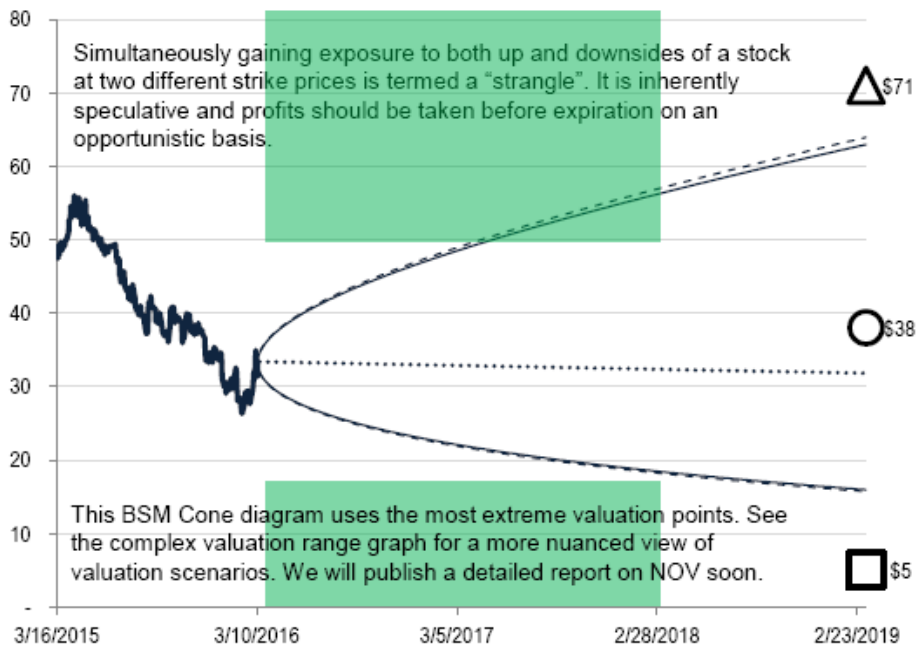




IOI INVESTMENT ANALYSIS **NATIONAL OILWELL VARCO (NOV)**

Brent Farler & Erik Kobayashi-
Solomon

B/S	P/C/S	Strike	Exp.	Premium
Buy	Call	50.00	JAN '18	(\$1.71)
Buy	Put	17.50	JAN '18	(\$1.83)
Long Strangle			JAN '18	(\$3.54)



Valuation & Return

Valuation Uncertainty: High

	Low	Likely	High
Stock Fair Value (\$)	5	38	71
Stock Return (%)	-85	14	113
Option Period Return (%)	453	-100	693
Option Annual Return (%)	97	-100	161

Historical Metrics

	Historical	Median
	5-year	10-year
Revenue Growth (%)	12	12
Profit Margin (%)	9	10
Med-term Growth	Neg.	High

Market Risk

NOV's exposure to oil prices is complex, but the market treats it as simple. R² of 82% and a "beta" to oil of around 1.3 (i.e., oil px inc of 1% implies NOV px. inc of 1.3%. PSR range represents 15th and 85th percentile hist PSR.

IOI Tear Sheet : Nat'l Oilwell Varco (NOV)

Speculative "Strangle" (Low Conviction)

IOI's Take

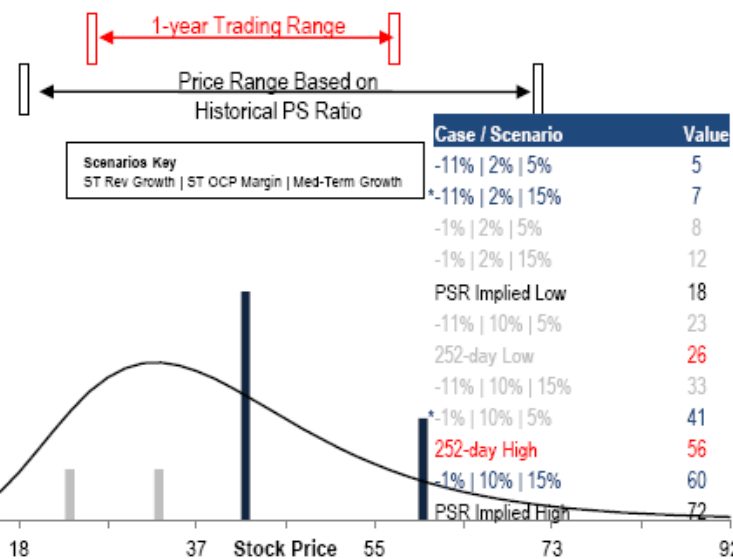
Data as of 13 March, 2016

NOV has built the world's premier business for supplying equipment to offshore rigs. Too bad that the offshore market is dead to new drilling until expectations for oil prices are sustained at a much higher level. The company has been a vigorous acquirer, and there are efficiencies to be gained from consolidating these acquisitions, but if oil prices remain low, NOV's business will look very different in 5 years. Three segments' revenues follow rig count more closely, and there is some good news over the next two years re: bounceback demand. A large range of revenue, profitability, and medium growth mean that this is a highly uncertain valuation and a spec. investment.

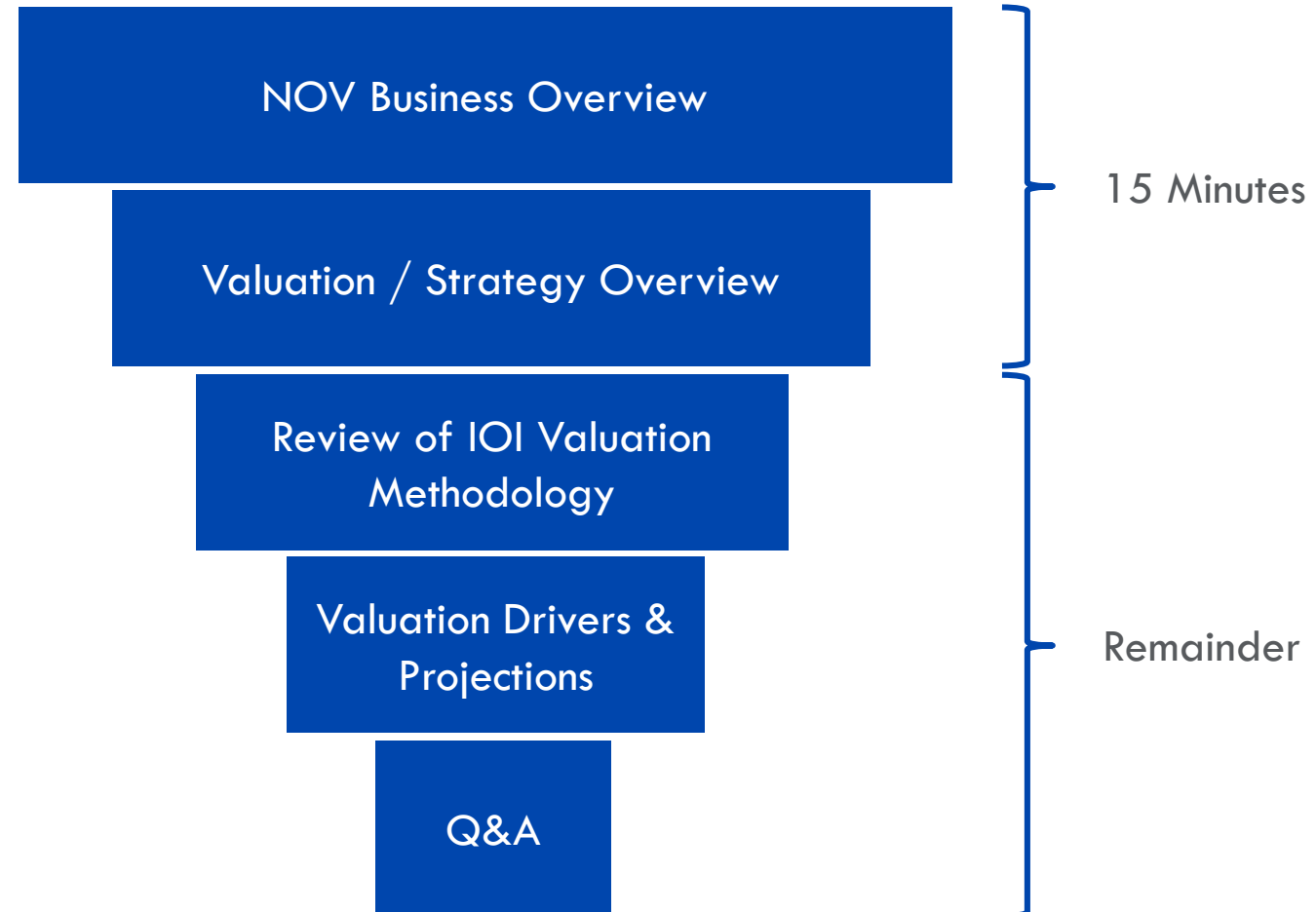
Drivers

Revenues	"Best" revenue comes from building offshore rig equipment, a mkt that will be bad to terrible for two years at least.
Profitability	Low teens OCP margin in boom years. Close to zero now. Room for cost cutting acquisitions. High operating leverage.
Investment Level / Eff.	Grew by acquiring a lot of high-priced assets during the boom. Likely need to acquire more onshore, but are pressed for cash. Efficacy looks bad now, but prob. OK normalized.

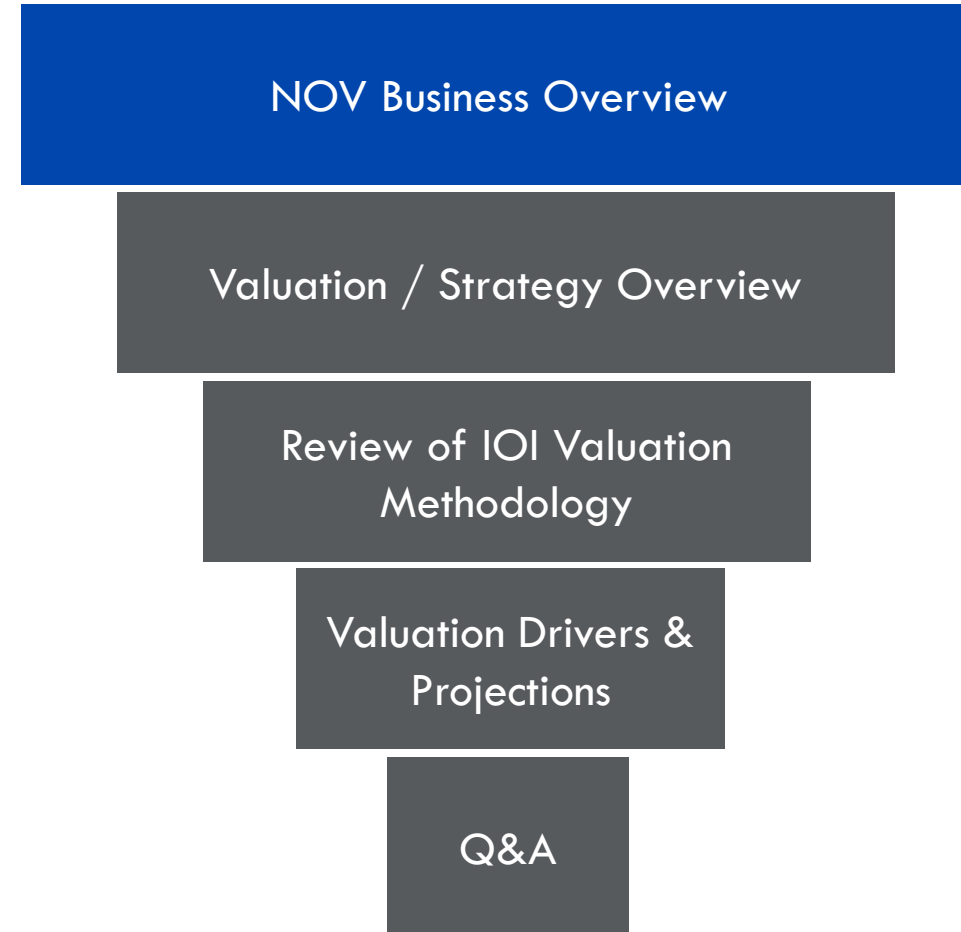
Balance Sheet Carbon regulation could kill terminal value of business. Political will re: Global warming is increasing.



AGENDA



AGENDA

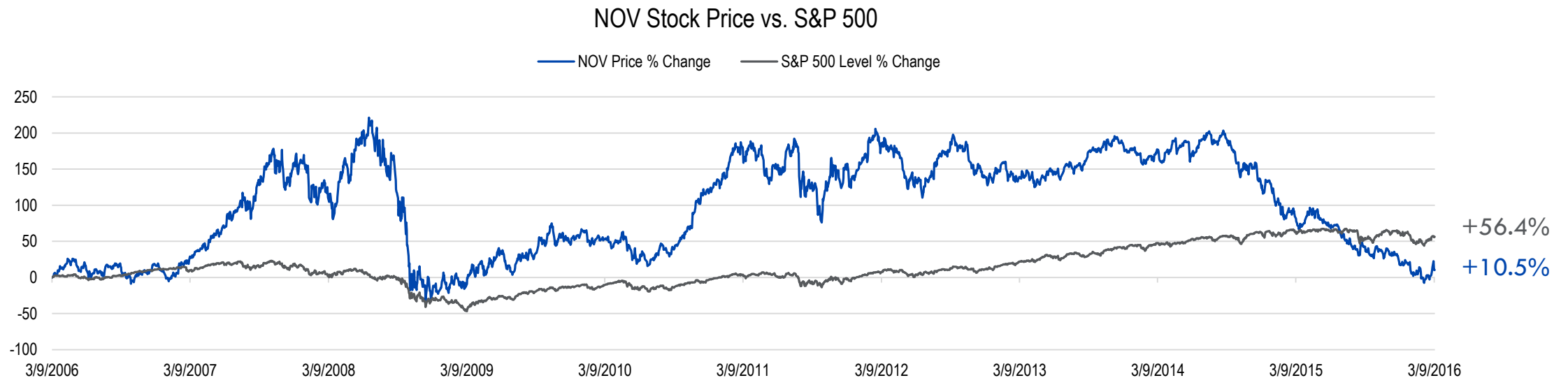


REFERENTIAL DATA

National Oilwell Varco (NOV)

Market Capitalization: \$11.8 billion

Sector and Industry: Energy Sector, Oil & Gas Equipment & Services (Industry ETF: OIH)



BUSINESS SUMMARY

NOV provides capital equipment, consumable equipment, and services for the production of oil and gas.



LAND



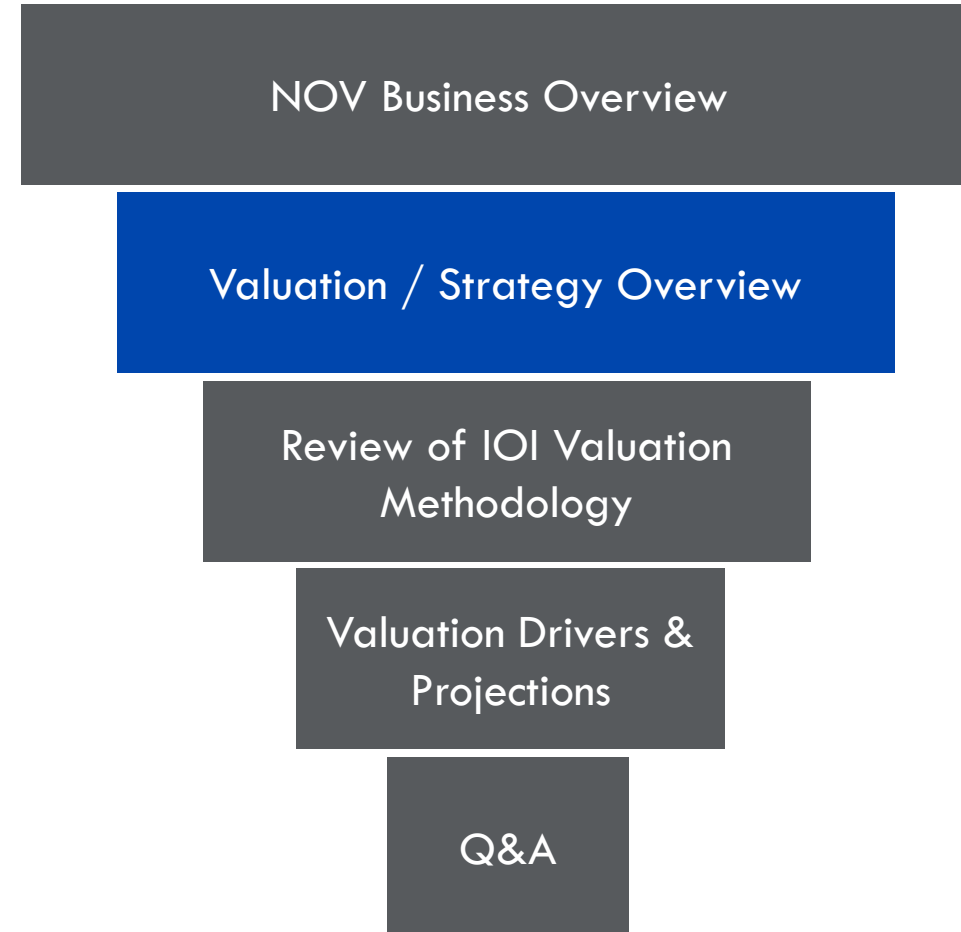
OFFSHORE



Company was created by a private equity deal merging National Oilwell and Varco in 1996. The company has built scale and broadened its offering by acquiring small, specialized equipment makers and servicing companies.

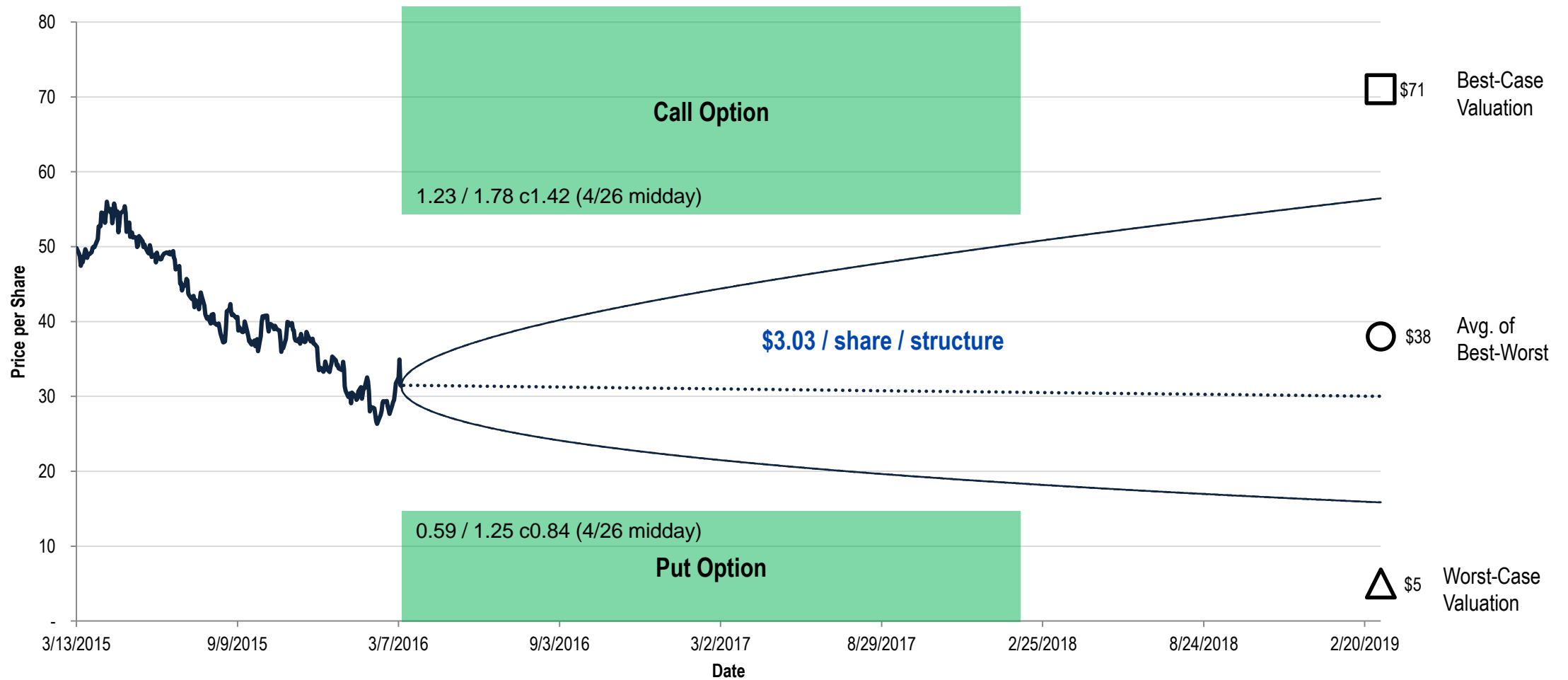
As the price of oil has fallen, new offshore drilling projects have been delayed or cancelled, biting into the most profitable portion of NOV's business. Now, market participants are beginning to believe it will have to cut its dividend (~6% yield).

AGENDA



BSM CONE VS VALUATION RANGE

“Strangle”



NOTES ON “STRANGLE” STRATEGY

This is a speculative strategy and an investors SHOULD take profits before expiration

- Premium on one “leg” will likely be wasted so you need a large enough move to pay for both legs
- Read about the Strangle on pp. 205-207 of *The Intelligent Option Investor*

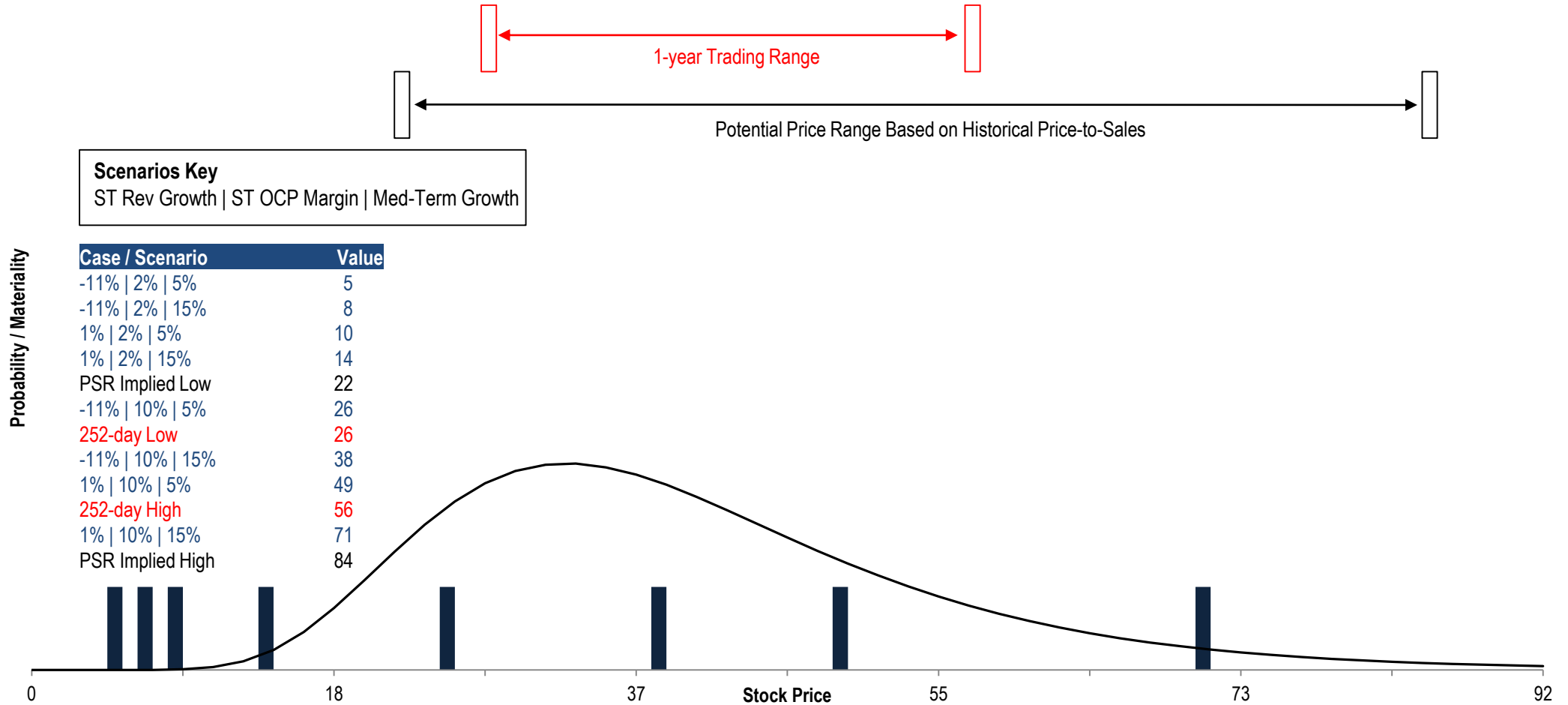
In terms of IOI’s “Balanced Investing Meal” a Strangle is definitely in the category of a spicy *hors d’oeuvres* or an after-dinner mint

This strategy is a manifestation of low investment conviction and indicative of high valuation uncertainty

If holding to maturity, a “Straddle” is a better structure (put and calls bought at same strike price)

- Straddles are an enormous waste of money in most cases and they are NOT recommended
- Read about the Straddle on pp. 208-209 of *The Intelligent Option Investor*

VALUATION SCENARIOS

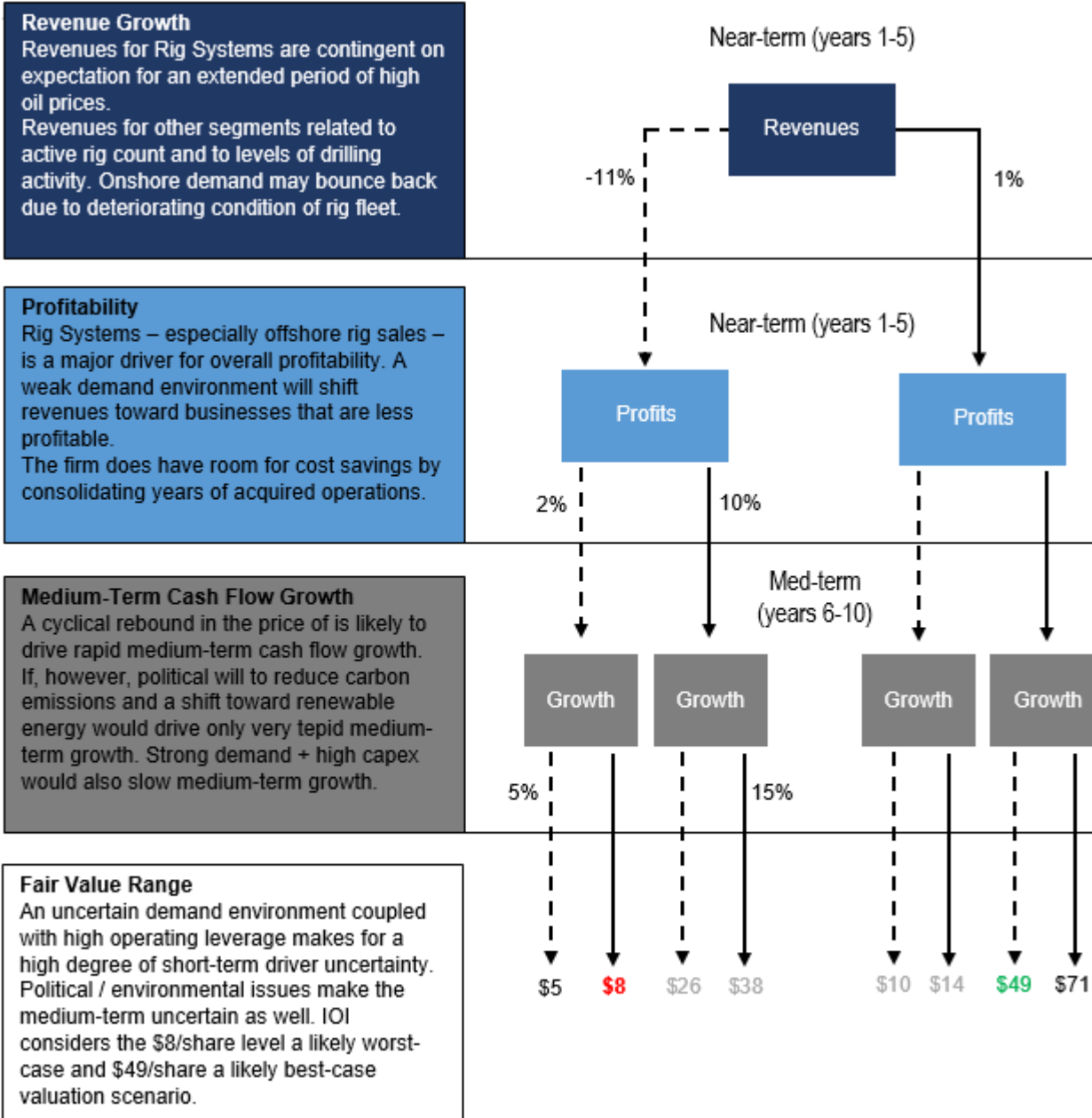


VALUATION WATERFALL

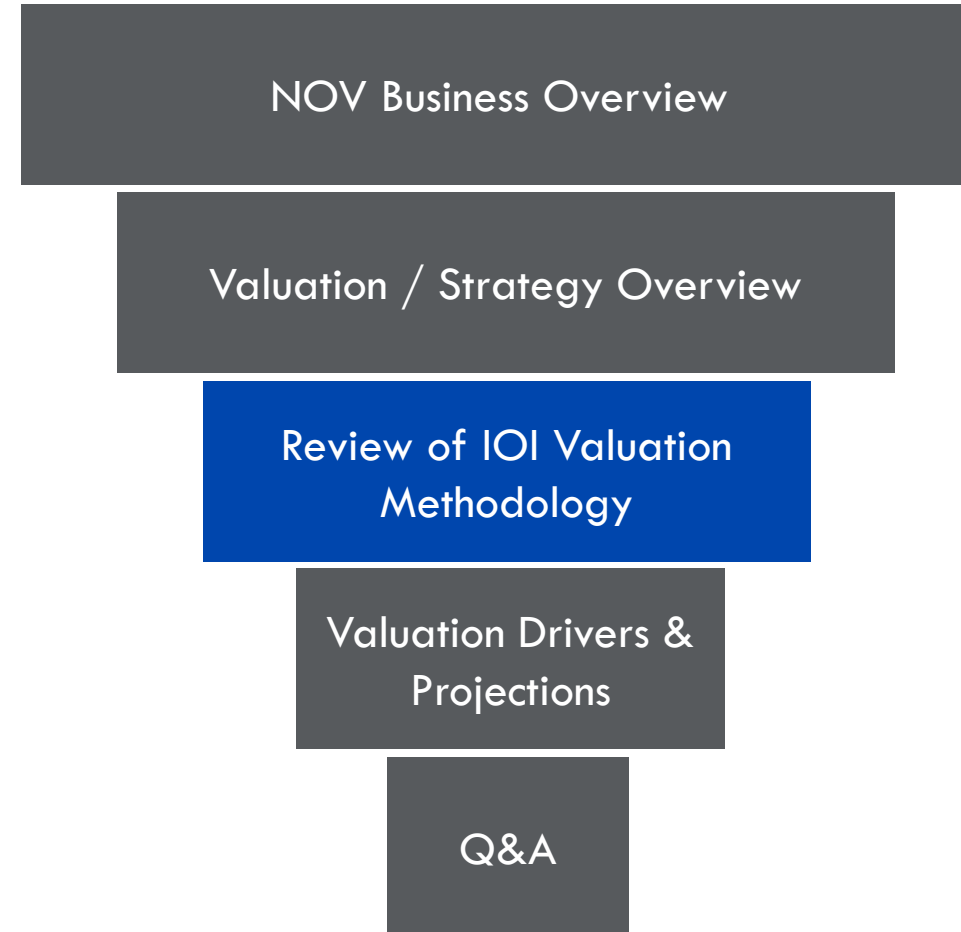
IOI analyses focus on three main valuation drivers: revenue growth, profitability, and medium-term cash flow growth. We estimate a best- and worst-case scenario for each of these drivers resulting in a total of $2^3 = 8$ fair value scenarios. Profitability is measured by Owners' Cash Profit (OCP) margin.

A wide spread of lowest and highest fair values indicates a firm whose value is uncertain. Risk depends on the stock price's relationship to the valuation range.

Best-case scenarios are represented with a solid line; worst-case scenarios, with a dotted one.



AGENDA



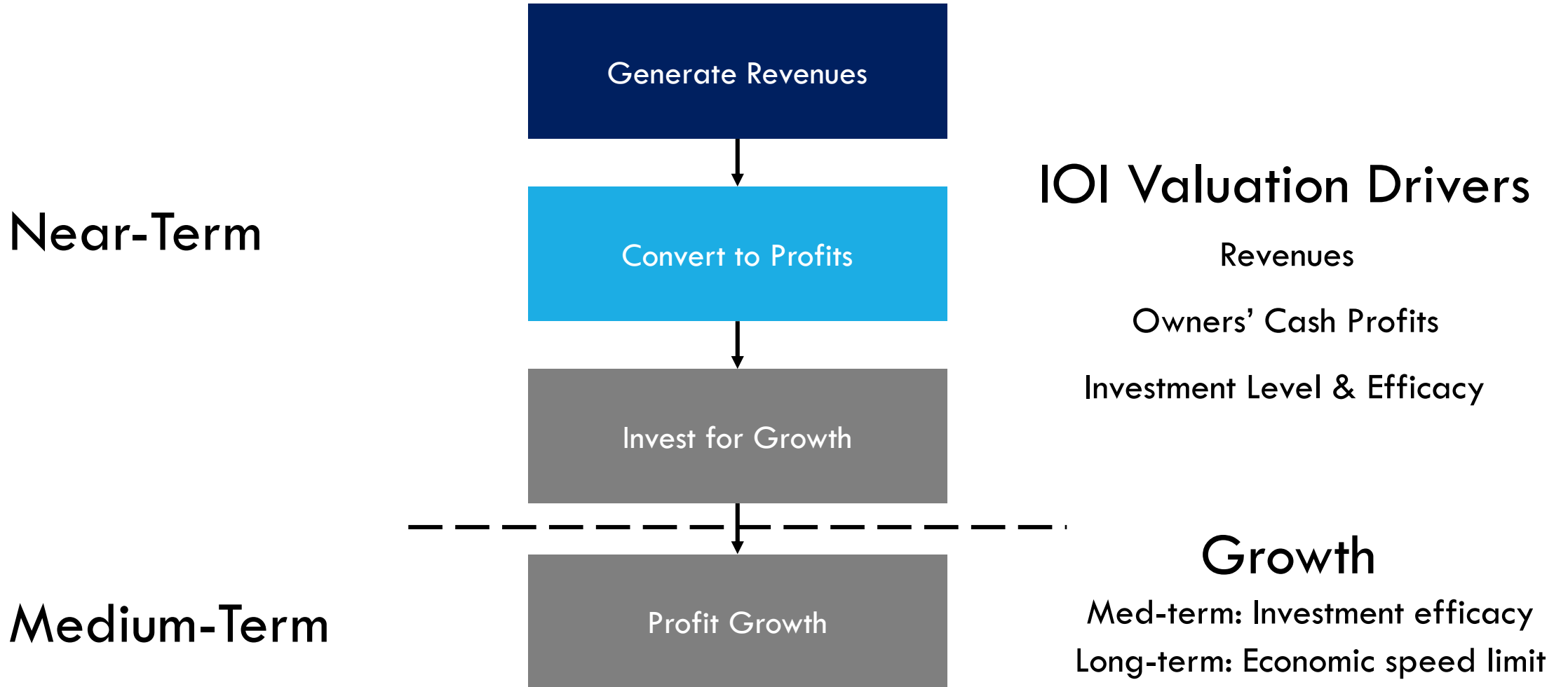
IOI VALUATION METHODOLOGY

Cash-Based Valuation Methodology

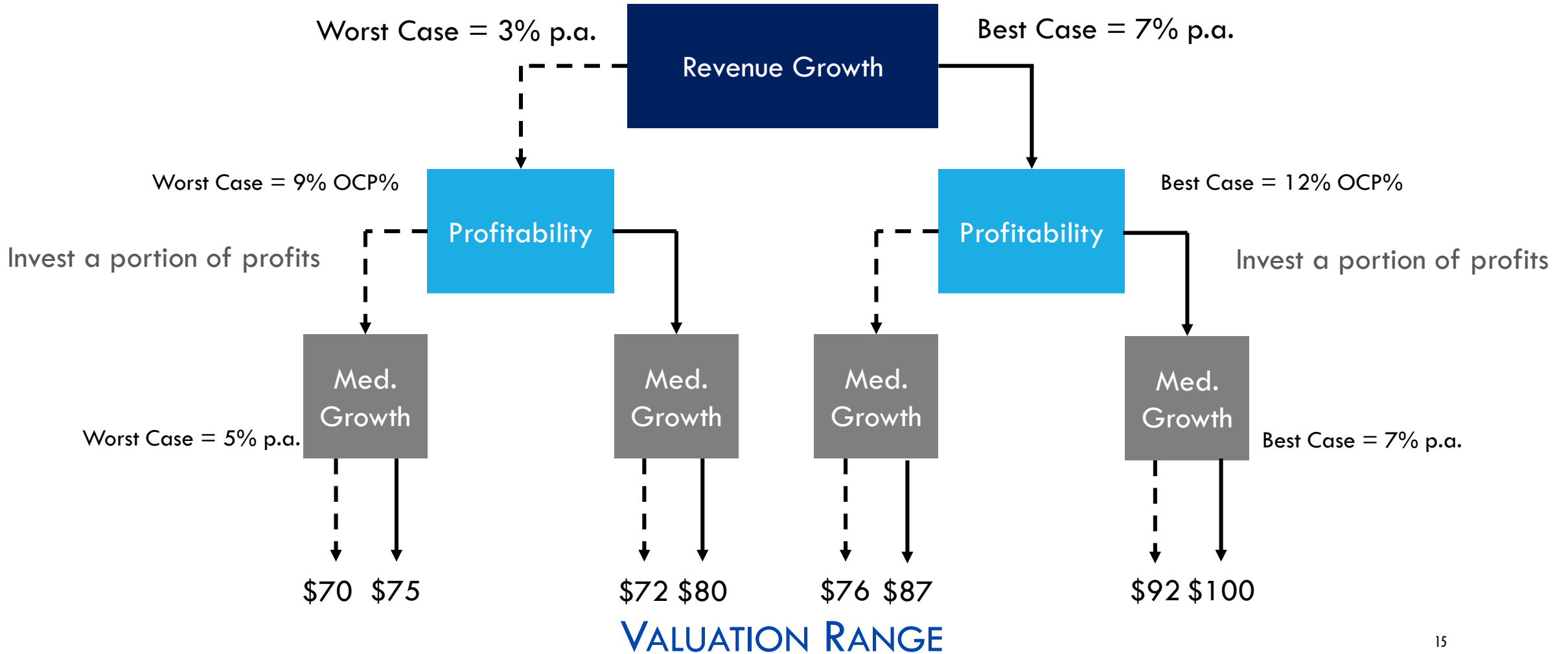
Clear-Eyed View of Growth

Best- and Worst-Case Valuation Scenarios

OUR METHODOLOGY — CASH-BASED VALUATION



OUR METHODOLOGY — VALUATION SCENARIOS ILLUSTRATION



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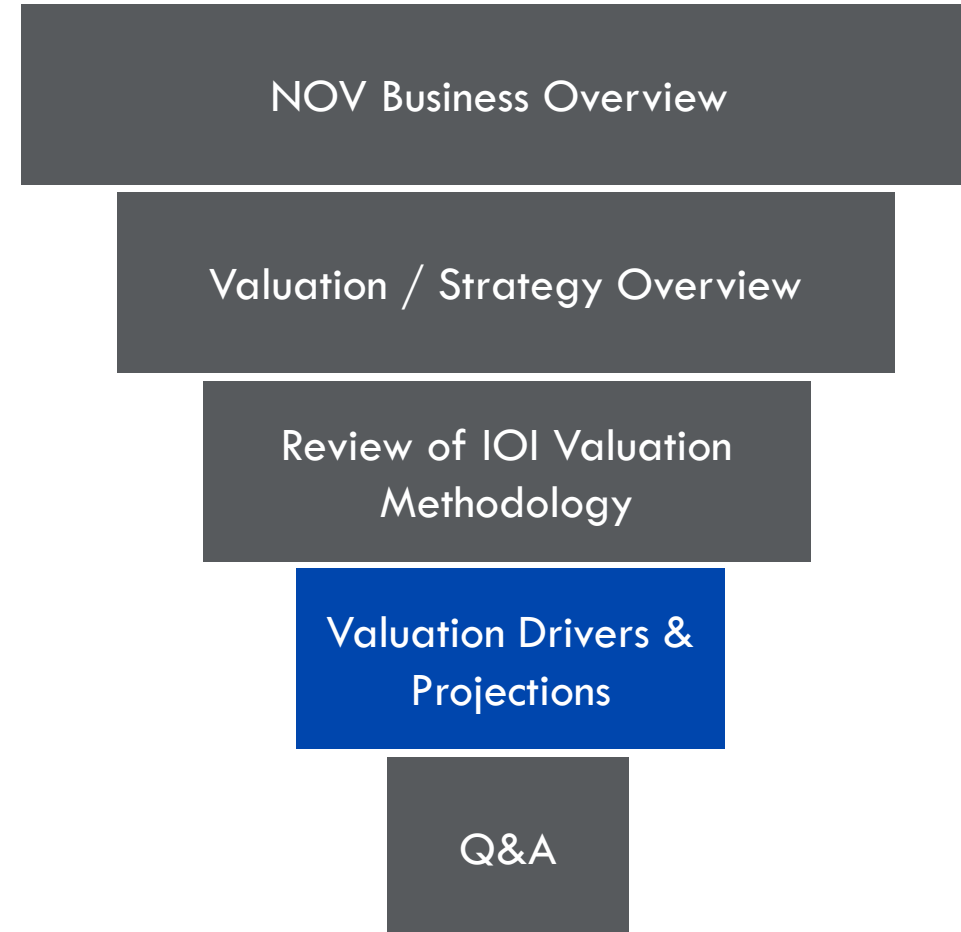
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TEACHABLE MOMENTS IN NOV ANALYSIS

Focus on Revenues and Demand Environment

Data Artifacts Related to OCP Calculation

Difficulty in Projecting Net ECF for an Acquisitive Firm

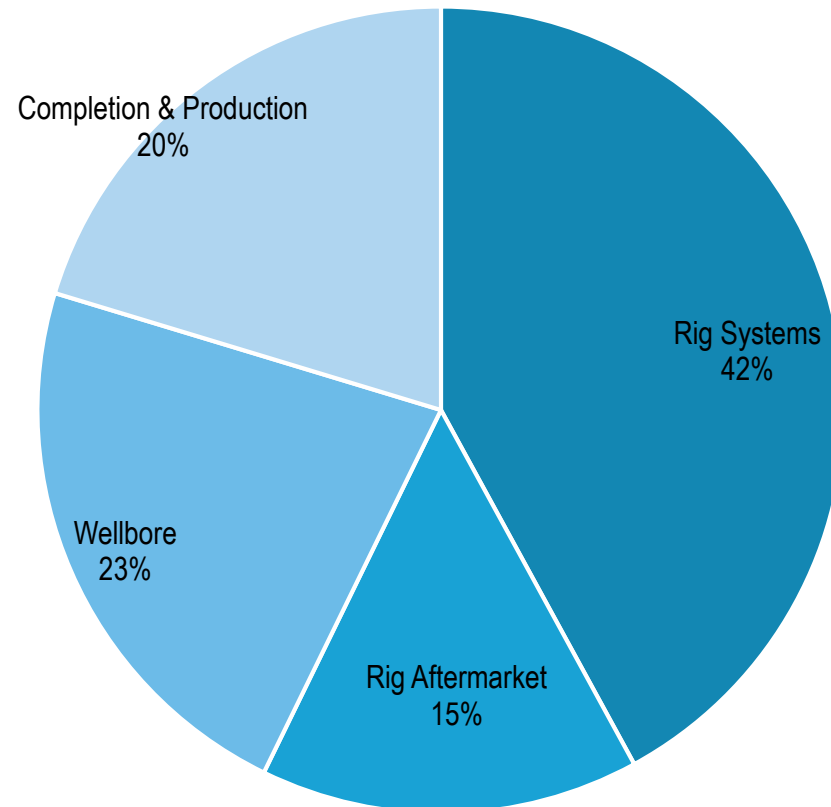
Thought Process behind Medium-Term Growth Projections

Multiplicative Uncertainty of Value Drivers Creates Large Valuation Uncertainty

Revenues

REVENUE BREAKDOWN

NOV 2015 Revenues by Segment



REVENUES

Segment	Capital / Consumable
Rig Systems	Capital
Rig Aftermarket	Services (& Spares)
Wellbore	Consumables
Completion & Production	Services (plus Capital & Consumables)

Rig Systems demand is based on outlook for price of oil (+ supply of rigs)

Rig Aftermarket is tied to number of NOV systems in active service

Wellbore and Completion & Production demand is tied to number of wells being drilled or pumped

RIG SYSTEMS

Revenues differ by rig type

- Offshore jack-ups: \$200 mm total cost. NOV wins ~65% of systems or \$30 - \$60 million per jack-up.
- “Floaters” (Offshore deep/ultra-deepwater / drillship): Total number is small. \$500 - \$700 mm total cost. NOV gets virtually 100% of systems or around \$150 million - \$250 million per ship
- Land-based: Roughly 25%-30% of Rig Systems historical revenue; 40% in 2015. Rigs are less expensive but upgrade cycle is supported by issues of increased drilling efficiency.

Construction cost distribution for jackups and floaters.

	Floaters		Jackups	
	Cost (million \$)	Proportion (%)	Cost (million \$)	Proportion (%)
Steel	25-60	<10	15-40	10-20
Labor	50-120	10-15	15-55	10-30
Drilling equipment	100-200	20-30	20-70	10-30
All other equipment	100-200	20-30	35-50	20-30
Profits	50-75	<10	10-25	<10
Total	500-700	100	175-225	100

RIG SYSTEMS GOOD & BAD

Good

Backlog of roughly \$6 billion at end of 2015

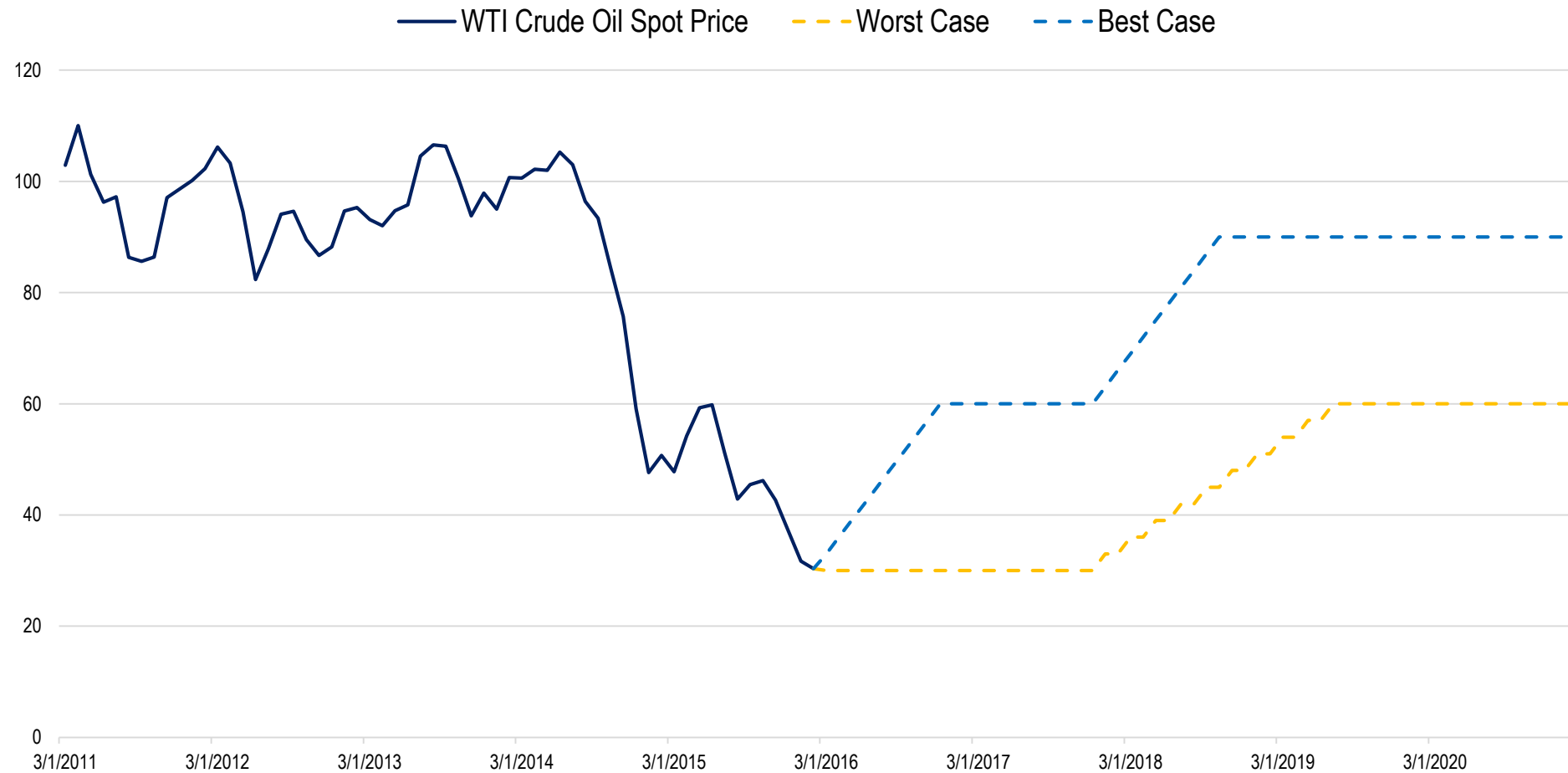
Demand from Saudi Arabia and Iran for jack-ups best hope for near-term

Bad

\$2 billion associated with Brazil likely to be pushed off for a long time

Most of the backlog associated with offshore (Rig Systems & Completion)

OIL PRICE SCENARIOS



REVENUE SCENARIOS

Best Case

Rig Systems: Offshore rig demand bounces back in 2018. Onshore rig demand is strong in 2017.

Rig Aftermarket: Large bump in demand as stacked rigs come back online (circa 2017)

Wellbore and Completion & Production: Increases with well count

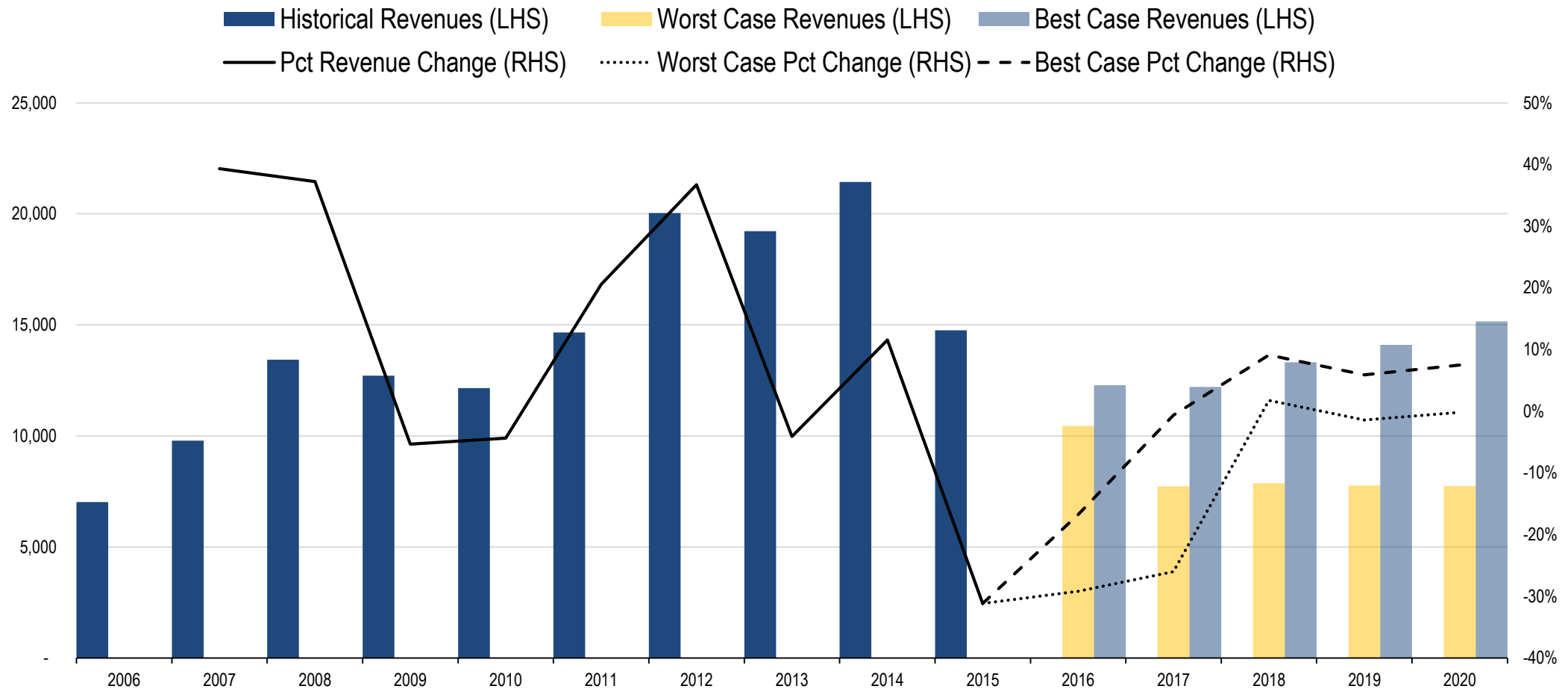
Worst Case

Rig Systems: Offshore rig demand dries up.

Rig Aftermarket: Onshore rig demand mainly in Aftermarket as spare parts supplies dwindle.

Wellbore and Completion & Production: No bump.

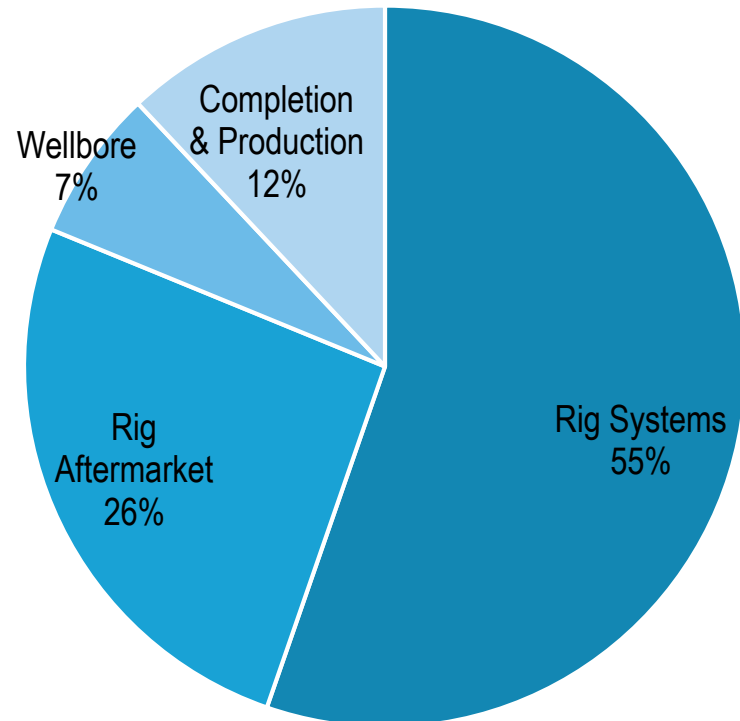
REVENUE SCENARIOS GRAPH



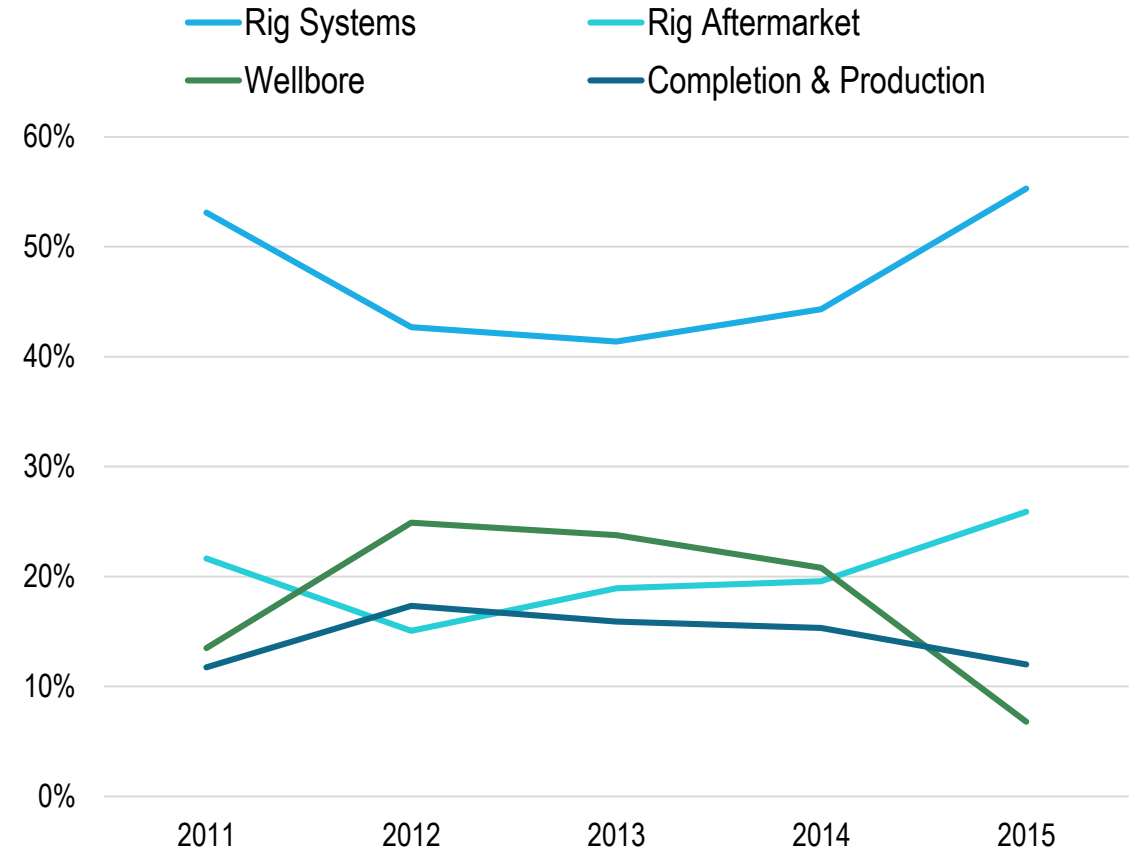
Profits

PROFIT DYNAMICS

NOV 2015 Operational Profit by Segment



Historical EBIT Margin by Segment



PROFITS GOOD & BAD

Good

NOV has been insourcing more work, attempting to keep skilled workers employed and in-house.

Consolidation of large number of sites (due to acquisition-based growth strategy) is possible.

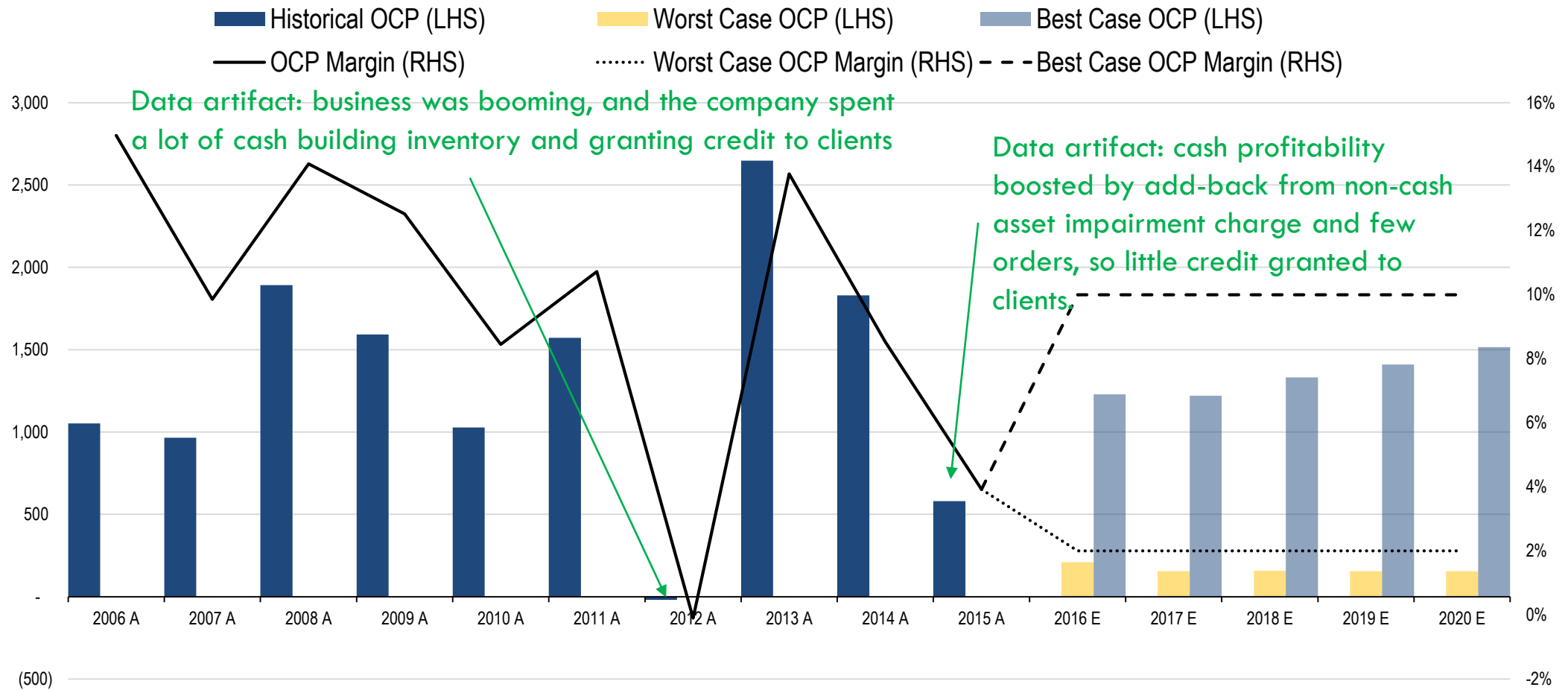
If revenues increase (i.e., oil price increases), profitability will increase quickly – “operational leverage.”

Bad

NOV is best offshore. Offshore is most profitable space and last to bounce back.

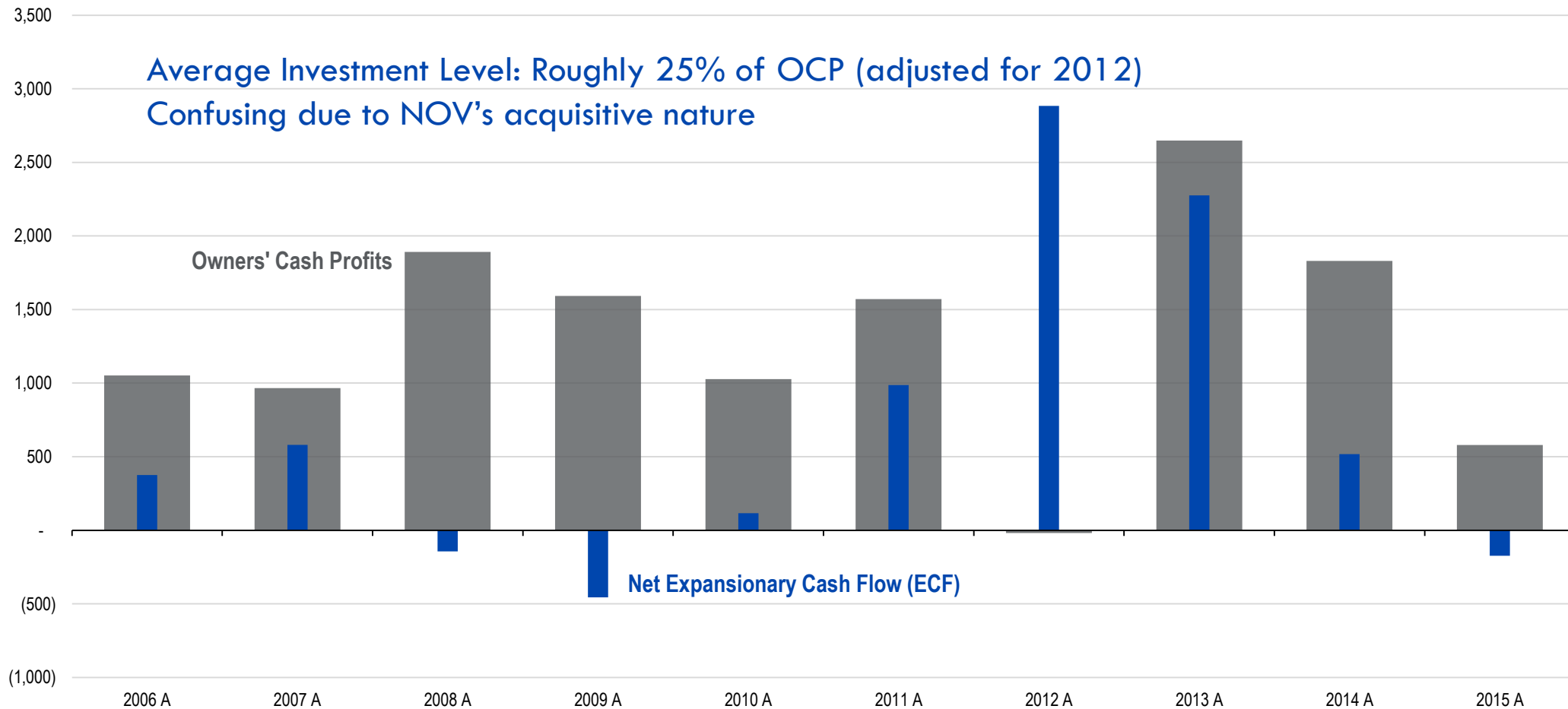
Operational leverage means that profits are severely affected by drop in revenue.

PROFIT SCENARIOS GRAPH

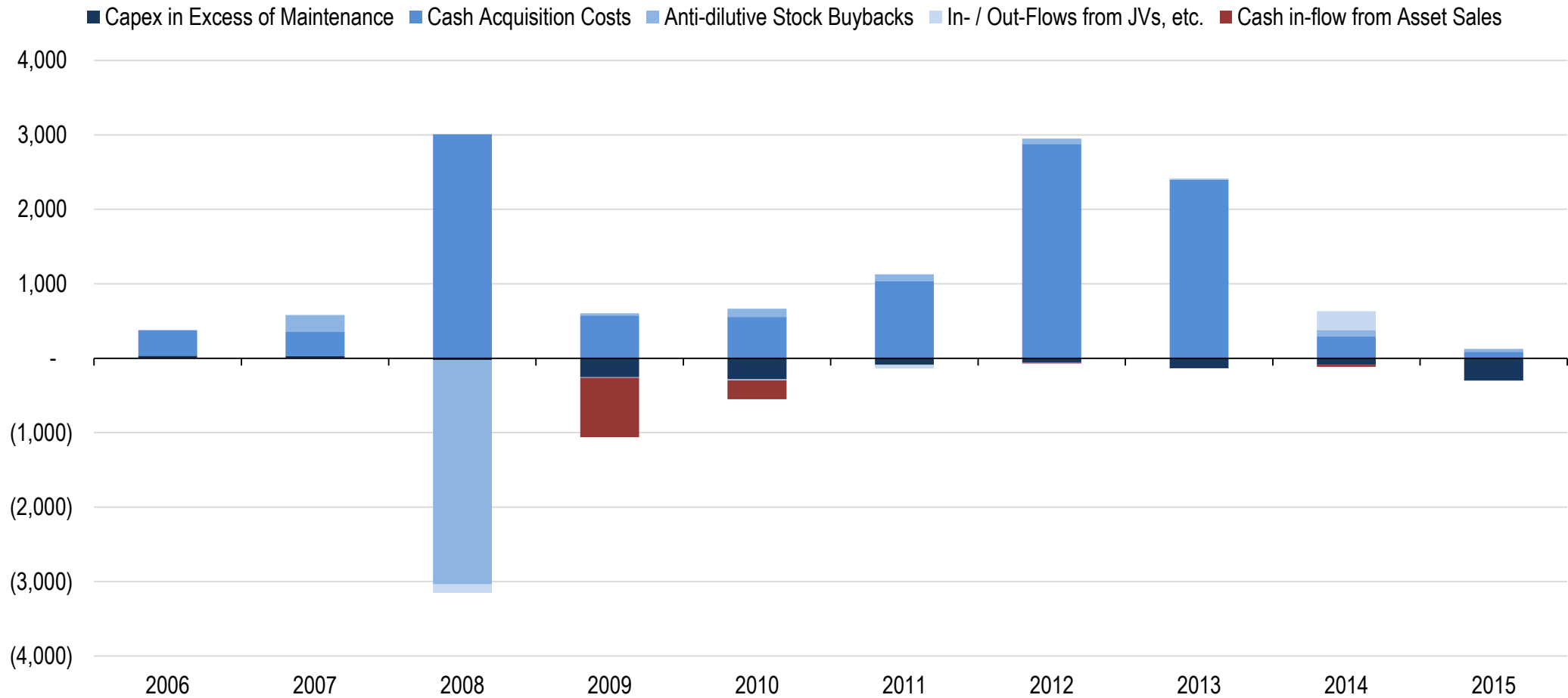


Investment Level & Efficacy

INVESTMENT LEVEL (VS. PROFITS)



WHERE NOV INVESTS

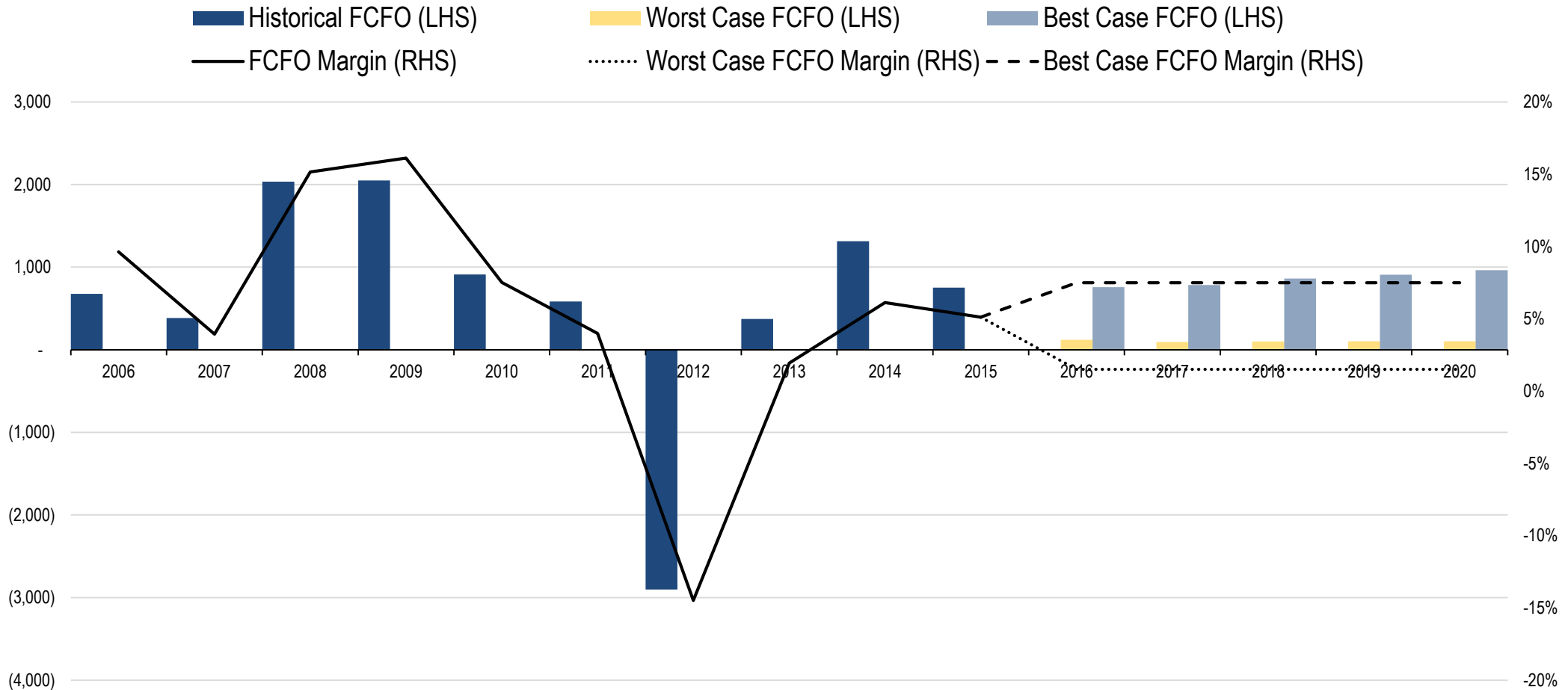


INVESTMENT LEVEL SCENARIOS

The IOI model uses an assumption of 25% of profits but this is highly uncertain and likely NOT to occur for some time – 2015 Expansionary Cash Flow was an inflow.

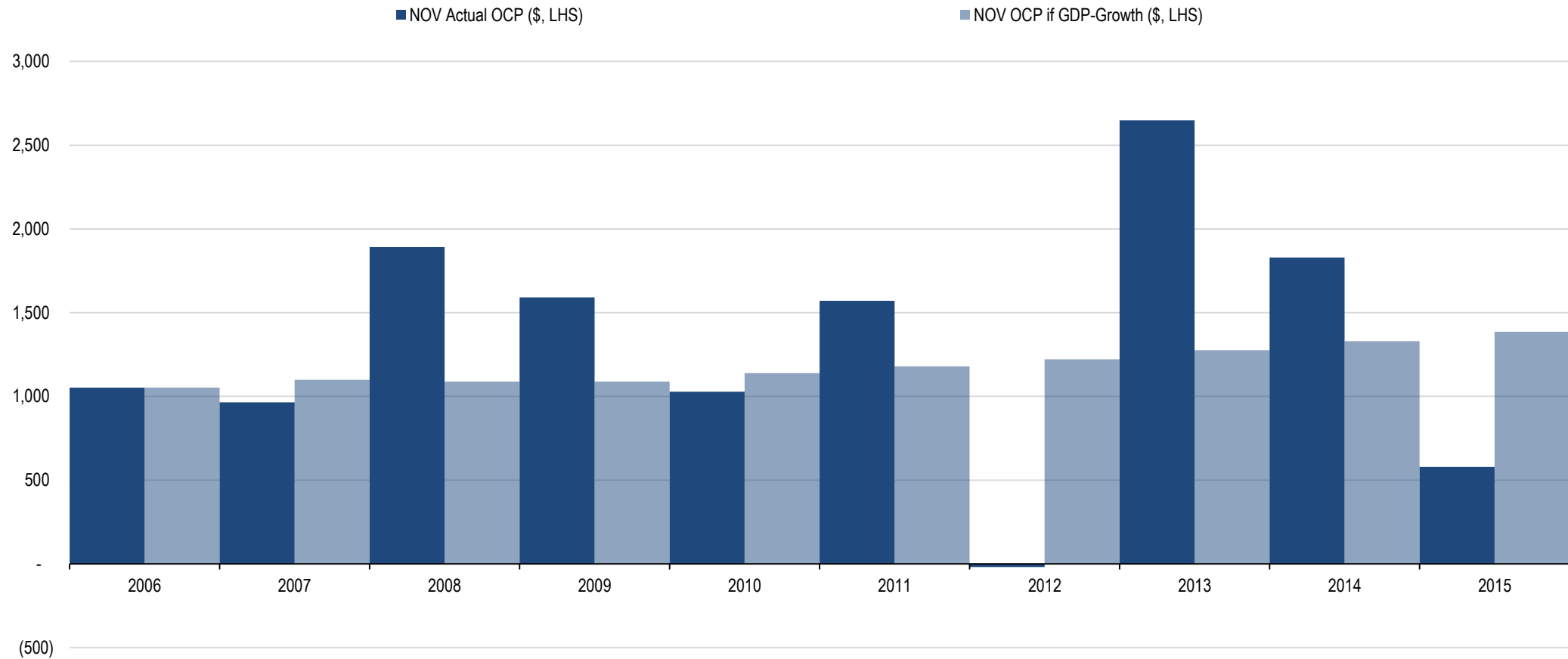
If oil prices remain low, NOV may have to acquire more land-based assets – presently 70-30 (offshore – land-based)

FREE CASH FLOW TO OWNERS

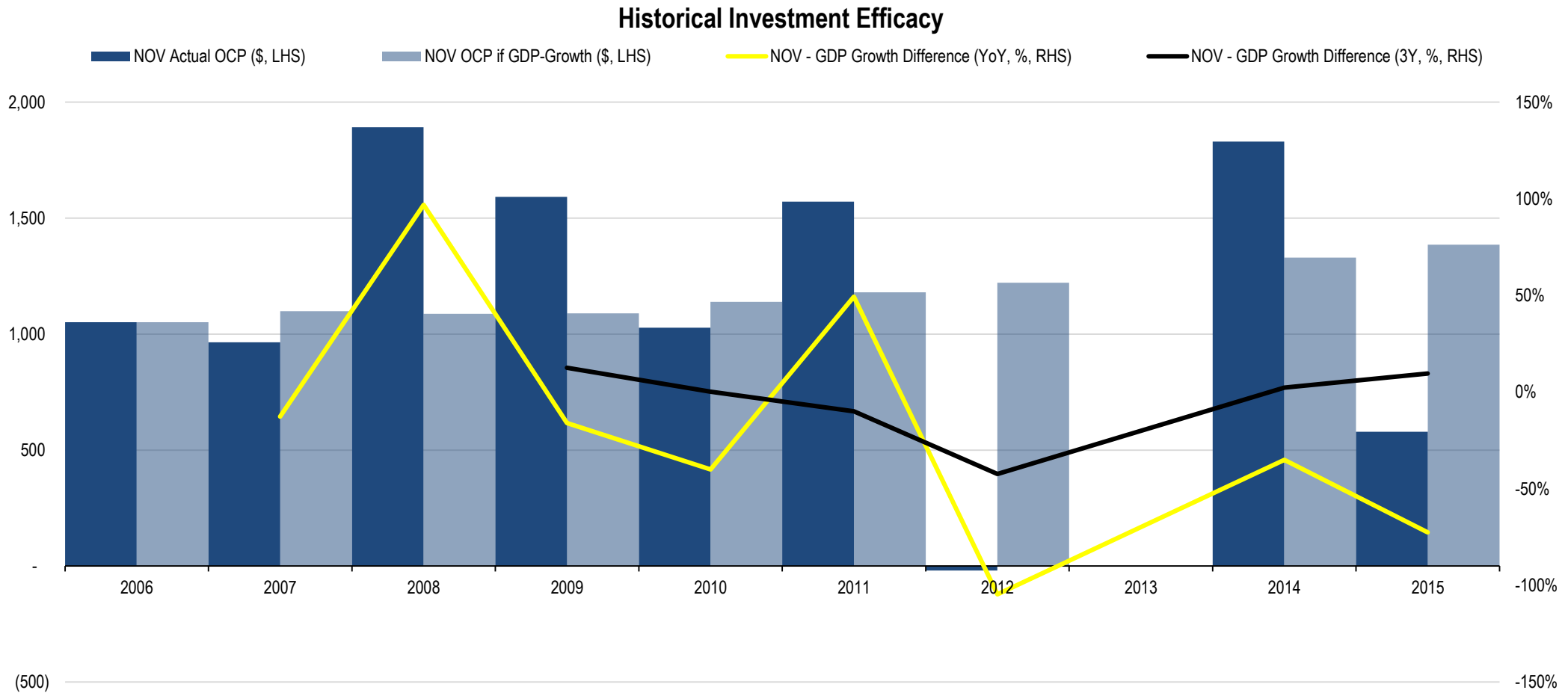


INVESTMENT EFFICACY

Historical Investment Efficacy



INVESTMENT EFFICACY



MEDIUM-TERM GROWTH SCENARIOS

Best Case

15% p.a. medium-term cash flow growth

- Normal cyclical return of oil demand in the medium-term drives rapid increase in revenues and profits.
- Look at energy as if it were in a normal cyclical environment.

Worst Case

5% p.a. medium-term cash flow growth

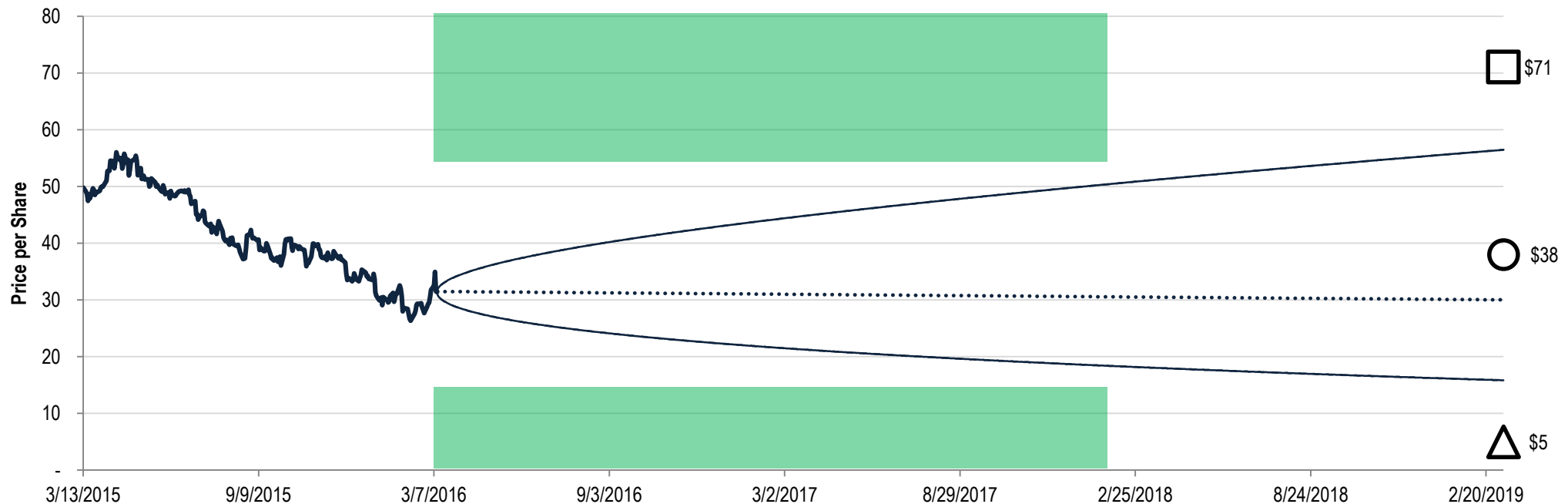
- Political action leads to demand shifting away from hydrocarbons.
- No matter what the near-term market does, oil does not return to its previous predominance.

AGENDA



LEARNING SUMMARY

Big difference in possible revenue outcomes + large operational leverage (i.e., wide range of profit outcomes) + uncertainty in medium-term outcomes leads to a large degree of investment uncertainty. A strangle structure is feasible but speculative.





Tilt the balance in your favor

THANK YOU

Erik Kobayashi-Solomon

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