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UConn Undergraduate SMF, 2014-2015

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Company Snapshot

Key Financial Metrics					
Stock Price	$51.01	**Market Cap**	$20,911M	**Sector**	Basic Materials
52-Week High	$86.43	**P/E Ratio**	8.5	**Industry**	Oil Equipment/Services
52-Week Low	$47.46	**EPS**	$6.03	**ROE**	11.66%
Dividend Yield	5.14%	**FCF**	$1,915M	**ROIC**	9.22%
Gross Margin	27.09%	**Cash & Equivalents**	$3,536M	**ROA**	7.32%
Profit Margin	11.67%	**Long-Term Debt**	$3,014M	**Beta**	1.13%

Business Summary: National Oilwell Varco is the global leader in the development and sale of parts used in oil and gas extraction. The company serves all types of oil and gas abstraction, such as crude, shale, deepwater, tar sand, etc. They have four main operating segments: Rig Systems, Rig Aftermarket, Wellbore Technologies, and Completion & Production Solutions. A brief synopsis of each segment is provided below:

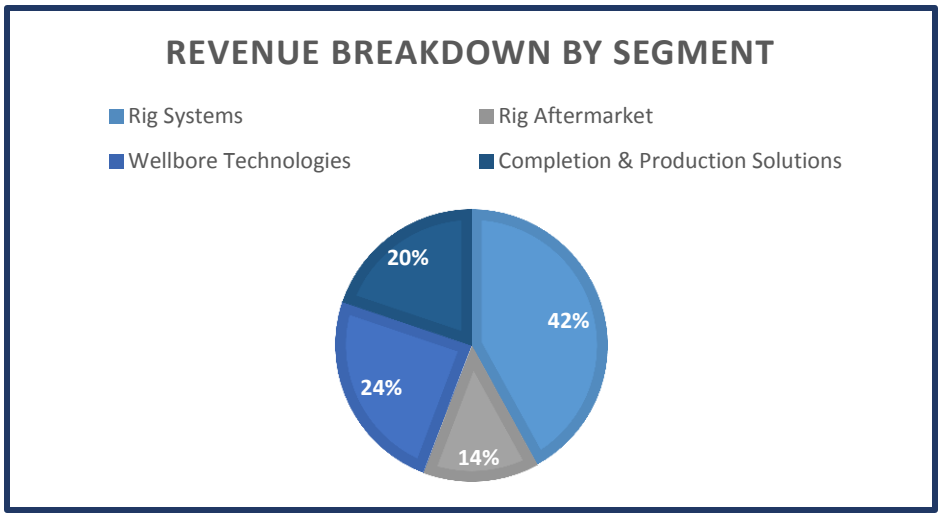
Rig Systems: This branch manufactures and develops the actual rig used in drilling. Specific products include substructures, derricks and mud pumps; essentially anything that is needed to support the actual drill puncturing the surface.

Rig Aftermarket: The Rig Aftermarket segment services the rigs after they have been built. This part of the business mainly deals with spare parts and other maintenance activities. Additionally, this subdivision leverages NOV's extensive industry knowledge by providing training and field engineering services for customers.

Wellbore Technologies: This segment develops and supplies the actual equipment that does the drilling; This includes drill pipe, drill bits, downhole tools, drilling fluids, and solids control and waste management. Drilling fluids are mainly used for shale rock formations, since the rock is too tough to be penetrated with drilling alone. Because of this, the drill bits have holes in them which pump liquid chemicals into the drilling area, which helps break down the mineral formations. The resulting 'mud' then rises out of the pump, and is collected and treated in order to neutralize the chemical compounds and minimalize negative environment externalities. Wellbore Technologies provides the technology for all of this and more.

Completion & Production Solutions: This is the innovation and consulting arm of National Oilwell Varco. Most of their efforts focus on hydraulic fracture stimulation, which is used in

shale oil extraction. Currently, shale extraction has one of the highest marginal costs among any drilling technique, alongside of oil sand extraction (which is more like mining than drilling, consequently requiring more people). Since the oil industry is considerably volatile, there is considerable room for improvement in the shale and tar sands extraction methods. If NOV is able to further the technology in this subsector, companies will be able to make a profit when oil prices trend downwards. This section of NOV works on those issues and sells its new developments to its customer base.



As shown in the pie chart above, the majority of the company's revenues come from the Rig Systems segment. This makes intuitive sense, since more parts are required to set up the entire derrick than just the drill itself. This is the main reason that energy companies continue to drill despite oil prices declining below their marginal cost (at least for shale and tar sands); they already incurred the high fixed cost of setting up the rig, so after that initial sum, the costs of oil extraction are minimal.

NOV does provide parts for natural gas drilling, but little mention of it is made in the 2014 annual report since about 80% of domestic drilling goes towards oil as of quarter four.

Competitive Environment

National Oilwell Varco operates in a somewhat fragmented industry, so many of their competitors are small. While they do have large competitors, such as Halliburton and Schlumberger among others, the business models of these companies are vastly different. National Oilwell works by designing and manufacturing the supplies to sell directly to oil drilling companies, then profits off servicing the rig over its lifetime of use. Halliburton and Schlumberger, however, have vertically integrated and now both manufacture drills and

actively manage the oil rigs themselves. This increases their exposure to individual projects, so they'll feel the effects of a dry well while NOV is immunized from that risk. Many of National Oilwell's true competitors reside in the private market, and many are cross-functional companies that operate across a vast space in the oil and gas equipment services market. Still, it is important to study the competition and the direction they are heading in order to understand the nature of the industry.

Halliburton operates under two divisions; Completion & Production and Drilling & Evaluation. The Completion & Production division is a service that provides the client with sophisticated strategies to extract oil and natural gas, and the products that help to provide this service, such as different types of pumps. The technology to make the process for oil and gas companies more efficient is constantly being developed by Halliburton. Halliburton then makes money off the installation, maintenance, repair and testing of the products, much like National Oilwell does. This segment brought in $20.25 billion in 2014. Halliburton's other segment, drilling and evaluation, brought in $12.6 billion in 2014. This segment involves the actual drilling and extracting of the oil or natural gas. Halliburton uses tools to estimate how much oil is in the ground, and their revenue stream is based off this. One very large project creates a lot of risk exposure tied to this estimate. The company will come into the site and do all the work for the customer and demand revenue based on these services. Halliburton also recently acquired Baker Hughes, another competitor who operates in a very similar manner to the firm. The acquisition, which cost a total of $34.6 billion, is estimated to reduce costs for the combined entity by $2 billion and allow the workforce to remain stable rather than face cuts. The resulting company will have almost 50% of the market for equipment used to prepare wells for pumping. Overall, this new corporation is something National Oilwell should look out for.

Schlumberger

Schlumberger operates under three divisions: the Reservoir Characterization Group, the Drilling Group and the Production Group. It operates very similarly to Halliburton, except it breaks down the revenue streams into three divisions rather than two. The Reservoir Characterization group focuses on finding and defining hydrocarbon resources. These are areas that contain oil and natural gas under the surface, which is part of Halliburton's Drilling and Evaluation segment. The drilling group is in charge of actually getting the area prepared for drilling and beginning to drill down into the ground for the natural resource. The Production Group produces the oil and natural gas throughout the life of the project. Like Halliburton, Schlumberger actively manages the well, and works on site to produce the appropriate amount of oil or natural gas that they had predicted.

The biggest difference between National Oilwell Varco and their competitors comes down to the active management of the wells. The other bigger companies in the oil and gas equipment services market operate by coming in and actually managing the wells. This creates exposure to the project. If something were to go wrong on the project, Halliburton, Schlumberger or other similar vendors would be liable and have the responsibility of fixing it. In National Oilwell's case, the liability would fall on the company who paid to have the rig installed. The business models differ in that National Oilwell only sells the rig technology and service to the rig whereas their other large competitors actually go in and sell their services to completely manage the oil field, eventually coming out with a finished product for the customer that can then be refined. This limits upside, but also greatly limits downside. National Oilwell still receives consistent revenue streams from companies while they continue to service the rigs, and do not have to worry about actively drilling for oil or potentially underestimating how much oil is in the ground. When it comes to the rig installation and maintenance industry, the adage that NOV stands for "No Other Vendor" still holds true. No one operates quite like the company in the rig technology space, and it is important to remember National Oilwell Varco does not have any true competitors given the company's size.

Industry Overview

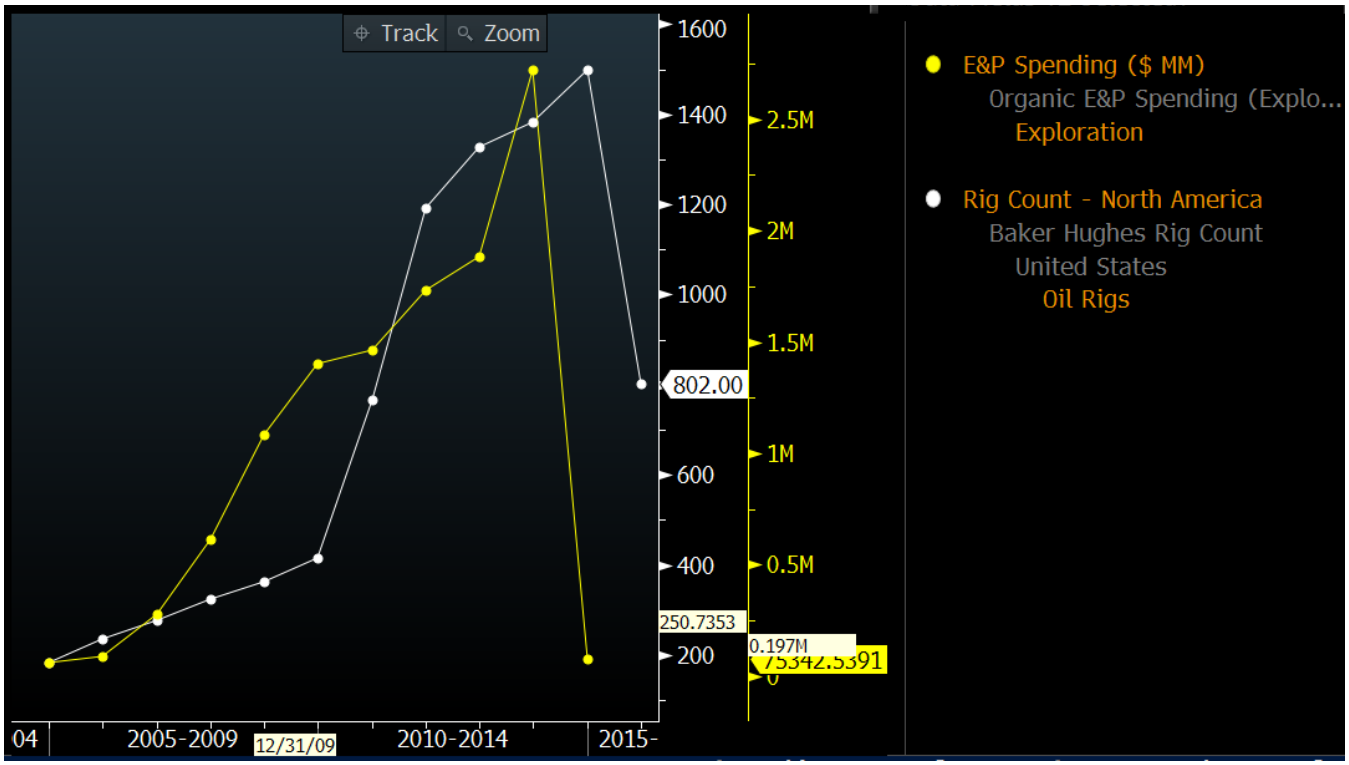
The company's demand is highly correlated with the level of drilling in the global oil industry. As the chart on the right shows, oil prices took a drastic decline starting in the summer of 2014. Brent oil dropped from a high of $110.06 per barrel all the way down to $48.95 per barrel in early 2015. This drastic reduction in the price of oil is from global supply exceeding global demand for a prolonged period of time. This global oversupply has two main causes; the US shale boom, and OPEC's lack of curtailment in their production as a response. A brief synopsis of each of the two drivers is presented below:

Shale oil has historically been used as an intermediary to create chemicals and resins, particularly in the mid-20th century. It was used as a fuel source in World War II, but not enough to justify mass extraction and refinement. In 2000, a vast reserve of subsurface oil was 'discovered' in the North Dakota area (I used the quotation marks because it was first found in 1953, but the breadth of the reserve wasn't known). This is known as the Bakken deposit, which encompasses about 200,000 square miles. With oil prices as high as they were starting in 2006, US energy companies began turning towards shale plays and making a profit despite their relatively higher marginal cost. Global shale deposits account for about ten percent of global crude reserves, so the impact of this new source was felt internationally. A chart of the known North American shale reserves is shown to the right.

The Organization of the Petroleum Exporting Countries (OPEC) would have had to curtail their production to keep the marginal price of oil consistent. The marginal cost of extracting crude oil in Middle Eastern countries such as Saudi Arabia is much lower (around $15/barrel) than the marginal cost of shale extraction in the US (around $70/barrel). Therefore, by oversupplying the market, OPEC was able to put downward pressure on the price of oil, well past the point where the shale extractors would be operating at a marginal loss. The response of American energy companies has been to continue to drill on the rigs they already paid for; as aforementioned, the initial lump sum of capital paid for the rig and the drill compromise the majority of the costs for those companies. The average life of a shale rig is around two years, so once those wells are depleted, we expect shale companies to cease further extraction until oil prices rebound. One of the reasons that crude rigs in the Middle East enjoy such low marginal costs is because it takes about 15-20 years for a well to be depleted. Consequently, these countries are able to avoid paying for replacement rigs for almost two decades compared to shale companies.

As a result of the global oversupply and the corresponding decline in the price of oil, energy companies have been cutting back on their exploration expense and are refraining from

ordering new rigs from suppliers such as NOV. The chart below depicts these trends in Exploration & Development (symbolized by E&P), and the North American rig count:



In the political landscape, there has been a lot of controversy over the Energy Policy and Conservation Act of 1975. A specific statute of the act (which was passed into law by President Gerald Ford) outlines America's hope to be energy independent, and to not export crude oil anywhere other than Canada. According the International Energy Agency, the US will be the top oil producer in 2015 (ahead of Russia and Saudi Arabia), so energy companies are lobbying for modification of this law in order to tap into new international demand sources.

Future Outlook

National Oilwell Varco's business performance is almost perfectly correlated with the number of new rigs being ordered. Since energy companies aren't placing new orders for rigs and drills, the company expects to have a book-to-bill ratio below one (representing more products being shipped than ordered). The company is using this trough period to work on product innovation, since energy firms are looking for more efficient ways to frack. Management is also relying on their backlog to carry them through the first half of 2015, which was at $12.5 billion at the end of fiscal 2014 (for Rig Systems specifically). The firm expects their Rig Aftermarket segment to decrease in revenues, since rig operators will cannibalize parts from old rigs rather than order new spare parts. CEO Clay Williams expects a surge in demand once more

equipment fracking methods are developed, since all rigs in North America would need to be replaced in order to drive marginal costs downward. Analysts expect oil to rebound within two years, because by then all shale rigs will be offline, unless a cheaper method of fracking is developed. NOV would face significant downsizing if oil prices never rebound, and the only world supplier is OPEC. It would still be very unlikely for National Oilwell to go out of business because they have subsidiaries that do business with the OPEC countries. However, only the most worried people think that this trough in energy prices is something more than volatility. The dip in oil prices has led NOV's shares to trade almost at a 50% discount of their 52-week high, so this macroeconomic trend has presented the opportunity to buy shares for cheap.

Given the competitive environment, we don't think this trough in energy prices compromises the value of the company's business model. In late March 2015, the Saudi's bombed Yemen, specifically targeted at the Houthis and the Iranian Shiite faction in the country. This fissure was largely created because Saudi Arabia represents the Sunni Muslim world, while Iran is mostly Shia, and both are trying to expand their empire. When the bombing occurred in Yemen, oil prices shot up 5% on the day. This is because things like air strikes tend to precipitate wars, which are incredibly expensive. Therefore, those countries would need the capital from a higher marginal price of oil to help finance their military endeavors. While it's tough to say what will happen in the conflict riddled Middle East, it will certainly be worthwhile to monitor the future happenings there and their implications on the oil market.

Valuation Results

(in millions)		2013
Revenue	$	22,869.00
(COGS)	$	17,380.00
(SG&A)	$	2,066.00
(Deferred Tax Liability)	$	295.00
EBIT	**$**	**3,128.00**
T	$	951.67
NOPAT	**$**	**2,176.33**
D	$	755.00
(NOWC)	$	(308.00)
(CAPEX)	$	1,612.44
(Operating Leases)	$	187.00
(Other Assets)	$	(25.00)
FCF	**$**	**1,464.89**

Growth/Discount Rates	
ROIC	15.32%
Short-term g	8.0%
WACC	10%
Terminal g	2.96%

Firm Value		$30,826.36
Debt	$	3,289.00
Cash	$	3,436.00
Equity Value		$30,973.36
Shares Outstanding		426
Repurchase		42
Intrinsic Value/Share	**$**	**80.71**

As shown above, NOV generated about $1.5 billion in free cash flow in 2013. When grown at the short-term rate of 8%, the firm value became about $30.8 billion. When net debt was considered (which is negative, a strength for the company), the equity value became almost $31 billion. On a per share basis (with yearly repurchases considered), this boils down to $80.71 per share. Considering that the stock is trading around $53 as of early April 2015, we think the equity has a significant margin of safety. We revised our analysis to consider the downward trend in oil prices, which is discussed below:

FCF loss	
10%	$68.61
20%	$64.27
30%	$58.11
40%	$51.36

We took 2013's cash flow and grew it by our short-term rate of 8%, since 2014 was still a very strong year for NOV (thanks to their large sum in backlog in the second half of the year). For 2015, we subtracted a certain percent from the free cash flow, and did the same for 2016. We then started growing the FCF's back in 2017, until they were back to the normal 8% growth by 2019. The terminal value was calculated in 2023 as it was before. The results of our scenario analysis with their respective per year losses is shown in the upper left. Given that shares are trading around $53 as of early April, this shows that the market thinks the short-term is very grave for NOV (with FCF going down by about 40% for 2015 and 2016). However, 2009 was another calamitous year in terms of oil prices, and the company's revenues only declined by 4%, before surpassing their 2008 sales level in 2010.

National Oilwell's shares have been trending significantly downwards because of the low levels of drilling activity. Given our intrinsic value estimate of around $80 per share, this macroeconomic trend has left us in a position to acquire NOV stock below its worth (as determined by our analysis of the company's free cash flows). Other indicators that suggest the equity is undervalued is how the P/E ratio is 8.5, while the industry's historical P/E has been about 17.3. The dip in trading prices gave us the opportunity to acquire more shares after the price dropped to the low $50's range in February 2015, which we capitalized on.

Last Price	Shares	Cost Basis	Market Value	Total Gain/Loss	Overall Return	Annualized Return
$53.04	2,205	$145,216.38	$116,953.20	($28,263.18)	-19.5%	-41.8%

Our return on the investment has been abysmal so far, but the market is at record highs as of early 2015, and the trepidation about low oil prices caused the energy industry to be one of the only sectors to be in a cyclical downturn. However, as long-term investors, we don't overly concern ourselves with short-term volatility, and used this low period to acquire NOV with a sizable margin of safety. With our intrinsic value estimate about $30 dollars (or 51%) higher than current trading prices, we think NOV shares are a steal, and will rebound in due time. We don't think that the trough in industry performance represents anything more than systematic risk for the company, and stand by our decision to purchase it in the first place and then to buy more as the price decreased.