

# Independent Explorers Create High Value Opening up New Countries\*

Julie Wilson<sup>1</sup>

Search and Discovery Article #70144 (2013)\*\*

Posted July 22, 2013

\*Adapted from oral presentation at AAPG Annual Convention and Exhibition, Pittsburgh, Pennsylvania, May 19-22, 2013

\*\*AAPG©2013 Serial rights given by author. For all other rights contact author directly.

<sup>1</sup>Senior Analyst, Exploration Research, Wood Mackenzie, Houston, Texas ([julie.wilson@woodmac.com](mailto:julie.wilson@woodmac.com))

## Abstract

Nine countries have seen country-opening finds since early 2006 - Uganda, Ghana, Sierra Leone, The Falklands, French Guiana, Sri Lanka, Cyprus, Liberia and Kenya. Deepwater plays have provided the first material hydrocarbon discoveries in seven of these nine frontier countries.

All nine of these important wildcats were operated by Independents, led by Tullow, Anadarko, and Noble Energy. The Majors have been fast-followers, farming-in to French Guiana ahead of the discovery well (Shell, Total) and moving quickly to establish positions in Uganda, Ghana, and Liberia. Further moves to enter these emerging hydrocarbon plays are likely.

Total volumes discovered in these nine frontier countries already exceed 4.5 billion barrels of oil and 13 trillion cubic feet of gas. These represent little more than 5% of global new field volumes since 2006, but exploration in each country is still at an early stage. We estimate that the initial finds have de-risked a further 10 billion barrels of yet-to-find oil potential, plus substantial gas upside.

Frontier country exploration has out-performed since 2006, achieving full-cycle returns of 17% versus an industry average of 14%. Full-cycle value creation was more than US\$20 billion at our long term Brent price assumption of US\$80/bbl. This recent success contrasts with the decade prior to 2006 when explorers completed wildcat wells in 22 frontier countries, but made commercial discoveries in just three - Sudan, Israel, and Mauritania.

Two factors have been key to opening frontier countries. Firstly, explorers had to be comfortable drilling wells with low chances of success, reflecting the product of both play risk and prospect risk. Secondly, the remoteness from proven play fairways means that the application of regional-scale geoscience has been a core competence.

Since 2002, the wildcat success rate in frontier countries is just 10% - less than one-third of the industry average. The increase in the number of frontier country discoveries since 2006 reflects an improvement in success rate as well as slightly higher activity in these plays.

We expect the trend of around 15 frontier country wildcats per year to continue, and overall, these wells should be rewarded with one or two new country play-openers annually, if one-in-ten success rates are maintained.

# Independent explorers create high value opening up new countries



**Julie Wilson**

*Senior Analyst, Exploration Research*

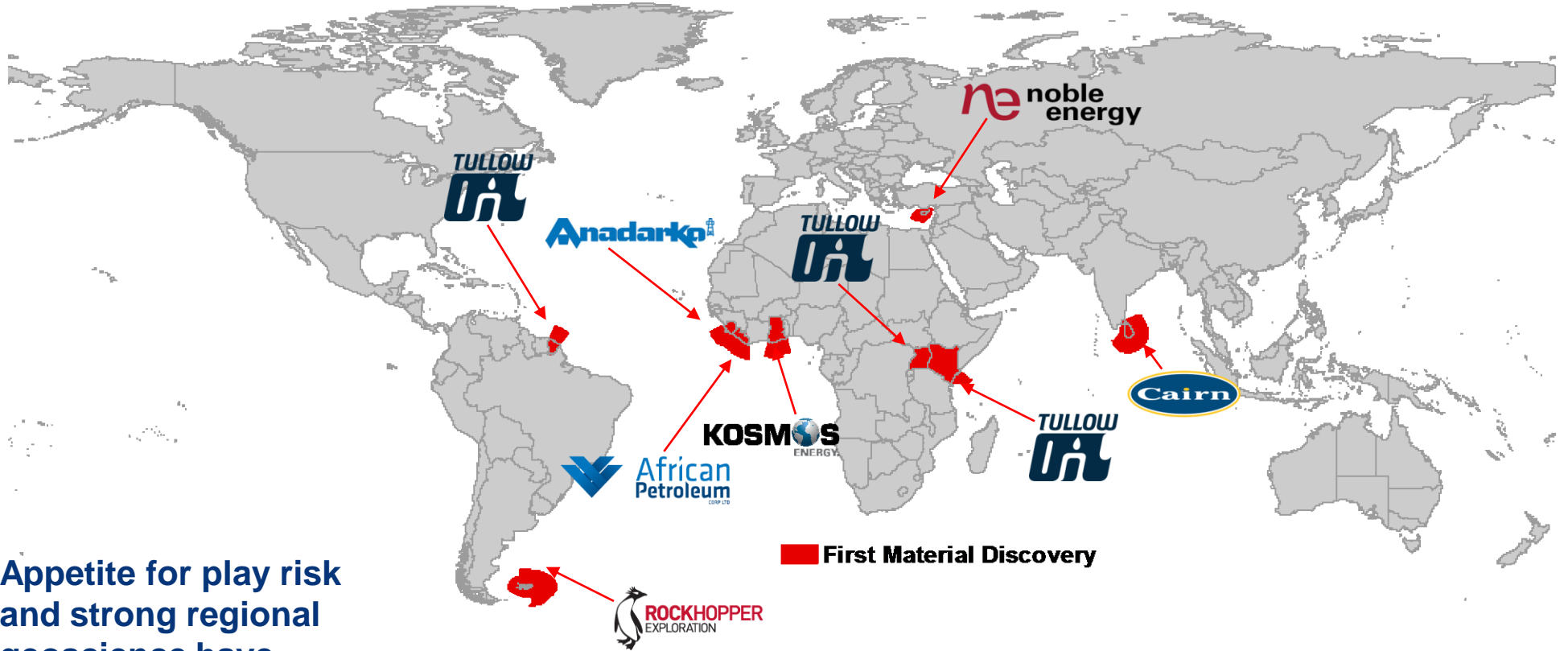
AAPG Pittsburgh, May 20th, 2013

## Wood Mackenzie Disclaimer

- › This presentation has been prepared by Wood Mackenzie Limited for delivery at AAPG Pittsburgh on May 20th, 2013. It has not been prepared for the benefit of any particular attendee and may not be relied upon by any attendee or other third party. If, notwithstanding the foregoing, this presentation is relied upon by any person, Wood Mackenzie Limited does not accept, and disclaims, all liability for loss and damage suffered as a result.
- › The information contained in these slides may be retained by attendees. However, these slides and the contents of this presentation may not be disclosed to any other person or published by any means without Wood Mackenzie Limited's prior written permission.

# Frontier conventional exploration continues to be led by the Independents

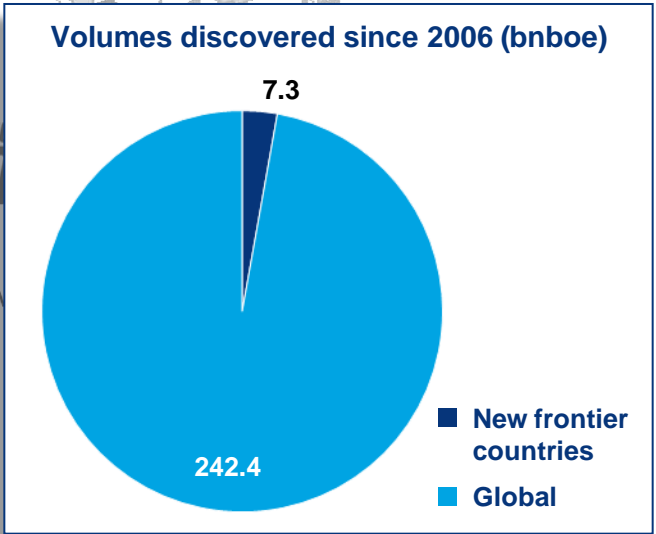
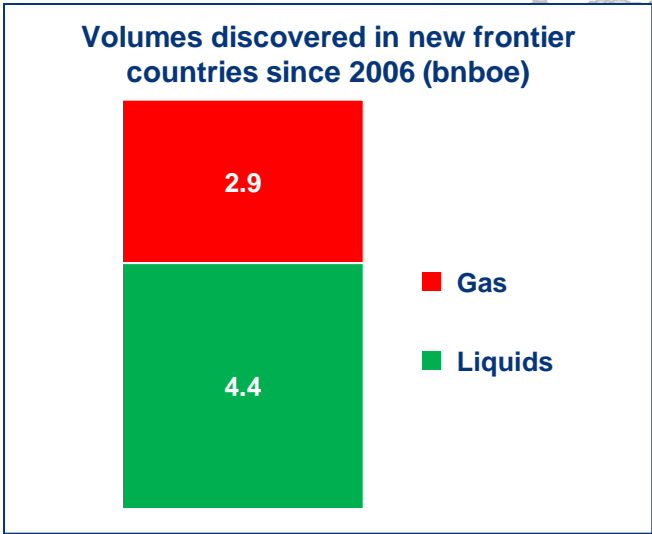
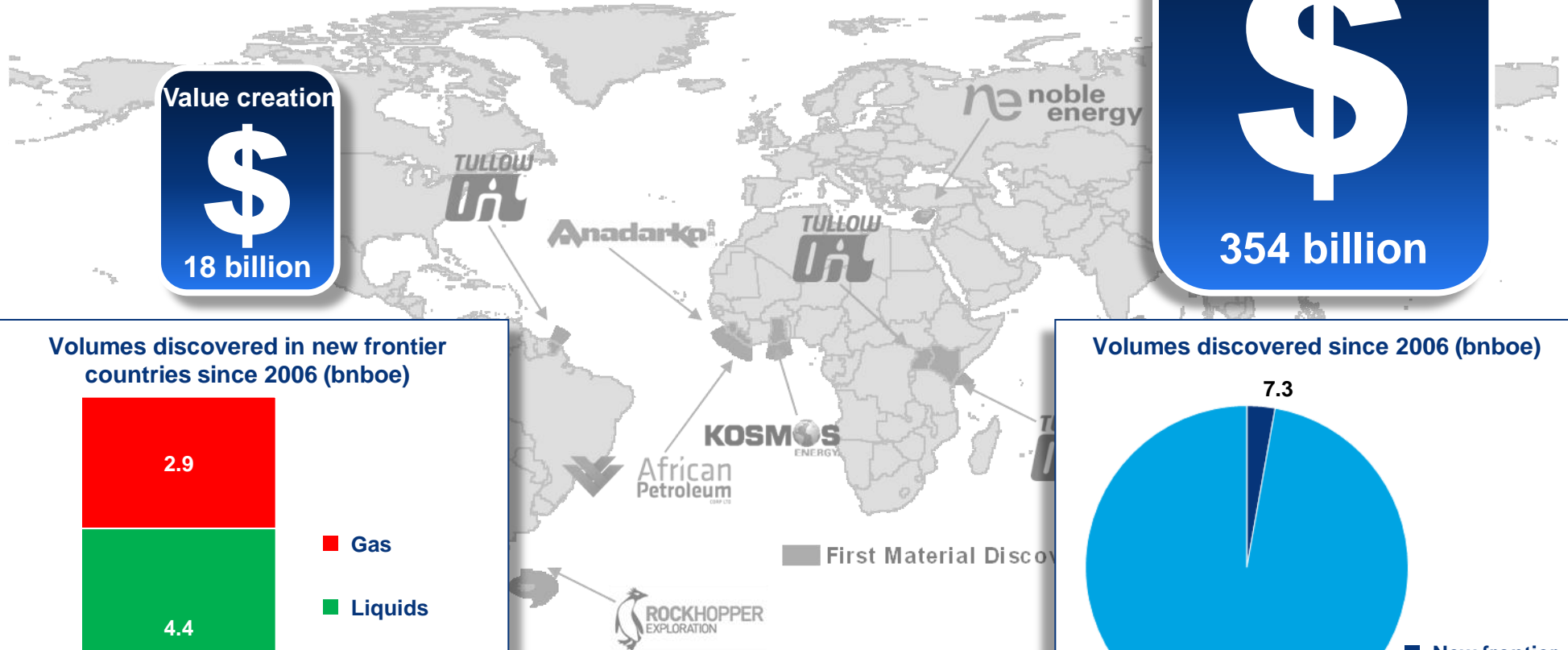
## Operated all nine “new country-openers” since 2006



Appetite for play risk and strong regional geoscience have been the keys

Source: Wood Mackenzie Exploration Service

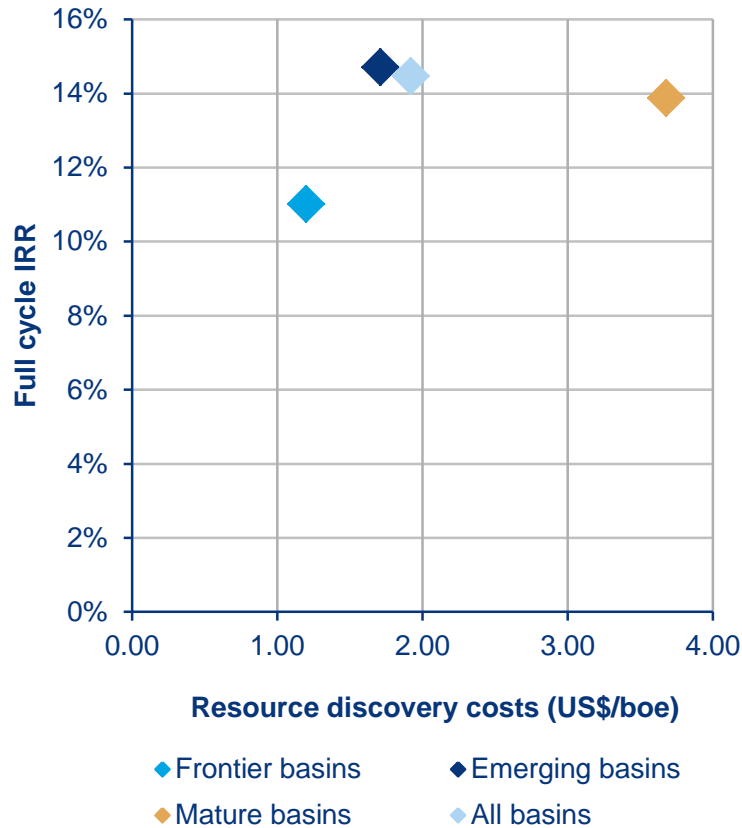
# These new frontiers have yielded large volumes and value... but still only a small fraction of global totals



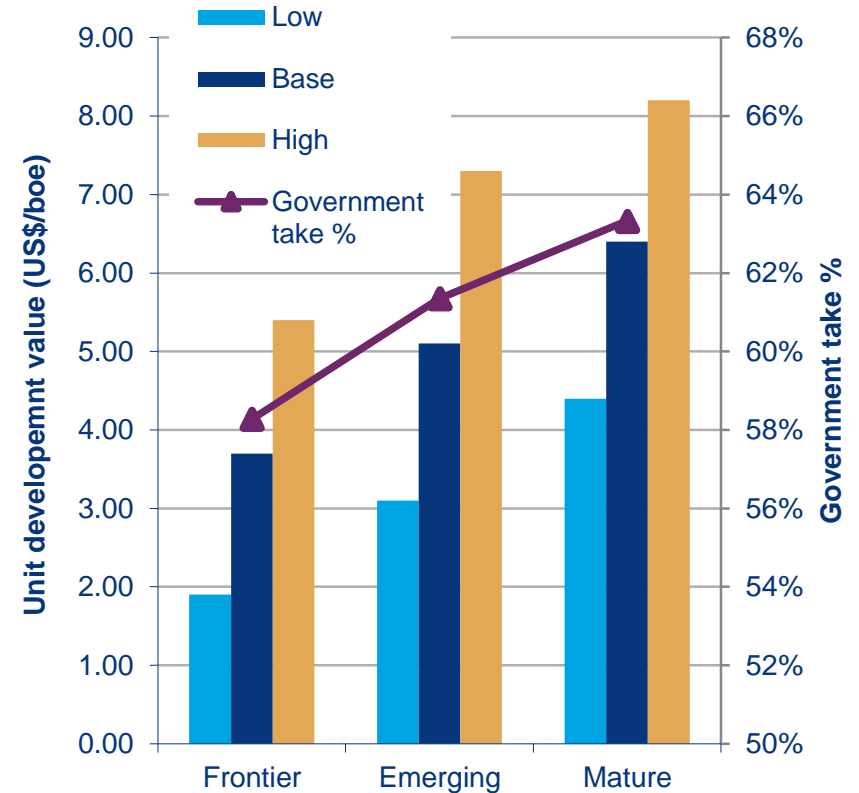
Source: Wood Mackenzie Exploration Service

# Frontier basins benefit from low discovery costs... and attractive fiscal terms – though other factors make developments challenging

## Discovery costs and IRR



## Development value and government take

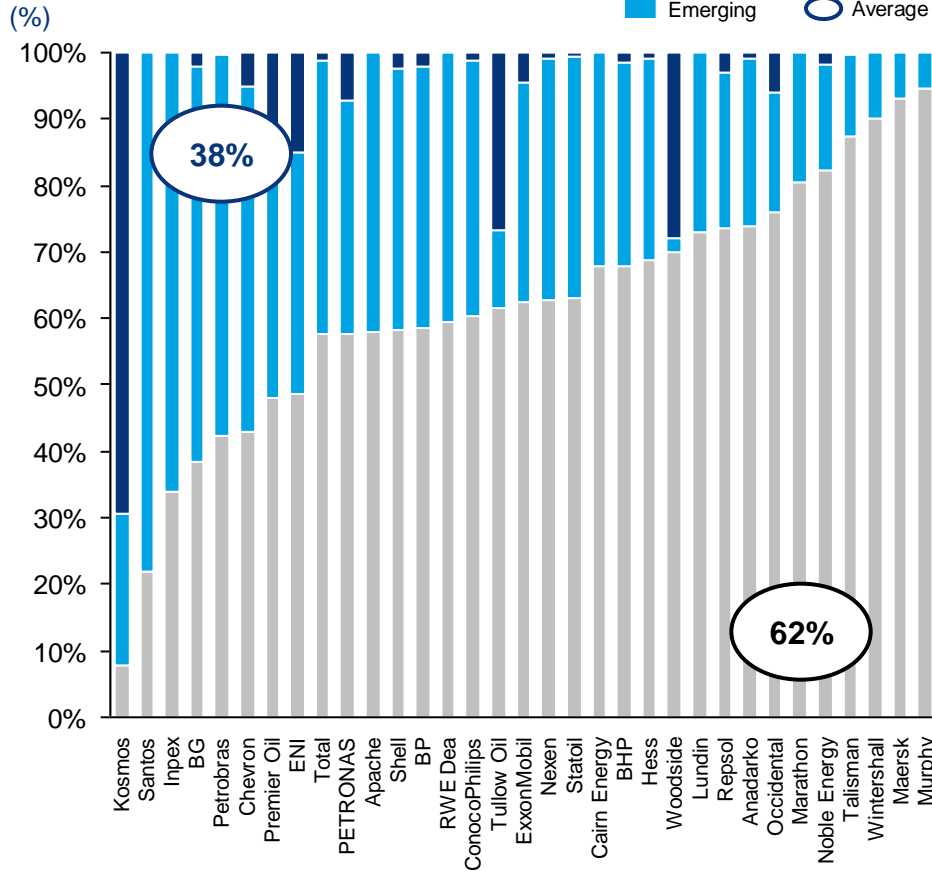


Source: Wood Mackenzie Exploration Service

# Top explorers are shifting spend towards frontier and emerging basins

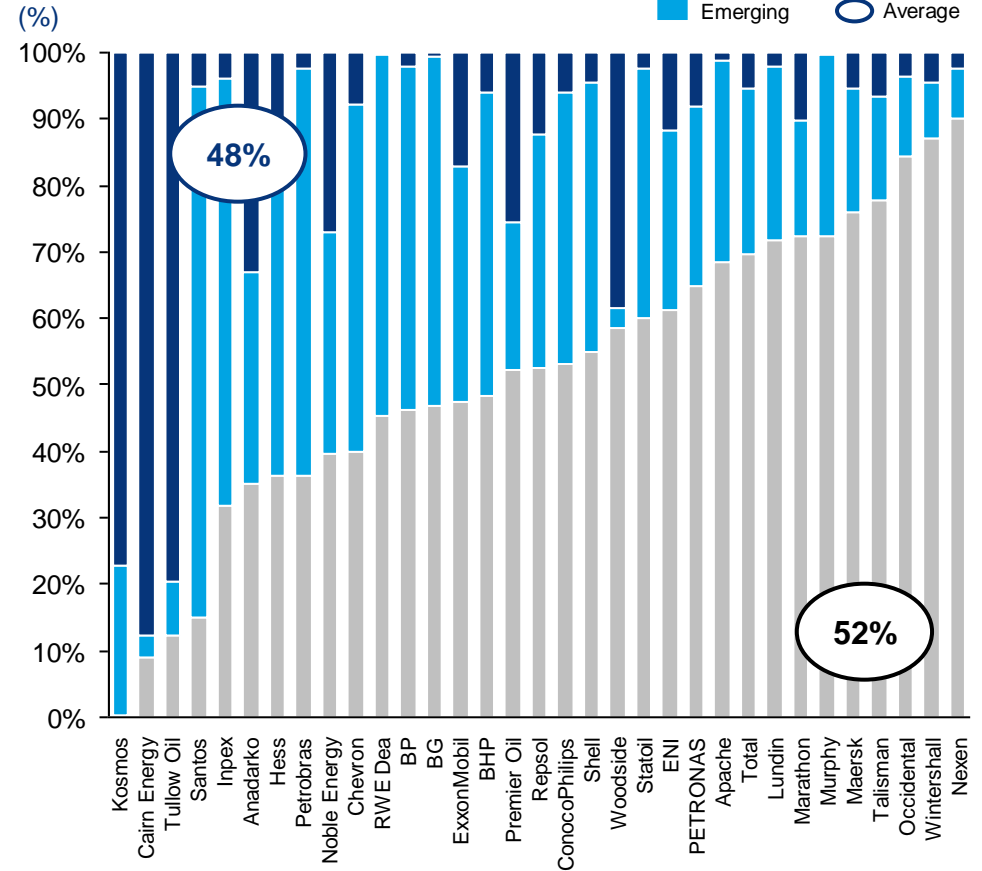
## Investment by basin maturity (2002-2006)

### Proportion of conventional E&A spend



## Investment by basin maturity (2007-2011)

### Proportion of conventional E&A spend

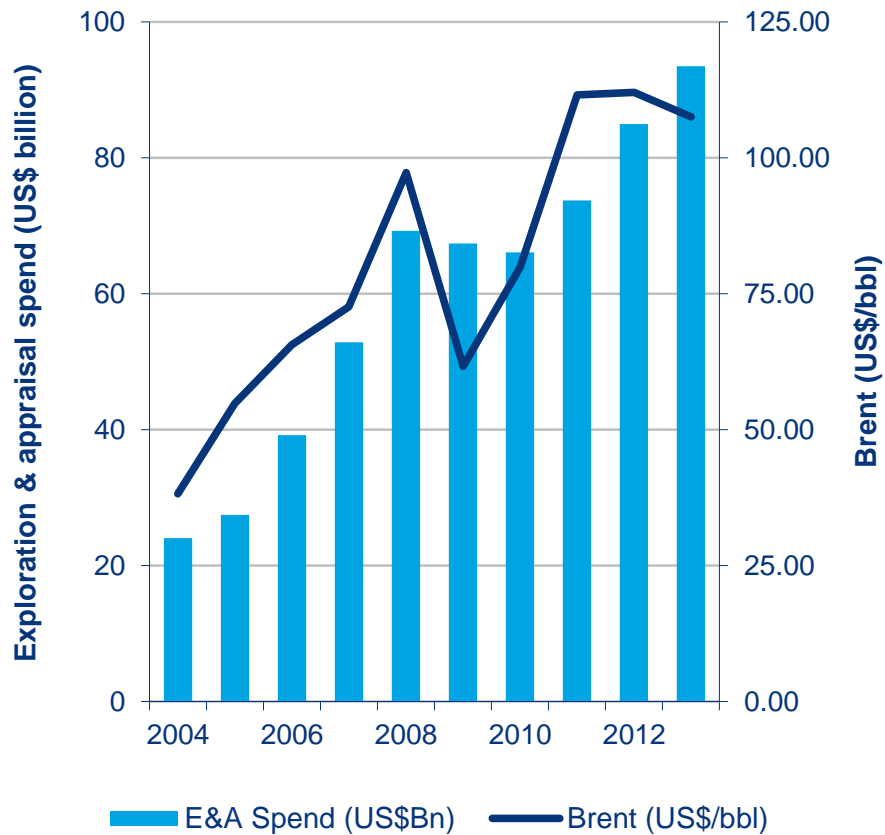


Source: Wood Mackenzie Exploration Service Company Performance Report, October 2012

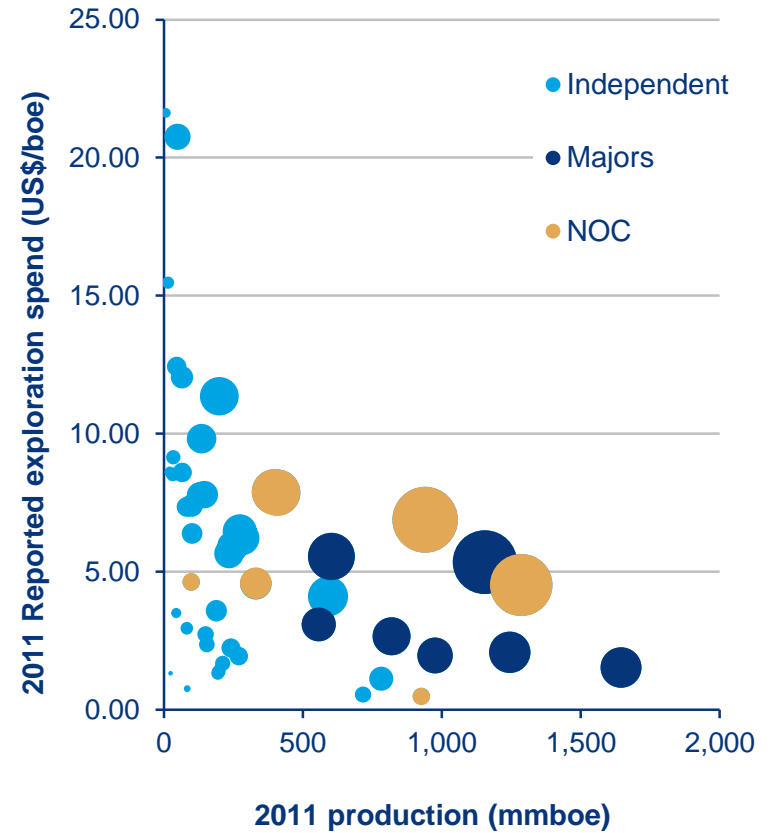


# Exploration investment is rising – with plenty of headroom to go further

## Conventional spend – exploration



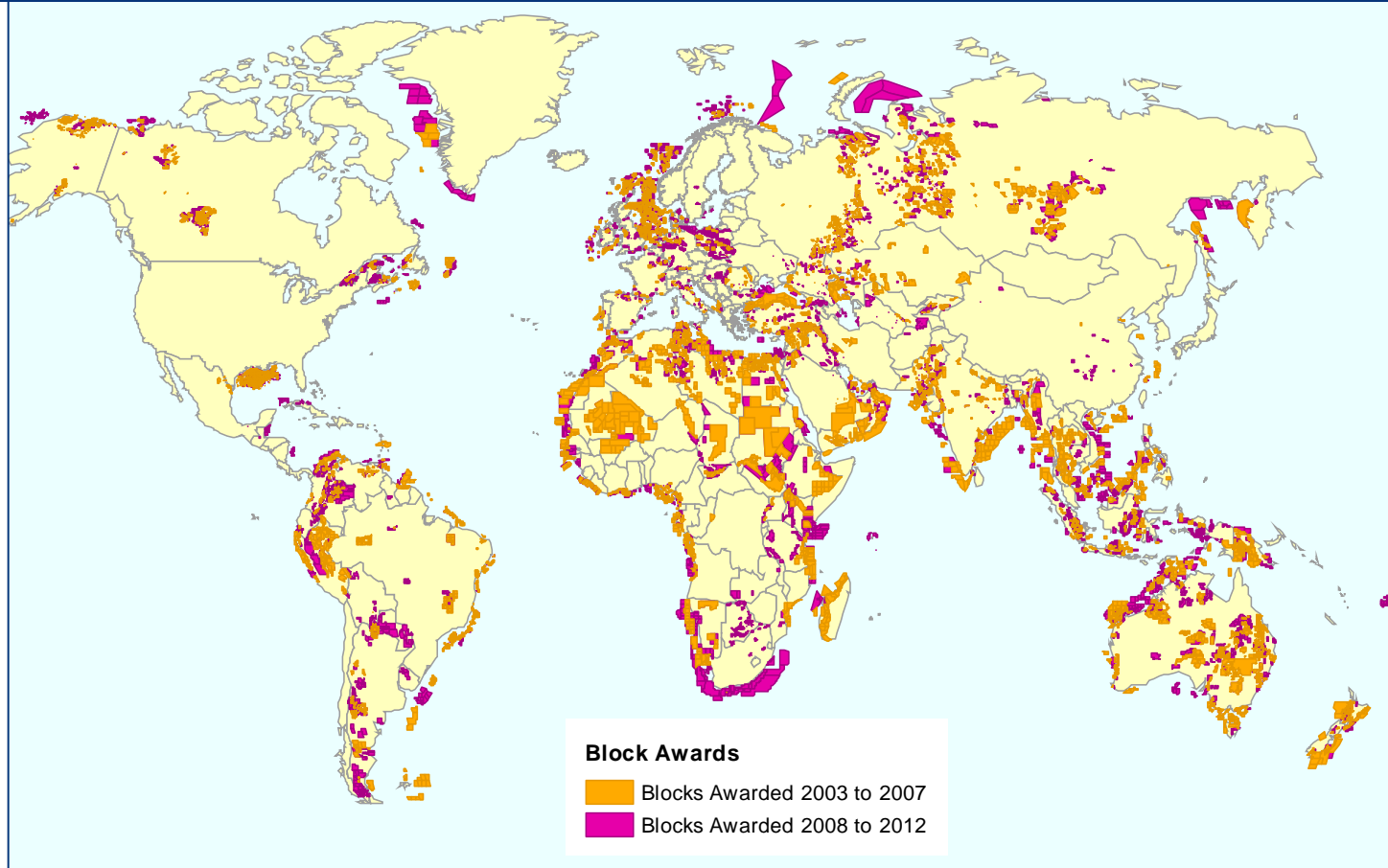
## Exploration spend intensity (re-investment rate)



Source: Wood Mackenzie Exploration Service and Corporate Benchmarking Tool. Bubble size represents reported exploration spend.

# Vast new areas have been licensed over the past few years

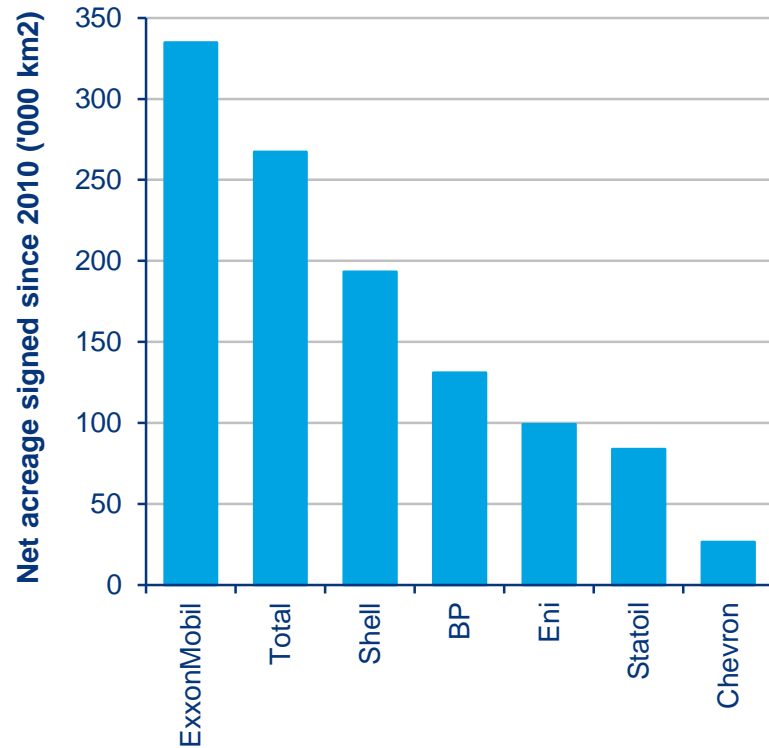
## Global blocks awarded 2003-2012



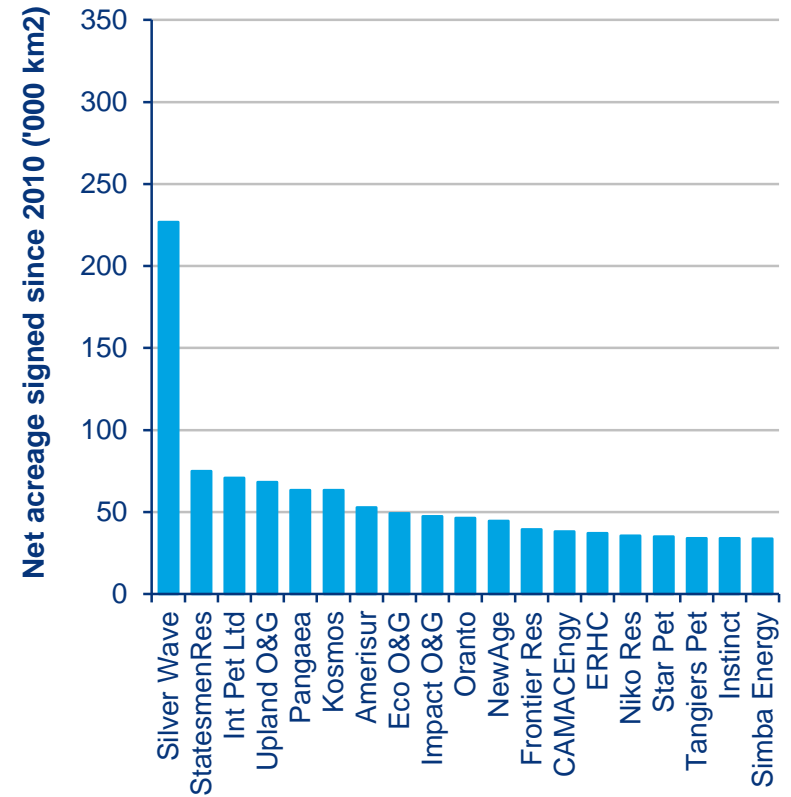
Source: Wood Mackenzie

# The Majors have been particularly aggressive in building up exploration positions and so have the minnows

Majors' net acreage capture since 2010



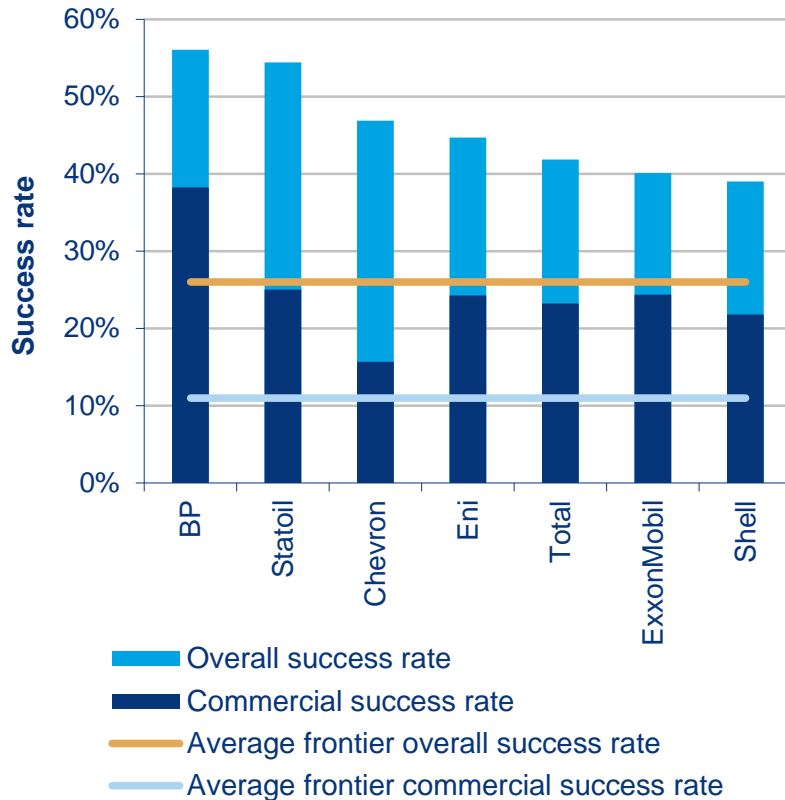
Leading Small Caps by acreage capture since 2010



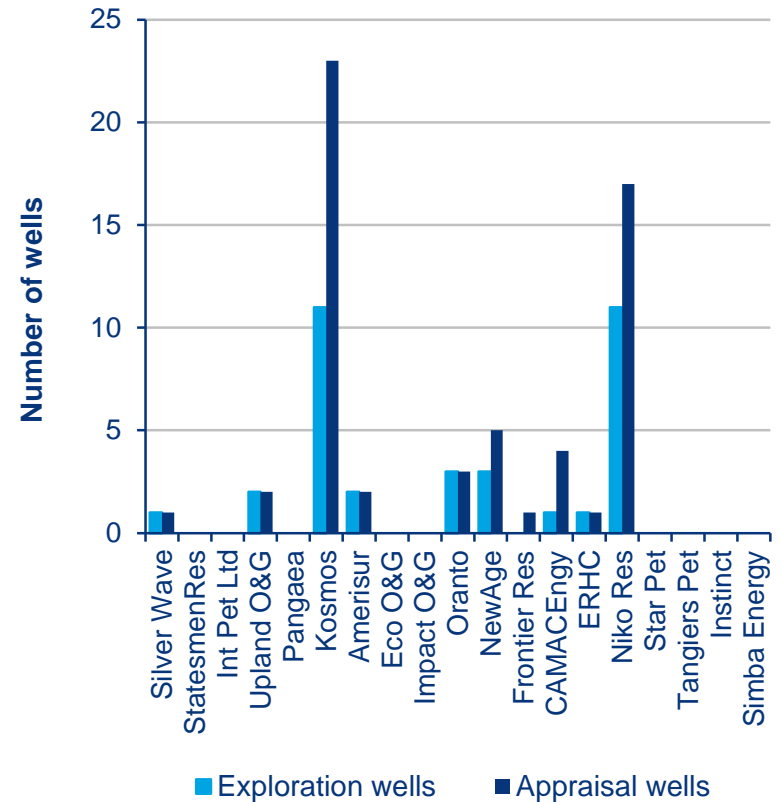
Source: Wood Mackenzie

# Majors will need to be comfortable with lower frontier success rates while small caps may struggle to drill, providing opportunities for M&A

## Majors' exploration well success rates 2002-2011



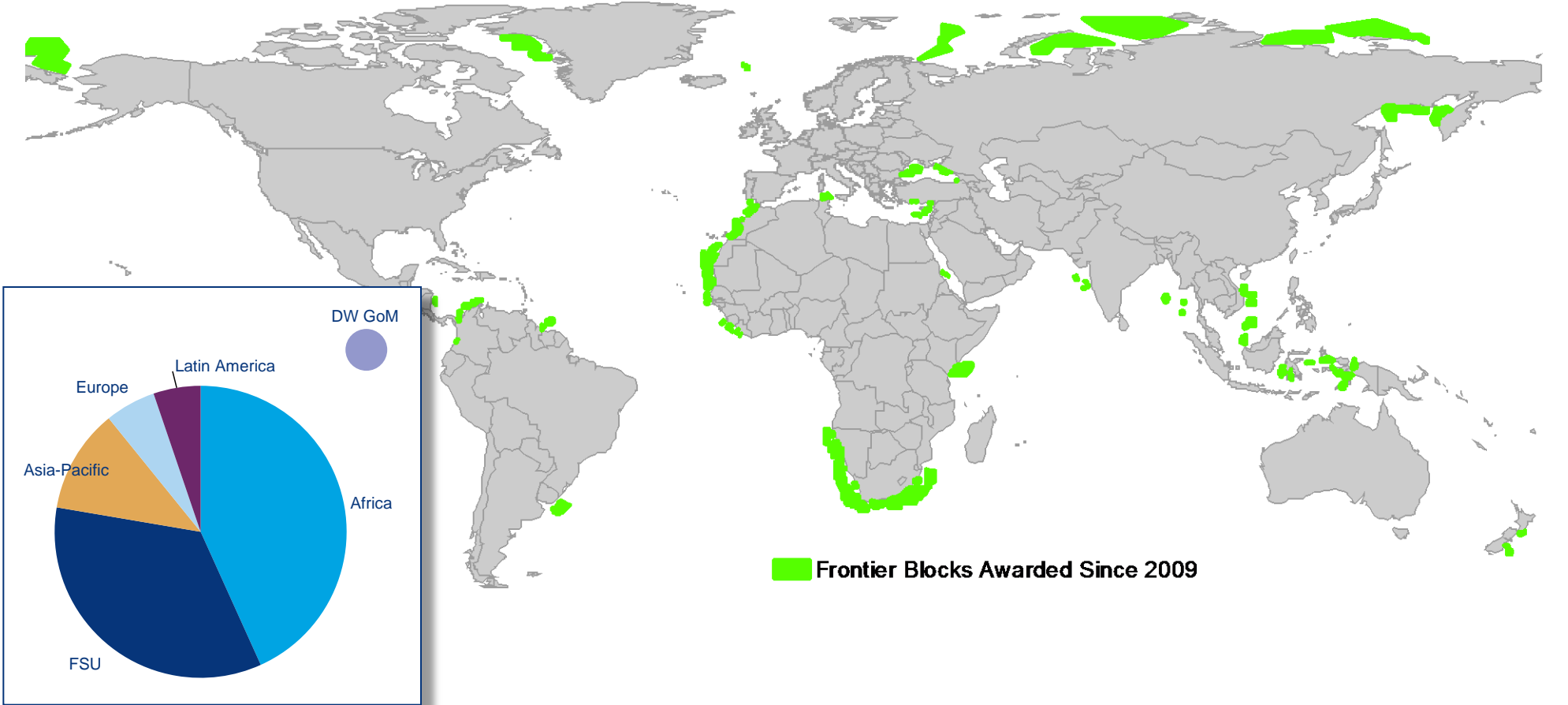
## Leading Small Caps by acreage: wells since 2010



Source: Wood Mackenzie Exploration Service, Pathfinder

# Huge swathes of frontier offshore acreage have been licensed, dominated by Africa and the Arctic

Offshore frontier acreage licensed since 2009 – compared to deepwater Gulf of Mexico acreage

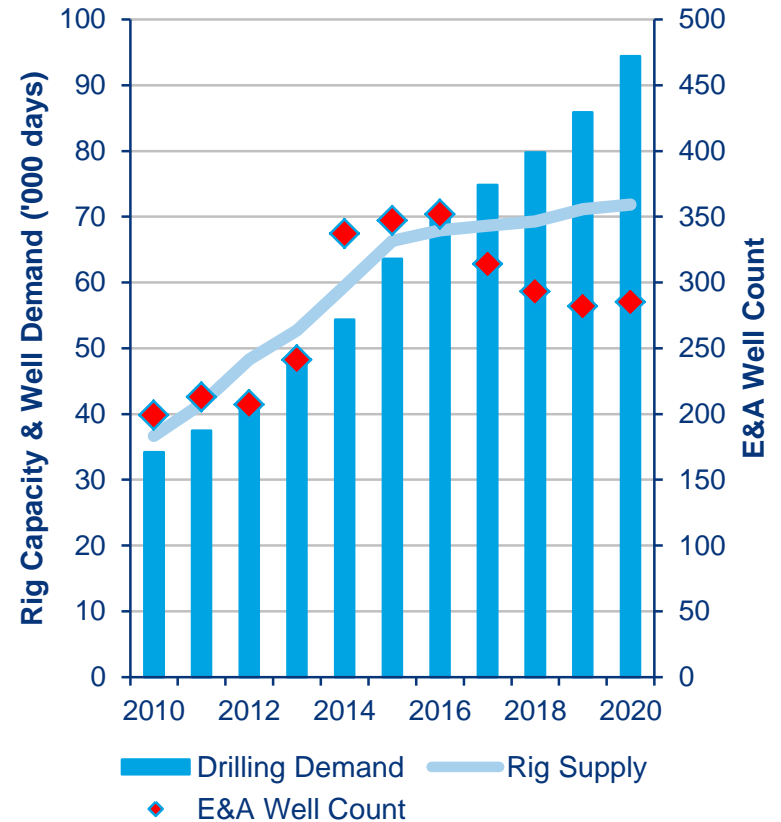
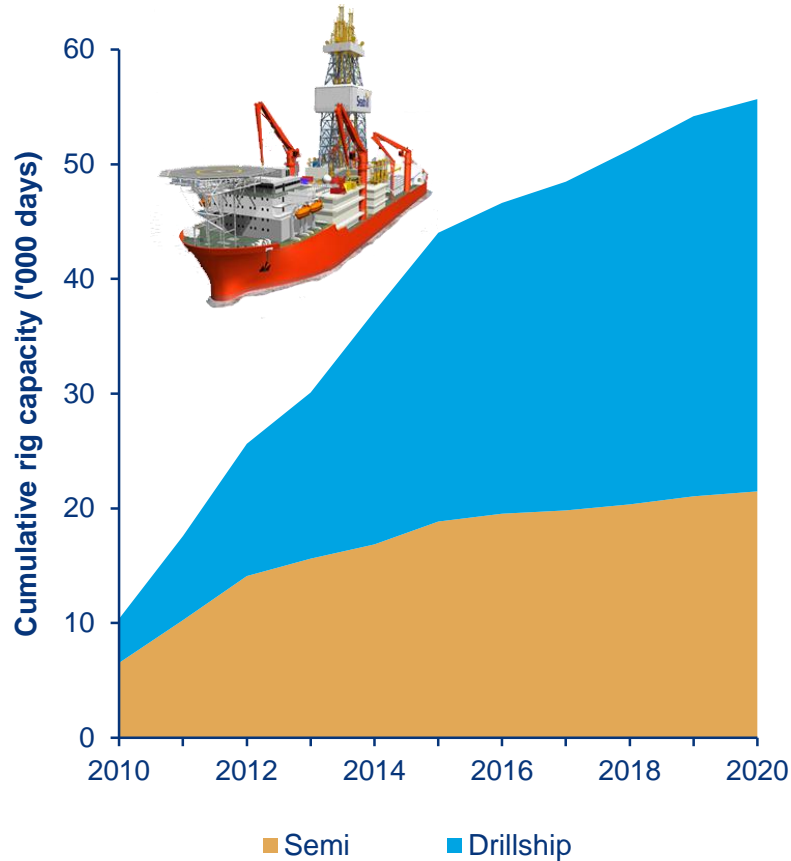


Source: Wood Mackenzie

# Deepwater exploration expected to rise, facilitated by increasing rig fleet But it may still be constrained by rig capacity from 2016

Cumulative newbuild MODU days added since 2008

Deepwater rig supply and demand



Source: Wood Mackenzie Future of Global Deepwater Markets

## Summary

- Independent explorers have led the way opening up new frontier countries since 2006, yielding large volumes and value
- Full-cycle economics of frontier exploration are helped by large discovery sizes and attractive fiscal terms
- Top explorers have shifted their exploration dollars towards frontier and emerging basins over the past five years
- Exploration spend has risen dramatically over the same period, with independents spending more on E&A than Majors, relative to their production levels
- Global spend is likely to continue to rise, given the vast amounts of acreage under license
- Companies of all sizes have been aggressively growing their land positions, much of it in frontier areas, presenting varying challenges but also opportunities for M&A deals
- The huge amounts of recently leased frontier offshore acreage bring both increased complexity and greater demands on the service sector
- Deepwater drilling capacity is set to increase considerably over the next decade with 90 newbuilds to be delivered; however, in spite of this, we still see a shortfall in supply by 2016 as demand outstrips supply

**Visit Wood Mackenzie's [www.woodmac.com](http://www.woodmac.com) to learn of our latest research and communicate directly with our experts on key trends in your market.**

Global Contact Details

Europe +44 (0)131 243 4400  
Americas +1 713 470 1600  
Asia Pacific +65 6518 0800  
Email [energy@woodmac.com](mailto:energy@woodmac.com)  
Website [www.woodmac.com](http://www.woodmac.com)

Global Offices

Australia	Indonesia	South Korea
Brazil	Japan	United Arab Emirates
Canada	Malaysia	United Kingdom
China	Russia	United States
India	Singapore	



Wood Mackenzie is the most comprehensive source of knowledge about the world's energy and metals industries. We analyse and advise on every stage along the value chain - from discovery to delivery, and beyond - to provide clients with the commercial insight that makes them stronger. For more information visit: [www.woodmac.com](http://www.woodmac.com)