative of what the market is willing to pay for the company's production. BOE/D is the barrel of oil equivalent daily production for the companies and is an average of the daily production for a given company during the year. The mean EBITDA multiple indicated a 25% premium, for EBITDAX multiple a 28% premium and for the BOE/D multiple a 23% premium.

Valuation – Comparable Precedent Transactions Method

Comparable Precedent Transactions

Based on precedent transactions provided on page 100 of the DEFM14A, net acreage in the Permian is worth between \$35,000 and \$55,000 per acre. Energen stated that they have 160,000 acres that should be included in the analysis which differs from their 10K although no reason was given as to why this difference exists (“Energen Corporation 10K.”). The low and high estimate for acreage value produced a mean equity value of \$7.2 billion which represents a 10.86% premium paid by Diamondback. (“DEFM14A.”)

Column1	Net Acreage (low)	Net Acreage (high)	Mean
total acreage	160,000.00	160,000.00	160,000.00
Price per acre	\$ 35,000.00	\$ 55,000.00	\$ 45,000.00
Equity value	\$ 5,600,000,000.00	\$ 8,800,000,000.00	\$ 7,200,000,000.00
shares outstanding	97,527,659	97,527,659	97,527,659
price per share	\$ 57.42	\$ 90.23	\$ 73.83

Valuation – Net Asset Value Method

Net Asset Value Model

The Net Asset Value model was my quantitative model of choice because it takes exactly what is on the balance sheet and assigns a present value. The net asset value model differs from the discounted cash flow model in that cash flows decrease over time in conjunction with production declines and commodity price fluctuations. The energy industry uses the NAV model because oil and gas companies cannot assume perpetual growth (Investopedia).

Assumptions

-Commodity Pricing-

My primary model used the NYMEX Forward Strip pricing data until 2022 for the price of oil, the EIA's estimate for the price of gas, and the DEFM14A estimate for natural gas liquids. Additionally, I made a low and high pricing environment model which showed the sensitivity of the equity value to commodity price fluctuations. I used the 10 year low (2016) and high (2008) annual average price for West Texas Intermediate ("West Texas Intermediate Oil Price Annually 1976-2019 | Statistic.").

-Productive Asset Decline Rate-

I used 9.3% for the decline rate which was provided on page 36 Energen's 10K ("Energen Corporation 10K.").

-Development Cost-

I utilized Energen's estimated total development cost provided on page 86 of the 10K and calculated the payment over 30 years at a 10% discount rate which equated to \$220.42 million in annual development costs.

-Production Cost-

I used the “\$/boe of production” provided in Energen’s supplemental information section of the 10K to estimate the total production cost for each year.

-SG&A-

I used the selling general and administrative figure provided in the 10K and ran on the assumption that it would not change during the life of the company. This is more than likely not going to be the case but it was the best figure I could find.

-Depreciation-

I used the average of the last 5 years of depreciation based on the 10K to estimate what future depreciation would be for Energen.

-Taxes-

I used the effective tax rate provided in the 10K to compute Energen’s after-tax cash flows.

Baseline Case (NYMEX, EIA, DEFM14A)

NPV	Debt	Cash	Equity Value	Per share
\$7,565.56	\$830.00	\$ 1.20	\$6,736.76	\$69.09

Low Price Environment

NPV	Debt	Cash	Equity Value	Per share
\$5,672.56	\$830.00	\$ 1.20	\$4,843.76	\$49.68

High Price Environment

NPV	Debt	Cash	Equity Value	Per share
\$10,957.11	\$830.00	\$ 1.20	\$10,128.31	\$103.88

Net Asset Value Summary

The baseline case represents a 15.6% premium, the low price environment represents a 39.3% premium, and the high price environment represents a 26.89% discount. The baseline case represents the current market environment and provides a closer figure to what was paid by Diamondback.

Valuation Summary

The methods used for this analysis all indicated that this transaction had a premium between 11%-28%. The values range between \$5.7 billion and \$7.2 billion depending on the method being used. I prefer the net asset value method to other methods because it is based purely on commodity market conditions and the assets of Energen. Using this method, I calculated Energen to be valued at \$6.7 billion indicating that Diamondback paid a 15% premium based on the transaction value I calculated.

Summary

Diamondback's acquisition expanded its' operations in the Permian Basin. The Permian Basin has been booming with activity for some time now and many companies are aggressively pursuing acquisitions in the region. Additionally, as an upstream company, Diamondback has existing employees, infrastructure, and business relationships that will create synergies that benefit both firms. In the DEFM14A capital productivity, savings in general and administrative expenses, and a lower cost of capital as direct tangible sources of the increased value of Energen. Analysts explicitly mentioned that the net present value of these synergies would be worth \$2 billion which is directly in line with the premium. I believe that the "Permian premium" and synergies both led to the acquisition premium highlighted in this report. Premium calculation is extremely specific to both firms as synergies differ depending on the merger. Sometimes there are no synergies in which case a premium would only be justifiable to ensure a bidding war did not take place. This project allowed me to gain a deeper appreciation for the valuation process and it demonstrated to me that while the process is highly quantitative it is also qualitative as firms that are better managed will garner a higher premium when being acquired.

Works Cited

- Capuano, Linda. *EIA*, Center for Strategic and International Studies, 24 July 2018, www.eia.gov/pressroom/presentations/capuano_07242018.pdf.
- “2017 Annual Summary Report.” *Energen*, 6 Mar. 2018, ir.energen.com/static-files/607b9287-00cb-49b0-a361-67b08ab9b6ef.
- “An Update to the Economic Outlook: 2018 to 2028.” *Congressional Budget Office*, 13 Aug. 2018, www.cbo.gov/publication/54318.
- Biscardini, Giorgio, et al. “Oil and Gas Trends 2018–19 & Strategy Shaped by Volatility.” *Strategy and PwC*, PwC, 2018, www.strategyand.pwc.com/media/file/2018-Oil-Gas-Industry-Trends.pdf.
- “Capital IQ.” | S&P Capital IQ, www.capitaliq.com/CIQDotNet/Financial/IncomeStatement.aspx?companyId=175480&sta tekey=cd6fadf5ebc246afba768074ad3e6ef7.
- “Crude Oil Prices: West Texas Intermediate (WTI) - Cushing, Oklahoma.” *FRED*, 24 Apr. 2019, fred.stlouisfed.org/series/DCOILWTICO/.
- “DEFM14A.” *DEFM14A*, 27 Nov. 2018, www.sec.gov/Archives/edgar/data/277595/000119312518306638/d637380ddefm14a.htm.
- “Diamondback Energy 10K.” *SEC Filing* | *Diamondback Energy, Inc.*, 15 Feb. 2018, ir.diamondbackenergy.com/node/11206/html.
- “Diamondback Energy, Inc. - Comm (FANG) Stock Historical Prices & Data.” *Yahoo! Finance*, Yahoo!, 29 Apr. 2019, finance.yahoo.com/quote/FANG/history?period1=1518501600&period2=1534136400&interval=1d&filter=history&frequency=1d.
- “Diamondback Energy, Inc. to Acquire Energen Corporation in All-Stock Transaction.” *Diamondback Energy, Inc.*, 14 Aug. 2018, ir.diamondbackenergy.com/news-releases/news-release-details/diamondback-energy-inc-acquire-energen-corporation-all-stock.
- “Diamondback to Buy Energen in \$9.2 Billion Deal to Boost Its Permian Presence.” *CNBC*, CNBC, 15 Aug. 2018, www.cnn.com/2018/08/15/diamondback-to-buy-energen-in-9point2-billion-deal-to-boost-its-permian-p.html.
- “Employment Situation News Release.” *U.S. Bureau of Labor Statistics*, U.S. Bureau of Labor Statistics, 3 Aug. 2018, www.bls.gov/news.release/archives/empsit_08032018.htm.

“Energen Corporation 10K.” *Energen*, 28 Feb. 2018, ir.energen.com/investor-relations/sec-filings?field_nir_sec_form_group_target_id%5B%5D=471#views-exposed-form-widget-sec-filings-table.

Henry Hub Natural Gas Spot Price (Dollars per Million Btu),
www.eia.gov/dnav/ng/hist/rngwhhdm.htm.

Investopedia. “How Is NAV Used for Oil, Gas, and Energy Investments?” *Investopedia*,
Investopedia, 12 Mar. 2019, www.investopedia.com/ask/answers/021915/how-nav-used-oil-gas-and-energy-investments.asp.

“Oil 2018 Executive Summary.” *IEA*, 2018, www.iea.org/Textbase/npsum/oil2018MRSsum.pdf.

“Permian Basin Production.” *Rail Road Commission of Texas*, 2019,
www.rrc.state.tx.us/media/51157/permian-basin-oil-new.pdf.

Powell, Jerome. “Speech by Chairman Powell on the Outlook for the U.S. Economy.” *Board of Governors of the Federal Reserve System*, 6 Apr. 2018,
www.federalreserve.gov/newsevents/speech/powell20180406a.htm.

Tang, Carol Marie. “Permian Basin.” *Encyclopædia Britannica*, Encyclopædia Britannica, Inc.,
25 May 2015, www.britannica.com/place/Permian-Basin/media/452277/94328.

“The Conference Board Consumer Confidence Index Increased Marginally in July.” *The Conference Board*, 31 July 2018, www.conference-board.org/press/pressdetail.cfm?pressid=7505.

Top Ten Operators 2016. www.rrc.state.tx.us/media/39810/permian-basin-top-ten-2016.pdf.

“U.S. Department of the Treasury.” *Daily Treasury Yield Curve Rates*,
www.treasury.gov/resource-center/data-chart-center/interest-rates/Pages/TextView.aspx?data=yieldYear&year=2019.

“U.S. Energy Information Administration - EIA - Independent Statistics and Analysis.” *Short-Term Energy Outlook - U.S. Energy Information Administration (EIA)*,
www.eia.gov/outlooks/steo/report/natgas.php.

“West Texas Intermediate Oil Price Annually 1976-2019 | Statistic.” *Statista*,
www.statista.com/statistics/266659/west-texas-intermediate-oil-prices/.

“World Economic Outlook Update, July 2018: Less Even Expansion, Rising Trade Tensions.” *IMF*, July 2018, www.imf.org/en/Publications/WEO/Issues/2018/07/02/world-economic-outlook-update-july-2018.