OIL & GAS, NATURAL RESOURCES

Valuation & Hedging for M&A and Financings

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MIT Energy Club – October 27, 2008

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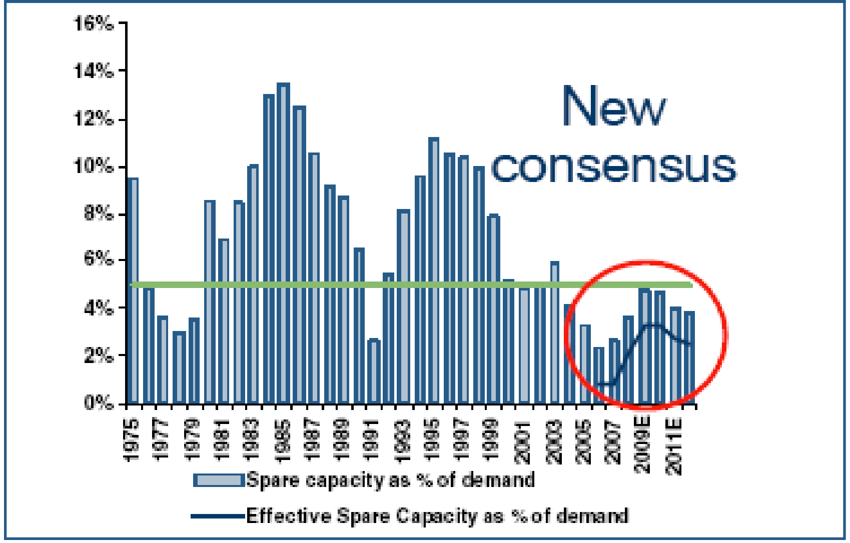
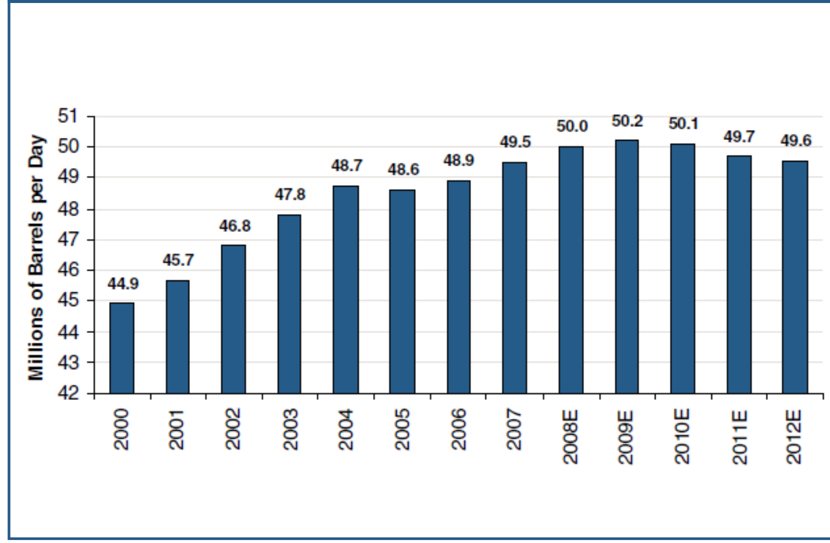
Market Expected Crude Shortage

Annual OPEC immediately deliverable spare capacity



Source: International Energy Agency, Credit Suisse estimate

Non-OPEC supply

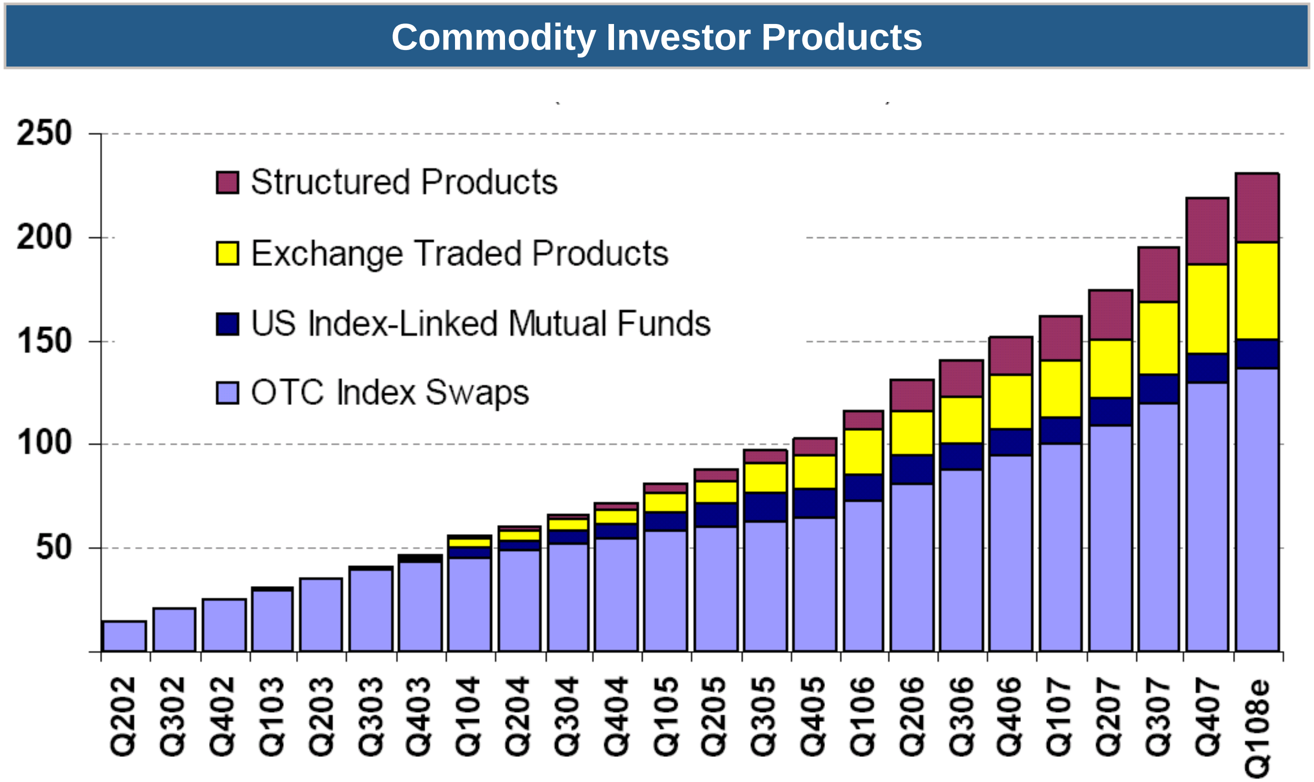


Source: International Energy Agency and Credit Suisse research, 3 October 2008

- Until mid 2008, market was irrationally fixated on 'runaway demand growth' from China, India and other developing economies
- If China and India's oil demand were to grow at 10% pa for several years, global spare capacity would have gone negative sometime in 2011
- Market continued marking oil price ever higher until evidence appeared that shortage has been avoided

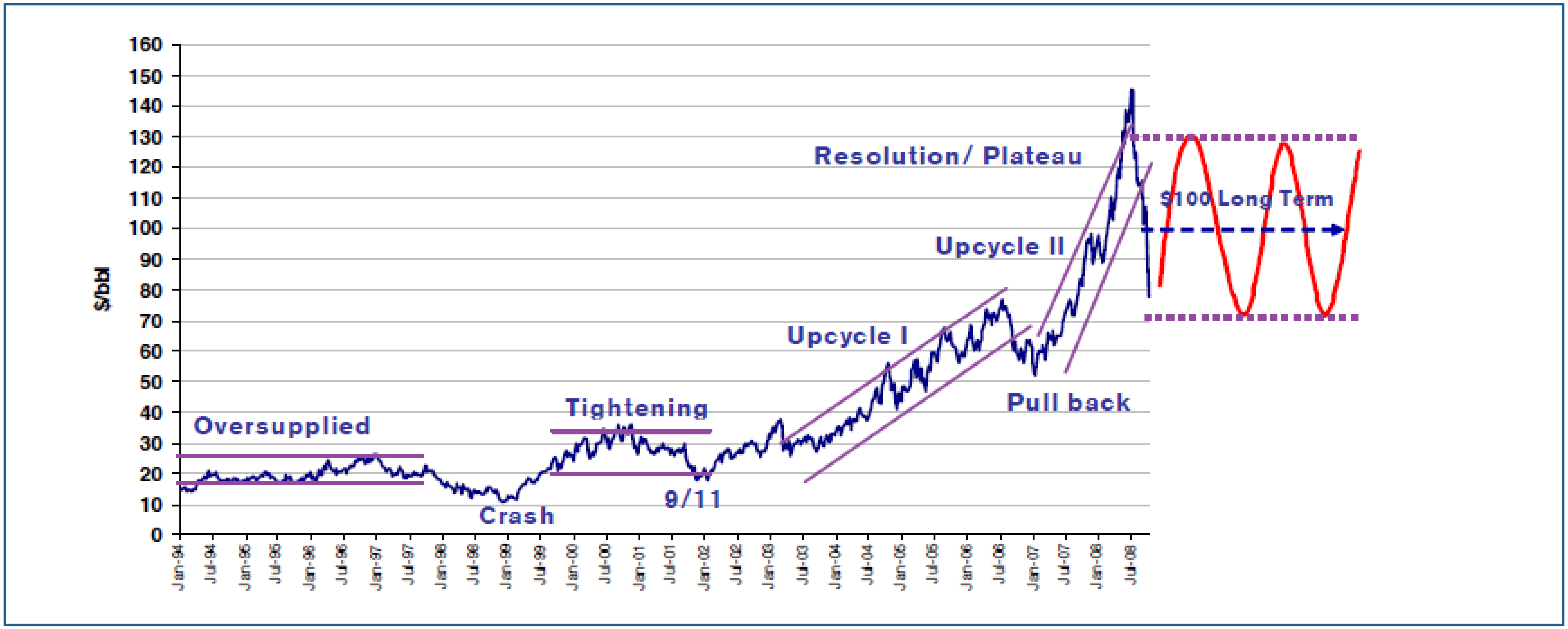
- Non-OPEC supply continued to disappoint, expected to begin declining in 2010

Emergence of Commodities as an Investor Asset Class



Increased financial participation in the commodities markets, in particular in crude oil, helped propel prices into the new paradigm

Oil Market Normalizing, Short-term Price Plateau



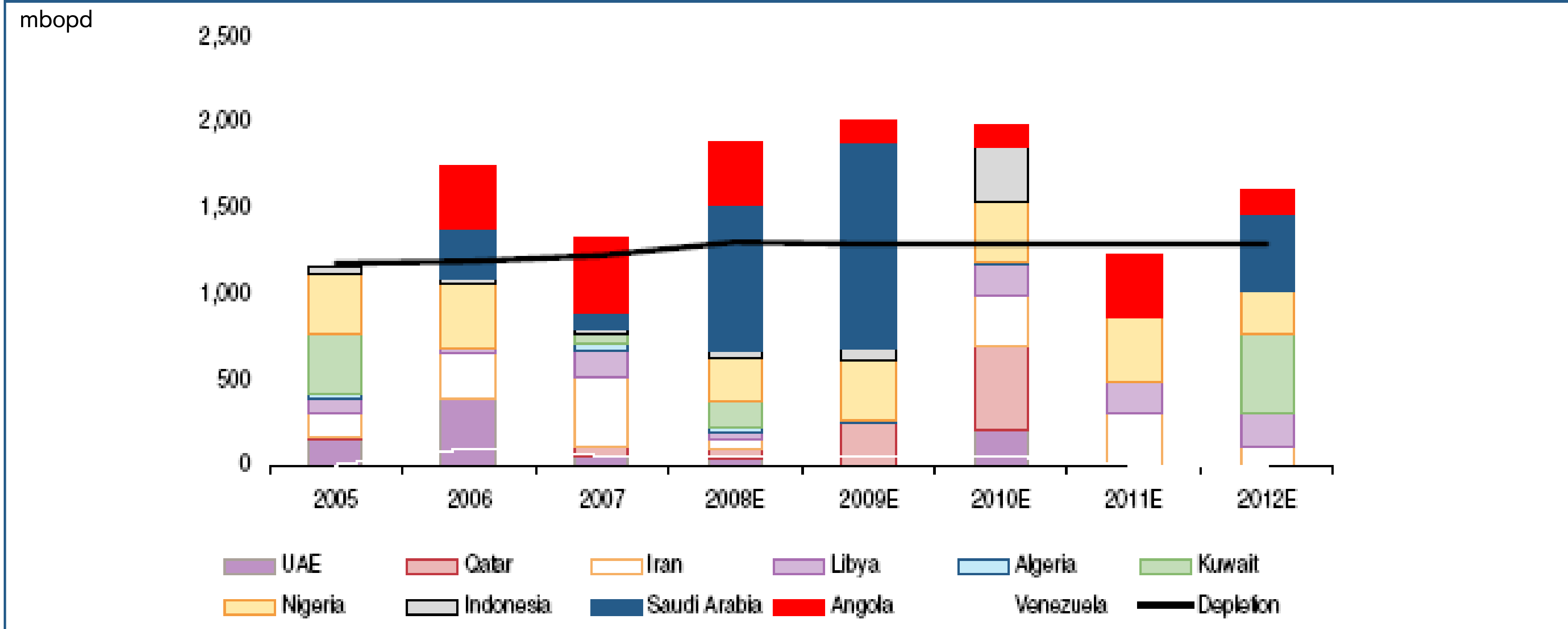
Source: Credit Suisse Integrated Oil & Gas Sector Review, 16 October 2008.

- Upcycle in oil prices now severely constrained by global financial crisis
- Oil tumbled $70 since June, but medium-term rebound to $100/bbl still possible
  - Fragile medium-term global oil supply
  - Likelihood of global economic recovery in medium term

Demand has been dampened by global financial crisis but could potentially recover, primarily from emerging market demand

OPEC capacity additions to peak in next 18 months

OPEC gross capacity additions



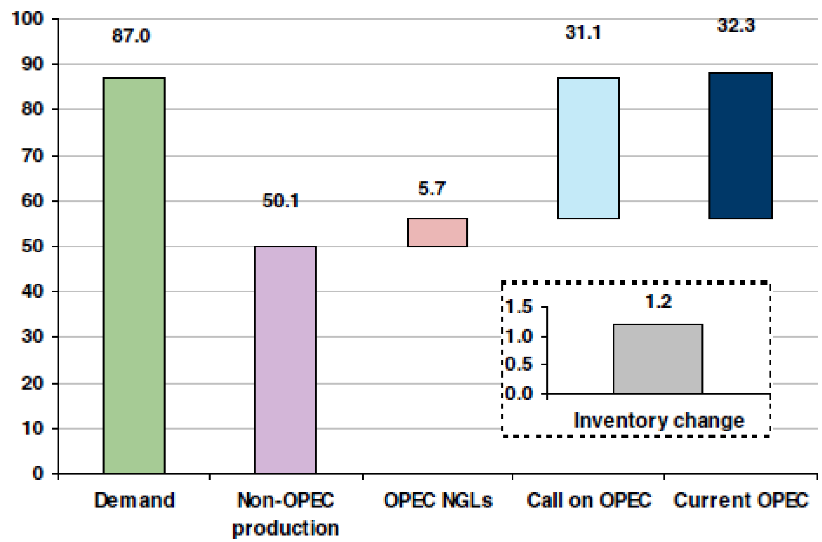
Source: OPEC, Credit Suisse analysis (16 October 2008)

- OPEC plans significant new fields over next 18 months, mostly in Saudi Arabia
- However, depletion issues are real
  - CS assumes 4% overall decline rate for OPEC may be generous

Supply story depends on Saudi Aramco's ability to execute ambitious growth plan

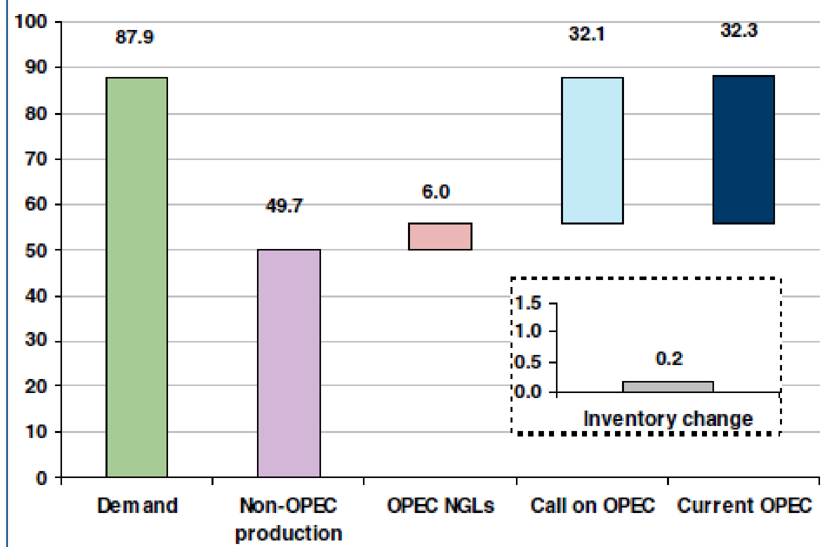
Market Balance Expected to Tighten Again in 2010

2009 estimated oil market balance



Source: Credit Suisse Integrated Oil & Gas Sector Review, 16 October 2008.

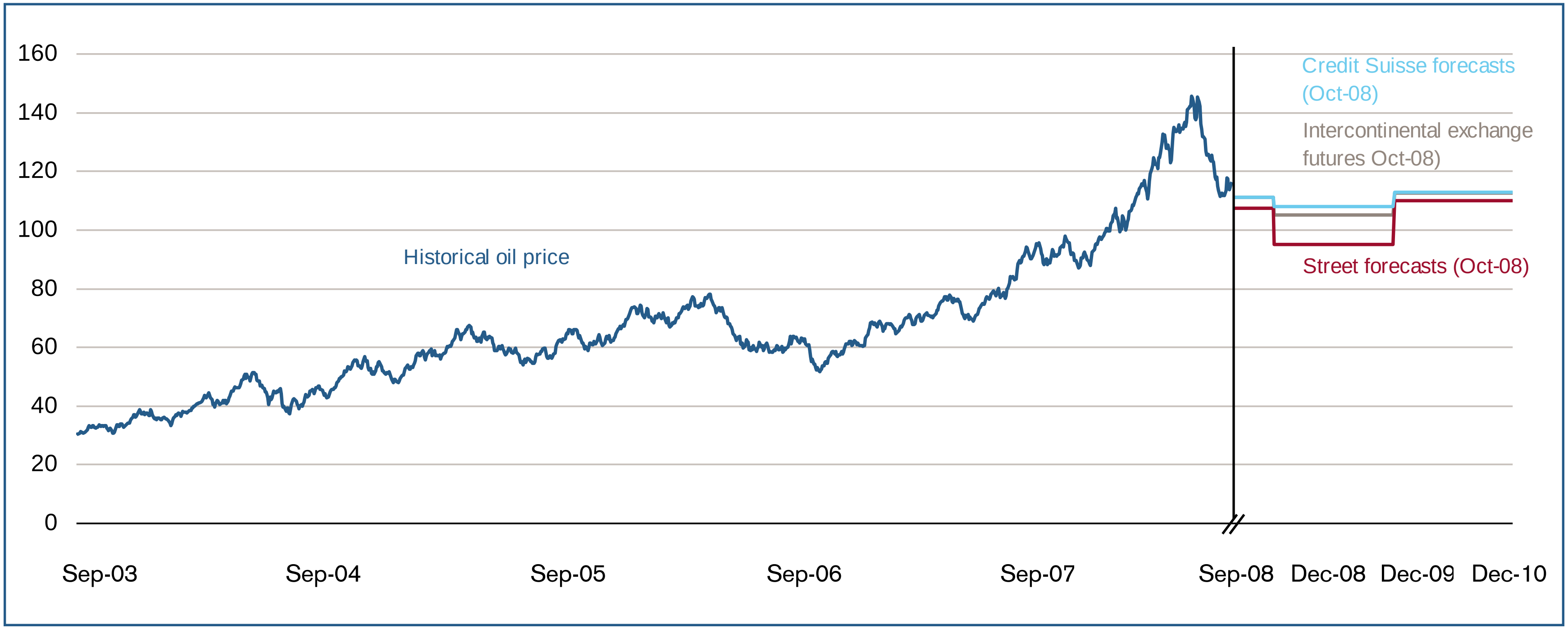
2010 estimated oil market balance



Source: Credit Suisse Integrated Oil & Gas Sector Review, 16 October 2008.

OPEC inventory expected to fall from 1.2mmbd in 2009 to 0.2mmbd in 2010 since OPEC and non-OPEC supply growth may not match demand growth

Crude Price Recovery Towards Late 2009 or 2010?



Average Brent Oil prices	2008E	2009E	2010E
Forward curve (Oct-08)	US$111.22/bbl	US$105.00/bbl	US$112.54/bbl
Street research (Oct-08)	US$107.5/bbl	US$95.1/bbl	US$109.9/bbl
Credit Suisse research (Oct-08)	US$102.0/bbl	US$73.0/bbl	US$98.0/bbl

Source: Bloomberg, Credit Suisse Integrated Oil & Gas Sector Review, 16 October 2008.
Current and broker price data is as of 10 October 2008.
Note: All prices are year averages.
Street forecasts are the average forecasts.

Oil price is expected to hold in Q408, likely to fall before recovering in 2009/2010

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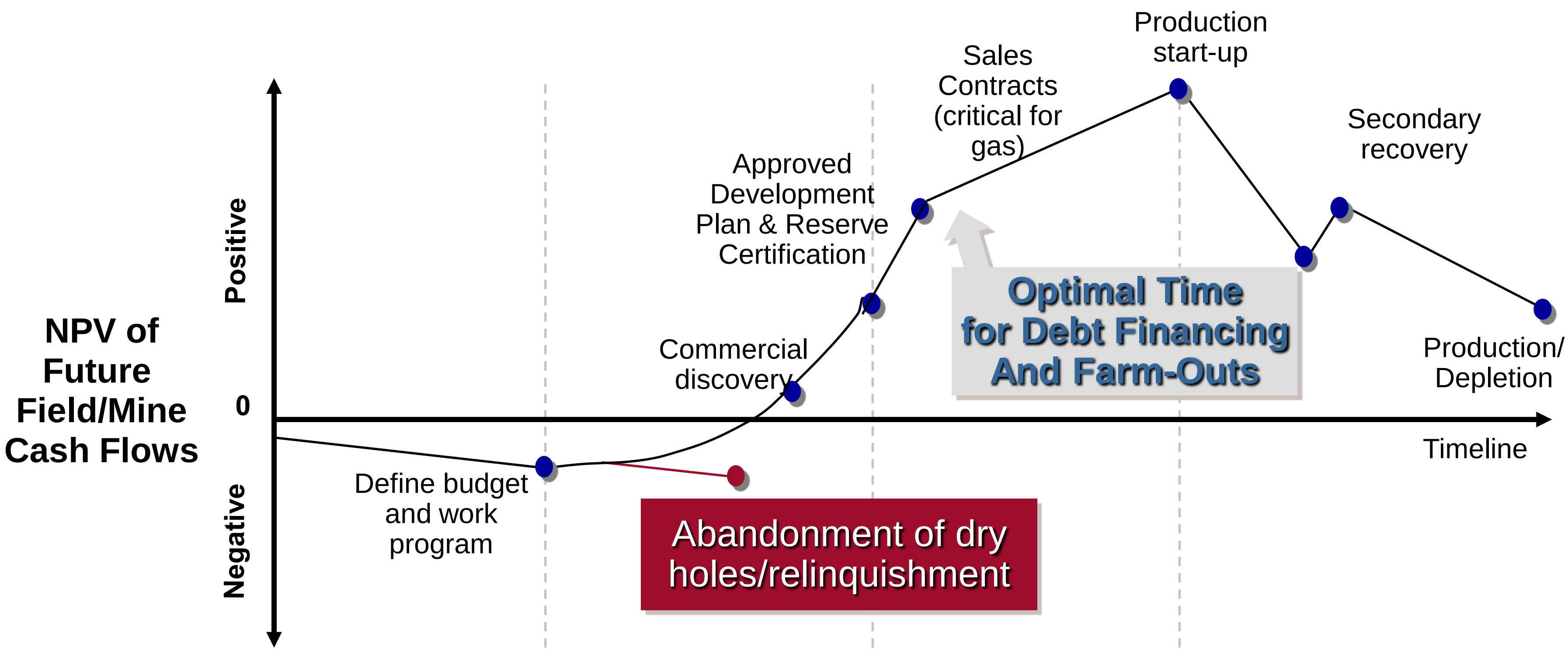
Resources Sector Valuation Drivers

- Stage of project lifecyle
  - Exploration, development/construction and production risks
- Reserves and resources in the ground
  - Proven and probable (2P) / mineable reserves
  - Possible reserves and contingent resources
- Production volume projections
  - Gradual decline due to natural depletion
- Supply-demand and price
  - Commodity cycles
  - Offtake contracts vs spot markets
  - Hedging
- Cost estimates
  - Capital expenditures
  - Operating expenses

Resource Project Lifecycle



PHASE	Prelim. Study	Exploration	Development	Production
RISK-RETURN	Low Cost Low Risk	Medium Capex High Risk	High Capex Medium Risk	Low Capex Low/Medium Risk
		Strategic, Private Equity	***Private placement Investors/lenders, ECAs, int'l banks***	***Commercial banks & public markets***

Summary of Valuation Methodologies

	Method	Relevanc	Advantages	CS's Approach
Primary	NAV (DCF)	High	Focus of strategic investors Capture fundamental long-term resource value and upside Eliminates distortion in capital structure and accounting policy Confirm reinvestment efficiency and other value creation	▸ Fundamental valuation driver ▸ Captures long-term growth value ▸ Technical consultants to assess volumes, costs, risks
Secondary	Comparable Companies EV/EBITDA EV/Mineabl. Reserves	Med	Sector widely traded on cash flows and reserve base Minimize accounting distortion Focus of public and cross-border investors	▸ Primary driver for international public market valuation ▸ Support short-term view on valuation, longer-term benchmark
Secondary	Comparable Acquisitions	Med	Focus on similar asset or company class acquisition values – widely used benchmark for M&A Focus on project stage to determine impact of future costs Capture strategic and control value	▸ Benchmark for fundamental value driver (DCF) ▸ Check for strategic/control value

NAV should be primary valuation driver, supported by Compcos and Compaqs

Net Asset Value (DCF) Analysis

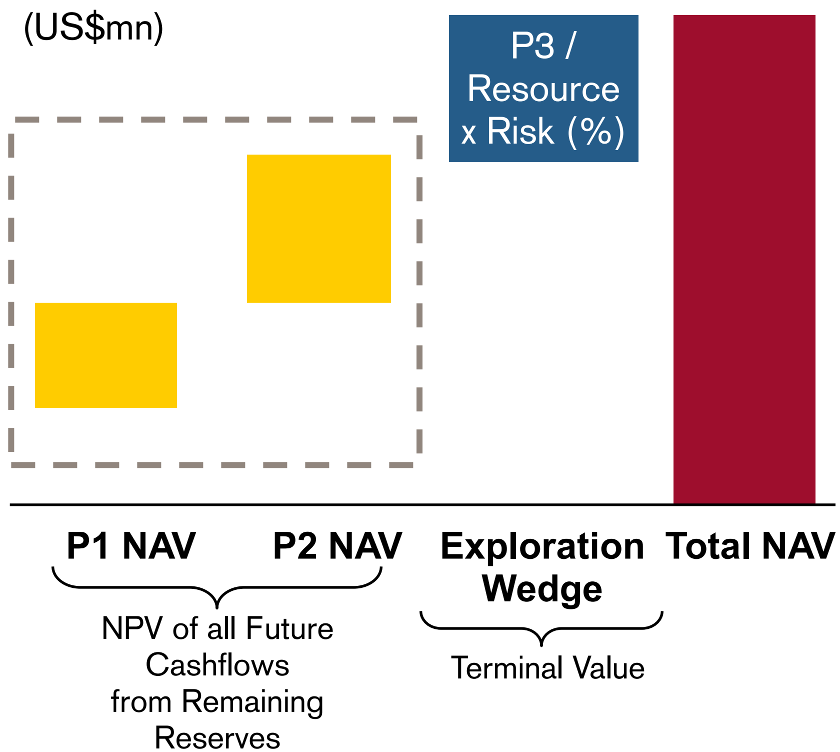
Overview of NAV Analysis

Revenue Assumptions
- Oil price based on industry forecasts
- Gas prices based on long term sales contracts
- Production from P1 reserves
- Production from P2 reserves moved into P1 category

Cost Assumptions
- Drilling Costs
- Transport Costs
- Labor Cost
- Depreciation Expenses
- PSC Taxes

Key NAV Assumptions
- Working interest
- WACC

NPV of Future Cashflows from Remaining Reserves (2P)

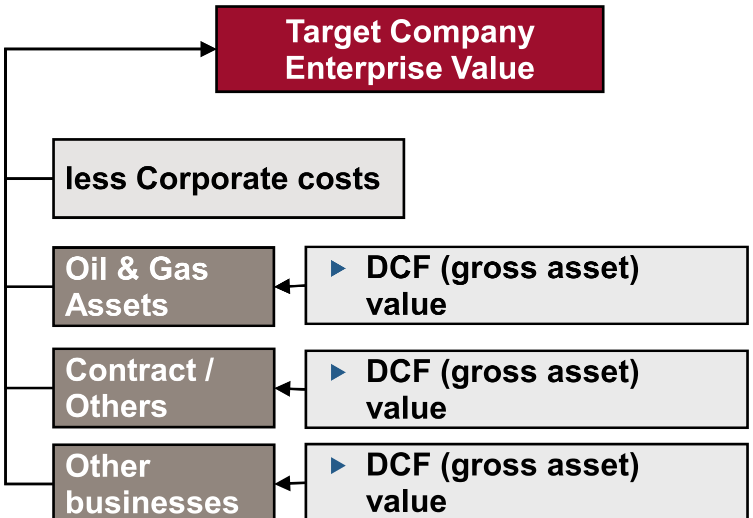


NAV method allows determination of full value of an oil & gas asset, derived from developing all of its remaining reserves and risked resources

Valuation of Companies

Primary: Sum-of-Parts Approach

Summation of value of each field based on DCF



Pros

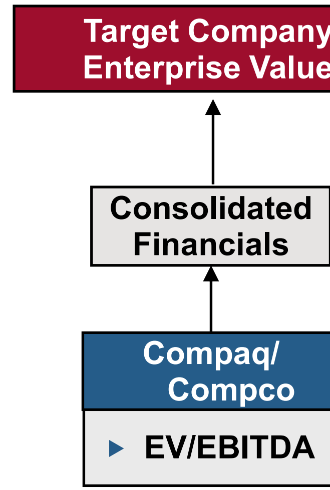
- ✓ More thorough valuation approach
- ✓ Captures large value difference of assets
- ✓ Good for valuation due diligence and restructuring considerations

Cons

- ▶ Not reflected or used in public market valuation methodologies

Secondary: Corporate Approach

Valuation of Target Company based on its consolidated status



Pros

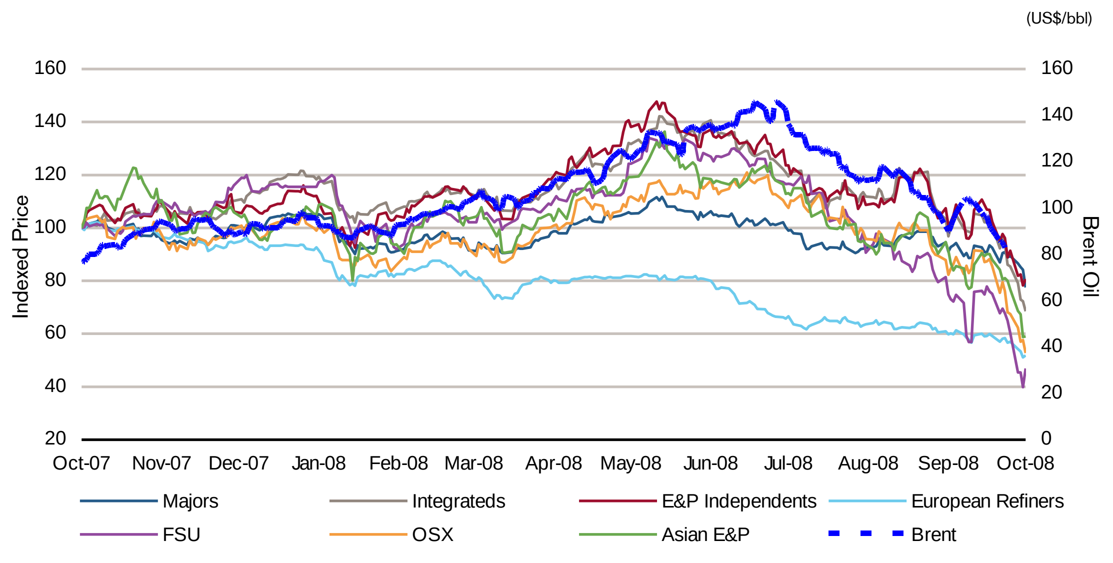
- ✓ Simplified approach
- ✓ Public-market approach - necessary for benchmarking DCF and exit scenarios

Cons

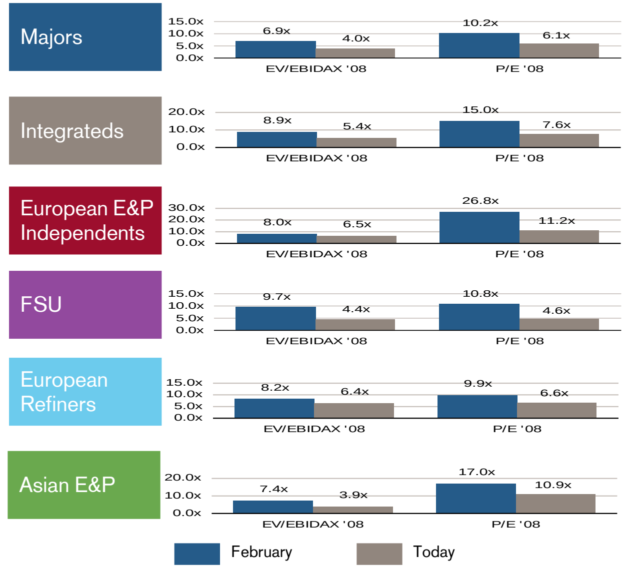
- ▶ Does not utilize asset-specific valuation parameters
- ▶ Does not allow for restructuring or cost saving analysis
- ▶ Does not demonstrate asset value contribution by field

Share Price Performance of Oil & Gas Companies

LTM share price performance



Valuation multiples



Source: Bloomberg, Capital IQ and FactSet as of 9 October 2008, Credit Suisse analysis

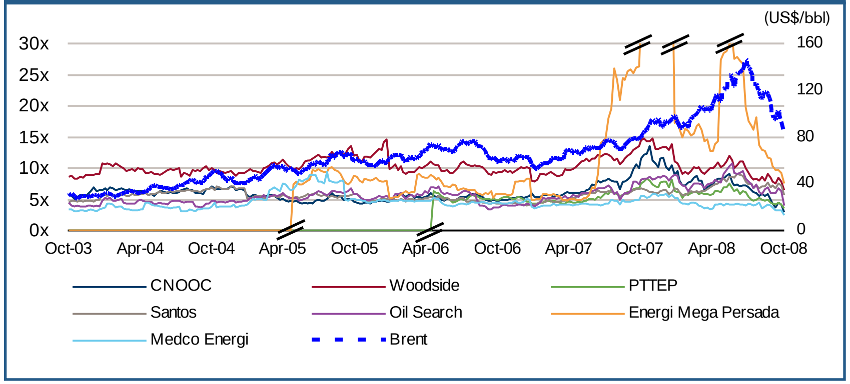
(1) Majors include: BP, Chevron, ConocoPhillips, ENI, ExxonMobil, Royal Dutch Shell, Total
Integrateds include: BG Group, Hess, Husky Energy, Imperial Oil, OMV, Petro-Canada, Statoil, Suncor Energy
E&P Independents include: Cairn Energy, Dana Petroleum, Lundin Petroleum, Premier, Oilexco, Tanganyika, Soco International, Tullow Oil
FSU include: Gazprom, KMG E&P, Lukoil, Novatek, Rosneft
European refiners include: Galp Energia, Hellenic Petroleum, MOL, Motor Oil, Neste, Petroplus, PKN Orlen, Saras, Tupras
OSX includes Baker Hughes, BJ Services, Cameron, Global Industries, GlobalSantaFe, Halliburton, Nabors, Noble Corp, National Oilwell Varco, Rowan, Transocean, Smith International, Schlumberger, Tidewater, Weatherford International
Asian E&P includes CNOOC, Woodside Petroleum, PTTEP, Santos, Oil Search, Energi Mega Persada, Medco Energi

- Strong volatility in the global Oil & Gas universe over last twelve months
- All subs-segments suffered significantly over past four months
- Majors and Refiners had disappointing performance throughout the last twelve months

Share price performance dampened by the global financial crisis

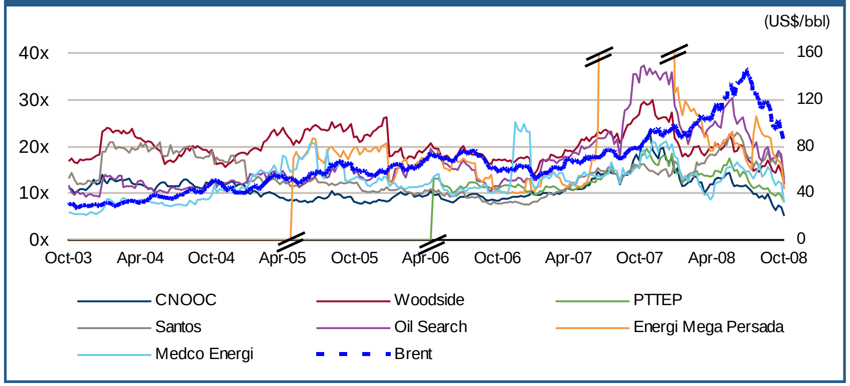
Asian Oil & Gas Comparable Company (Compco) Analysis

FY1 EV/EBITDA



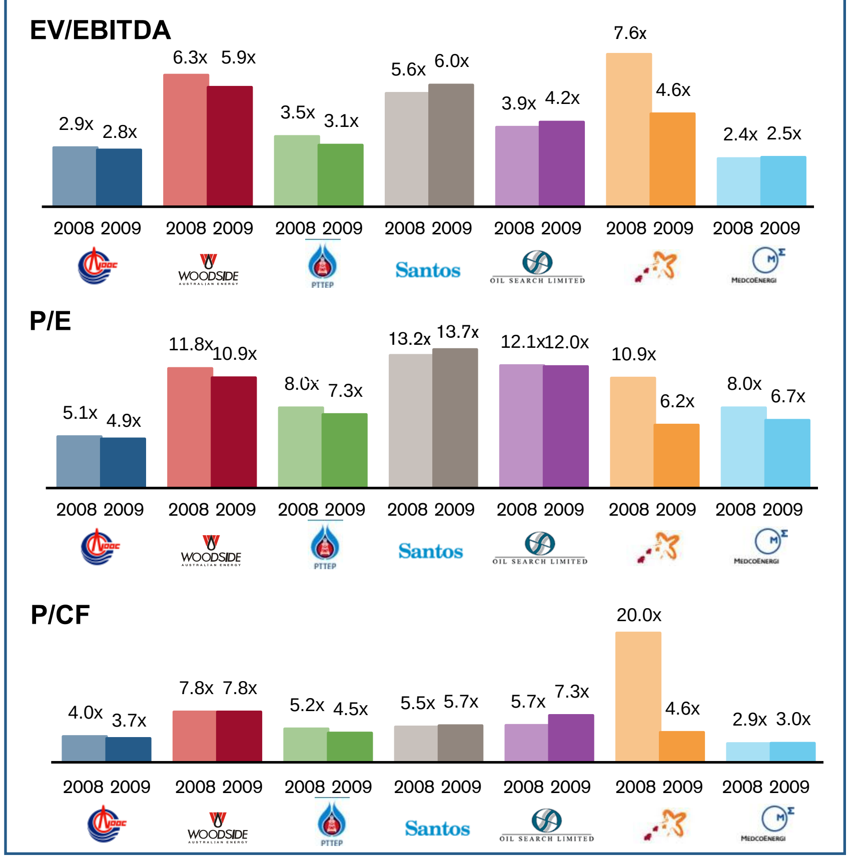
Source: Capital IQ, Bloomberg, share price as of 9 October 2008

FY1 P/E



Source: Capital IQ, Bloomberg, share price as of 9 October 2008, Credit Suisse analysis

Forward multiples



Source: Capital IQ, share price as of 9 October 2008

Last few months have seen multiple compression for Asian E&P companies

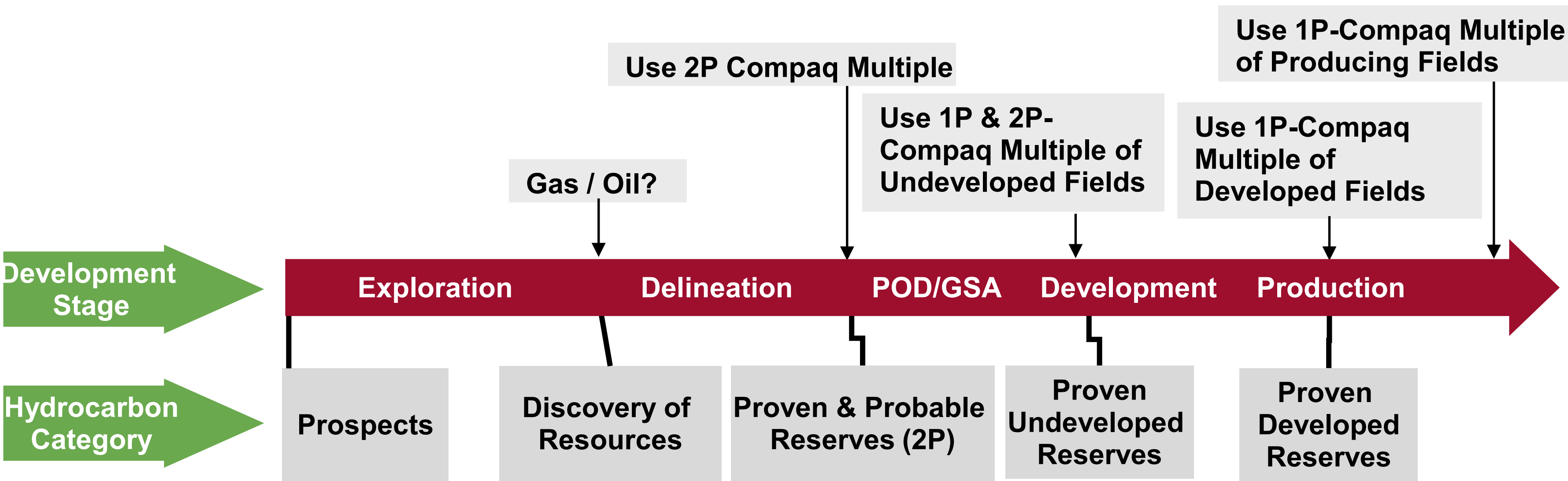
Sample E&P Compco Table

(US$ in millions, except otherwise noted)

Company	Price Currency	Price (7/2/08)	Market Value	Enterprise Value	EV / EBITDA 2008E	EV / EBITDA 2009E	P / E 2008E	P / E 2009E	EV / 1P ($ / boe)	EV / 2P ($ / boe)	2P (mmboe)	2007 Total Debt [(1)] / Capital	2007 Total Debt [(1)] / LTM EBITDA	2007 Total Debt [(1)] / Mkt Equity
Asian Companies														
CNOOC Ltd.	HKD	14.06	$80,538	$76,541	7.6x	7.1x	13.7x	13.0x	$30.27	NA	NA	7.6%	0.2x	1.9%
Woodside Petroleum Ltd.	AUD	65.64	43,490	44,275	10.6	10.3	19.6	18.9	27.34	28.02	1,579.9	12.6%	0.8	3.5%
PTT Exploration and Production Public Co.	THB	191	19,933	19,497	6.5	5.7	15.2	13.6	19.68	NA	NA	3.4%	0.3	7.6%
Santos Ltd.	AUD	20.42	11,712	13,376	8.0	8.8	20.6	20.2	27.58	16.33	819.0	11.4%	1.5	12.9%
Oil Search Ltd.	AUD	6.52	7,028	6,684	9.4	9.9	27.3	26.0	108.69	81.82	81.7	0.2%	0.1	21.5%
PT Energi Mega Persada Tbk	IDR	920	1,455	1,820	7.3	5.2	13.5	8.3	15.84	7.94	229.3	2.1%	15.0	103.9%
Medco Energi Internasional tbk PT	IDR	4,775	1,748	2,206	4.3	4.0	16.1	14.5	15.36	4.56	484.2	4.7%	2.0	86.5%
Mean					**7.7x**	**7.3x**	**18.0x**	**16.3x**	**$34.97**	**27.73**	**638.8**	**6.0%**	**2.8x**	**34.0%**
Median					**7.6**	**7.1**	**16.1**	**14.5**	**27.34**	**16.33**	**484.2**	**4.7%**	**0.8**	**12.9%**
European Companies														
Tullow Oil plc	GBP	9.19	$13,137	$14,101	13.3x	13.6x	39.8x	38.3x	$64.39	NA	NA	6.0%	1.5x	11.5%
Cairn Energy plc	GBP	31.65	8,151	7,752	38.2	10.6	NM	12.9	39.55	NA	NA	0.5%	1.0	18.6%
Lundin Petroleum AB	SEK	84.75	4,477	5,173	7.4	5.3	18.5	15.4	26.84	35.40	146.1	2.9%	1.3	33.8%
Soco International plc	GBP	18.35	2,665	2,597	34.1	17.3	31.1	15.6	33.68	NA	NA	0.0%	0.1	56.7%
Premier Oil plc	GBP	15.74	2,577	2,297	3.9	4.6	7.0	8.0	15.64	14.05	163.5	0.8%	0.5	58.7%
Dana Petroleum plc	GBP	18.24	3,128	3,012	3.5	3.6	11.0	11.1	23.38	27.01	111.5	0.0%	NM	48.3%
Venture Production plc	GBP	8.33	2,423	2,542	2.9	2.2	8.4	6.1	32.40	13.25	191.8	2.2%	1.0	62.4%
Mean					**14.8x**	**8.2x**	**19.3x**	**15.4x**	**$33.70**	**22.43**	**153.2**	**1.8%**	**0.9x**	**41.4%**
Median					**7.4**	**5.3**	**14.7**	**12.9**	**32.40**	**20.53**	**154.8**	**0.8%**	**1.0**	**48.3%**
North American Companies														
Talisman Energy Inc.	CAD	20.90	$20,964	$25,053	3.1x	2.7x	8.8x	8.8x	$16.84	NA	NA	21.8%	0.7x	7.2%
Nexen Inc.	CAD	38.81	20,234	24,256	3.9	3.4	8.0	7.4	24.99	NA	NA	23.1%	0.9	7.5%
Noble Energy, Inc.	USD	95.84	16,893	17,962	5.7	4.8	10.8	9.0	20.40	NA	NA	9.4%	0.7	9.0%
Denbury Resources Inc.	USD	33.57	8,571	9,133	8.7	7.1	17.1	14.7	46.90	NA	NA	3.3%	0.8	17.6%
Newfield Exploration Co.	USD	63.84	8,738	9,633	6.0	4.3	15.5	10.7	23.15	NA	NA	5.3%	0.4	17.3%
Plains Exploration & Production Company	USD	69.35	7,569	9,721	6.0	5.9	12.5	12.9	14.09	NA	NA	10.9%	1.4	20.0%
Encore Acquisition Co.	USD	73.40	3,991	5,284	6.6	6.1	13.2	12.7	22.84	NA	NA	5.9%	2.3	37.9%
Stone Energy Corp.	USD	63.71	1,832	1,715	2.0	1.4	5.9	5.6	25.56	NA	NA	2.0%	0.6	82.5%
Energy Partners Ltd.	USD	14.40	463	924	3.1	2.8	11.7	6.7	20.39	NA	NA	2.4%	1.2	326.3%
Mean					**5.0x**	**4.3x**	**11.5x**	**9.8x**	**$23.91**	**NA**	**NA**	**9.3%**	**1.0x**	**58.4%**
Median					**5.7**	**4.3**	**11.7**	**9.0**	**22.84**	**NA**	**NA**	**5.9%**	**0.8**	**17.6%**
Overall Mean					**8.8x**	**6.4x**	**15.7x**	**13.5x**	**$30.25**	**25.38**	**423.0**	**6.0%**	**1.6x**	**45.8%**
Overall Median					**6.5**	**5.3**	**13.6**	**12.9**	**24.99**	**16.33**	**191.8**	**3.4%**	**0.9**	**20.0%**

Source: Company filings, press releases, Wall Street research and Reuters consensus estimates.
(1) Some companies are per 2006 data.

Comparable Asset Acquisition (Compaq) Analysis

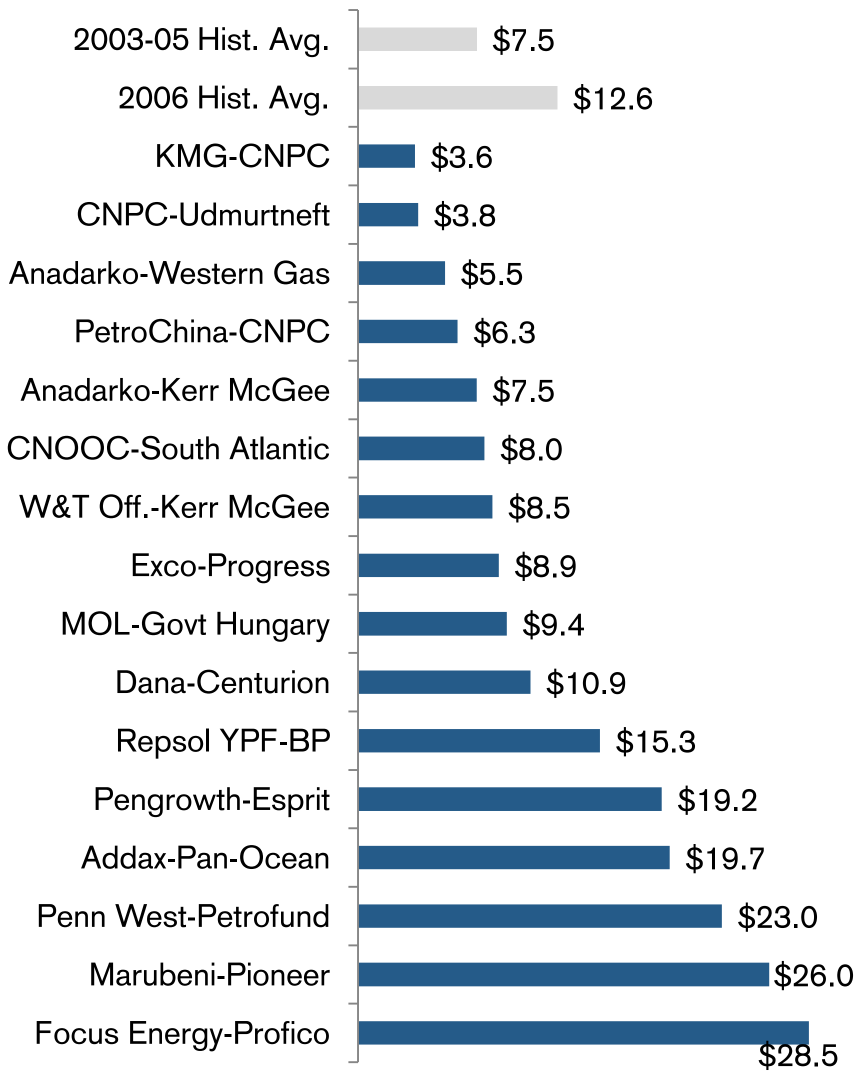


Major Considerations

- Gas focused or oil focused?
- Development stage?
- Producing/non-producing?
- Geographical location of assets?
- Concession terms and fiscal regime?
- Strategic and control value - operatorship?

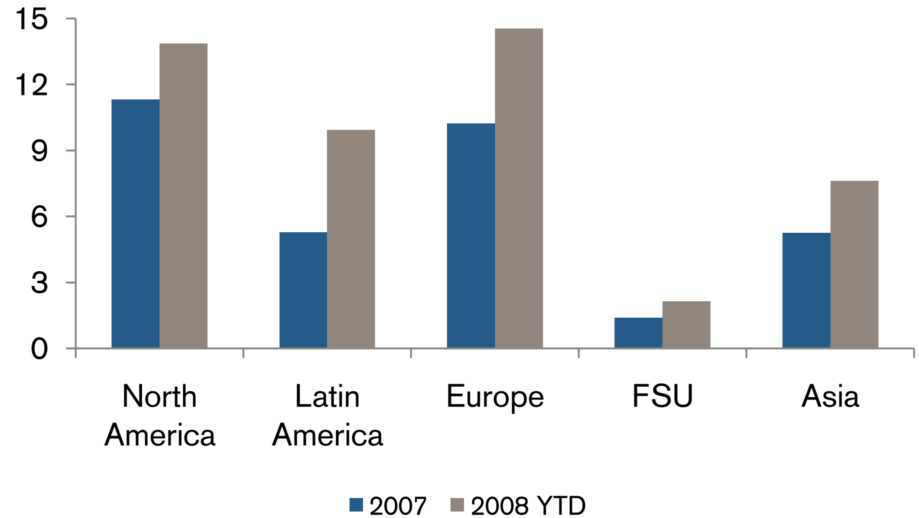
Compaq Multiples Increased Significantly

2003-2006 Global US$/2P

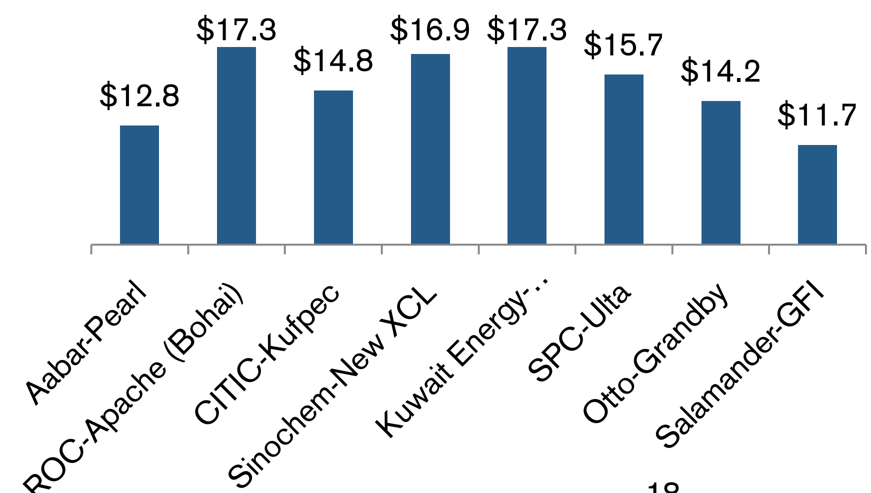


Source: Herolds Statistics

2007 & 2008YTD Global US$/2P



Recent Asian US$/1P



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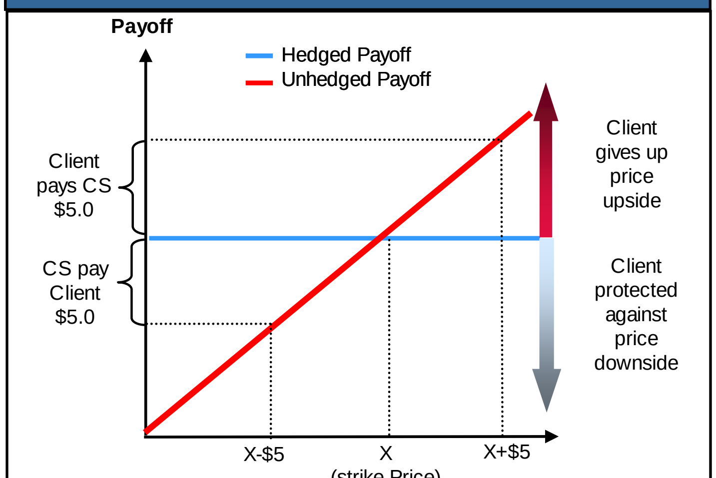
3. Hedging

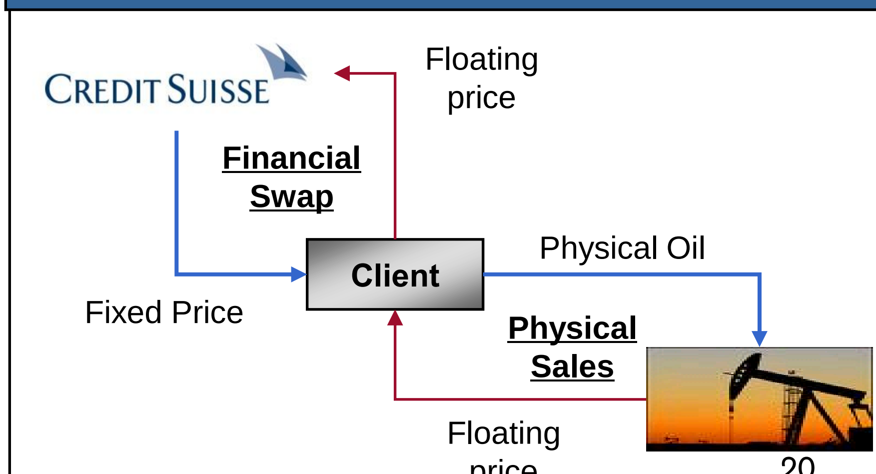
Vanilla Swap

Commodity Reference Price	OIL-WTI-NYMEX	▪ Observable price reference
Fixed Price	$[136]/bbl * * illustrative price only	▪ Fixed price agreed at trade date
Floating Price	TBD	▪ Average Commodity Reference Price over each Calculation Period
Tenor	Cal 2009	▪ Effective period of the contract
Calculation Period	Monthly	▪ Settlements based on monthly price averages
Settlement	Cash	▪ **At the end of each Calculation Period, the difference between the Fixed Price and Floating price is settled as a cash payment paid to/from the Client**
Option Premium	None	▪ **Zero Cost**

Payoff Diagram



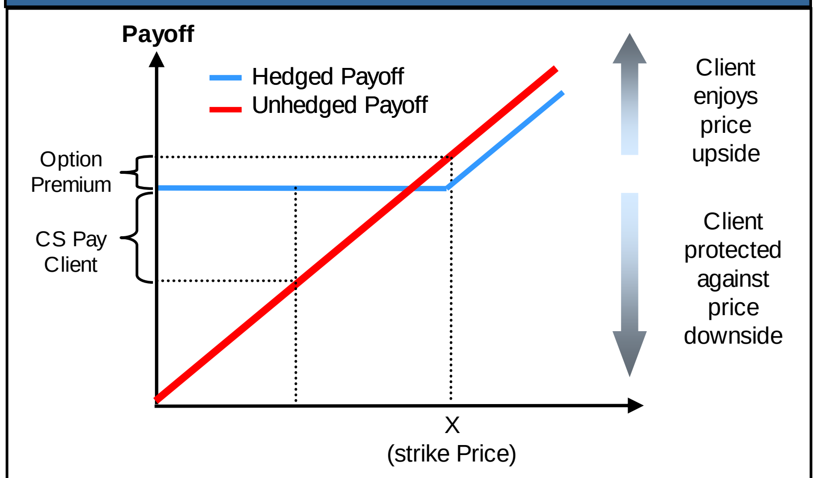
Hedge Flow Diagram



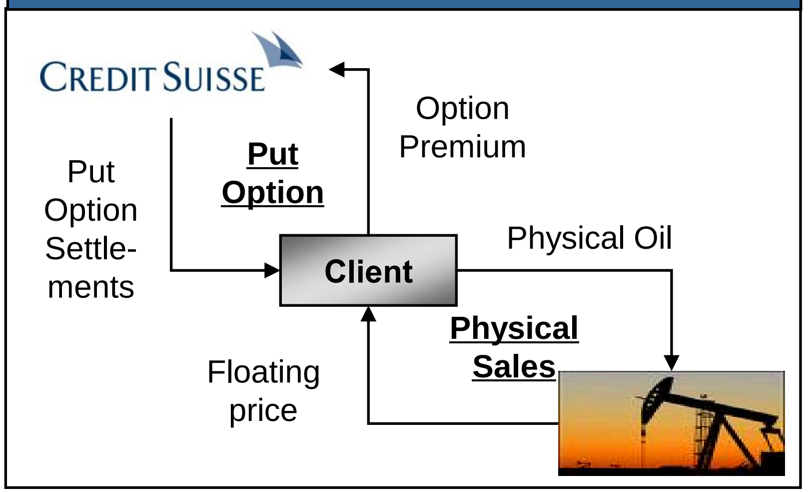
Vanilla Put Option Structure

Commodity Reference Price	OIL-WTI-NYMEX	▪ Observable price reference
Floating Price	TBD	▪ Average Commodity Reference Price over each Calculation Period
Put Strike	$[115]/bbl *	▪ Client buy Put - Strike level determined at trade date
Tenor	Cal 2009	▪ Effective period of the contract
Calculation Period	Monthly	▪ Settlements based on monthly price averages
Settlement	Cash	▪ **At the end of each Calculation Period, the difference between the Put Strike and Floating Price is settled as a cash payment paid to the Client, if above zero**
Option Premium	$[9.0]/bbl *	▪ **Cost of option that is paid in cash upfront**
	* illustrative price only	

Payoff Diagram



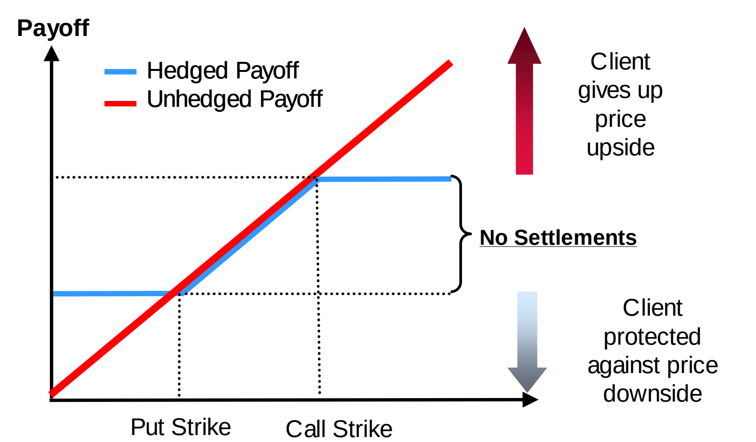
Hedge Flow Diagram



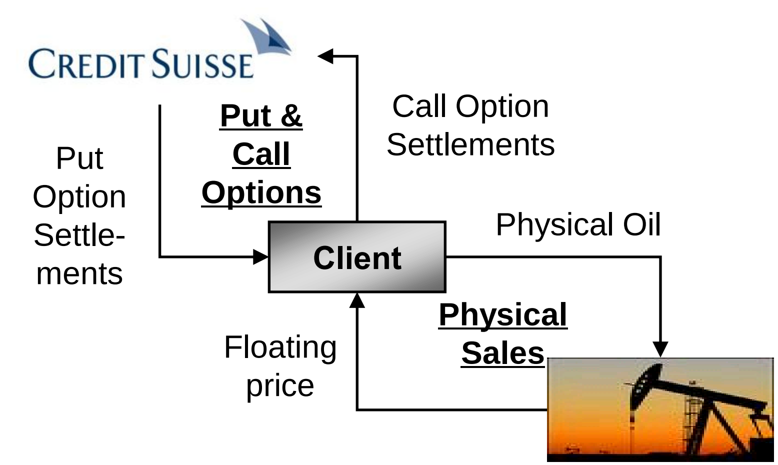
Vanilla Collar Option Structure

Commodity Reference Price	OIL-WTI-NYMEX	▪ Observable price reference
Floating Price	TBD	▪ Average Commodity Reference Price over each Calculation Period
Call Strike	$[165]/bbl *	▪ Client sell Call - Strike level determined at trade date
Put Strike	$[115]/bbl *	▪ Client buy Put - Strike level determined at trade date
	* Illustrative prices only	
Tenor	Cal 2009	▪ Effective period of the contract
Calculation Period	Monthly	▪ Settlements based on monthly price averages
Settlement	Cash	▪ **At the end of each Calculation Period, if the Floating Price is above the Call Strike or below the Put Strike, a cash settlement will be made to/from the client**
Option Premium	None	▪ **Zero Cost**

Payoff Diagram



Hedge Flow Diagram



THANK YOU