

"The Oil Environment"

By Rich Aube, Managing Director, Head of Energy

What to Focus on Today

The Commodity Price Outlook Is Uncertain in the Near Term...

...But Long Term Equilibrium Price Likely to Be Higher

The Industry Adjusts to Find Balance

Our Portfolio Is Built to Last

Great Time to Deploy Capital

Discussion Agenda Where We've Been **Key Drivers of Oil Price Revised Outlook What Works in the Current Oil Price Environment? The Opportunity Set Going Forward**

Discussion Agenda

Where We've Been

What We Expected at the Beginning of the Year

- At the beginning of the year, we provided a short- and long-term outlook on the oil market
 - In the short term, we expected prices to be volatile. Prices do not have an "economic floor," as the marginal cost to produce from existing wells is \$1-20/bbl
 - A deceleration in shale supply growth was expected. However, U.S. production in 2015 and 2016 was unlikely to decline below year-end 2014 levels
 - » A 50% reduction in rig count was required to halt growth
 - In the long run, prices have to be high enough to encourage new supply
- In addition, we highlighted several factors that we believed would influence oil prices
 - The extent of global demand response (whether demand would be bolstered by low oil prices or remain suppressed by a weak economy)
 - The extent to which breakeven prices would fall as a result of lower service costs
 - How much oil would OPEC produce (Saudi Arabia's production decisions and whether less financially secure OPEC members would remain stable)

A Look Back: Where Are We Now?

Recent Developments

Consistent With Our Expectations

- U.S. rig count has declined and U.S. production growth is flattening
- Service costs are down by over 25%
- Long-dated, capital-intensive projects are being delayed or cancelled
- U.S. banks were accommodating with borrowing bases (they kicked the can down the road)
- OPEC has not curbed production

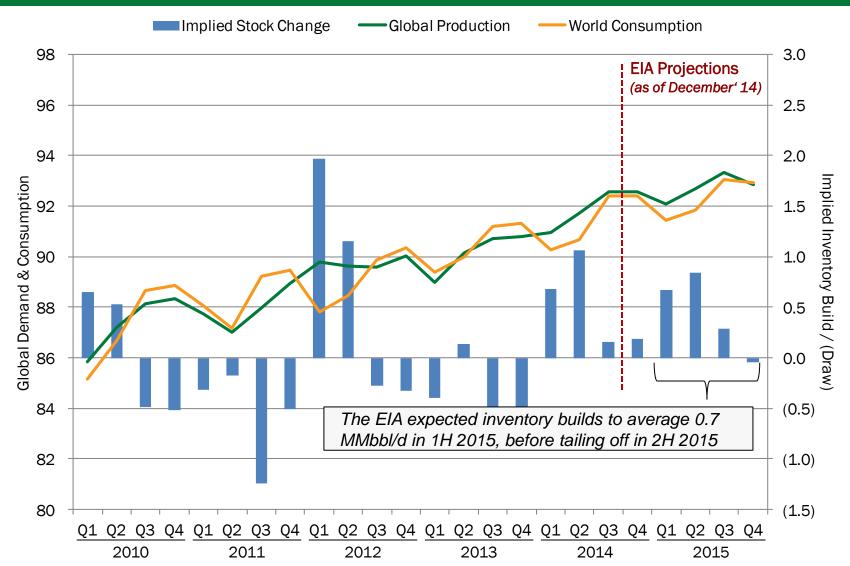
Surprises Relative to Our Expectations

- OPEC production continues to grow, driven by Saudi Arabia and Iraq
 - Supply has risen 1.3 MMbbl/d since OPEC's November 2014 decision to defend market share
- Iranian sanctions may be lifted, adding to global supply
- World markets have been unsettled by events in China and broader concerns about the emerging markets
- The capital markets (both debt and equity) were wide open for energy producers
- Industry activity in the rest of the world is down less than expected

While the majority of our expectations for the market's reaction to lower oil prices have been met, unexpected developments have further pressured near-term oil prices

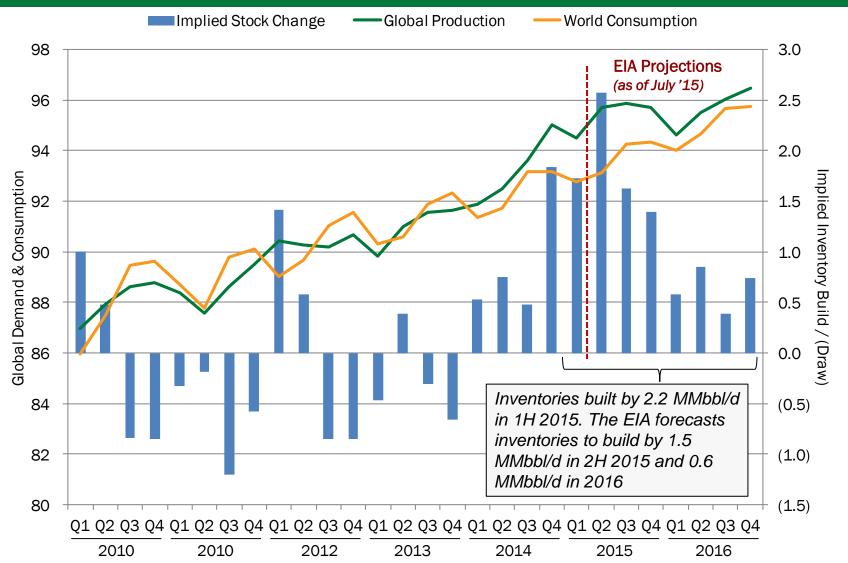
In December 2014, the EIA Forecasted Oversupply of 0.5 MMbbl/d in 2015

EIA December 2014 Outlook: World Production and Consumption Balance (MMbbl/d)



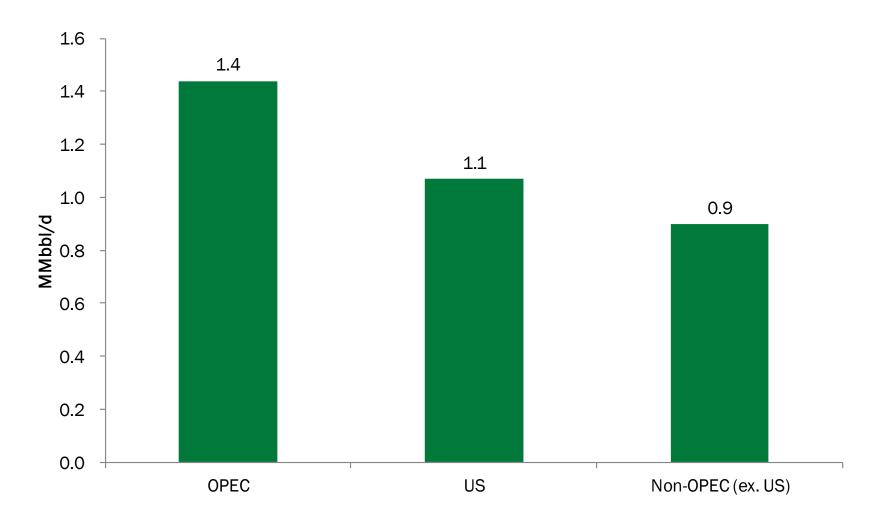
In July 2015, the World Was Oversupplied by 2.2 MMbbl/d in 1H 2015





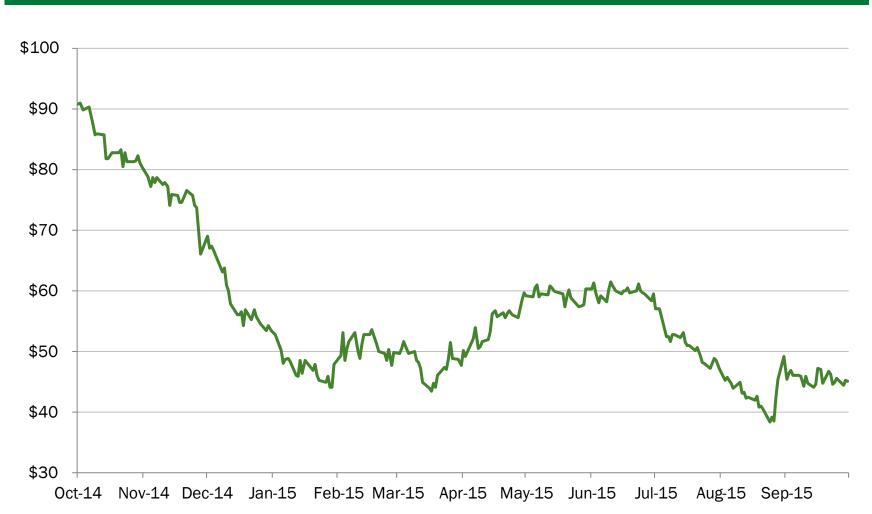
Increase in Global Liquids Supply a Surprise...

Growth in World Production - Q2'15 vs. Q2'14 (MMbbl/d)



...And as a Result, Oil Has Been Volatile

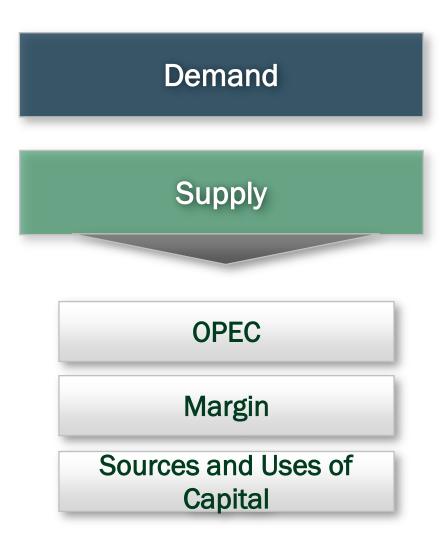




Source: EIA, as of 9/30/15.

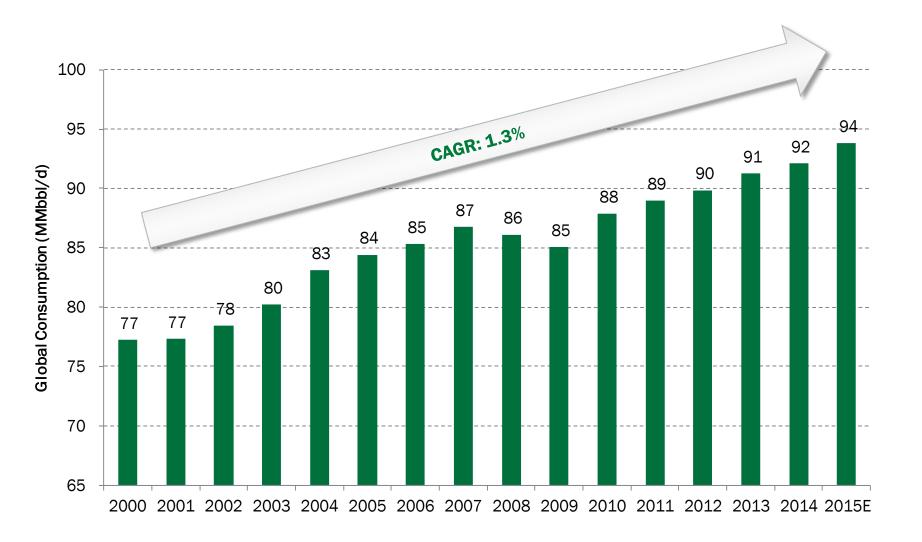
Discussion Agenda Key Drivers of Oil Price

Key Drivers of Oil Price Going Forward

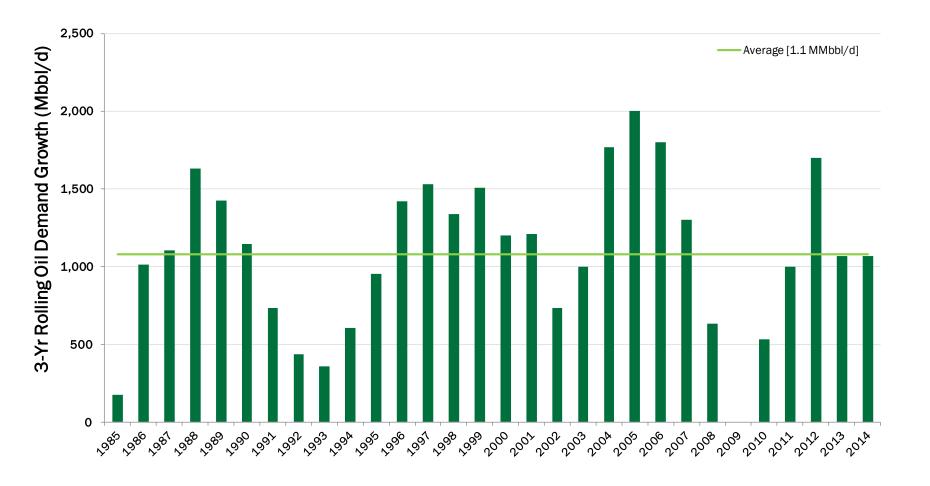


Demand

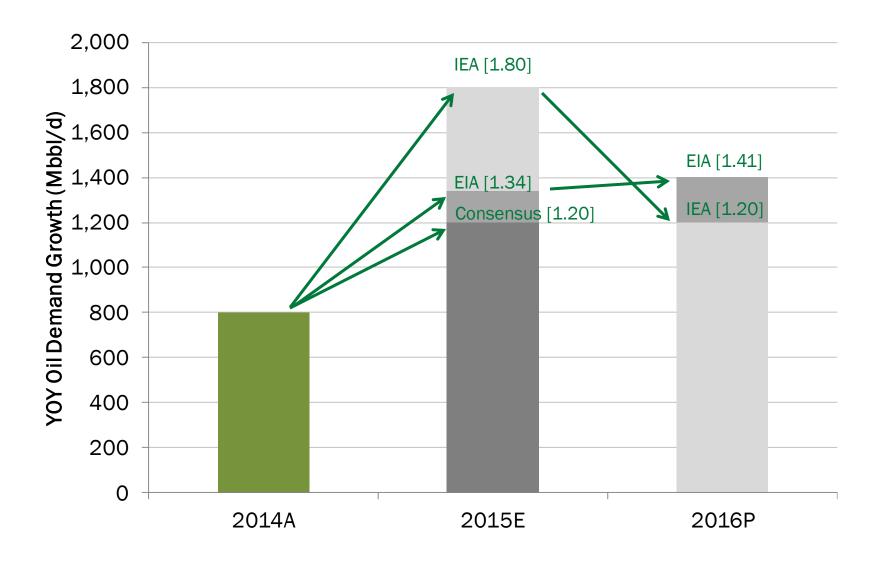
Pine Brook's Fundamental View: Global Consumption Will Continue to Grow...



...Within a Fairly Narrow Band



Range of 2015 Demand Growth Estimates Varies

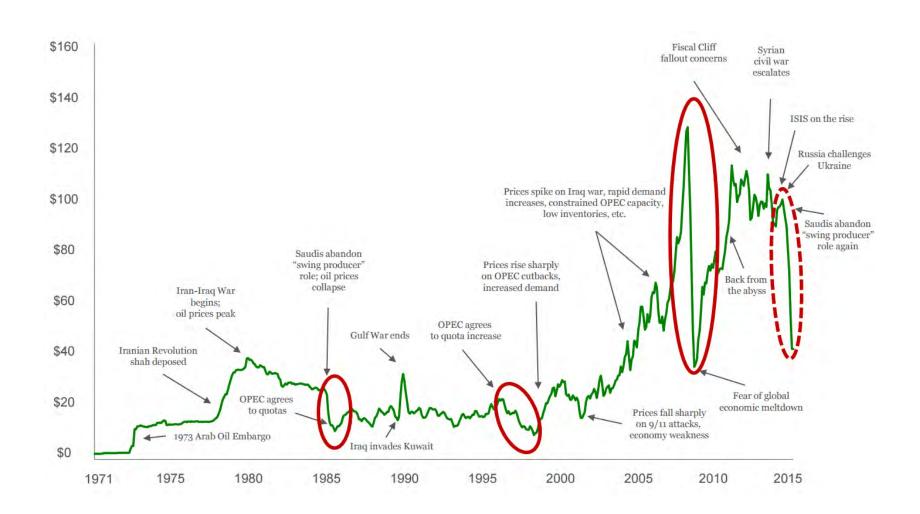




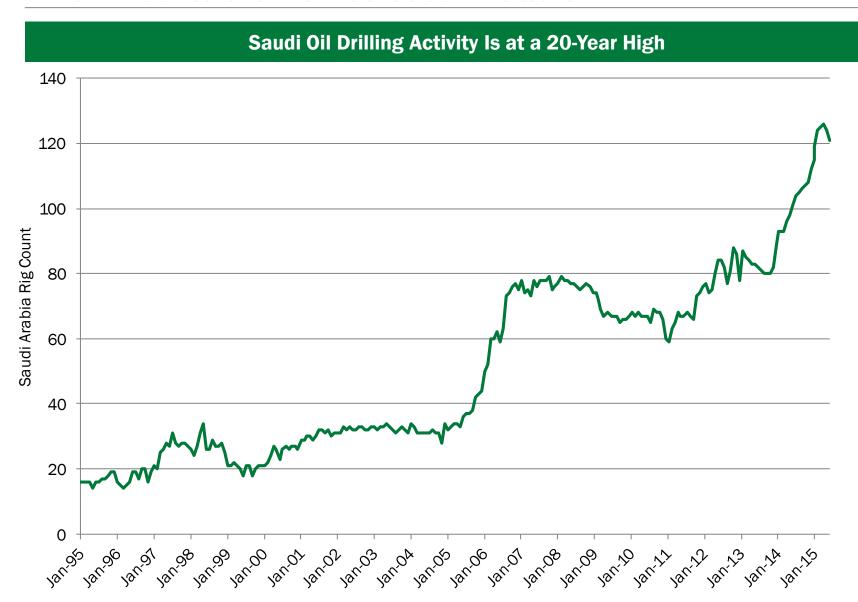


OPEC Continues To Play a Pivotal Role in Oil Prices

Historical Oil Prices (1971 – 2015)

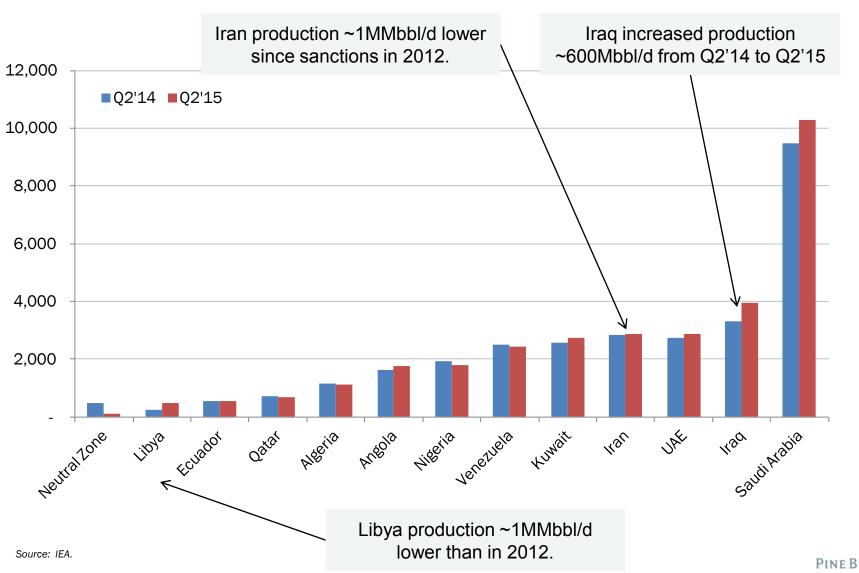


A Reminder to the Market: Saudi Matters



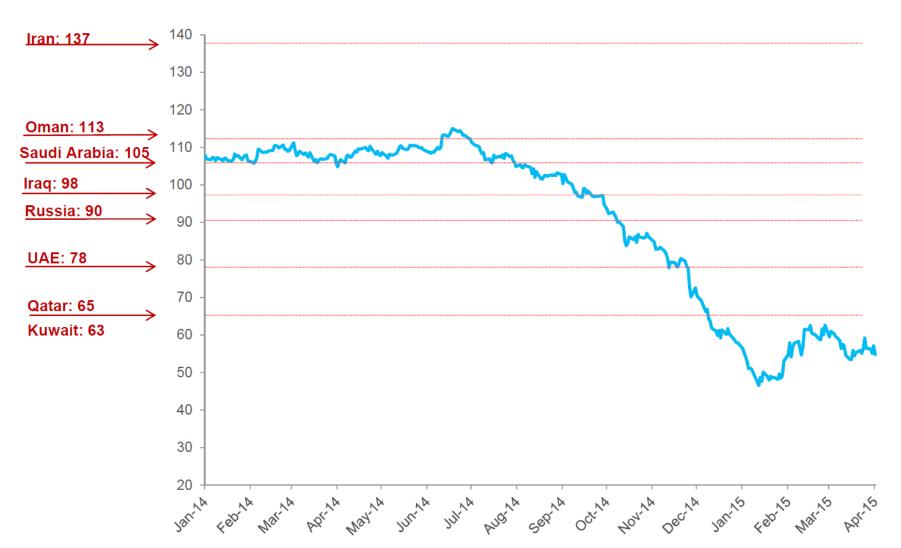
Production Surprises from Other OPEC Members Also Matter





OPEC Needs High Oil Prices to Balance Budgets

Brent Prices vs. Fiscal Break Evens



Margin

| (\$/Bbl) | Old Service Costs |
|--------------------|-------------------|
| Oil Price (WTI) | \$ 80.00 |
| Cash Costs: | |
| Royalty | \$ 20.00 |
| Operating Expenses | 14.00 |
| Taxes | 5.50 |
| G&A | 2.50 |
| Cash Margin | \$ 38.00 |
| | |
| Well Cost (\$MM) | \$ 8.5 |
| | |
| IRR | 35% |
| MOIC | 2.7x |

| (\$/Bbl) | Old Servi | ice Costs | |
|--------------------|-------------|-----------|-------|
| Oil Price (WTI) | \$ 80.00 | \$ | 50.00 |
| Cash Costs: | | | |
| Royalty | \$ 20.00 | \$ | 12.50 |
| Operating Expenses | 14.00 | | 14.00 |
| Taxes | 5.50 | | 3.50 |
| G&A | 2.50 | | 2.50 |
| Cash Margin | \$ 38.00 | \$ | 17.50 |
| | | | |
| Well Cost (\$MM) | \$ 8.5 | \$ | 8.5 |
| | | | |
| IRR | 35% | | 9% |
| MOIC | 2.7x | | 1.6x |

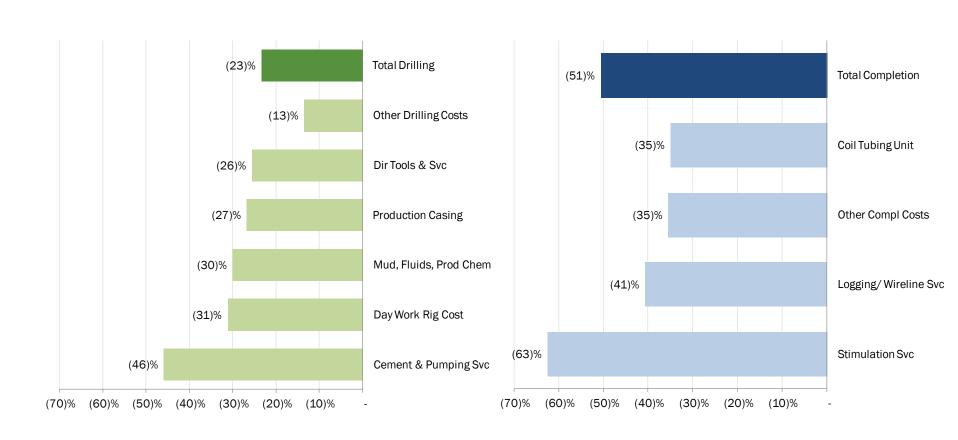
| (\$/Bbl) | | Old Service Costs | | | Service Costs Adj. |
|--------------------|-------------------|-------------------|----|-------|--------------------|
| Oil Price (WTI) | \$ | 80.00 | \$ | 50.00 | |
| Cash Costs: | | | | | |
| Royalty | \$ | 20.00 | \$ | 12.50 | \$ |
| Operating Expenses | | 14.00 | | 14.00 | 12.00 |
| Taxes | | 5.50 | | 3.50 | |
| G&A | | 2.50 | | 2.50 | |
| Cash Margin | \$ | 38.00 | \$ | 17.50 | \$ |
| | | | | | |
| Well Cost (\$MM) | \$ | 8.5 | \$ | 8.5 | \$ 6.4 |
| | | | | | |
| IRR | | 35% | | 9% | |
| MOIC | | 2.7x | | 1.6x | |

| (\$/Bbl) | Old Service Costs | | | ets | Service Costs Adj. | | |
|--------------------|-------------------|-------|----|-------|--------------------|-------|--|
| Oil Price (WTI) | \$ | 80.00 | \$ | 50.00 | \$ | 50.00 | |
| Cash Costs: | | | | | | | |
| Royalty | \$ | 20.00 | \$ | 12.50 | \$ | 12.50 | |
| Operating Expenses | | 14.00 | | 14.00 | | 12.00 | |
| Taxes | | 5.50 | | 3.50 | | 3.50 | |
| G&A | | 2.50 | | 2.50 | | 2.50 | |
| Cash Margin | \$ | 38.00 | \$ | 17.50 | \$ | 19.50 | |
| | | | | | | | |
| Well Cost (\$MM) | \$ | 8.5 | \$ | 8.5 | \$ | 6.4 | |
| | | | | | | | |
| IRR | | 35% | | 9% | | 22% | |
| MOIC | | 2.7x | | 1.6x | | 2.1x | |

Where Does Margin Come From?

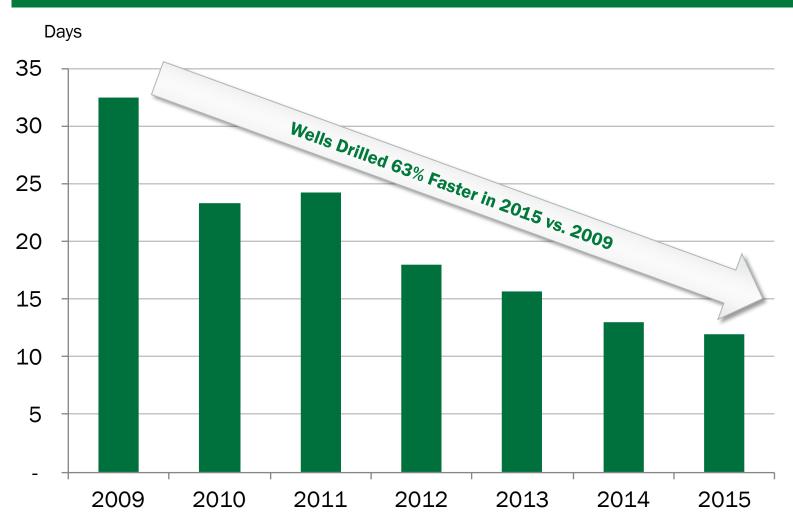
Drilling Cost Q4'14 to Q2'15 % Change

Completion Cost Q4'14 to Q2'15 % Change



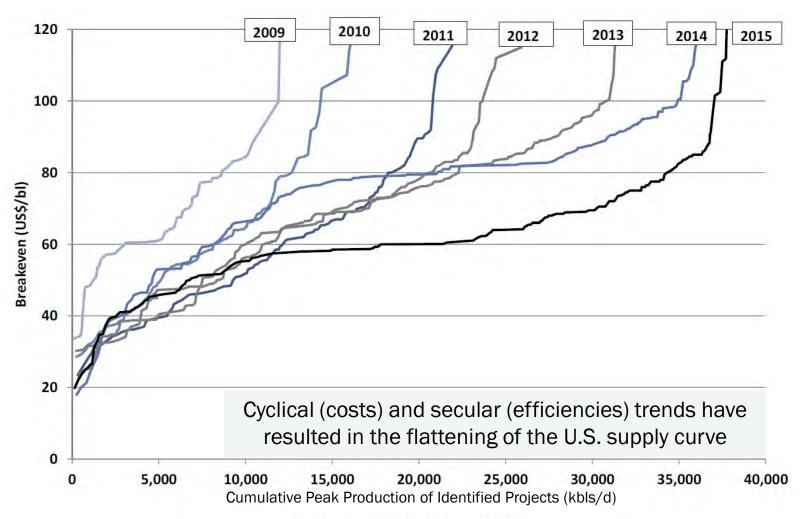
Operators Have Become More Efficient





Cost Declines and Efficiency Have Increased Resource Available at Any Given Price

Evolution of the Breakeven Oil Supply Curve by Year



¹⁾ Source: Goldman Sachs, as of May 2015.

²⁾ Note: Each year, Goldman Sachs releases a report covering the top non-producing and recently online global oil projects that Goldman Sachs believes will be key drivers of global oil supply over the next 10-20 years. This graph shows how Goldman Sachs' estimated cost curve for key projects has flattened over time, largely driven by cost deflation and innovation in US shale.

Sources and Uses of Capital

Traditional Sources of Capital

Major Sources of Funds in Exploration & Productions

Public Equity

High Yield

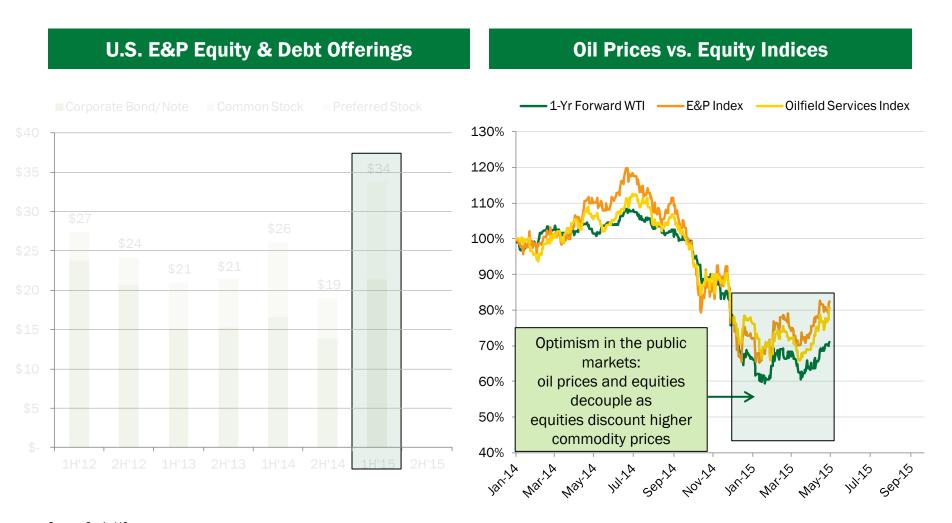
Second Lien

Revolver / Borrowing Base

Cash Flow

Capital Markets More Robust than Expected in 1H 2015

The public markets demonstrated a willingness to infuse additional capital into E&Ps despite the dramatic decline in commodity prices...

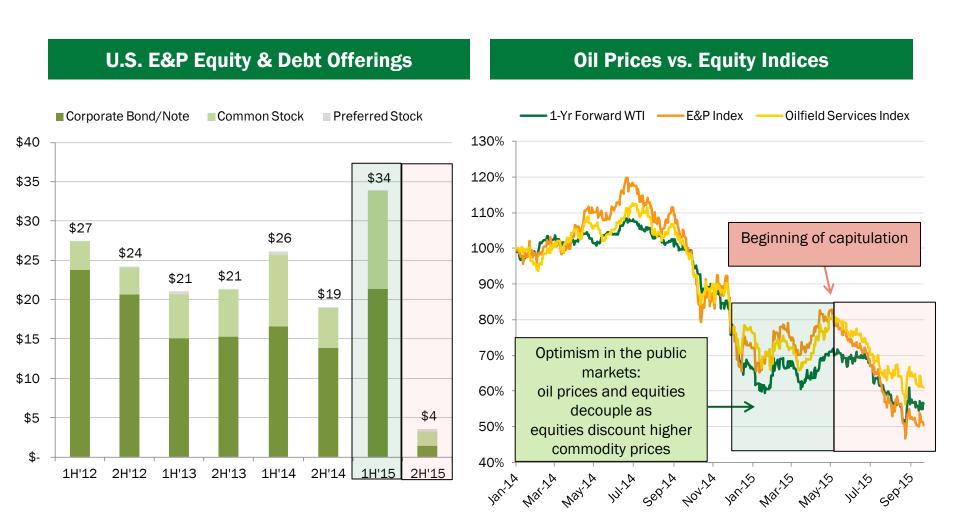


Source: Capital IQ.

Note: Includes only U.S. independent E&P companies.

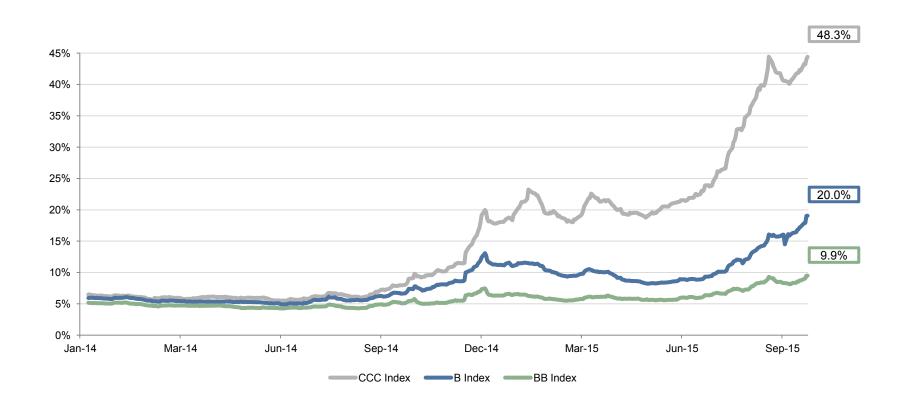
Capital Markets More Robust than Expected in 1H 2015

The public markets demonstrated a willingness to infuse additional capital into E&Ps despite the dramatic decline in commodity prices...but the tide is turning



High Yield and Second Lien Re-Pricing

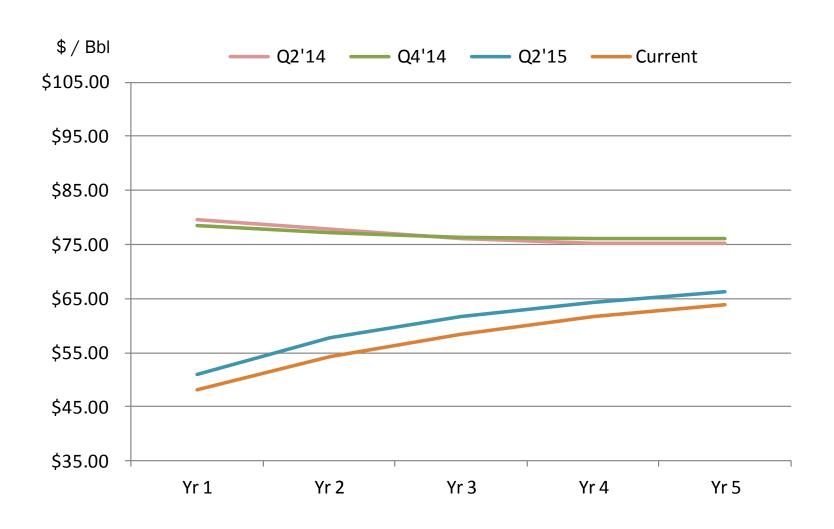
E&P Yield-to-Worst by Rating



Source: Jefferies.

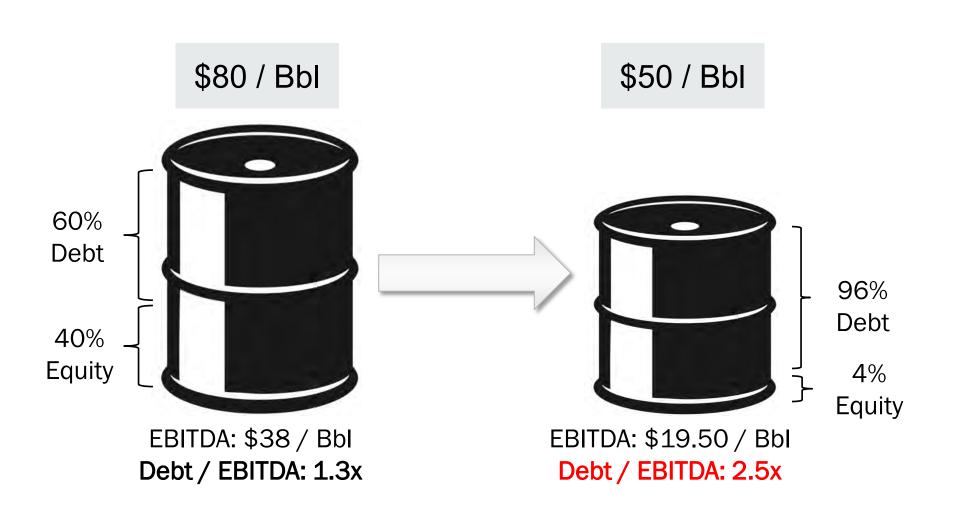
Borrowing Base Debt Capital Diminishing

Bank Borrowing Base Price Deck Over Time



Leverage Overwhelms Asset Base as Prices Fall

Debt / EBITDA Multiple at Various Prices



Available Liquidity Becomes More Scarce

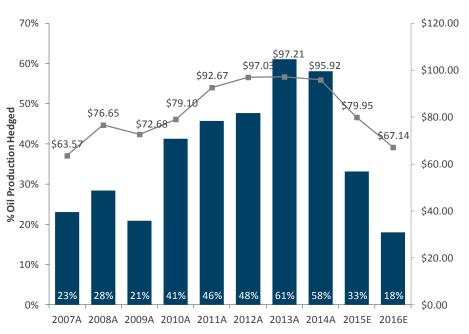
Liquidity Multiplier at Various Oil Prices



Hedges Are Rolling Off, Cash Flows Become Unprotected

SCI E&P Universe Oil Hedging

SCI E&P Universe Gas Hedging





Traditional Sources of Capital Are Drying Up

Major Sources of Funds in Exploration & Production

| Public Equity | "A Tale of Two Cities" |
|---------------------------|------------------------|
| High Yield | Unavailable |
| Second Lien | Down |
| Revolver / Borrowing Base | Down |
| Cash Flow | Down |

Discussion Agenda Revised Outlook

The Bull Case vs. the Bear Case

Bull Case

- Global supply is currently running at full throttle, and there is very little global spare capacity
- Large, global projects are now being delayed or cancelled, reducing future supply (2017+)
- It is unclear if fiscally weaker countries will be able to maintain their current levels of output
- Low oil prices may result in higher future demand
- All of this points to a swift price bounce as soon as the market balances

Bear Case

- The global supply curve has flattened
- OPEC may continue to produce at full tilt
- The lifting of Iranian sanctions may bring another million barrels per day back into the global market
- A weak global economy, particularly in China, may inhibit demand growth
- The U.S. dollar may continue to be strong
- All of this points to a world that continues to be well supplied, resulting in lower prices for longer

Our Revised Expectations

- Over the short run, volatility will continue
- The production decisions of the Gulf producers will be more important than previously anticipated
- Reaching supply / demand equilibrium could take longer than previously expected

Oil Supply/Demand Expectations Going Forward

| Supply | | | |
|--|-----------|----|---------|
| | (MMbbl/d) | (M | Mbbl/d) |
| Estimated Current Excess Supply | 2.0 | _ | 2.5 |
| Potential Increase from Saudi and Iraq | 1.0 | _ | 1.5 |
| Potential Increase from Iran | 0.5 | _ | 1.0 |
| Other ROW | 0.0 | _ | 0.5 |
| Excess Supply Before NAM Growth | 3.5 | - | 5.5 |

Oil Supply/Demand Expectations Going Forward

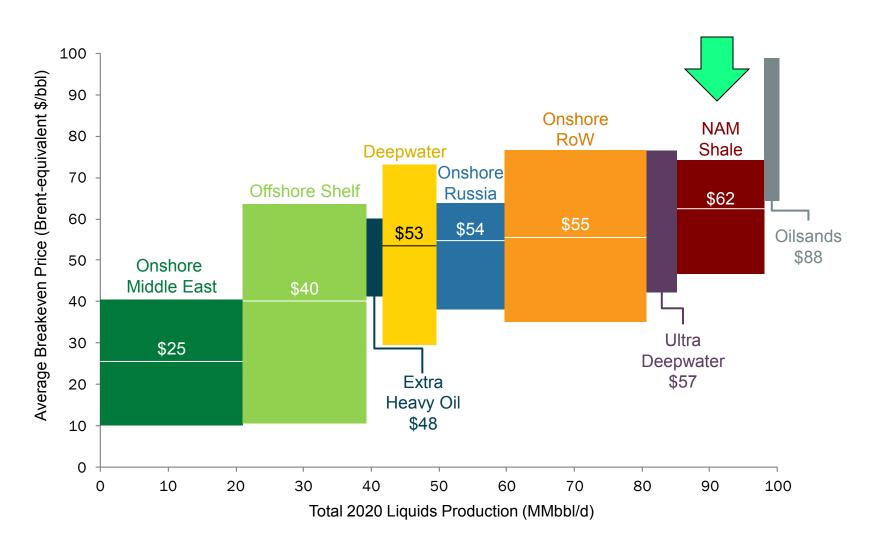
| Supply | | | | |
|--|-----|-------------|----------|-----------|
| | | (MMbbl/d) | (| MMbbl/d) |
| Estimated Current Excess Supply | | 2.0 | _ | 2.5 |
| | | | | |
| Potential Increase from Saudi and Iraq | | 1.0 | _ | 1.5 |
| | | | | |
| Potential Increase from Iran | | 0.5 | _ | 1.0 |
| Other ROW | | 0.0 | | 0.5 |
| Other ROW | | 0.0 | _ | 0.5 |
| Excess Supply Before NAM Growth | | 3.5 | _ | 5.5 |
| , | | | | |
| | | | | |
| How many years of oversupply? | | | | |
| | | Excess Supp | ly @ \$5 | 60 / Bbl |
| | | 3.5 | _ | 5.5 |
| | 1.0 | 3.5 years | _ | 5.5 years |
| ے م | | | | |
| Demand | 1.5 | 2.3 years | _ | 3.7 years |
| Demanc | 2.0 | 1.8 years | _ | 2.8 years |
| | | , | | , |

Our Revised Expectations

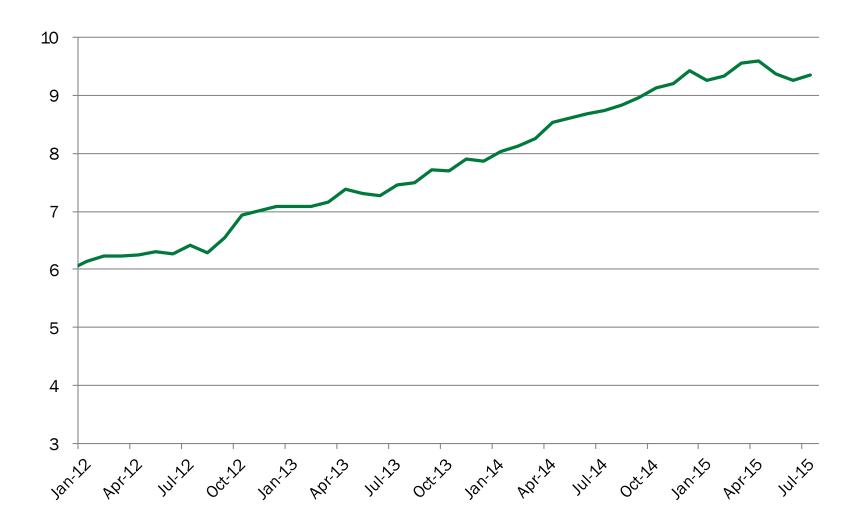
- Over the short run, volatility will continue
- The production decisions of the Gulf producers will be more important than previously anticipated
- Reaching supply / demand equilibrium could take longer than previously expected
- In the long run, prices have to be high enough to encourage new supplies to be brought to market as global demand continues to grow and existing wells deplete

North American Shale Is the Marginal Resource

Global Margin Breakeven Oil Supply Curve



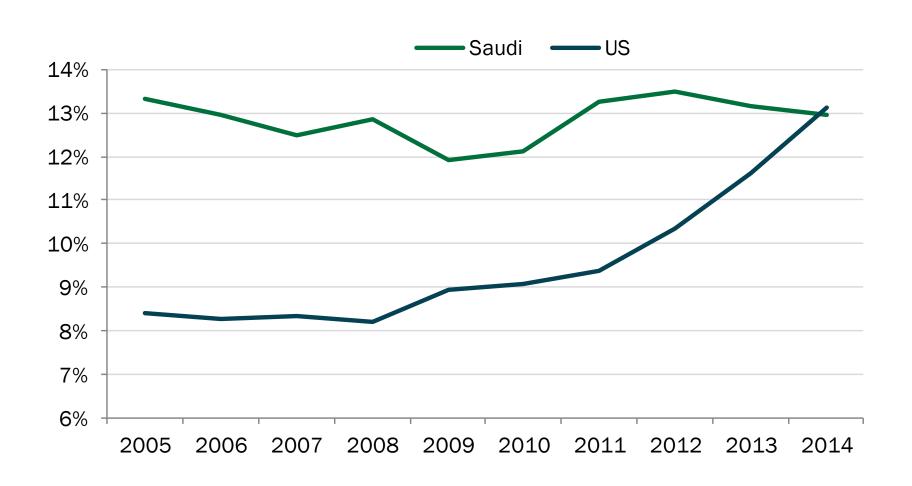
U.S. Oil Production (MMbbl/d)



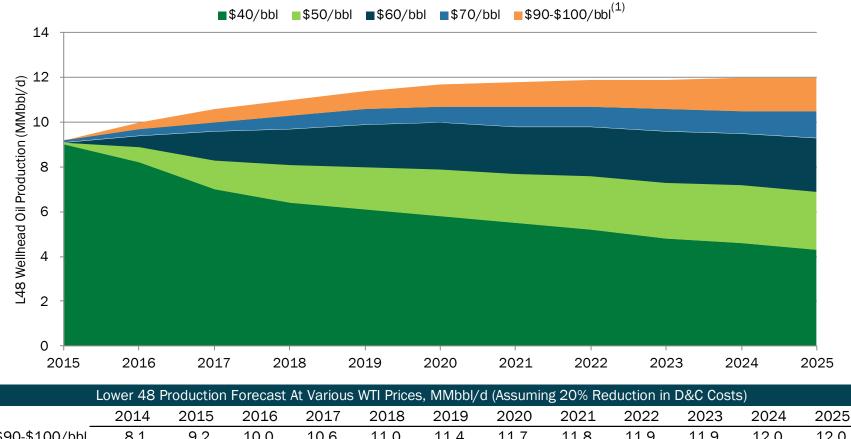
Source: EIA, as of 9/28/15.

From "Call on OPEC" to "Call on Shale"

Percent of Global Oil Production - U.S. & Saudi Arabia



U.S. Lower 48 Oil Supply Curve: Forecast as of March 2015



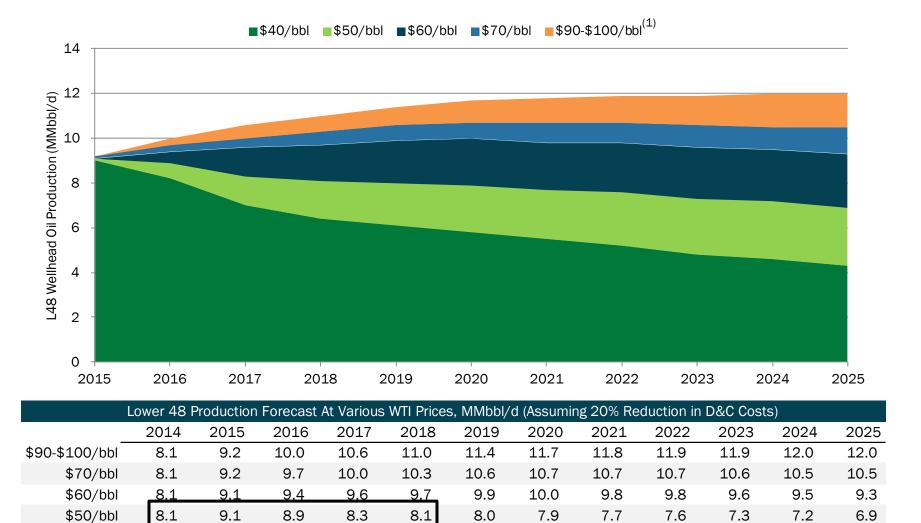
| Lower 48 Production Forecast At Various WTI Prices, MMbbl/d (Assuming 20% Reduction in D&C Costs) | | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|------|------|
| | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 |
| \$90-\$100/bbl | 8.1 | 9.2 | 10.0 | 10.6 | 11.0 | 11.4 | 11.7 | 11.8 | 11.9 | 11.9 | 12.0 | 12.0 |
| \$70/bbl | 8.1 | 9.2 | 9.7 | 10.0 | 10.3 | 10.6 | 10.7 | 10.7 | 10.7 | 10.6 | 10.5 | 10.5 |
| \$60/bbl | 8.1 | 9.1 | 9.4 | 9.6 | 9.7 | 9.9 | 10.0 | 9.8 | 9.8 | 9.6 | 9.5 | 9.3 |
| \$50/bbl | 8.1 | 9.1 | 8.9 | 8.3 | 8.1 | 8.0 | 7.9 | 7.7 | 7.6 | 7.3 | 7.2 | 6.9 |
| \$40/bbl | 8.1 | 9.0 | 8.2 | 7.0 | 6.4 | 6.1 | 5.8 | 5.5 | 5.2 | 4.8 | 4.6 | 4.3 |

Source: ITG. As of March 2015.

Methodology: ITG created production forecasts and ran WTI sensitivities for over 300 regions in the L48. In regions that generate less than a 10% IRR at a given WTI price, ITG models a gradual drop in the rig count to zero over a 12-month period. ITG assumes a 6-month delay in the production response to a change in the rig count to account for spud-to-sales times and backlog wells. The model runs \$3.50 NYMEX flat and accounts for a 20% reduction in D&C costs (relative to ITG's D&C assumptions in December 2014).

^{(1) \$90-\$100/}bbl WTl case does not assume a reduction in D&C costs. All other cases assume a 20% reduction in D&C costs.

U.S. Lower 48 Oil Supply Curve: Forecast as of March 2015



\$40/bbl Source: ITG. As of March 2015.

8.1

9.0

Methodology: ITG created production forecasts and ran WTI sensitivities for over 300 regions in the L48. In regions that generate less than a 10% IRR at a given WTI price, ITG models a gradual drop in the rig count to zero over a 12-month period. ITG assumes a 6-month delay in the production response to a change in the rig count to account for spud-to-sales times and backlog wells. The model runs \$3.50 NYMEX flat and accounts for a 20% reduction in D&C costs (relative to ITG's D&C assumptions in December 2014).

6.1

5.8

5.5

5.2

4.8

4.6

6.4

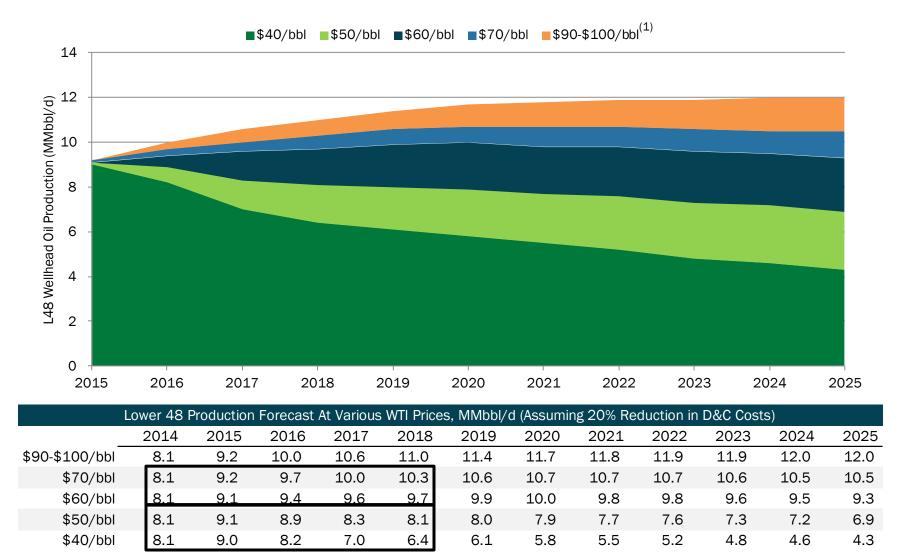
(1) \$90-\$100/bbl WTl case does not assume a reduction in D&C costs. All other cases assume a 20% reduction in D&C costs.

7.0

8.2

4.3

U.S. Lower 48 Oil Supply Curve: Forecast as of March 2015



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Our Revised Expectations

- Over the short run, volatility will continue
- The production decisions of the Gulf producers will be more important than previously anticipated
- Reaching supply / demand equilibrium could take longer than previously expected
- In the long run, prices have to be high enough to encourage new supplies to be brought to market as global demand continues to grow and existing wells deplete

The world market could balance in the \$50-70 range

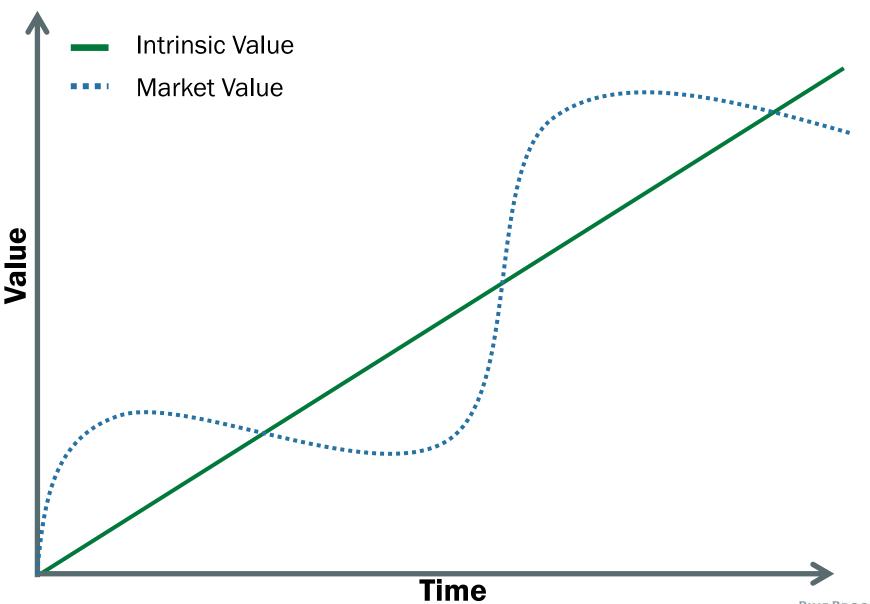
Discussion Agenda 4 **What Works in the Current Oil Price Environment?**

Why Is This a Sophisticated Question?

An Answer to a Sophisticated Question

- What matters is not price, but expectations of future prices
- Expectations of margin
- Unit level economics
- Investment economics
- Time horizon

Market Value vs. Intrinsic Value

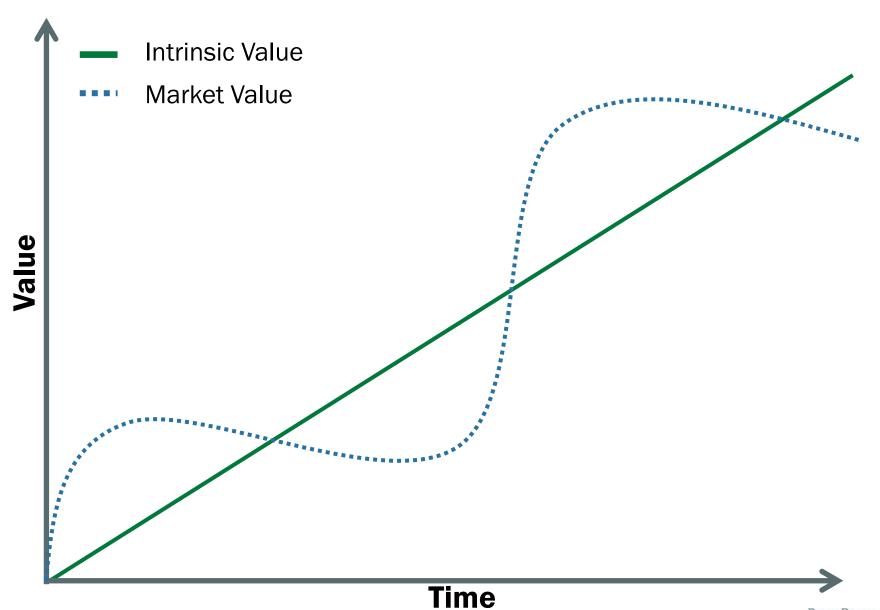


Our Counsel to Our Management Partners

- 1. Manage liquidity
- 2. Make sure your team is properly motivated
- 3. Re-underwrite everything
- 4. Go on offense
- 5. Throw conventional wisdom out the window







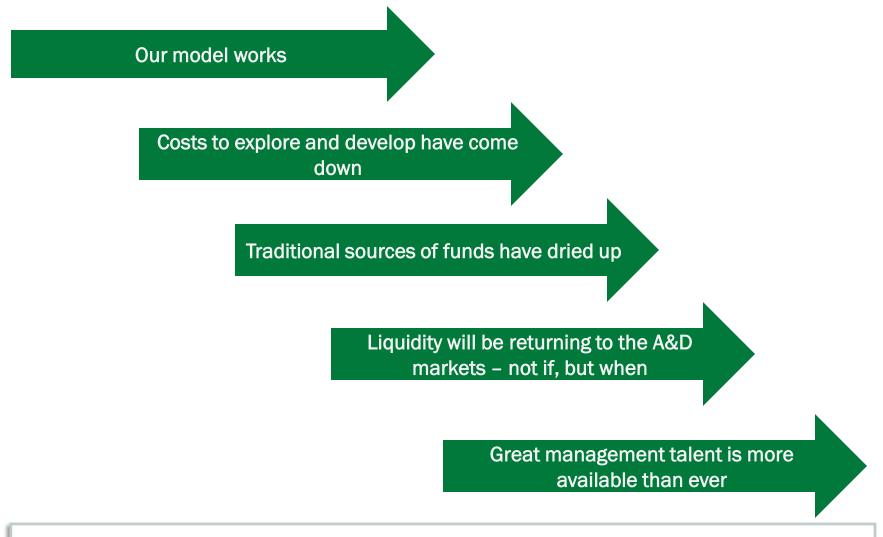
Discussion Agenda **The Opportunity Set Going Forward**

Current Market Sentiment is Unambiguously Negative

Lower for longer is the new normal Valuations for assets are down in both the public and private markets Activity is at cyclical lows Midland Double Tree vacancies are normal course of business

But sentiment is backward looking while opportunity is forward looking

Our Investment Opportunity Going Forward is Attractive



Portfolio is well positioned and has significant dry powder to go on offense

Example of Fund I Energy Upside

More than \$200.0 million left to invest in Fund I energy portfolio

| (\$ millions) | Investment Date | Invested Capital | LOE | Remaining LOE |
|-----------------------------------|--------------------|------------------|---------|------------------|
| STONEGATE PRODUCTION COMPANY, LLC | Mar-07 | \$62.7 | \$100.0 | \$37.3 |
| Fe Forge energy | Jul-11 | \$57.4 | \$98.5 | \$41.1 |
| Common Resources III | Sep-12 | \$53.4 | \$149.1 | \$95.7 |
| STONEGATEII | Jul-14 | \$8.7 | \$78.1 | \$69.4 |
| Total | | \$182.2 | \$425.7 | \$243.5 |

Fund II Energy Investment Opportunity

| \$ Millions | Investment Date | Invested Capital | LOE | Remaining LOE |
|--------------------------------------|--------------------|---------------------|-----------|------------------|
| Elevation Resources Holdings LLC | Mar-13 | \$73.4 | \$150.0 | \$76.6 |
| Brigham Resources, LLC ¹ | Apr-13 | 135.7 | 189.6 | 53.9 |
| GR Energy Services Holdings LP | Jun-13 | 27.4 | 125.0 | 97.6 |
| Saguaro Resources Ltd ^{1,2} | Jul-13 | 128.0 | 135.4 | 7.4 |
| Serafina Energy Ltd. ^{1,2} | Jan-14 | 144.9 | 150.4 | 5.5 |
| Stonegate Production Company II, LLC | Jul-14 | 11.2 | 150.0 | 138.8 |
| Wagon Wheel Exploration, LLC | Jul-14 | 31.0 | 100.0 | 69.0 |
| High Ground Energy Inc. ² | Jul-14 | 8.4 | 115.6 | 107.2 |
| La Luna Energy Partners, LP | Sep-14 | 9.3 | 16.4 | 7.1 |
| Gulf Pine Energy Partners, LP | Dec-14 | 54.6 | 135.0 | 80.4 |
| Red Bluff Resources Holdings, LLC | Jul-15 | 5.0 | 200.0 | 195.0 |
| Cahill Services, LLC | Jul-15 | 1.0 | 97.2 | 96.2 |
| TOTAL | | \$629.9 | \$1,564.6 | \$934.7 |

Upside LOE.

The lines of equity for High Ground Energy Inc., Saguaro Resources Ltd, and Serafina Energy Ltd. are adjusted for USD/CAD exchange rate fluctuations over the reporting period.

New Energy Portfolio Companies in 2015...

2015



... And the Energy Opportunity Going Forward

