

Houston IPAA/TIPRO Luncheon

“Living on a Razor’s Edge – The Embedded Challenges in U.S. Deal Flow”

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Advised on Seven of the Top Ten Shale/Resource Transactions

Date	Seller	Buyer	Trans. Value (\$MM)	Shale/Resource
Dec-09	ExxonMobil	XTO	\$35,000	Diversified
Jul-11	BHP Billiton	Petrohawk Energy	15,223	Diversified
Nov-11	KKR	Samson	7,200	Diversified
Feb-12	Apollo	El Paso E&P	7,150	Diversified
Feb-11	BHP Billiton	Chesapeake	4,750	Fayetteville
May-10	Shell	East Resources	4,700	Marcellus
Oct-11	Statoil ASA	Brigham Exploration	4,643	Bakken
Nov-10	Chevron	Atlas Energy	4,300	Marcellus
Jun-11	Marathon Oil	Hilcorp Resources	3,500	Eagle Ford
Mar-10	CONSOL Energy	Dominion	3,475	Marcellus

- **Jefferies has advised on more than 45 shale/resource transactions for greater than \$150 Billion**

Source: IHS Herold.
 Bold indicates Jefferies advised on transaction.

Relationships with the Largest Energy Companies in the World

Jefferies Involvement on Transactions with the Top 20 Global E&P Companies Since 2010

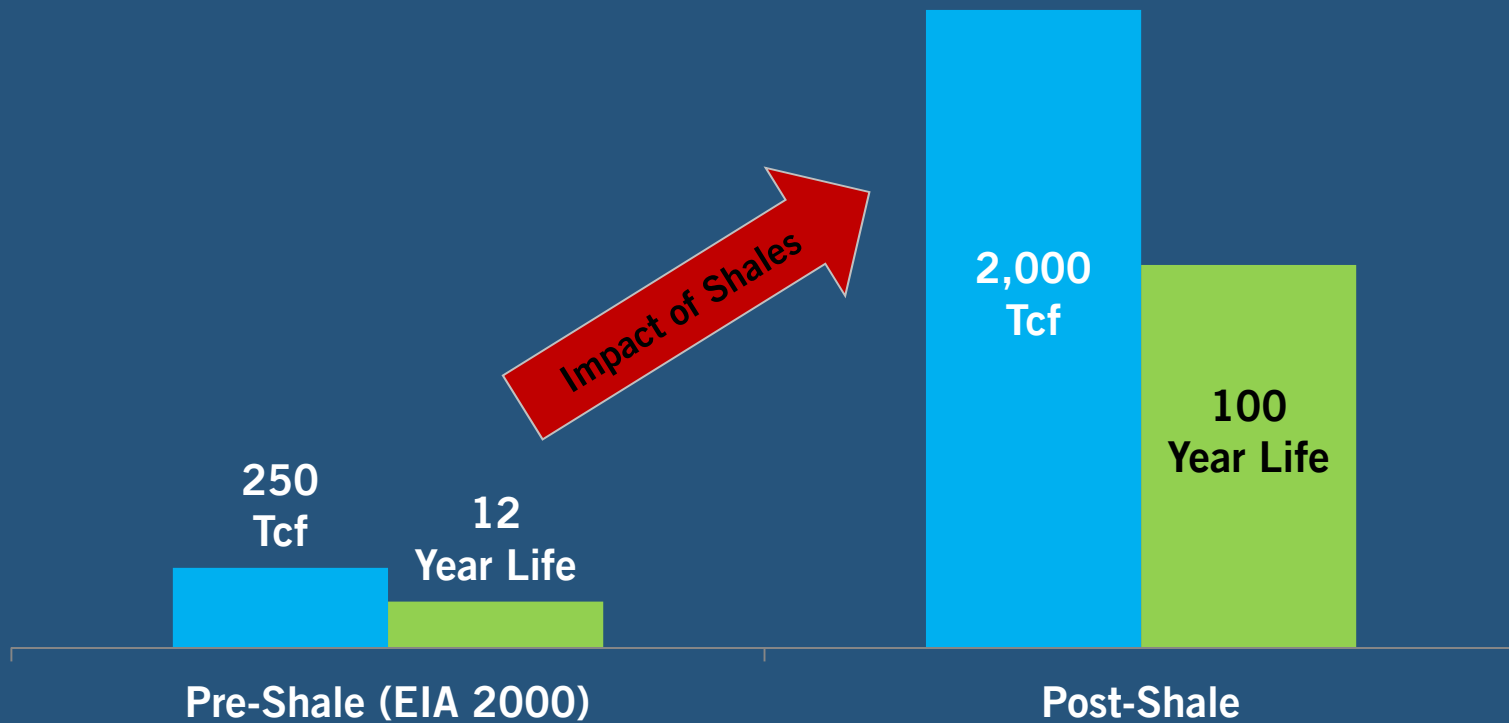
Rank	Company	TEV (\$MM)	Transaction	Rank	Company	TEV (\$MM)	Transaction
1	Exxon Mobil Corporation	\$423,414	Purchase of XTO	11	ConocoPhillips	\$114,281	Various divestitures
2	PetroChina Co. Ltd.	336,263		12	Ecopetrol SA	105,680	Purchase of GOM Deepwater
3	Petroleo Brasileiro	248,053		13	Rosneft Oil Company	88,896	
4	Royal Dutch Shell plc	245,205	Purchase of East Resources; CHK Permian purchase	14	BG Group plc	87,757	Sale of Mauritania
5	Chevron Corporation	197,228	Purchase of Atlas Energy; CHK Permian purchase	15	Statoil ASA	86,231	Sale of Peregrino; Purchase of Brigham
6	Gazprom	174,093		16	CNOOC Ltd.	85,653	JVs w/ Chesapeake (Eagle Ford, Niobrara); Nexen (GOM DW)
7	BP plc	166,395	North Sea Sales	17	Occidental Petroleum	83,213	Sale of certain assets
8	China Petroleum	143,139	Purchase of Peregrino; Purchase of Talisman Trinidad	18	Suncor Energy Inc.	62,036	
9	Total SA	136,526	JVs with Chesapeake (Barnett and Utica)	19	Repsol YPF SA	60,813	
10	Eni SpA	123,626		20	Anadarko Petroleum	50,823	JVs with Mitsui & KNOC (Marcellus & Eagle Ford)

Other global companies of note include: BHP, KNOC, Mitsui, Mitsubishi, Reliance, Sasol.

Source: IHS Herold.
Bold indicates Jefferies advised on transaction.

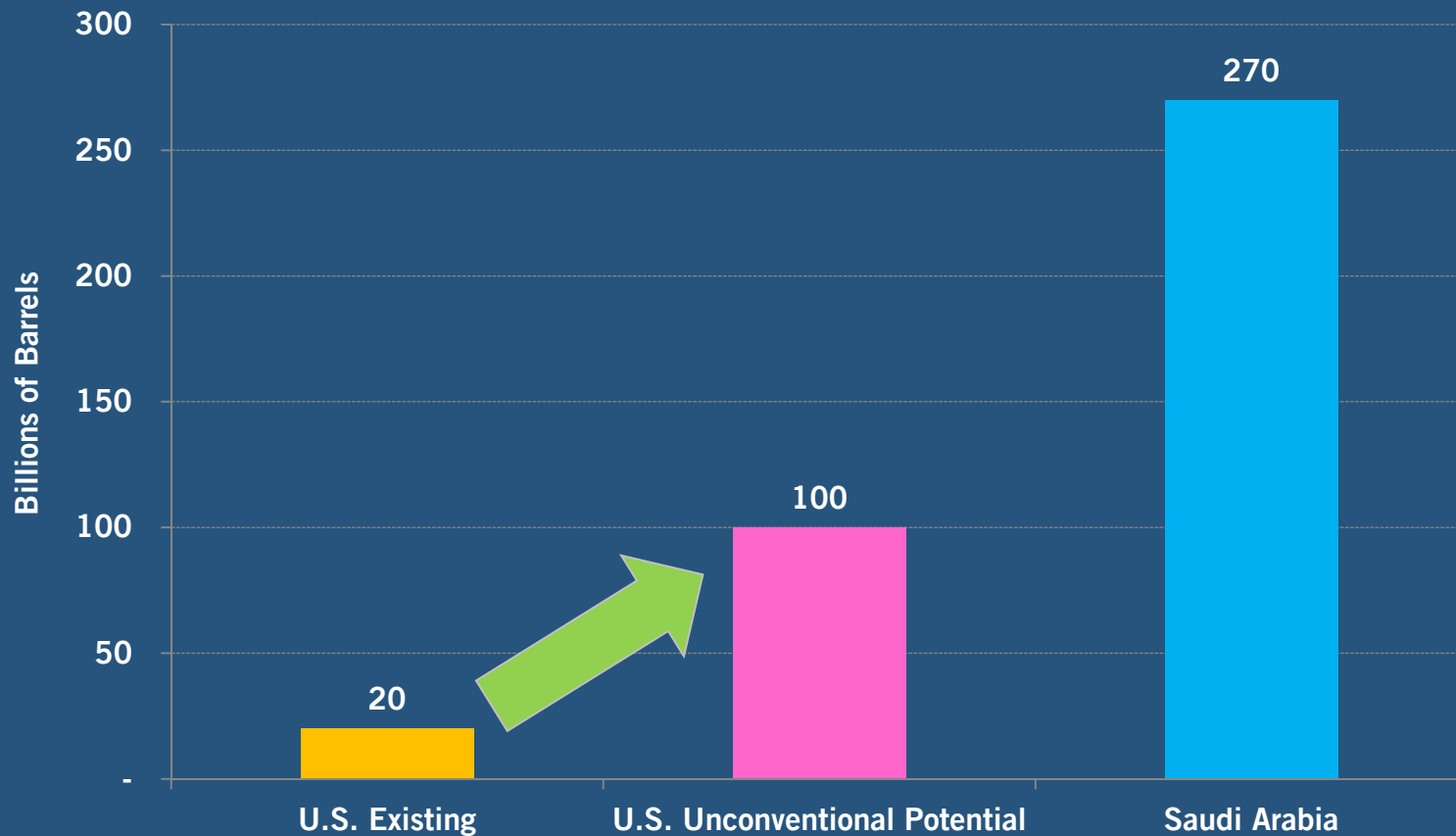
Macro U.S. Reserves and Production

U.S. Natural Gas Reserves / Resource Life



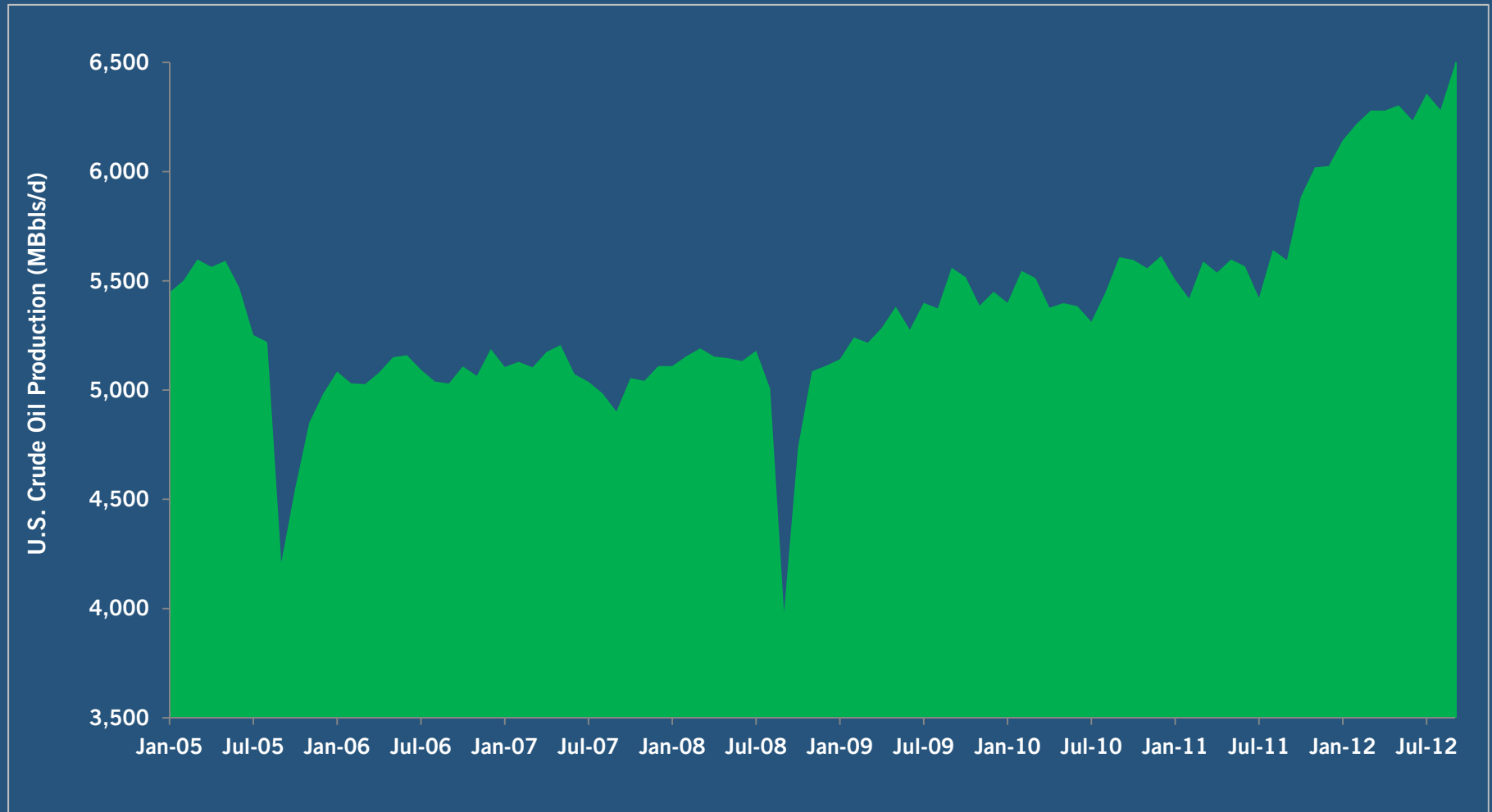
Natural gas can now be viewed as a long-term energy solution

U.S. Oil / Liquids Reserves / Resources



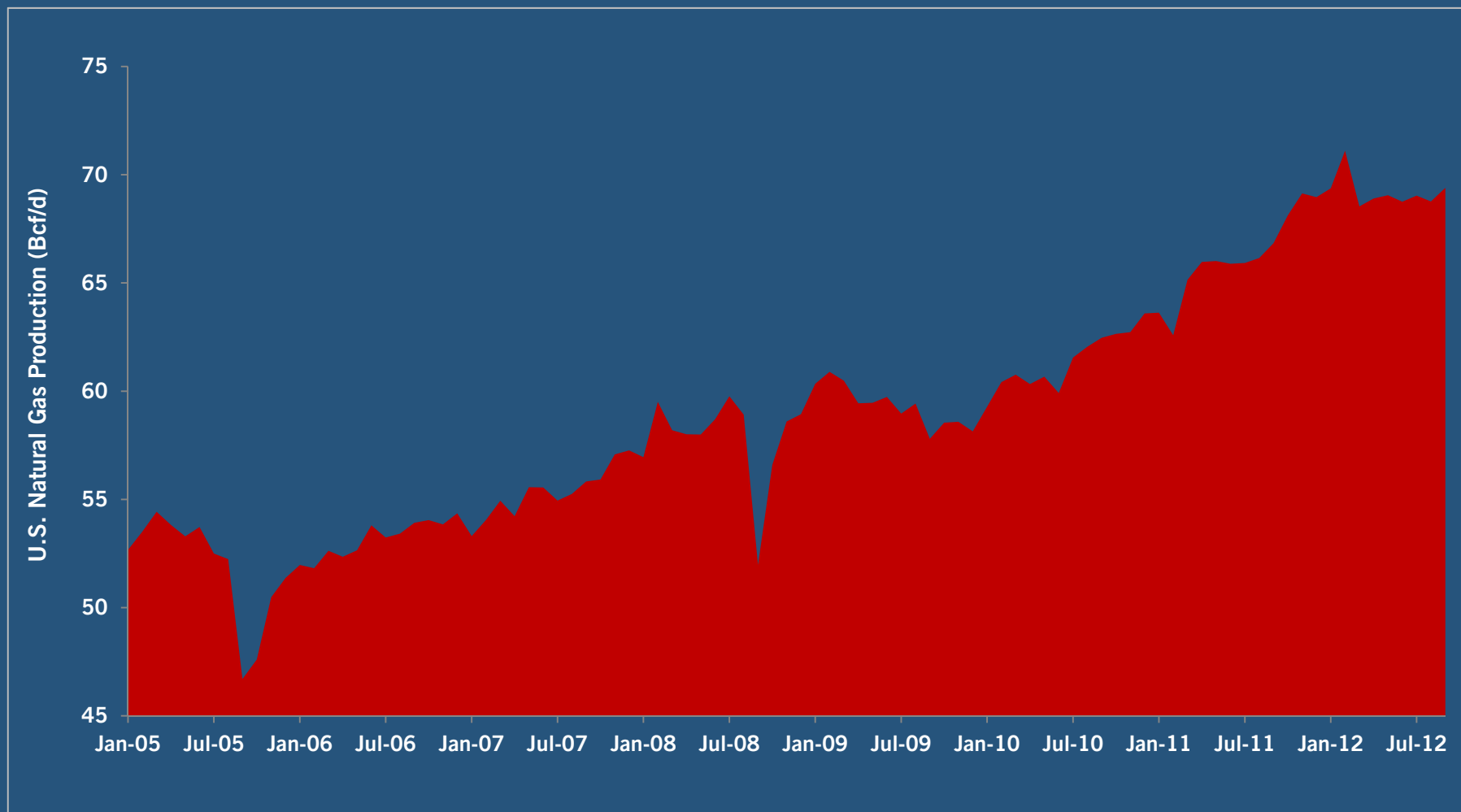
Increase in U.S. liquids production is reducing imports

Historical U.S. Oil Production



Source: EIA.

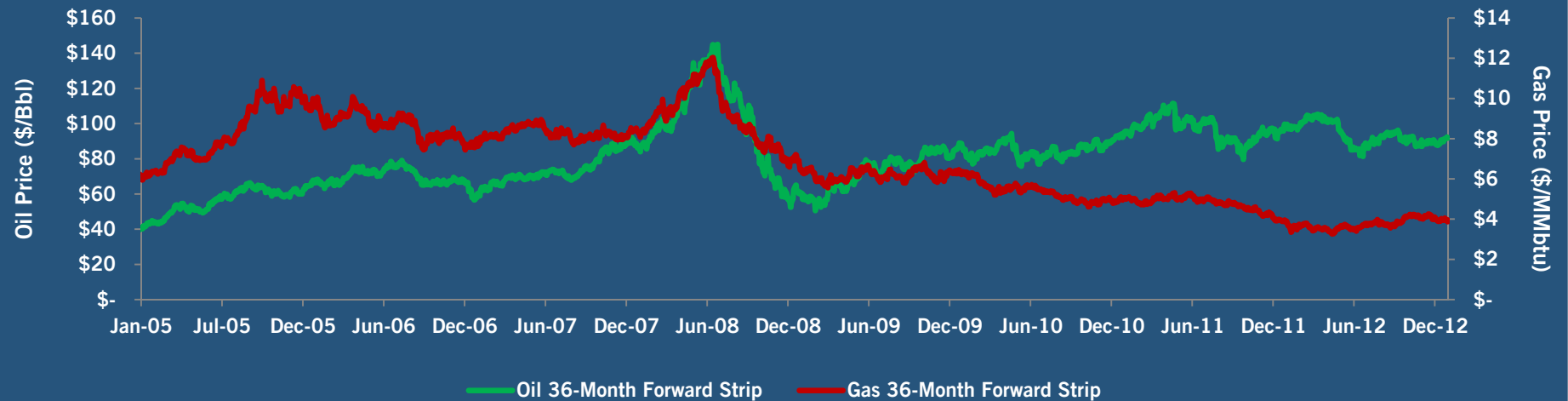
Historical U.S. Gas Production



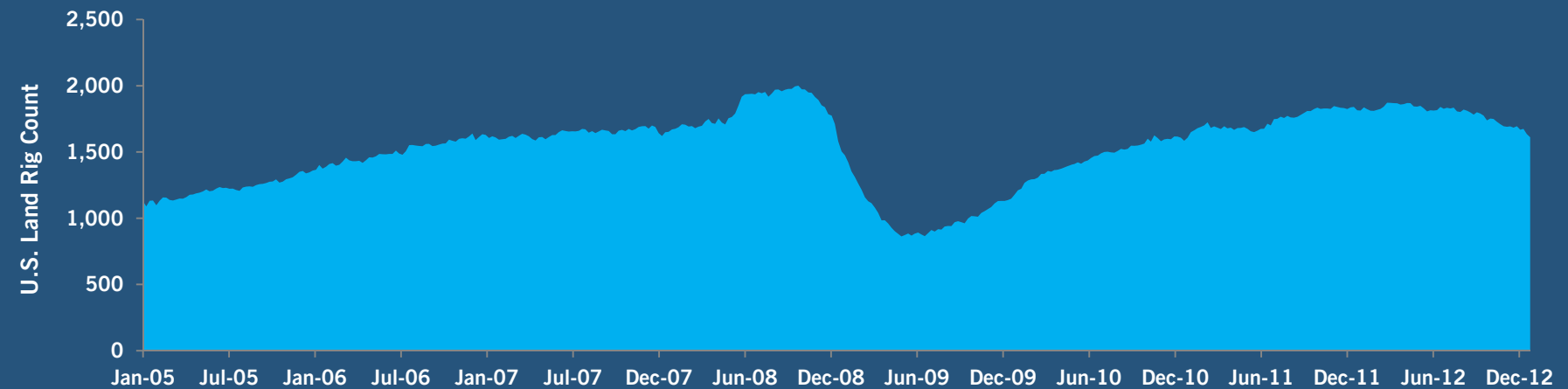
Source: EIA.

Rig Count Rebuilt and Peaking

Historical 36-Month Forward Strip for Oil & Gas ⁽¹⁾



U.S. Total Rig Count ⁽²⁾



(1) Bloomberg Financial 1/4/2013.

(2) LandRig Newsletter, Smith Rig Counts, Jefferies & Company estimates.

U.S. Shales and Resource Plays Can Lead a Resurgent U.S. Economy ⁽¹⁾

- GDP gains in 2017 of \$167 - \$245 Billion (1.2% - 1.7% U.S. GDP)
- Total employment gains 835,000 - 1.6 Million jobs in 2017
- Increase employment 0.5% - 1.0%
- Up to \$85 Billion in new taxes
- \$12 Billion in royalty payments

(1) American Clean Skies Foundation October 2012 Report.

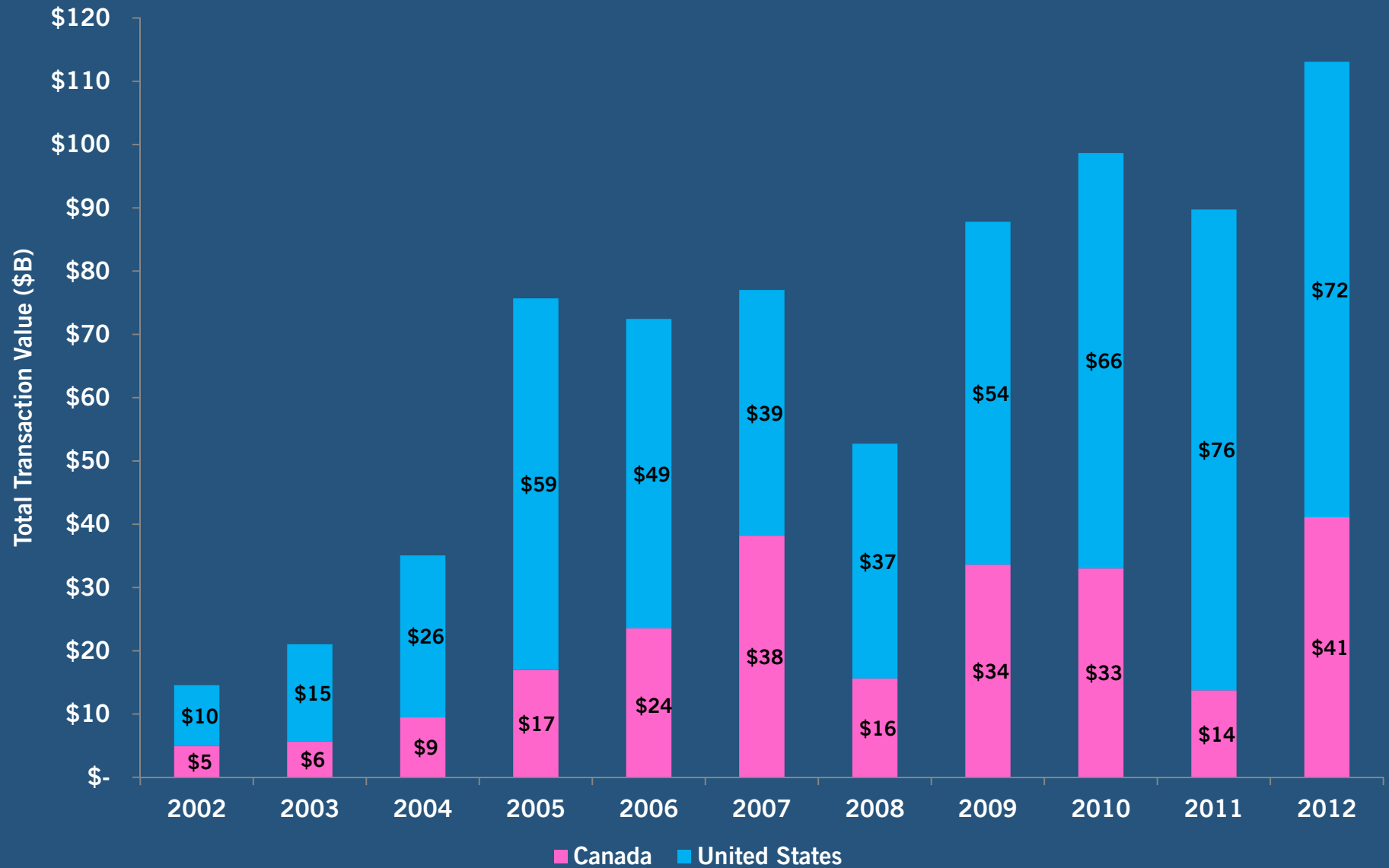
Deal Flow Summary Statistics

North American Onshore M&A Activity - \$100 Billion Per Year Business



Source: IHS Herold. North American onshore asset and corporate deals since 2002 with disclosed transaction values.

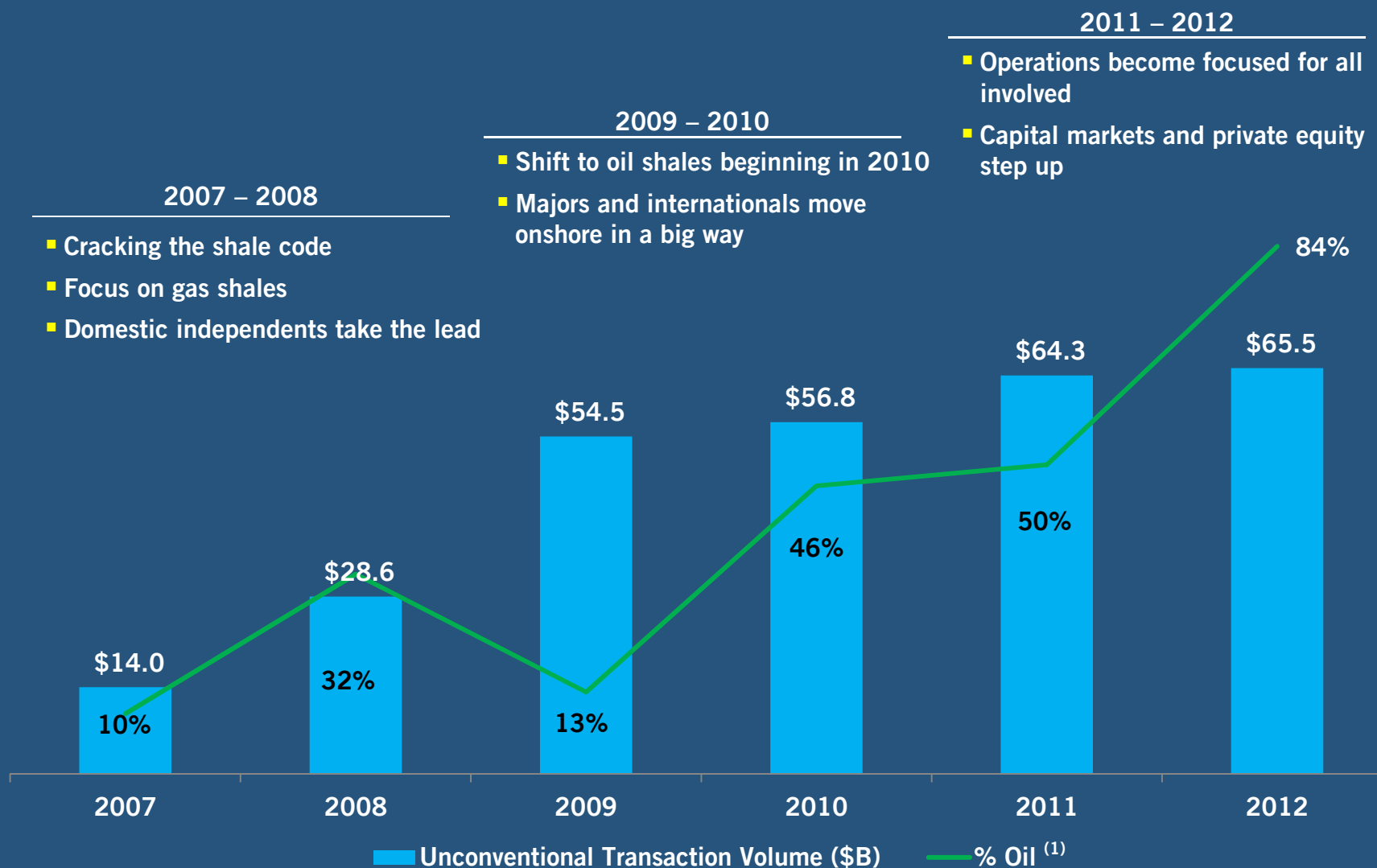
North American Onshore M&A Activity – U.S. vs. Canada



Source: IHS Herold. North American onshore asset and corporate deals since 2002 with disclosed transaction values.

Unconventional Activity Increasingly Liquids Rich

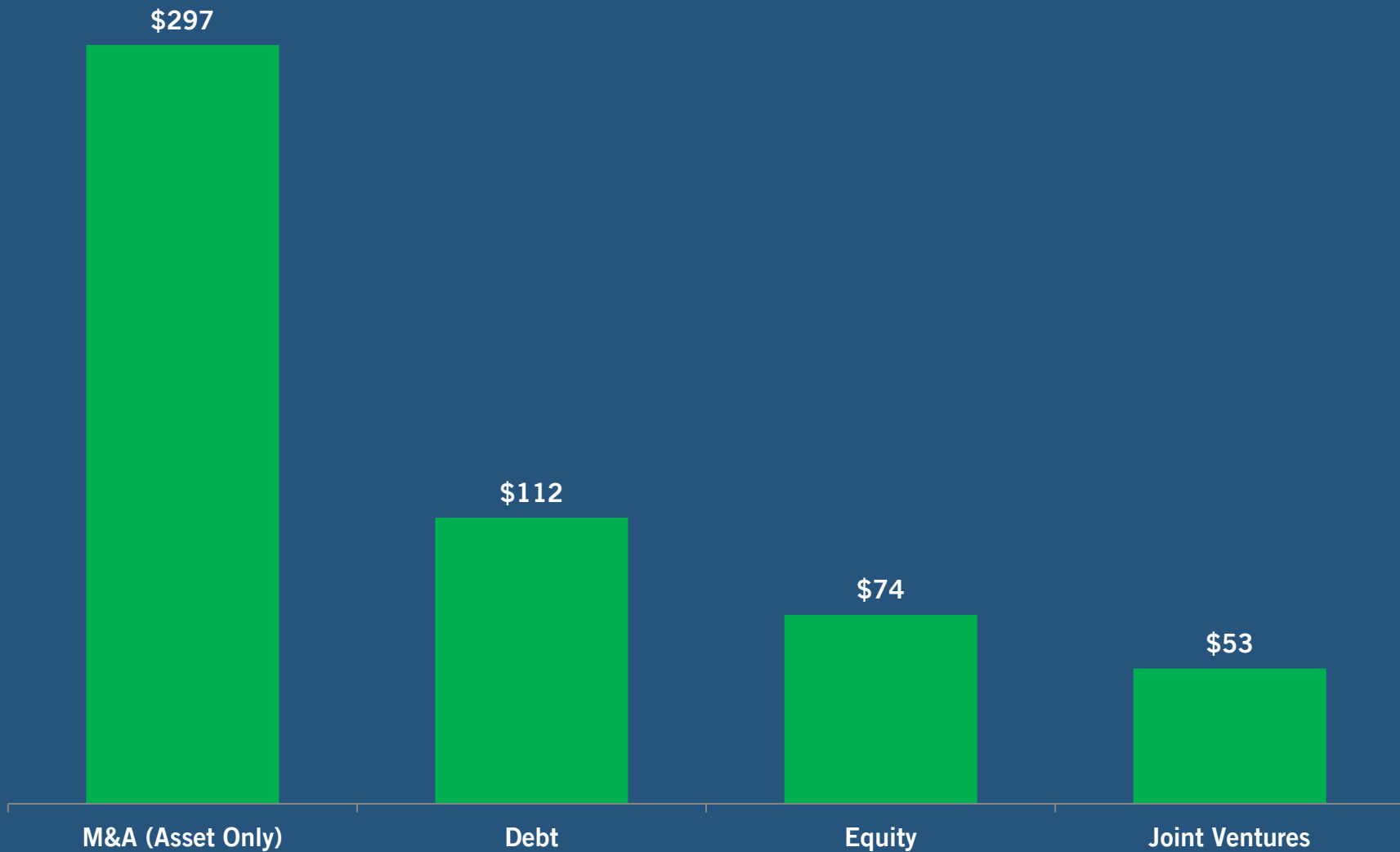
Unconventional Transaction Volume (\$B)



Source: IHS Herold.

(1) Proved reserves consisting of at least 50% oil.

Capital Sources for North American E&P Companies Since 2007 (\$B)



■ More than \$500 Billion raised

Future Shale Development Requires Massive Capital

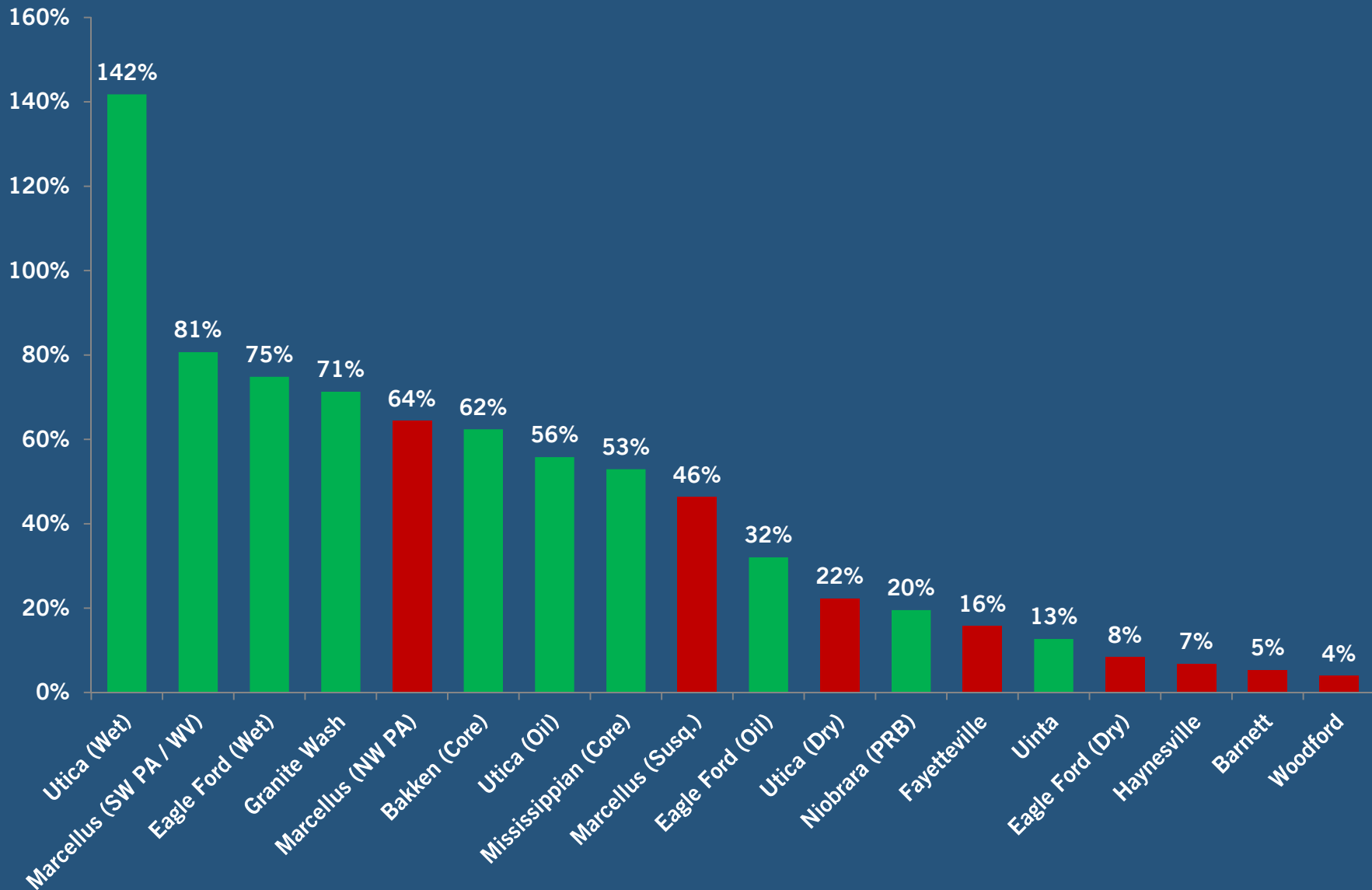
Play	Est. Total Area (Million Acres)	Wells to be Drilled	Implied Recov. Res. (Tcfe)	Future Drilling Capital (\$B)
Marcellus	12	150,000	750	675
Utica	5	52,500	344	281
Haynesville	3	37,500	247	300
Eagle Ford	3	37,500	206	206
Fayetteville - Core	2.5	31,250	84	102
Bossier	1	12,500	69	94
Woodford	1	12,500	39	69
Barnett - Core	1.2	21,818	55	57
Bakken	3	9,375	34	31
Total Drilling	31.7	364,943	1,828	1,815
Estimated Midstream	—	—	—	251
TOTAL				\$2.066 Trillion

- Average of \$70 Billion per year for 30 years

Relative Play Economics and Rig Count

Single Well Return Comparison Across North American Unconventional Plays

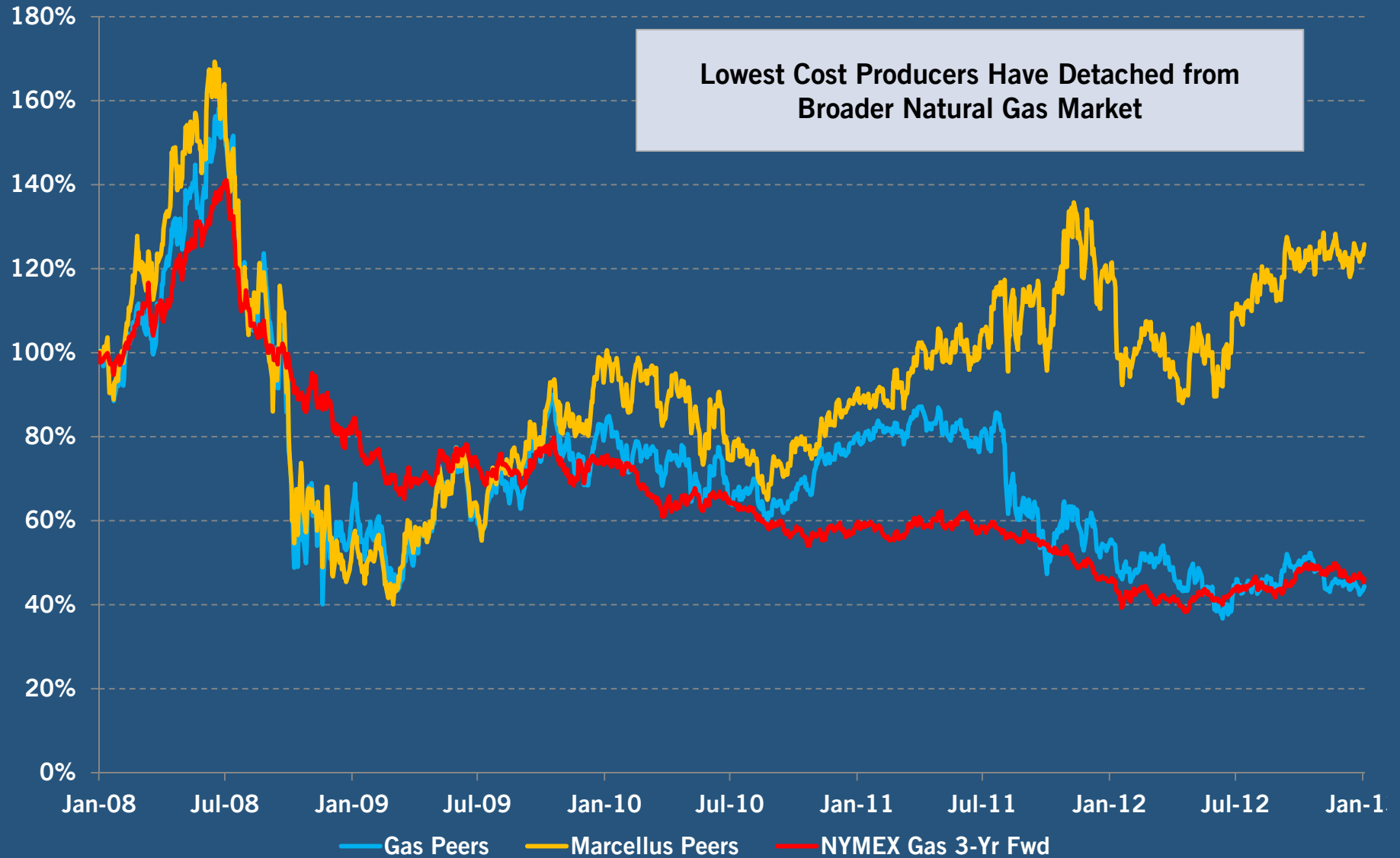
Assumes NYMEX Pricing as of 1/4/2013



Source: Jefferies estimates.

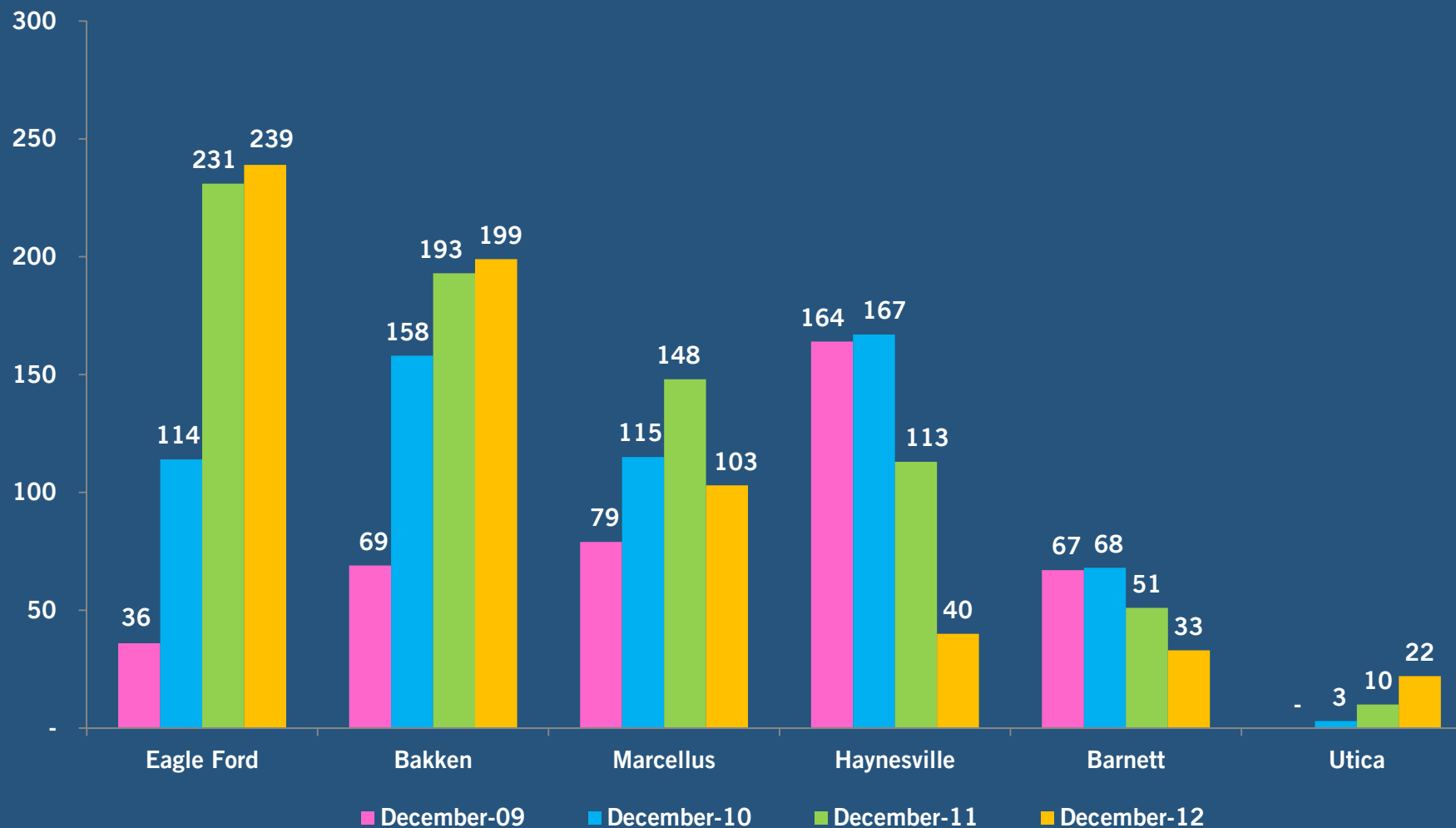
Note: NYMEX 5-year forward average of \$89.56/ Bbl and \$4.18 / MMBtu.

Historical Relative Trading Performance 2008-2012



Rig Counts Grow in Liquids Rich and From Gas Plays

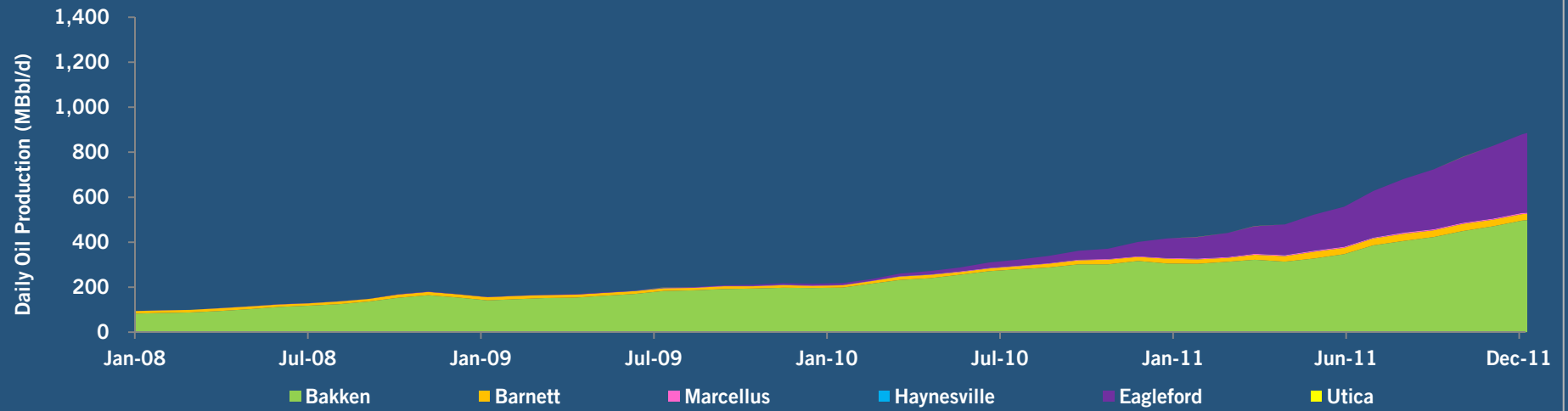
Rigs by Major Basin ⁽¹⁾



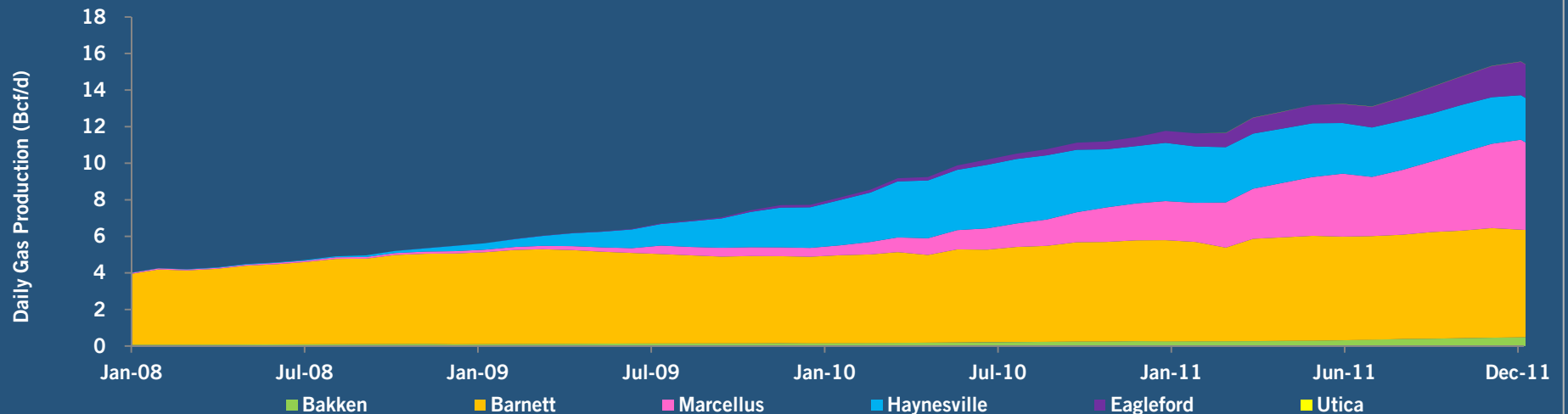
(1) Source: LandRig Newsletter, Smith Rig Counts, Jefferies & Company estimates.

Best Shale Plays Making Significant Contributions

U.S. Oil Production by Major Play



U.S. Gas Production by Major Play



Source: DrillingInfo.

Technology Is Driving Improving Well Results

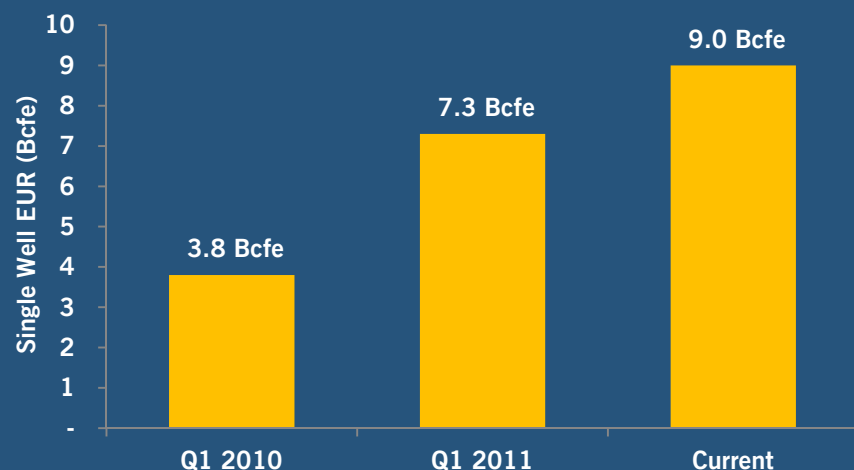
Key Points

- Operators are using advances in technology to improve recoveries across numerous plays
- EURs have trended upwards as companies move up the learning curve
- In addition, drilling costs have generally fallen based on a number of factors:
 - Increase in pad drilling as leases become HBP
 - Consolidated, integrated infrastructure
 - Economies of scale as development ramps up

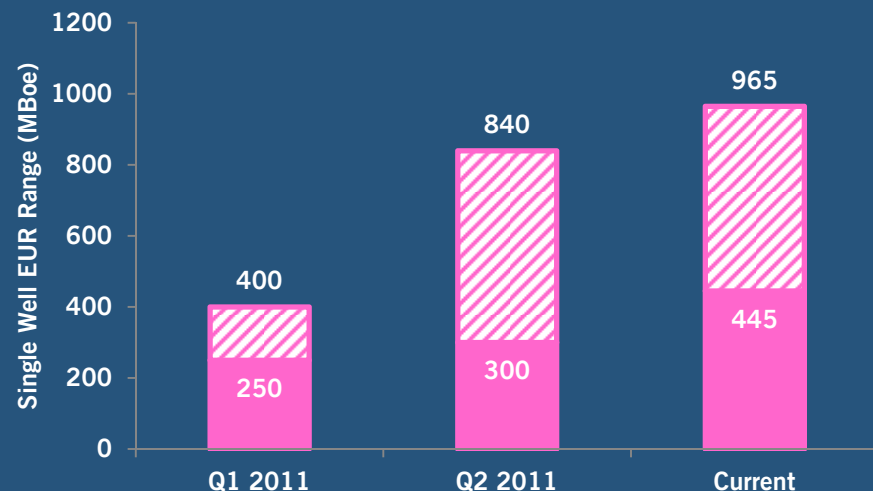
Range Resources – Marcellus EURs



EQT – Marcellus EURs



Marathon Oil – Eagle Ford EURs



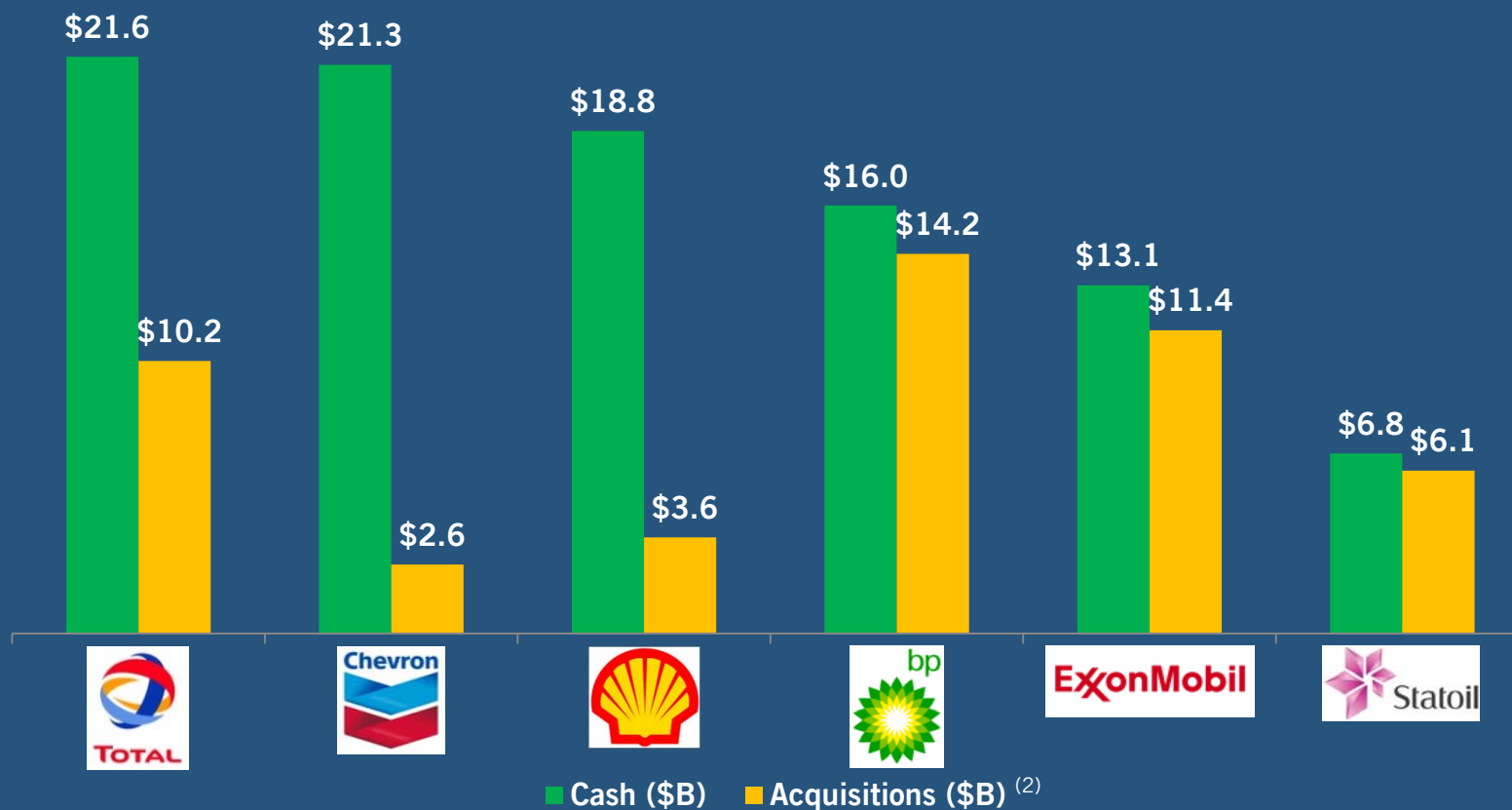
Source: Public data.

Majors, Internationals, Private Equity

Mega-Majors Have Lots of Cash and Lots of Patience

Majors / internationals have almost unlimited capital and a large universe of opportunities ⁽¹⁾ ⁽²⁾

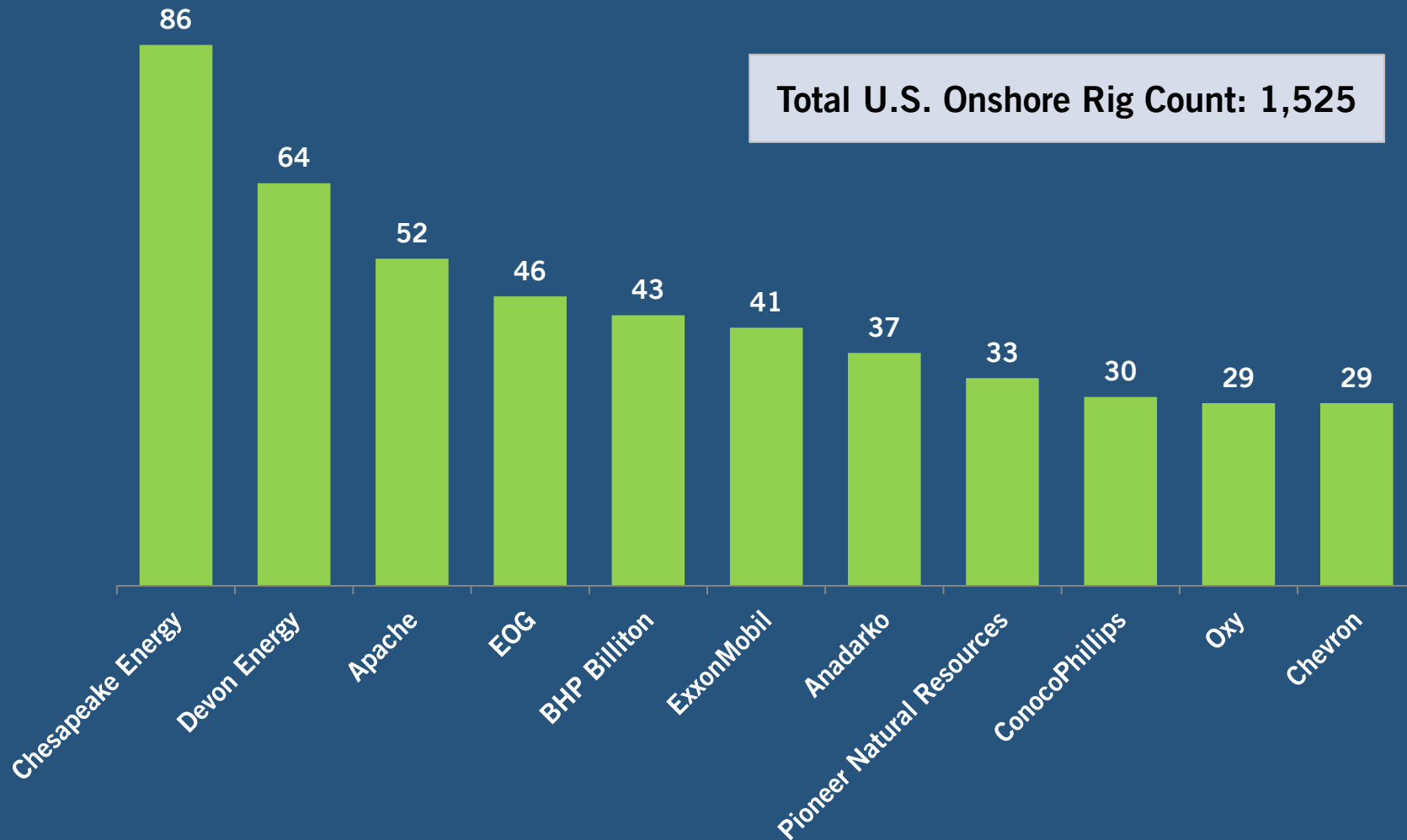
- Looking at a broad / deep range of deals
- Average debt to market capitalization of 15%



(1) Per Capital IQ.

(2) Per IHS Herold. Includes all global acquisitions in the last 24 months.

Relative Activity of Operators

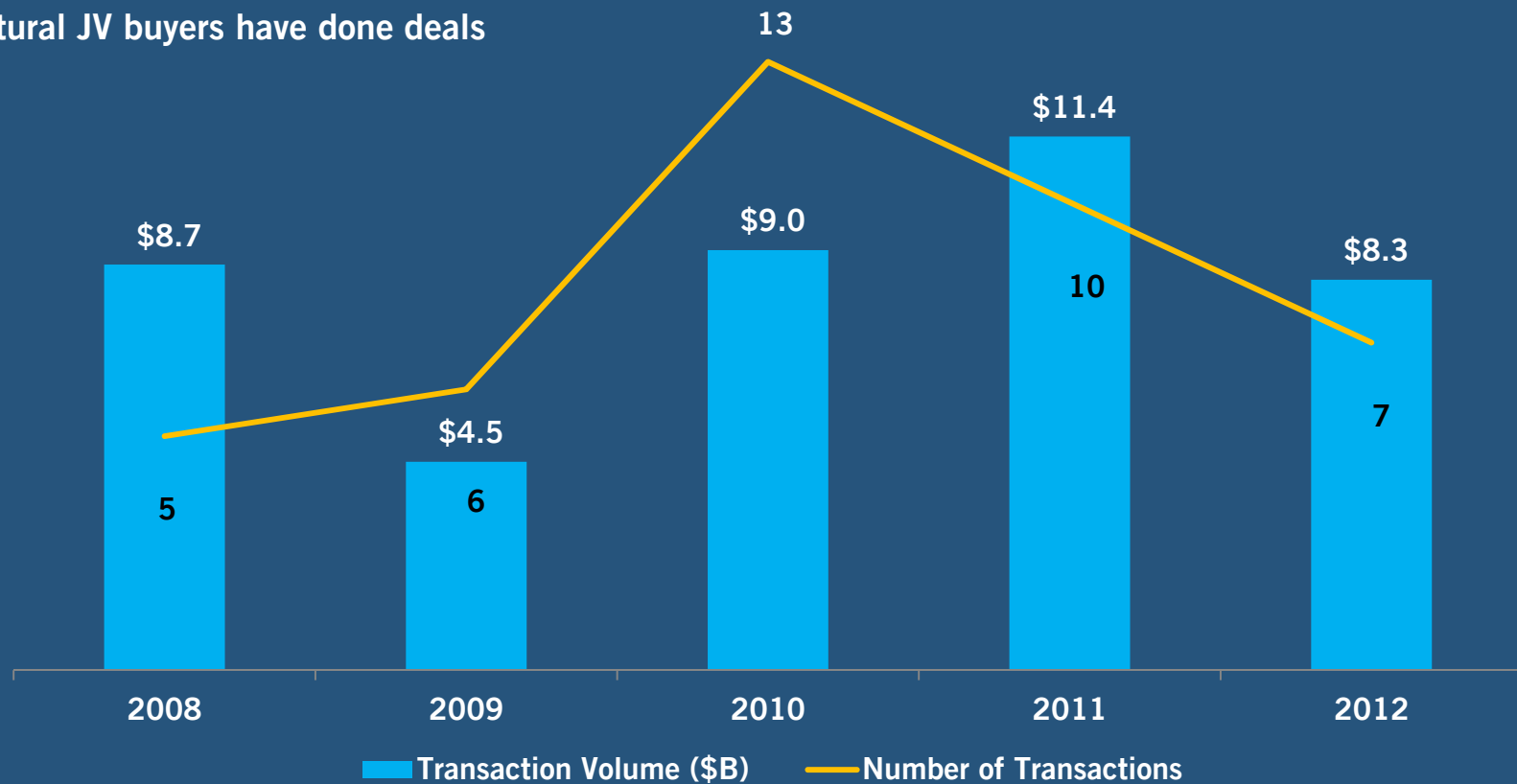


Source: Operator rig counts per *The Land Rig Newsletter Biweekly Report*. U.S. onshore rig count per Baker Hughes.

International Appetite Waning Slightly

International buyers are slowing down ⁽¹⁾

— Natural JV buyers have done deals






2008 – 2011: \$33.5 B

Year-to-Date: \$8.3 B

(1) Per IHS Herold.

Financial Investors Assuming a Bigger Role

Category	Examples	Comments
<i>Traditional Buyout</i>	 	<ul style="list-style-type: none"> ▪ Fits conventional investment model ▪ Ability to execute very large transactions, particularly via syndication ▪ More mature assets increase ability to utilize leverage ▪ Bet on the management team
<i>Minority Equity Investment</i>		<ul style="list-style-type: none"> ▪ Middle ground between active and passive investment ▪ Capital typically used to delineate an asset ▪ More limited governance but requires visibility to liquidity
<i>Preferred / Convertible Security</i>	 	<ul style="list-style-type: none"> ▪ More debt-like returns ▪ Mature assets more suitable, but early stage assets viable ▪ Limited governance (negative controls) ▪ Equity upside through conversion, NPI, ORRI, etc.

- These are in addition to traditional energy focused PE such as Encap, NGP, Quantum, Kayne Anderson, etc.

Closing Thoughts

Key Market Insights

- Buyers are worn out from a very busy 2012
 - A lot on the market
 - To a great extent it is a buyer's market
- Sellers have had an eventful year
 - Capitulation on gas price
 - Price expectations compared to observed world records
 - A very crowded market ruled by quality
- If you buy it you must also effectively run it
 - Key challenge is execution of large shale drilling programs
 - Bolt-ons must have synergies that can be realized
 - Corporate deals have the added challenge of employee attrition

Key Market Insights

- **Great deal of upside in improved performance in the major shale/resource development**
 - EUR per well increase
 - Drilling and completion cost per well decrease
 - Decrease in rig days per well
 - Decrease in time to hook up wells as midstream infrastructure grows
 - Operating economies of scale
- **Midstream market will continue to be very active**
 - Most plays are in very early stages of development
 - MLP structure is attractive to investors
 - Large MLPs by nature need to continue to grow
- **Potential break through to cash flow positive for resource developments**
 - Early shale developments are decidedly cash flow negative
 - This could provide upward equity re-evaluation for independents

Key Market Insights

- While many internationals have completed deals there are still other new entrants
 - Continued high appetite for energy deals of all types from most Asian countries
 - Ability to export U.S. LNG is part of Asian decision making
- Future natural gas price
 - How far, how fast can it rise?
 - Will decreased gas rig counts lead to decreased supply?
 - Will new sources of demand significantly impact gas price
 - Coal switching
 - Industrial uses
 - CNG/LNG for transportation
 - LNG export

Key Market Insights

- Corporate M&A oriented around “natural deals”
 - CNOOC and Nexen
 - Petronas and Progress
- E&P industry running at its peak
 - People, \$, management resources at peak
- Finally, deal flow is expected to maintain its \$75 - \$100 Billion per year pace
 - Still many companies too under capitalized to develop shale holdings
 - Continued consolidation of the major plays
 - Big potential for midstream as well as upstream deals
 - Continued buyer demand to be matched with undercapitalized seller supply