

January 20, 2010

Finding Petroleum Conference

Who are the successful explorers today?

Oswald Clint

Senior Research Analyst

Sanford Bernstein

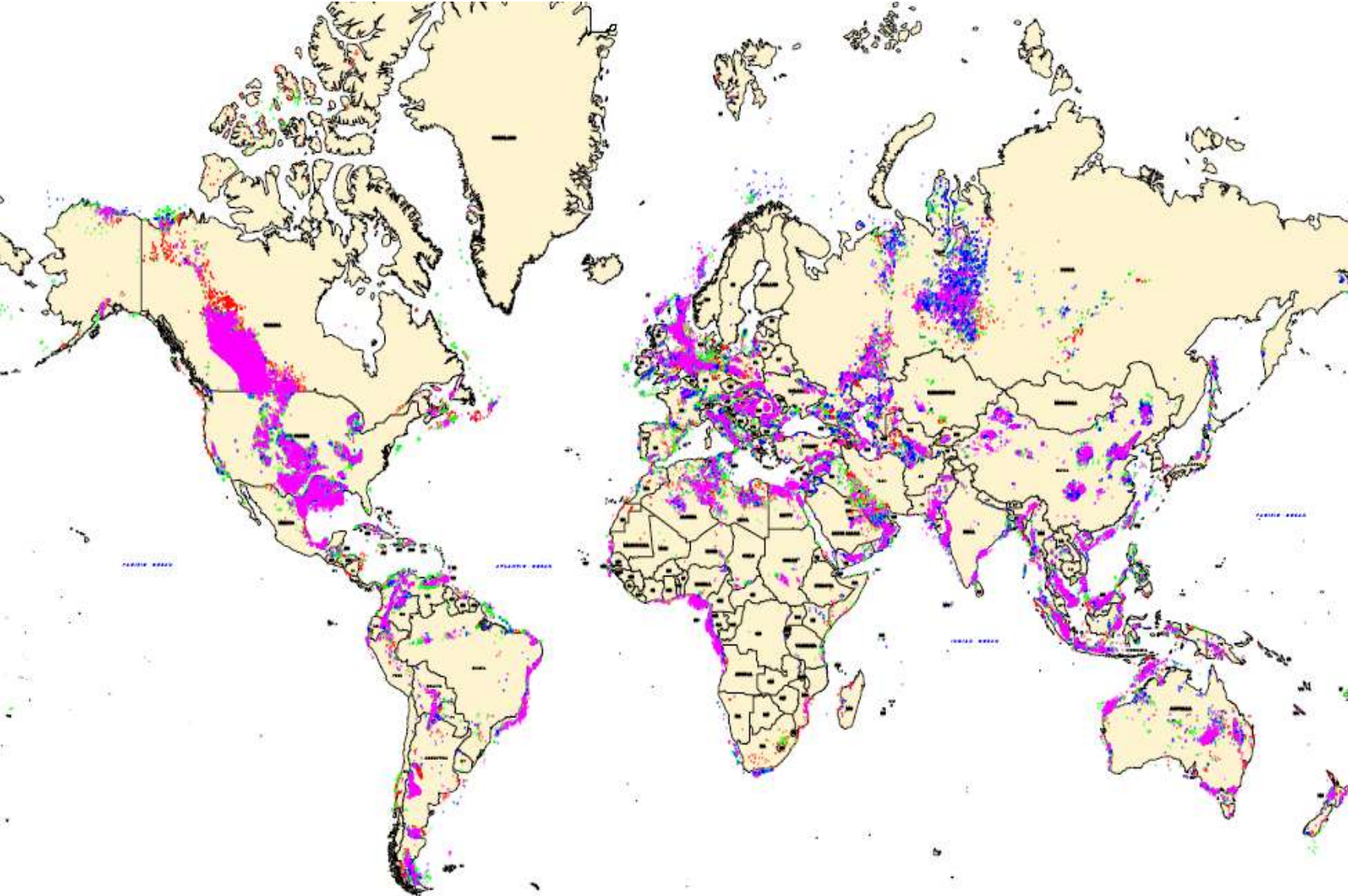


SANFORD C. BERNSTEIN LIMITED

Key topics to be covered

- Trends within global exploration
- Explorers acreage strategies and are they enough
- E&P's dominance in exploration success versus larger peers
- What determines a successful explorer from a stock market perspective

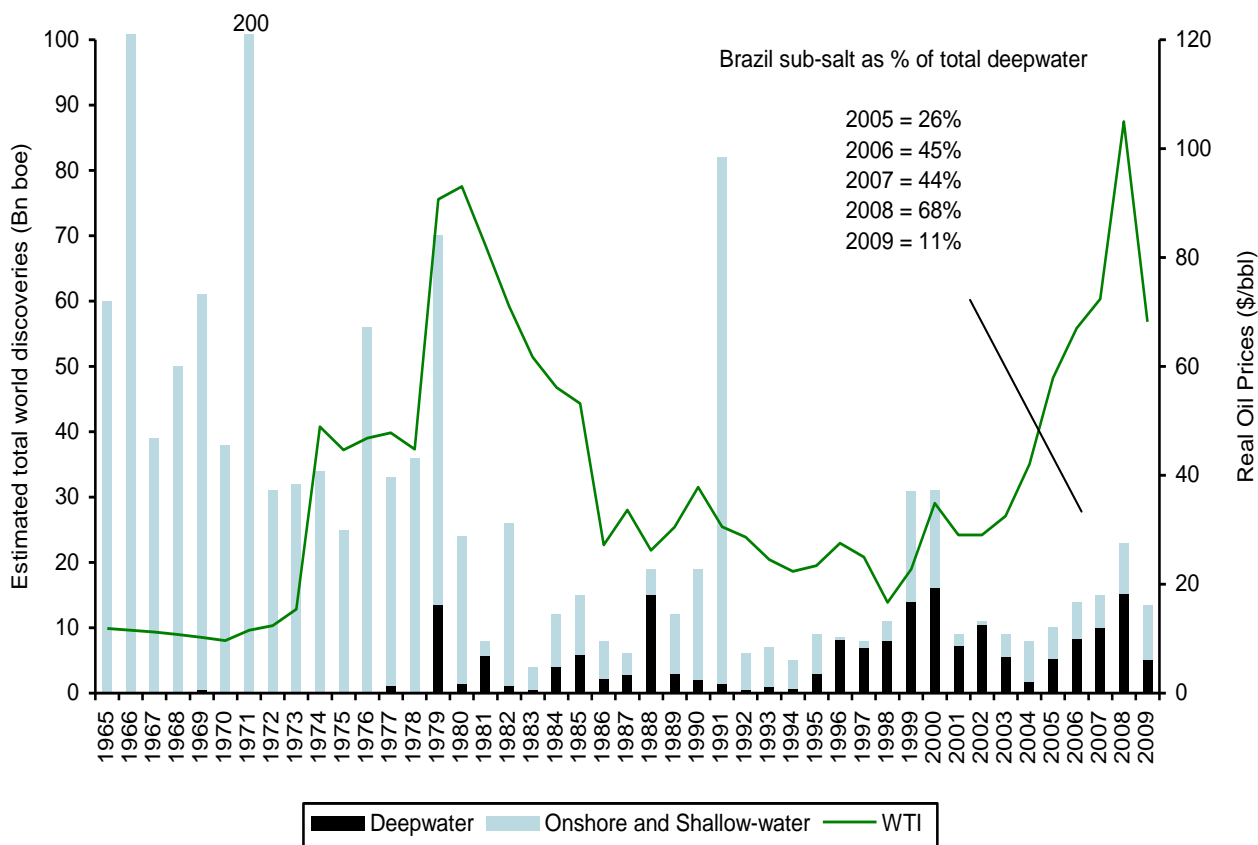
Global distribution of wildcat exploration wells (1965-2005)



Source: IHS

Exploration Success – Did the recent oil price cycle help?

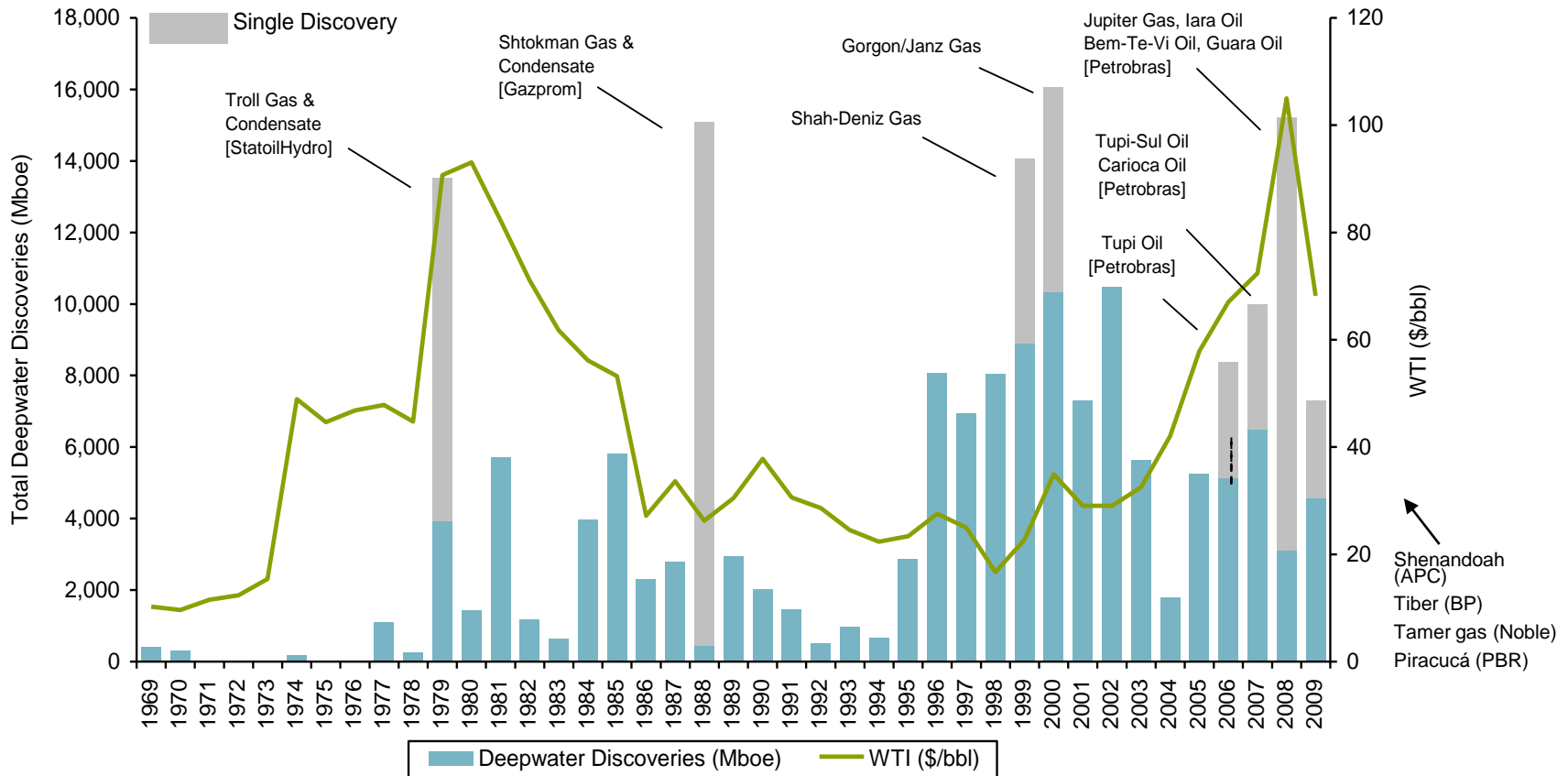
- Combined onshore and offshore wildcat discoveries continue to disappoint despite the obvious oil price incentives
- The 2000-2009 average of 15Bn boe/yr is a quarter of the 60Bn average annual discovery rate of the 1960-1970's
- Deepwater discoveries have been the main source of new discovery volumes since 1995, with the Brazilian subsalt contributing significantly over the past few years.



Source: World Oil, IHS, Company reports and Bernstein estimates

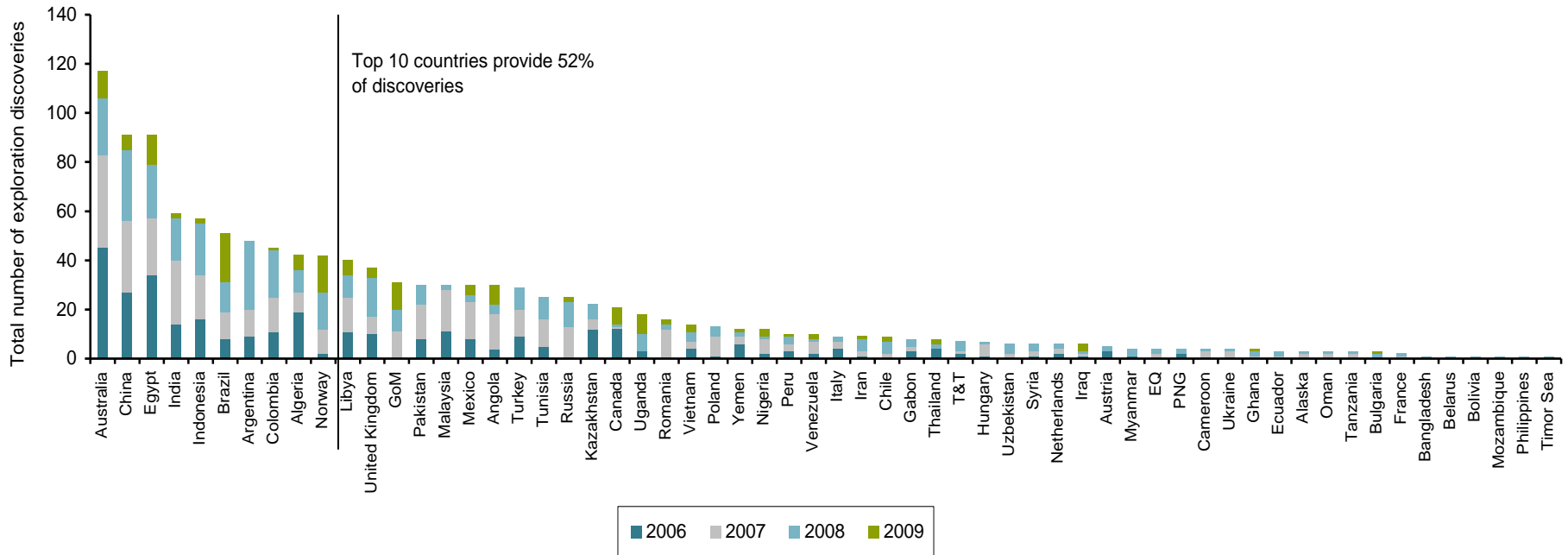
Without Brazil total deepwater discovered reserves would have been in decline

- Deepwater discoveries fell to 5Bn boe in 2009 - a third of 2008 levels - as lower oil prices impacted exploration. Even these low numbers were boosted by three large discoveries: Tiber and Shenandoah in deepwater GoM and the Tamar discovery in Israel
- Adjusting for large discoveries (particularly for the Brazilian sub-salt Santos Basin discoveries) reveals an overall downward trend



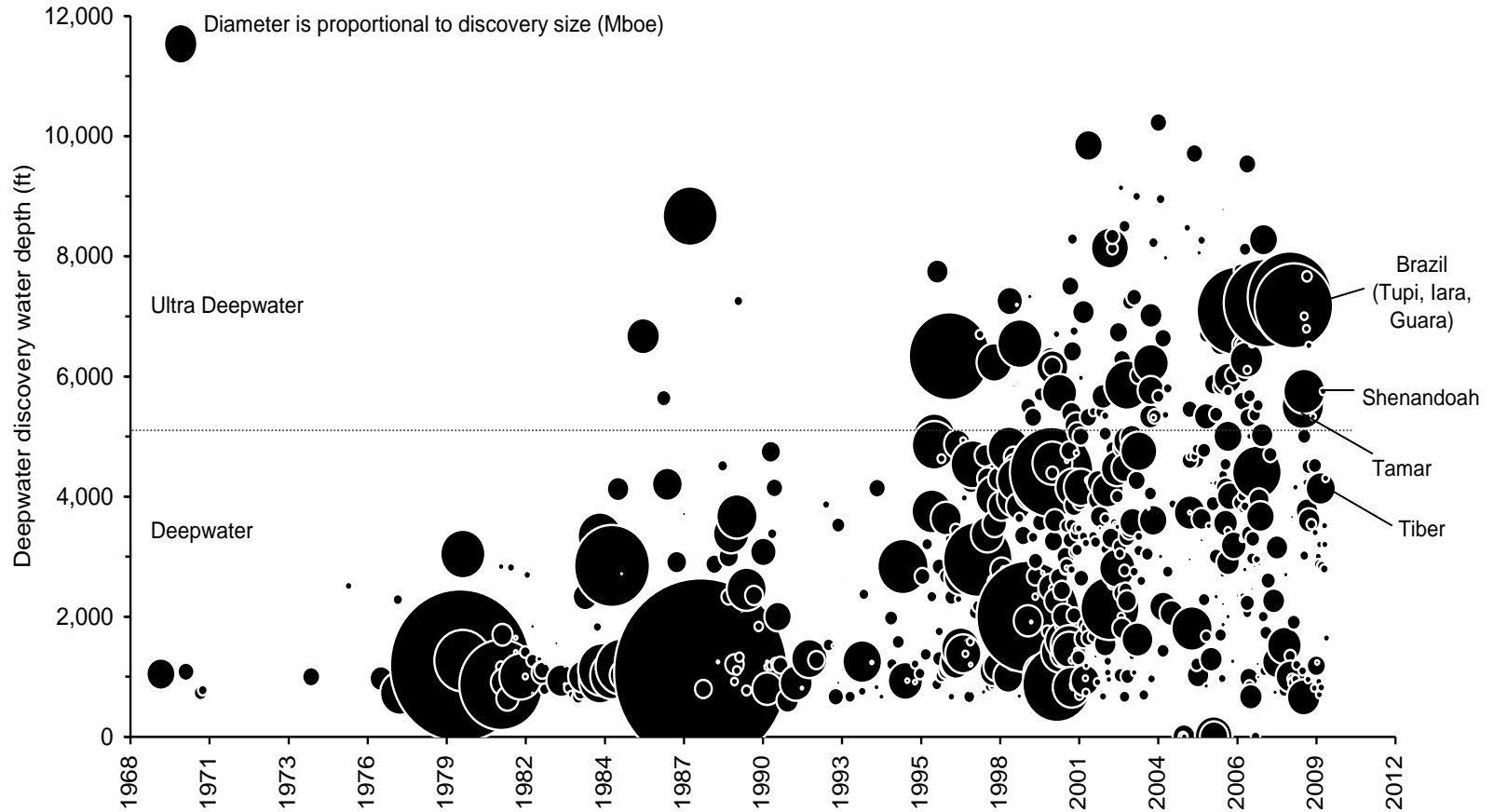
Source: World Oil, IHS, Company reports and Bernstein estimates

The same countries continue to dominate when it comes to new discoveries



Source: AAPG, World Oil, IHS, Company reports and Bernstein estimates

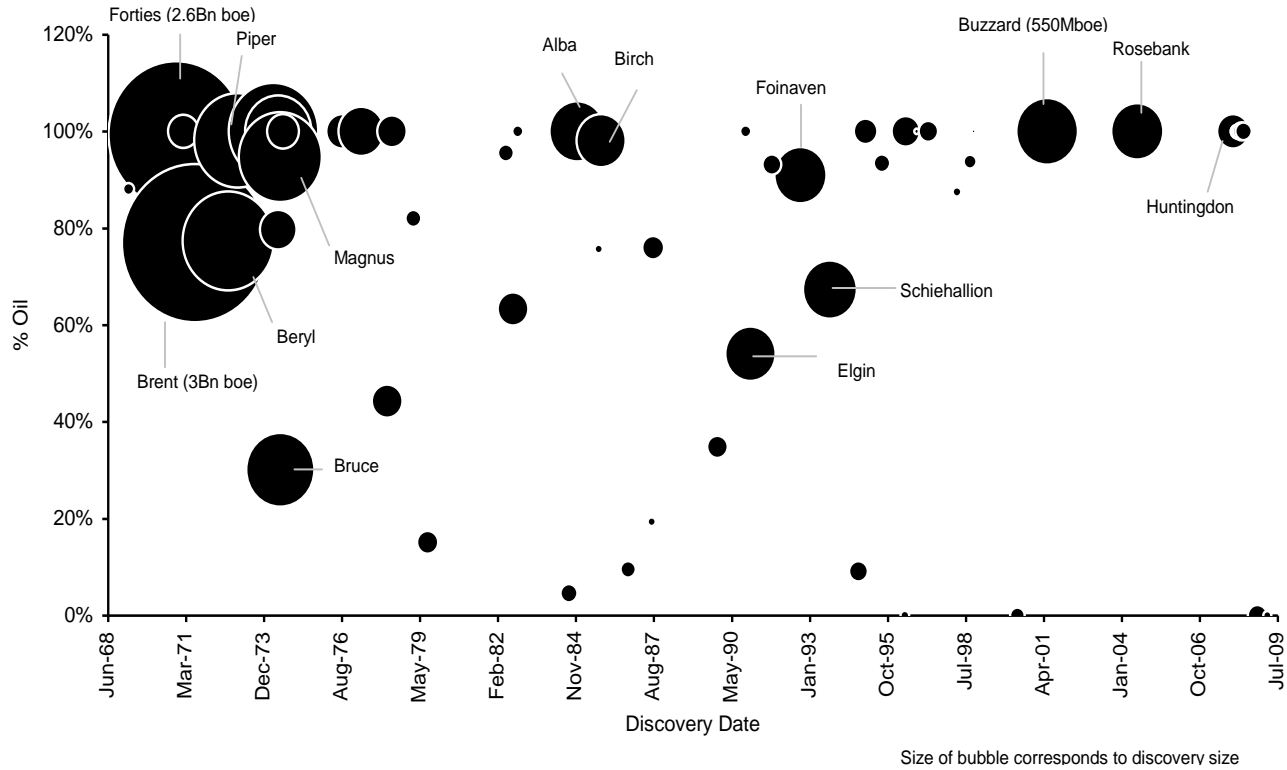
But since 2000-2001 average discovery sizes have declined with some notable exceptions



Source: World Oil, IHS, Company reports and Bernstein estimates

Similar trends are also visible in mature exploration provinces

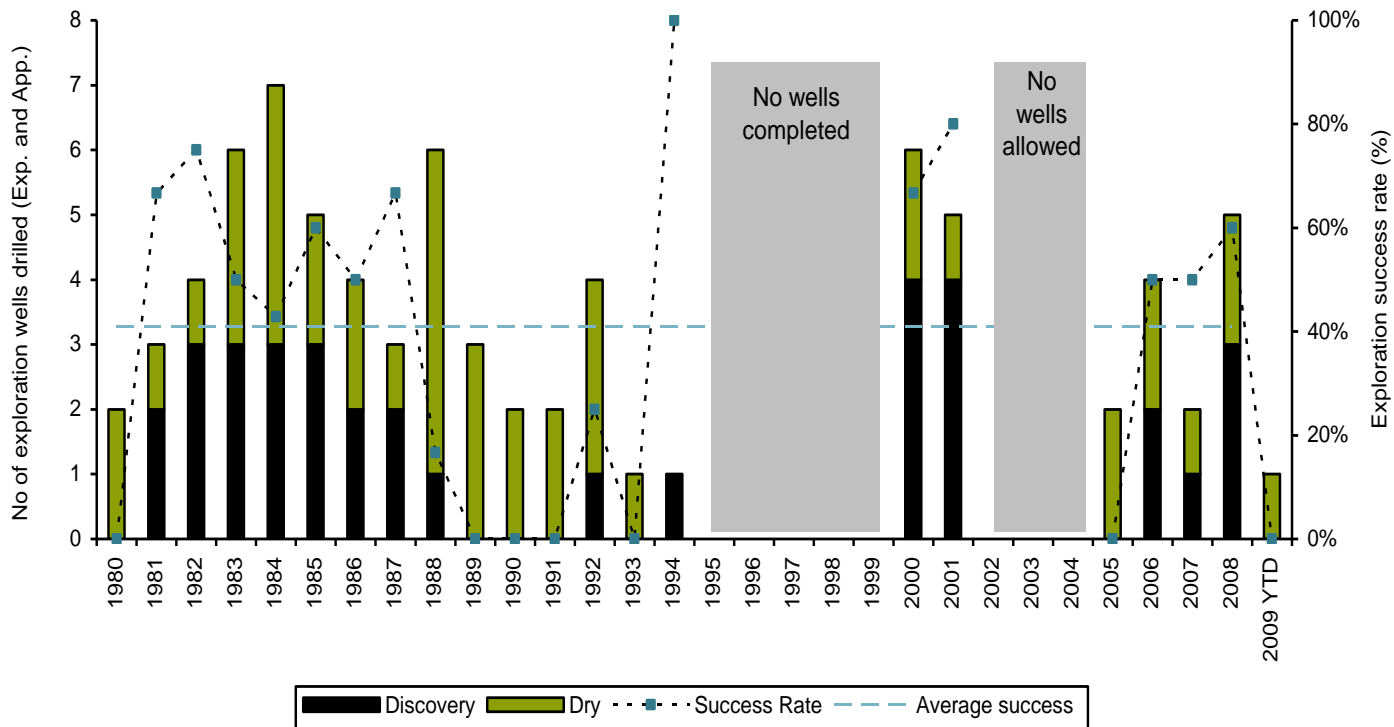
North Sea discoveries by volume and % oil from 1969 to present



Source: DECC UK and Bernstein estimates

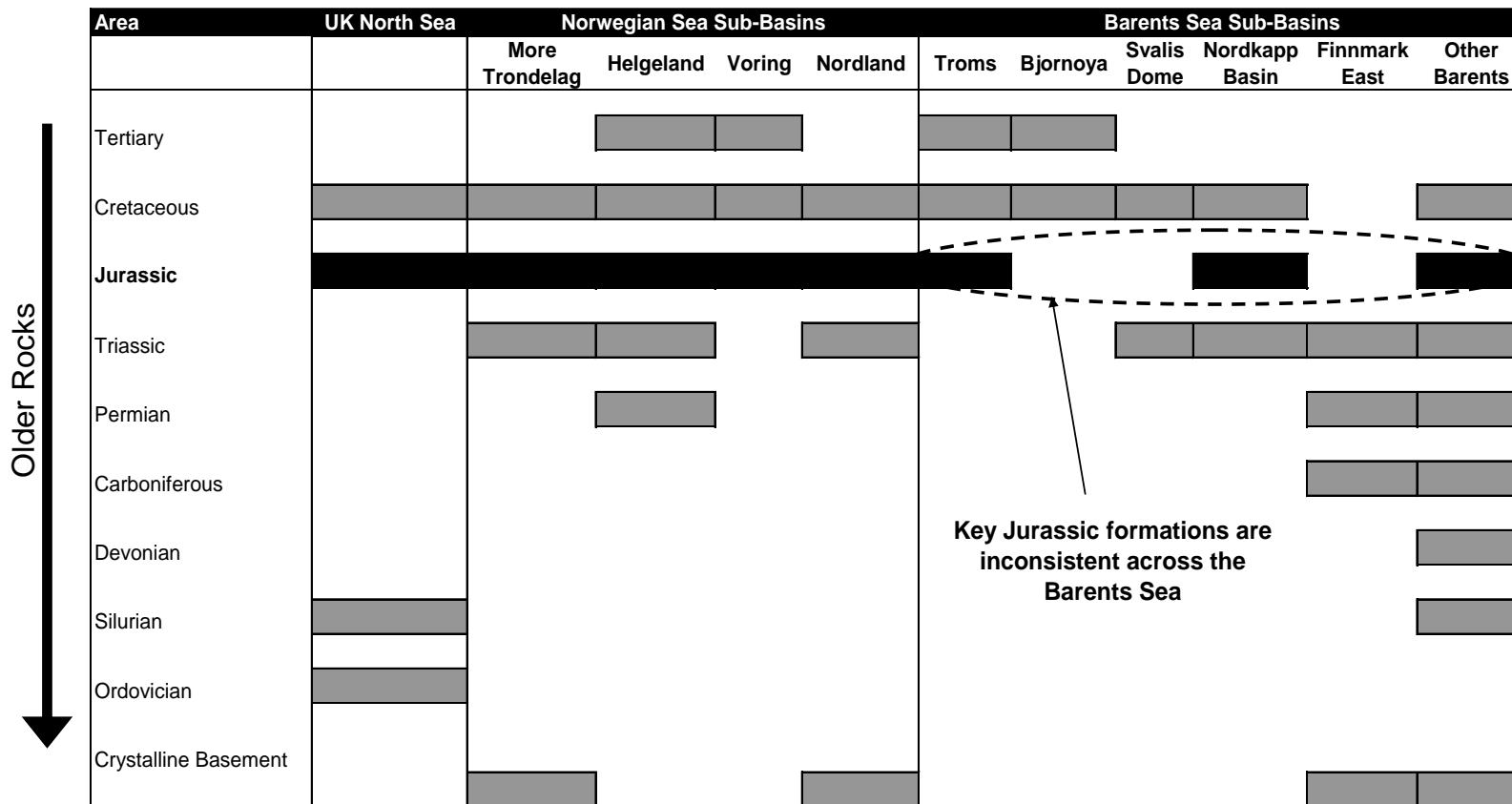
While new deepwater areas close to mature areas are being tested – Norway's Barents Sea

Exploration and appraisal wells drilled in the Barents Sea with success rate (1980-2009 YTD)



Source: NPD and Bernstein Estimates

But geology will make it increasingly difficult to match the performance of the NCS



Source: SINTEF and NPD

Discoveries have been made in the Barents Sea but the resource size is being downgraded

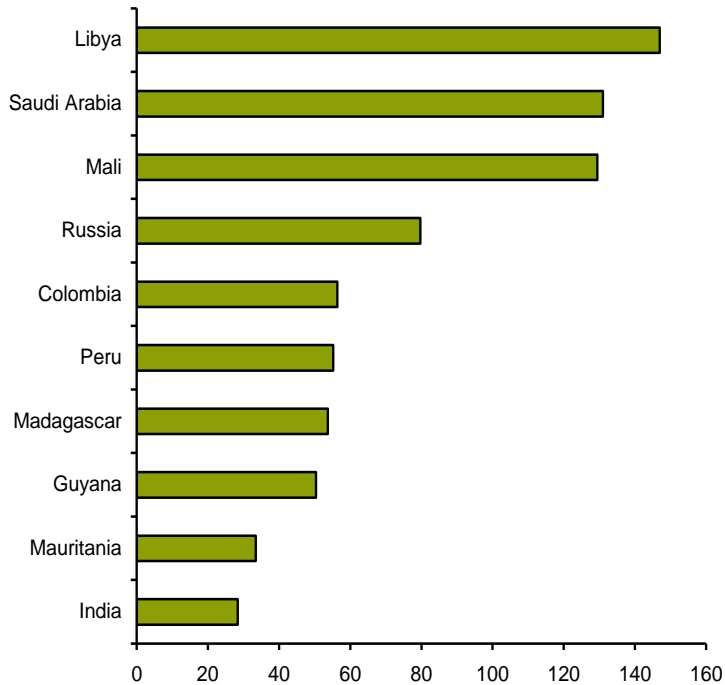
	Oil (Bn bbls)	Gas (Bn boe)	NGL (Bn boe)	Condensate (Bn bbls)	Total (Bn boe)	% of total
North Sea	3.90	3.05	-	0.35	7.30	35%
Norwegian Sea	1.38	5.03	-	0.94	7.36	35%
Barents Sea (2006 est.)	2.64	3.36	-	0.38	6.37	30%
Barents Sea (2009 est.)	2.20	3.05	-	0.38	5.63	28%
<i>% Change</i>	<i>(16.7%)</i>	<i>(9.1%)</i>		<i>0.0%</i>	<i>(11.7%)</i>	
Total (2006 est.)	7.93	11.44	-	1.67	21.03	100%
Total (2009 est.)	7.49	11.13	-	1.67	20.28	100%
<i>% Change</i>	<i>(5.6%)</i>	<i>(2.7%)</i>		<i>0.0%</i>	<i>(3.5%)</i>	

Source: NPD

The Majors have been refreshing their acreage positions

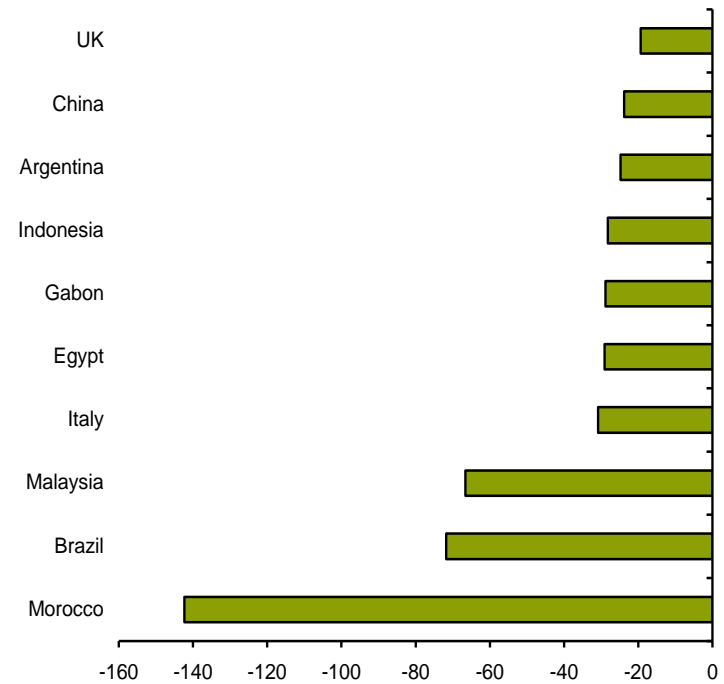
■ Overall increase in net acreage: 458,000km² or 46,000km² per company

Top Ten Countries for Acreage Increase Across the Majors 2003-2009



Top Ten Countries for Acreage Increase across the Majors (2003-2009) (000km²)

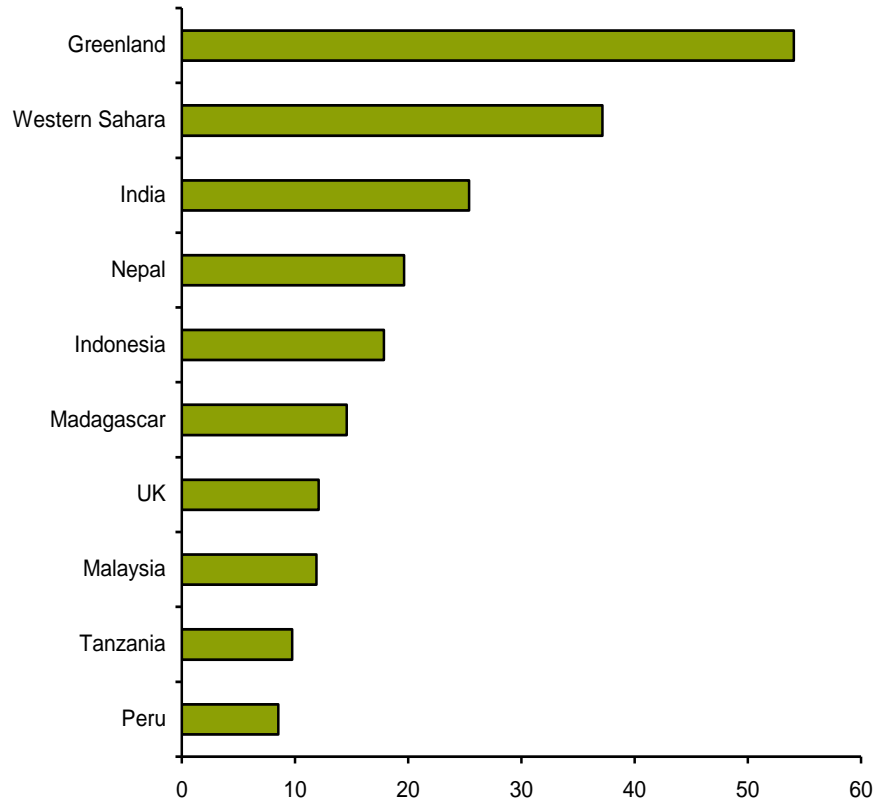
Top Ten Countries for Acreage Reduction Across the Majors 2003-2009



Top Ten Countries for Acreage Decrease across the Majors (2003-2009) (000km²)

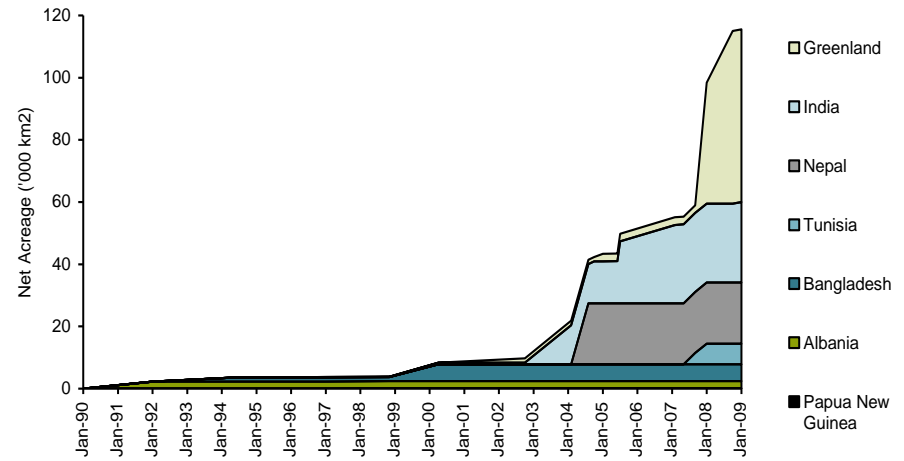
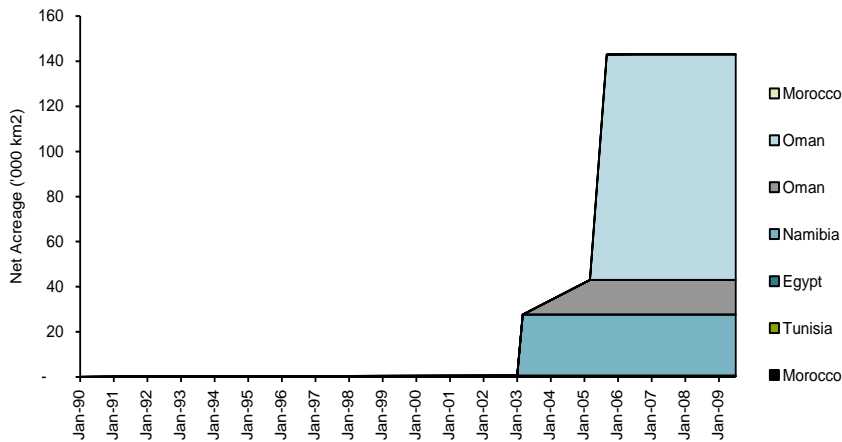
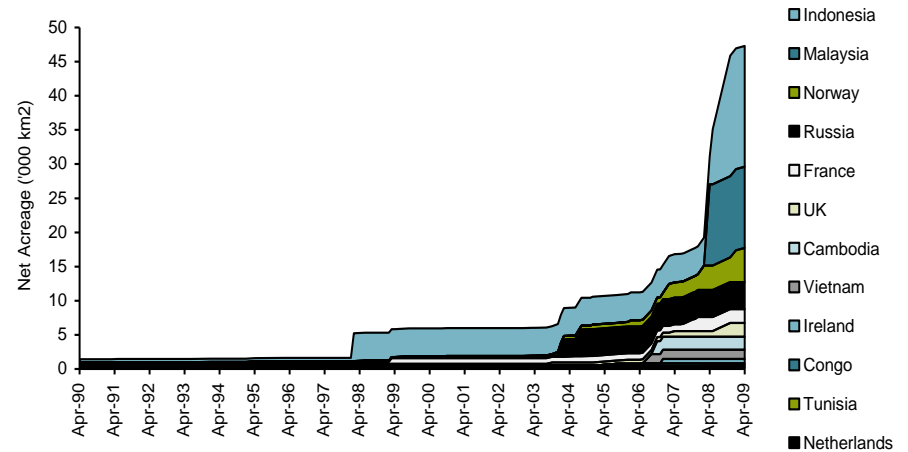
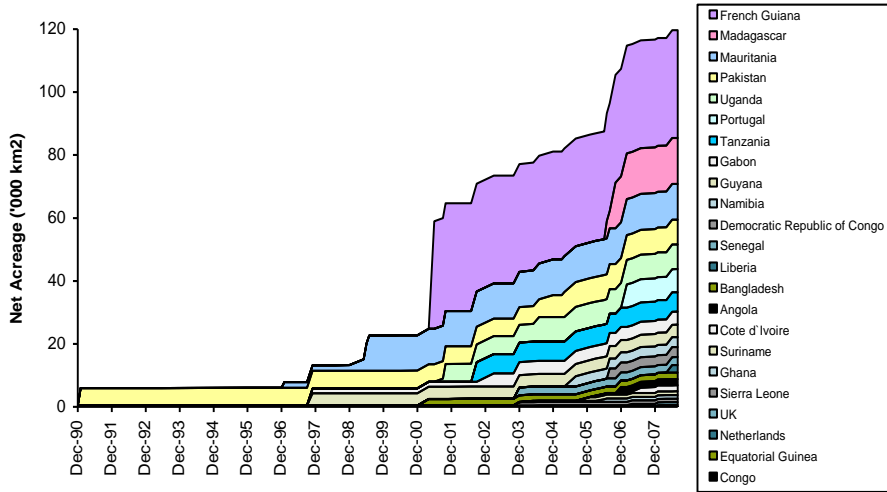
While the E&Ps have added aggressively to acreage positions

■ Overall increase in net acreage: 300,000km² with no decrease during 2003-9



Top Ten Countries for Acreage Increase across the European E&Ps (2003-2009) (000km²)

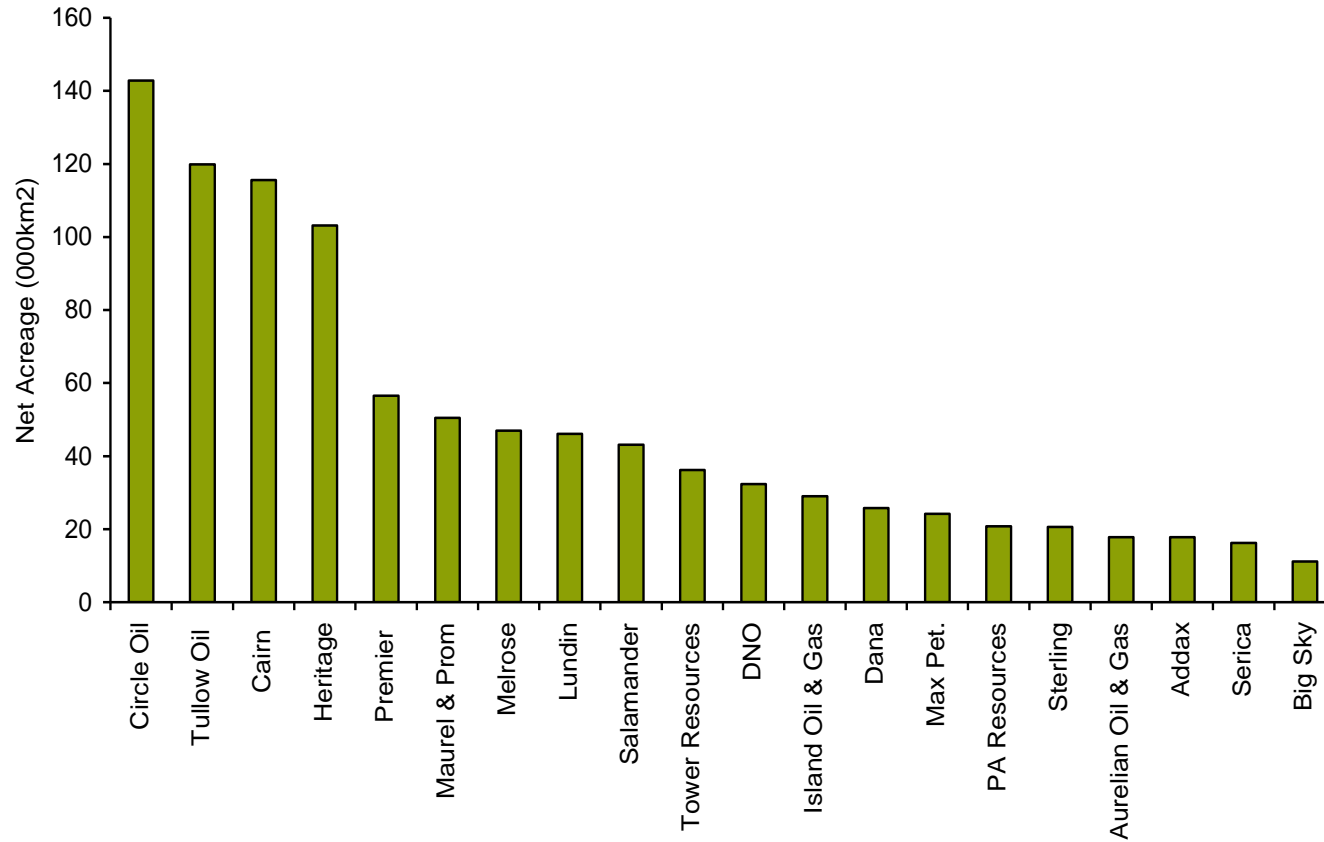
Examples of how the E&P's built up their acreage portfolios through the last oil price cycle



Source: Wood Mackenzie, Company reports and Bernstein estimates

Leading to some very large acreage positions across the companies

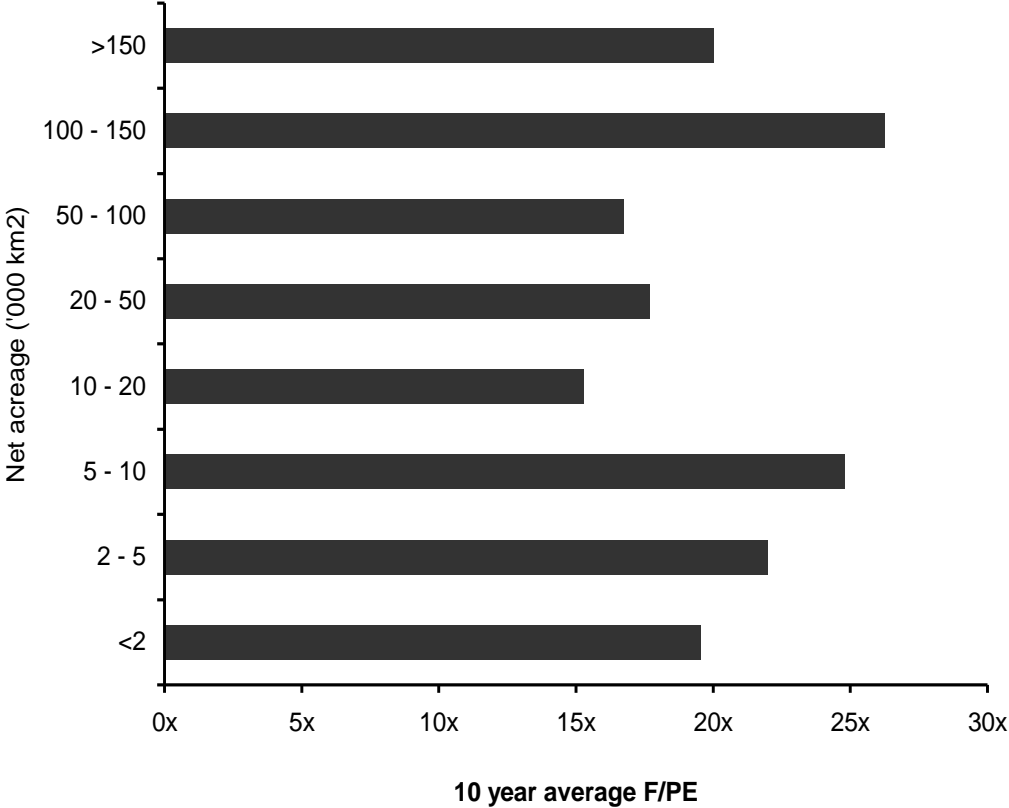
Approximate acreage positions of Europe's E&P's



Source: Wood Mackenzie and Bernstein estimates

But stock market investors want more than simply acreage

10 Year average stock market valuation multiples and acreage positions for European E&Ps

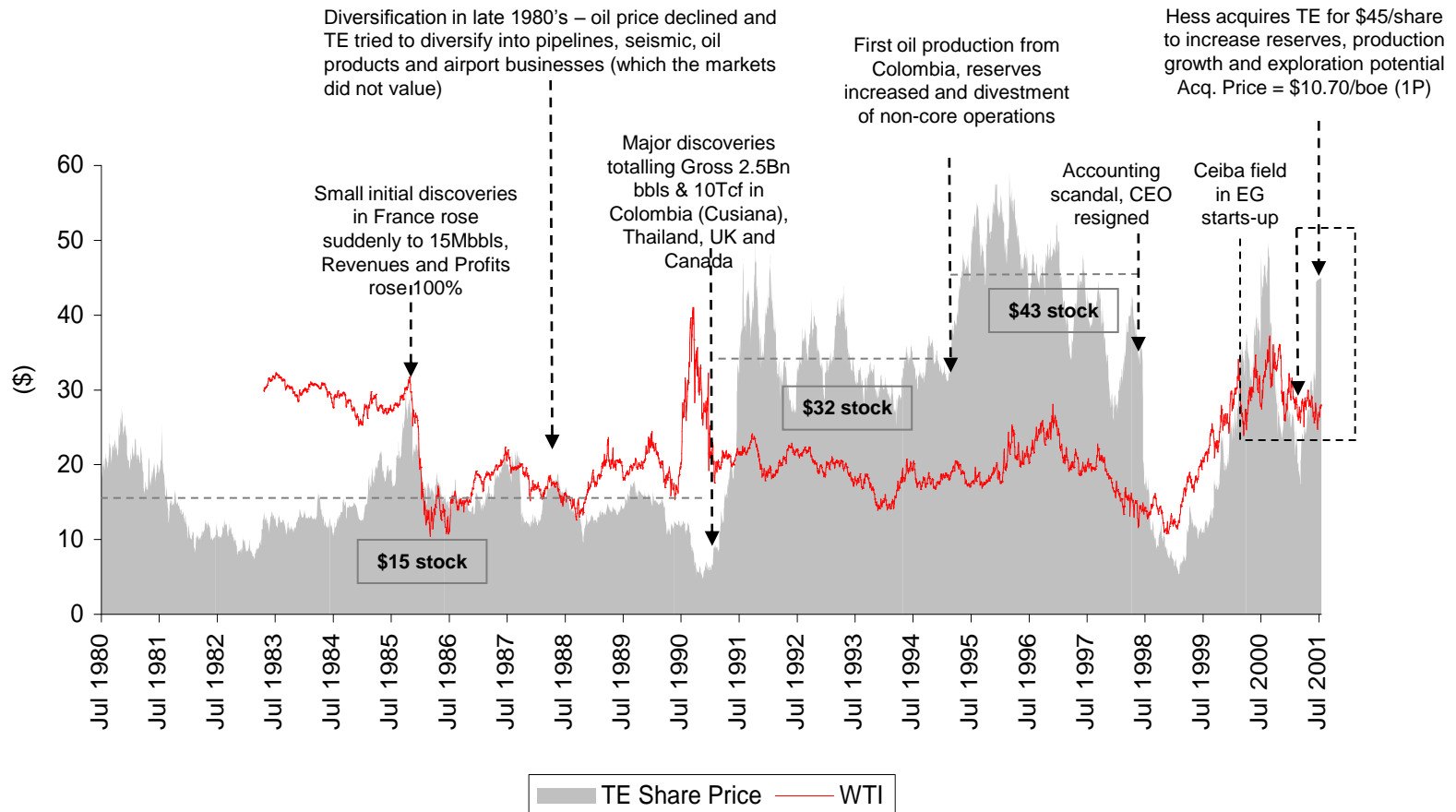


Source: Wood Mackenzie, Company reports and Bernstein estimates

One early example of a successful explorer – Changing geography

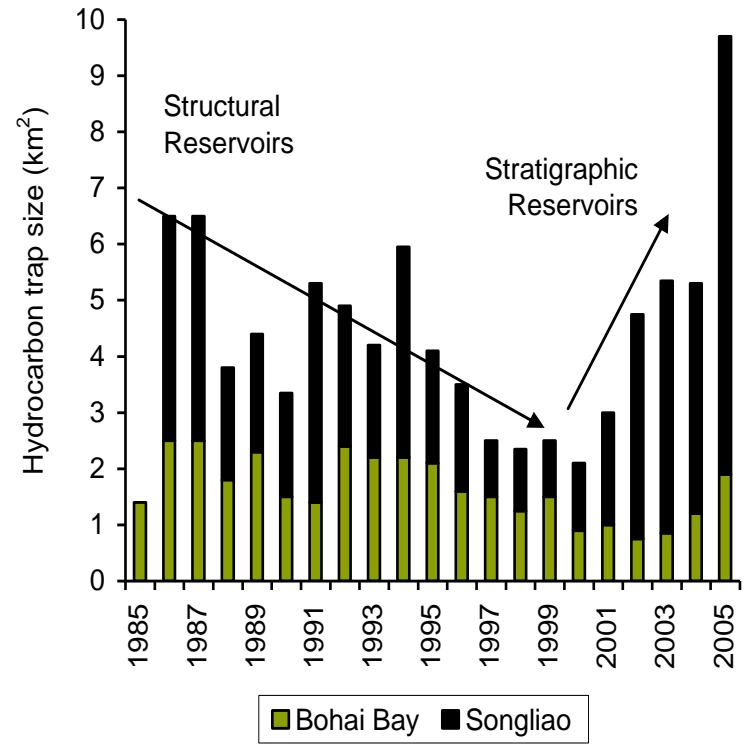
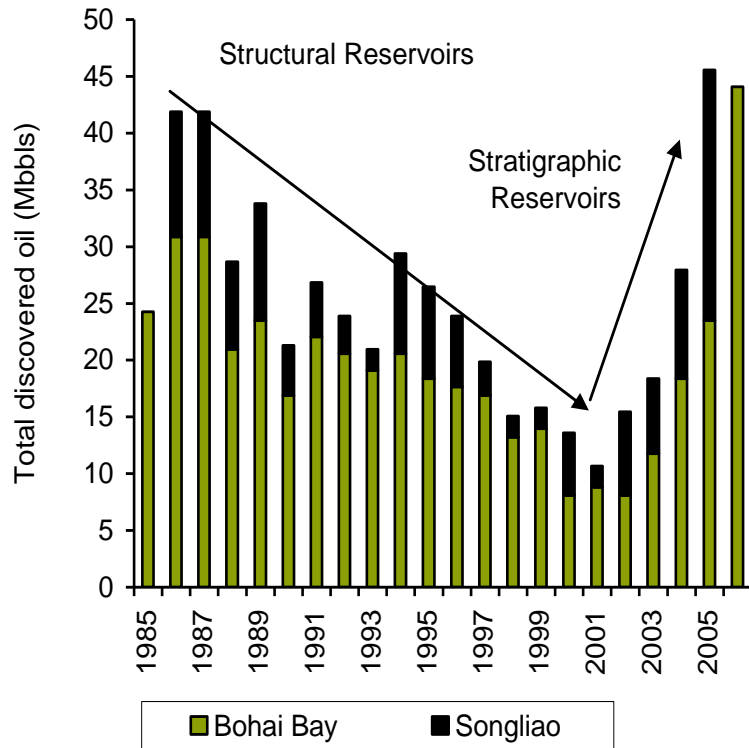
Exploration – Focus on international exploration seeking high risk high reward finds. Held acreage positions in Colombia, Australia, Indonesia, Thailand, Malaysia, Europe, Argentina, New Zealand and Canada

Development, Production and Exploration – Producing from Colombia and Equatorial Guinea. Exploration was focused on Equatorial Guinea (with Energy Africa), Colombia, Malaysia, Gabon, Greece, Italy, Madagascar, Oman, China



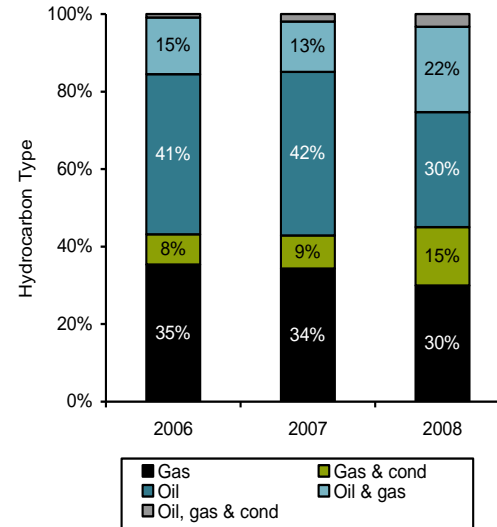
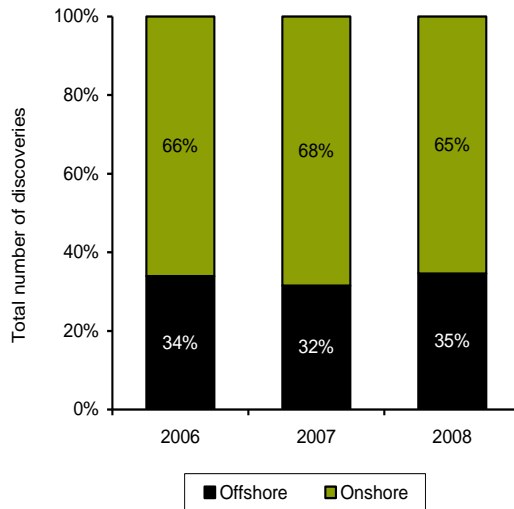
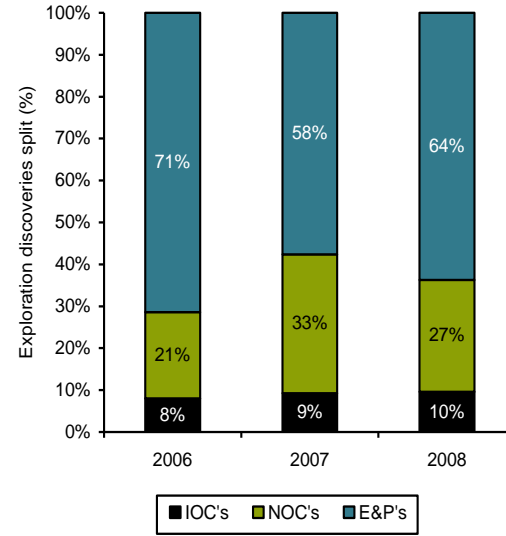
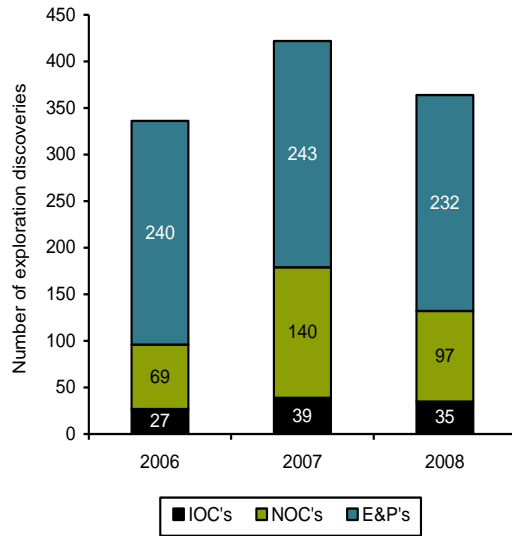
Source: Bloomberg and Bernstein estimates

Another successful exploration strategy – Changing play type



Source: Company reports and Bernstein estimates

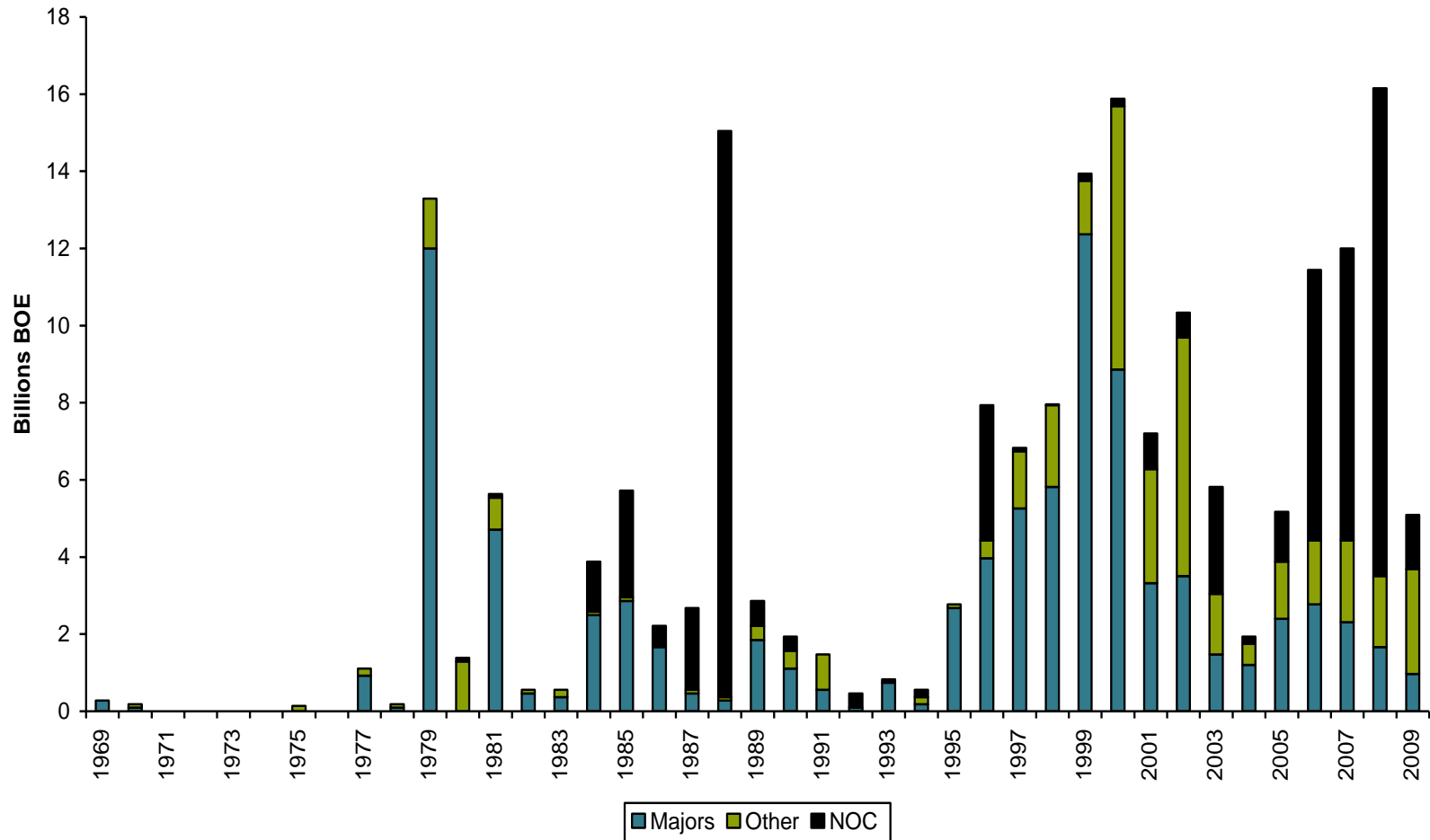
Hence it is these E&P's who dominate discovery successes which are mainly onshore



Source: AAPG, World Oil, IHS, Company reports and Bernstein

In the technically challenging deepwater the National Oil Companies have been winning recently

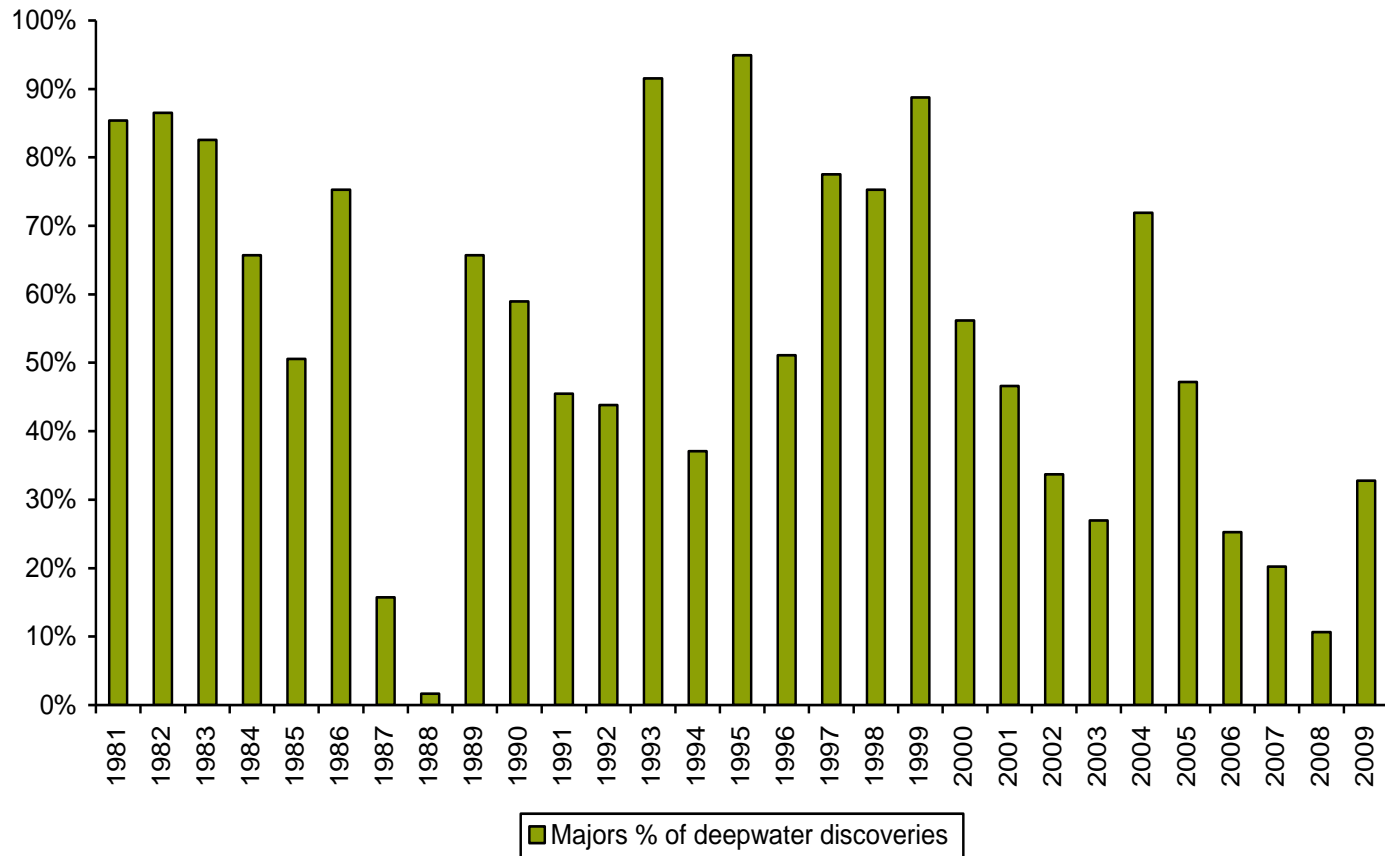
Deepwater discovery volumes by operator



Source: World Oil, IHS, press reports and Bernstein estimates

Forcing out the Majors who used to dominate this environment

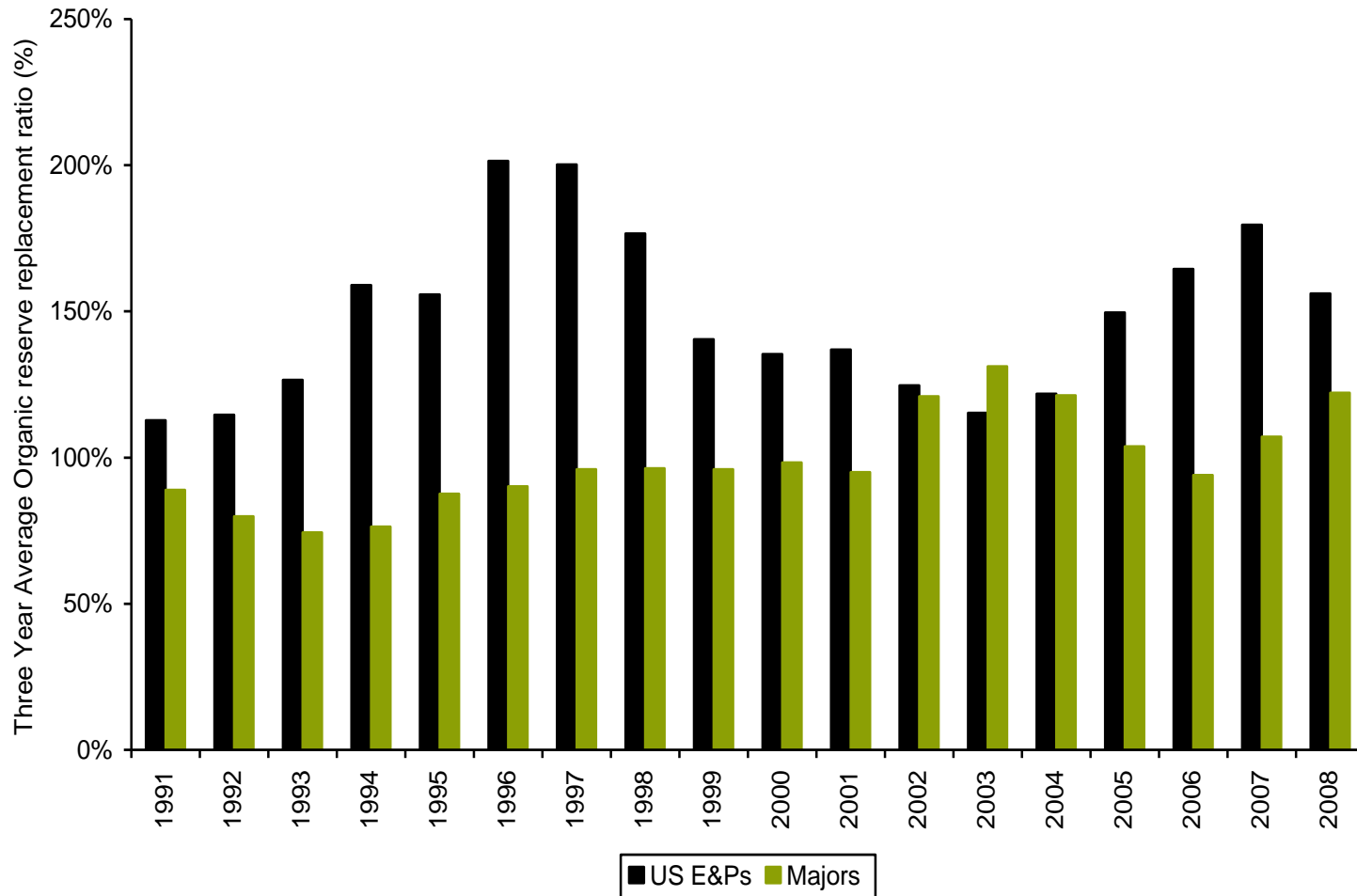
Percentage of deepwater discoveries with a Major as Operator



Source: World Oil, IHS, press reports and Bernstein estimates

E&P's are therefore consistently more than replacing their production

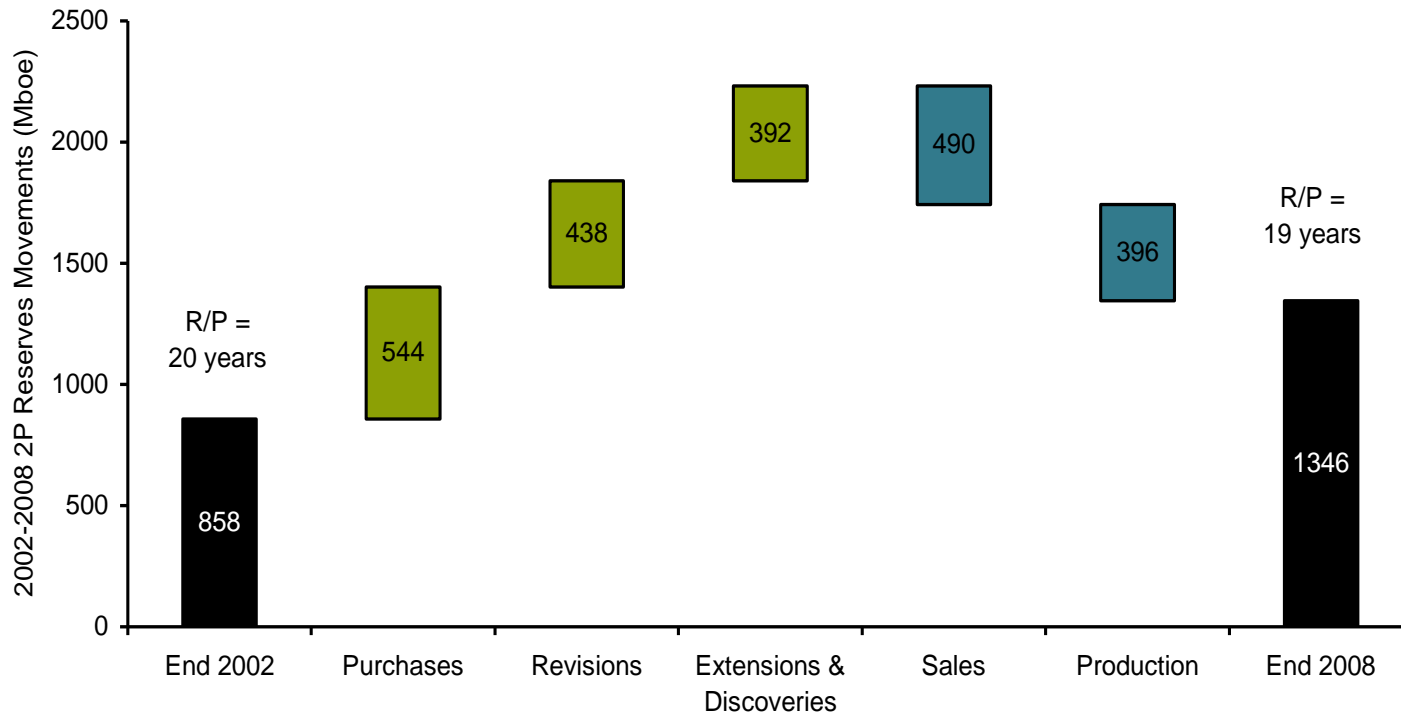
Three Year Average RRR for Majors and E&Ps



Source: Company reports and Bernstein estimates

European E&P's put up a solid performance over the last oil price cycle also

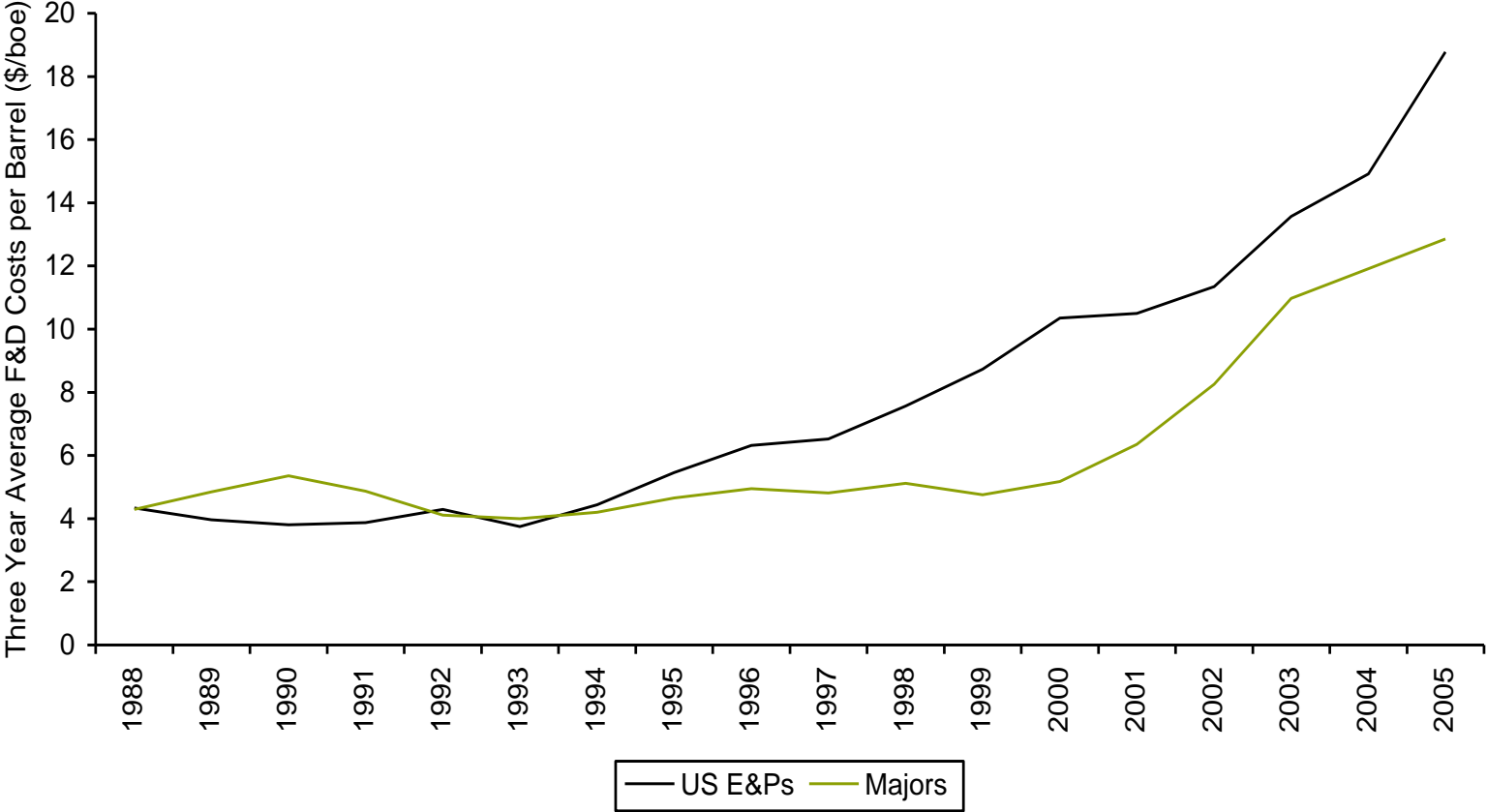
- The largest European E&Ps were able to replace almost all their production organically in the 2002-8 period and keep R/P ratios stable



Source: Company reports and Bernstein estimates

It is costing more to replace production for all companies

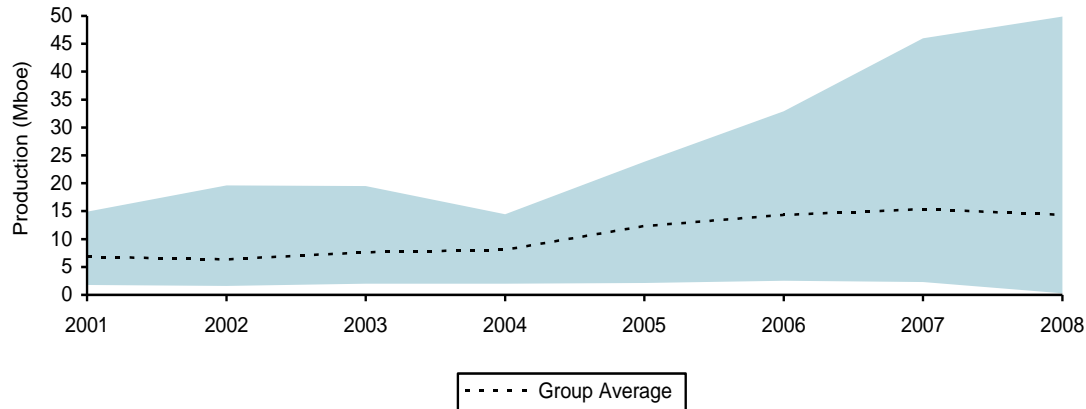
Three Year Average Organic F&D costs for Majors and E&Ps



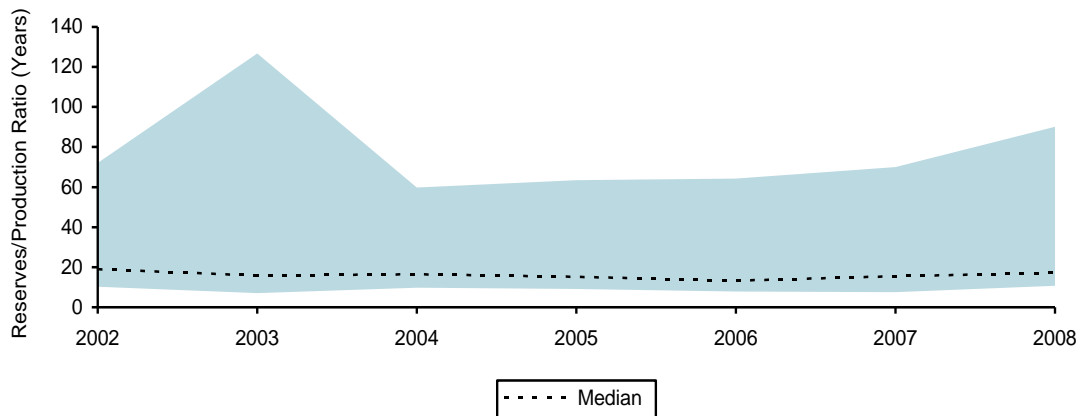
Source: Company reports and Bernstein estimates

European E&Ps have grown production and kept the reserve-to-production ratio constant

Hydrocarbon Production of 10 largest European E&Ps



Reserve-to-Production ratio of 10 largest European E&Ps



Source: Company reports and Bernstein estimates

So who are the successful explorers...at least from a stock market perspective

Rank		5Yr Avg F&D Cost \$/boe		5Yr 2P Reserves Added Mboe		5Yr Wildcat Exploration Success %		5Yr Avg CF/boe \$		Share Price Move '03-'08* %
1	SOCO	3.49	Tullow	382	Heritage	80%	Lundin	31.00	Tullow	669%
2	Heritage	4.84	Addax	234	Dana	56%	Maurel & Prom	27.58	Cairn	400%
3	Tullow	7.24	Cairn	221	Tullow	54%	Tullow	27.43	Dana	303%
4	Premier	7.57	Lundin	213	Cairn	52%	Dana	25.50	SOCO	299%
5	Cairn	7.84	Venture	193	Addax	46%	Venture	25.13	Venture	213%
6	Dana	8.98	Dana	182	Premier	43%	Cairn	20.57	Premier	116%
7	Lundin	10.00	SOCO	176	SOCO	38%	SOCO	17.38	Maurel & Prom	112%
8	Venture	12.41	Premier	115	Lundin	36%	Premier	17.27	Heritage	61%
9	Maurel & Prom	23.03	Maurel & Prom	91	Venture	25%	Addax	12.89	Lundin	20%
10	Addax	23.65	Heritage	58	Maurel & Prom	22%	Heritage	-43.78	Addax	8%

* Heritage is the Canadian shares due to recent UK listing, Addax is Canadian shares since 2007

Source: Company reports, Bloomberg, Factset and Bernstein estimates

Disclosure Appendix

SRO REQUIRED DISCLOSURES

- References to "Bernstein" relate to Sanford C. Bernstein & Co., LLC, Sanford C. Bernstein Limited, and Sanford C. Bernstein, a unit of AllianceBernstein Hong Kong Limited, collectively.
- Bernstein analysts are compensated based on aggregate contributions to the research franchise as measured by account penetration, productivity and proactivity of investment ideas. No analysts are compensated based on performance in, or contributions to, generating investment banking revenues.
- Bernstein rates stocks based on forecasts of relative performance for the next 6-12 months versus the S&P 500 for stocks listed on the U.S. and Canadian exchanges, versus the MSCI Pan Europe Index for stocks listed on the European exchanges (except for Russian companies), versus the MSCI Emerging Markets Index for Russian companies and stocks listed on emerging markets exchanges outside of the Asia Pacific region, and versus the MSCI Asia Pacific ex-Japan Index for stocks listed on the Asian (ex-Japan) exchanges - unless otherwise specified. We have three categories of ratings:
 - Outperform: Stock will outpace the market index by more than 15 pp in the year ahead.
 - Market-Perform: Stock will perform in line with the market index to within +/-15 pp in the year ahead.
 - Underperform: Stock will trail the performance of the market index by more than 15 pp in the year ahead.
 - Not Rated: The stock Rating, Target Price and estimates (if any) have been suspended temporarily.
- As of 01/08/2010, Bernstein's ratings were distributed as follows: Outperform: 46.7% (1.0% banking clients) ; Market-Perform: 46.5% (0.5% banking clients); Underperform: 6.8% (0.0% banking clients); Not Rated: 0.0% (0.0% banking clients). The numbers in parentheses represent the percentage of companies in each category to whom Bernstein provided investment banking services within the last twelve (12) months.
- Accounts over which Bernstein and/or their affiliates exercise investment discretion own more than 1% of the outstanding common stock of the following companies BG/.LN / BG Group PLC, TLW.LN / Tullow Oil PLC.
- The following companies are or during the past twelve (12) months were clients of Bernstein, which provided non-investment banking-securities related services and received compensation for such services BG/.LN / BG Group PLC.
- In the next three (3) months, Bernstein or an affiliate expects to receive or intends to seek compensation for investment banking services from BG/.LN / BG Group PLC, CNE.LN / Cairn Energy PLC, PMO.LN / Premier Oil PLC, TLW.LN / Tullow Oil PLC.

12-Month Rating History as of 1/11/2010

=====

CNE.LN - O (IC) 1/22/2009
BG/.LN - O (IC) 1/22/2009, O (DC) 1/21/2009, O (RC) 6/19/2008
PMO.LN - M (IC) 1/22/2009
TLW.LN - O (IC) 1/22/2009

Rating Guide: O - Outperform, M - Market-Perform, U - Underperform
Rating Actions: IC - Initiated Coverage, DC - Dropped Coverage, RC - Rating Change

Disclosure Appendix

OTHER DISCLOSURES

A price movement of a security which may be temporary will not necessarily trigger a recommendation change. Bernstein will advise as and when coverage of securities commences and ceases. Bernstein has no policy or standard as to the frequency of any updates or changes to its coverage policies. Although the definition and application of these methods are based on generally accepted industry practices and models, please note that there is a range of reasonable variations within these models. The application of models typically depends on forecasts of a range of economic variables, which may include, but not limited to, interest rates, exchange rates, earnings, cash flows and risk factors that are subject to uncertainty and also may change over time. Any valuation is dependent upon the subjective opinion of the analysts carrying out this valuation.

This document may not be passed on to any person in the United Kingdom (i) who is a retail client (ii) unless that person or entity qualifies as an authorised person or exempt person within the meaning of section 19 of the UK Financial Services and Markets Act 2000 (the "Act"), or qualifies as a person to whom the financial promotion restriction imposed by the Act does not apply by virtue of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005, or is a person classified as an "professional client" for the purposes of the Conduct of Business Rules of the Financial Services Authority.

To our readers in the United States: Sanford C. Bernstein & Co., LLC is distributing this publication in the United States and accepts responsibility for its contents. Any U.S. person receiving this report and wishing to effect securities transactions in any security discussed herein should do so only through Sanford C. Bernstein & Co., LLC.

To our readers in the United Kingdom: This report has been issued or approved for issue in the United Kingdom by Sanford C. Bernstein Limited, authorised and regulated by the Financial Services Authority and located at Devonshire House, 1 Mayfair Place, London W1J 8SB, +44 (0)20-7170-5000.

To our readers in member states of the EEA: This report is being distributed in the EEA by Sanford C. Bernstein Limited, which is authorised and regulated in the United Kingdom by the Financial Services Authority and holds a passport under the Investment Services Directive.

To our readers in Hong Kong: This publication is being issued in Hong Kong by Sanford C. Bernstein, a unit of AllianceBernstein Hong Kong Limited. AllianceBernstein Hong Kong Limited is regulated by the Hong Kong Securities and Futures Commission.

To our readers in Australia: Sanford C. Bernstein & Co., LLC and Sanford C. Bernstein Limited are exempt from the requirement to hold an Australian financial services licence under the Corporations Act 2001 in respect of the provision of the following financial services to wholesale clients:

- providing financial product advice;
- dealing in a financial product;
- making a market for a financial product; and
- providing a custodial or depository service.

Sanford C. Bernstein & Co., LLC, Sanford C. Bernstein Limited and AllianceBernstein Hong Kong Limited are regulated by, respectively, the Securities and Exchange Commission under U.S. laws, by the Financial Services Authority under U.K. laws, and by the Hong Kong Securities and Futures Commission under Hong Kong laws, all of which differ from Australian laws.

One or more of the officers, directors, or employees of Sanford C. Bernstein & Co., LLC, Sanford C. Bernstein Limited, Sanford C. Bernstein, a unit of AllianceBernstein Hong Kong Limited, and/or their affiliates may at any time hold, increase or decrease positions in securities of any company mentioned herein.

Bernstein or its affiliates may provide investment management or other services to the pension or profit sharing plans, or employees of any company mentioned herein, and may give advice to others as to investments in such companies. These entities may effect transactions that are similar to or different from those recommended herein.

Bernstein Research Publications are disseminated to our customers through posting on the firm's password protected website, www.bernsteinresearch.com. Additionally, Bernstein Research Publications are available through email, postal mail and commercial research portals. If you wish to alter your current distribution method, please contact your salesperson for details.

Bernstein and/or its affiliates do and seek to do business with companies covered in its research publications. As a result, investors should be aware that Bernstein and/or its affiliates may have a conflict of interest that could affect the objectivity of this publication. Investors should consider this publication as only a single factor in making their investment decisions.

This publication has been published and distributed in accordance with Bernstein's policy for management of conflicts of interest in investment research, a copy of which is available from Sanford C. Bernstein & Co. LLC, Director of Compliance, 1345 Avenue of the Americas, New York, N.Y. 10105, Sanford C. Bernstein Limited, Director of Compliance, Devonshire House, One Mayfair Place, London W1J 8SB, United Kingdom, Sanford C. Bernstein, a unit of AllianceBernstein Hong Kong Limited, Director of Compliance, Suite 3401, 34th Floor, One IFC, One Harbour View Street, Central, Hong Kong.

Disclosure Appendix

CERTIFICATIONS

• I/(we), Oswald Clint, Ph.D., ACA, Senior Analyst(s), certify that all of the views expressed in this publication accurately reflect my/(our) personal views about any and all of the subject securities or issuers and that no part of my/(our) compensation was, is, or will be, directly or indirectly, related to the specific recommendations or views in this publication.

Copyright 2010, Sanford C. Bernstein & Co., LLC, Sanford C. Bernstein Limited, and AllianceBernstein Hong Kong Limited, subsidiaries of AllianceBernstein L.P. ~ 1345 Avenue of the Americas ~ NY, NY 10105 ~ 212/756-4400. All rights reserved.

This publication is not directed to, or intended for distribution to or use by, any person or entity who is a citizen or resident of, or located in any locality, state, country or other jurisdiction where such distribution, publication, availability or use would be contrary to law or regulation or which would subject Bernstein or any of their subsidiaries or affiliates to any registration or licensing requirement within such jurisdiction. This publication is based upon public sources we believe to be reliable, but no representation is made by us that the publication is accurate or complete. We do not undertake to advise you of any change in the reported information or in the opinions herein. This publication was prepared and issued by Bernstein for distribution to eligible counterparties or professional clients. This publication is not an offer to buy or sell any security, and it does not constitute investment, legal or tax advice. The investments referred to herein may not be suitable for you. Investors must make their own investment decisions in consultation with their professional advisors in light of their specific circumstances. The value of investments may fluctuate, and investments that are denominated in foreign currencies may fluctuate in value as a result of exposure to exchange rate movements. Information about past performance of an investment is not necessarily a guide to, indicator of, or assurance of, future performance.