

Global Oil & Gas

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That was then... past 30 years gave us exceptionally high GDP growth

1. 1/3 of world's population exits communism
2. Rich countries lever up
3. World peace, and emerging market political stability

This is now... next 30 years low GDP growth

1. Only 5 communist countries left (includes Laos)
2. Rich countries forced de-levering and weak demography
3. Emerging market middle classes demand better government and/or non-colonial borders
4. Communication revolution mitigates global conflict...
5. ...But intra-country political conflict/civil war, and global terrorism

Can technology save us from low growth? Don't think so...

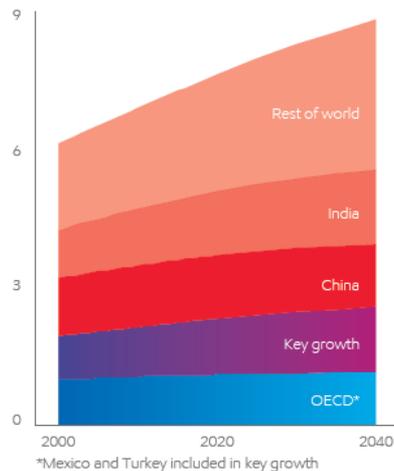
1. Internet low employment, high intellectual capital = Zuckerberg \$30bn age 30
 - Groupthink concentrates winners and wealth
2. Good news: lower military budgets/spending "asymmetric opposition"
 - Iran sanctions were imposed electronically – and worked (+ some cyber warfare/Stuxnet)

Key impacts

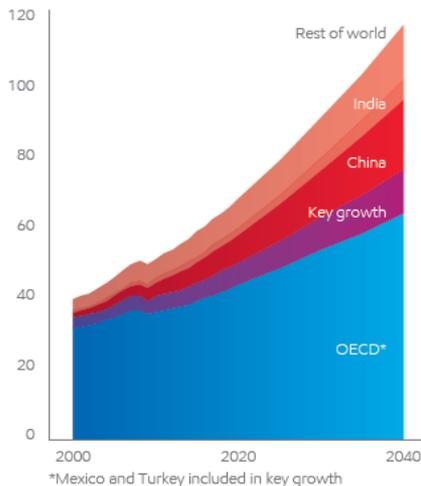
1. Emerging market middle classes demand political representation = civil war
 - The move from medieval monarchy to liberal democracy involves guillotines
 2. Rich countries' political stasis and retrenchment; de-leveraging + weak demography
 - "The end of history"
- = LOW GROWTH WORLD
- Low interest rates vs asset inflation = yet more wealth concentration
 - **Growth very tough but premium valuation if achieved; high value of dividend**

ExxonMobil ...Energy Outlook Too Bullish? Or WAY too bullish?

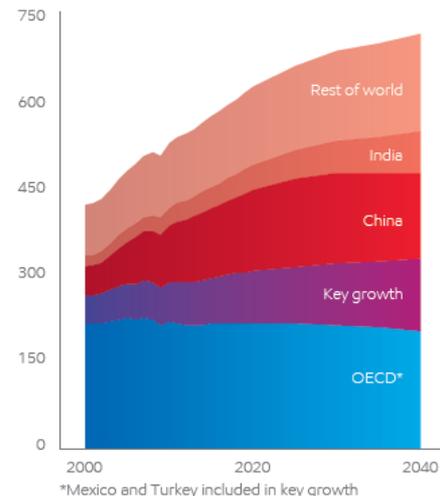
Global population
Billions of people



Economic output (GDP)
Trillions of 2005 dollars



Global energy demand
Quadrillion BTUs



Major risk to oil equities is external risk: demand (but analysts spend ~99% of time on supply)

1. Major demand events: Asian Financial Crisis, 9/11, Global Financial Crisis (av. every 7 years?)
2. Supply events spike oil prices and destroy demand = bad for oil equities - \$150/bbl? Sell!
3. In extreme circumstances COST OF CAPITAL IS KEY MITIGATOR OF RISK
 - ExxonMobil had richer CDS in financial crisis than US government

Management (safety) is the biggest equity value risk

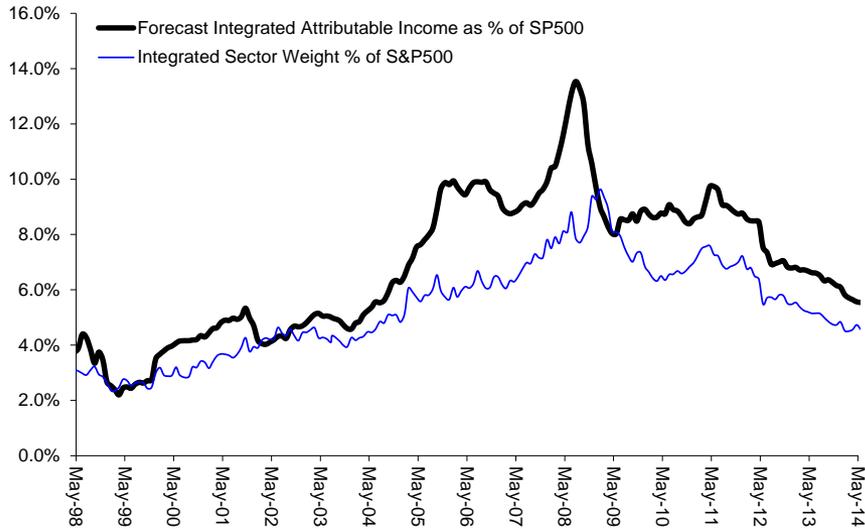
1. Macondo BP
2. Texas City BP
3. Alaskan oil spill BP
4. Exxon Valdez
5. Shell reserves booking scandal

Oil price planning is the biggest corporate strategy risk – alongside corporate ego

Risks are to the upside too

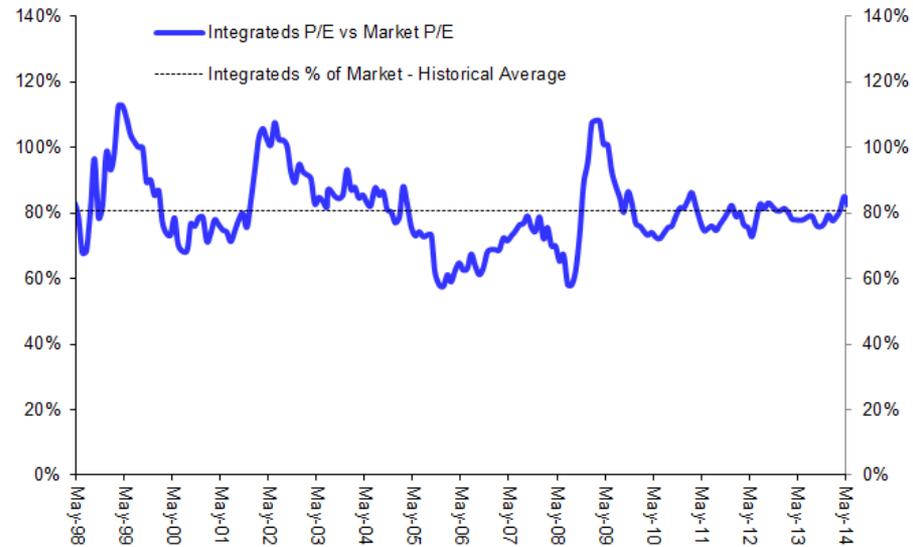
1. US unconventional revolution – biggest oil surprise of the past 30 years
2. Chinese oil demand growth
3. Brazilian sub-salt – no German oil companies benefit

Integrations - Share in S&P500 Earnings vs market cap



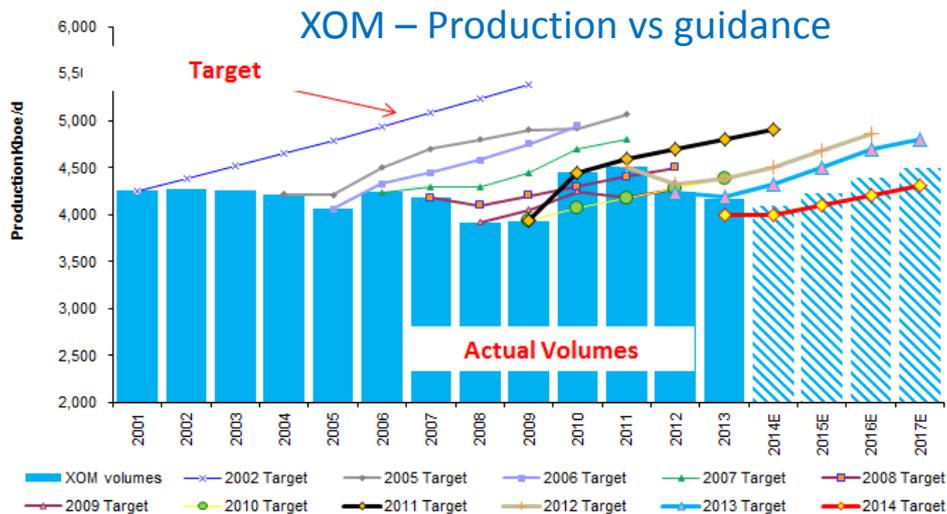
Source: FactSet, Wolfe Research

Relative Multiple Integrations vs S&P500

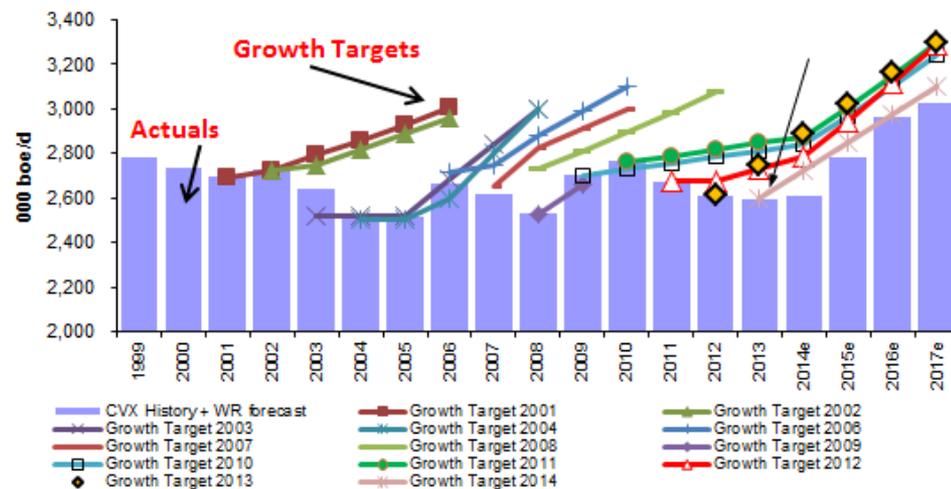


Source: FactSet, Wolfe Research

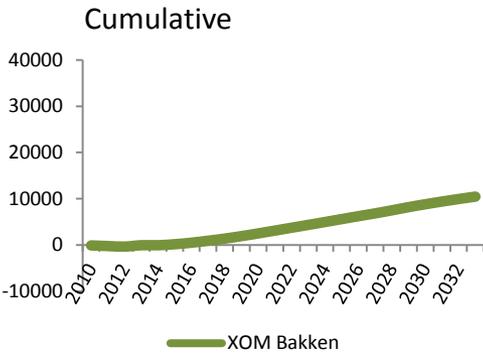
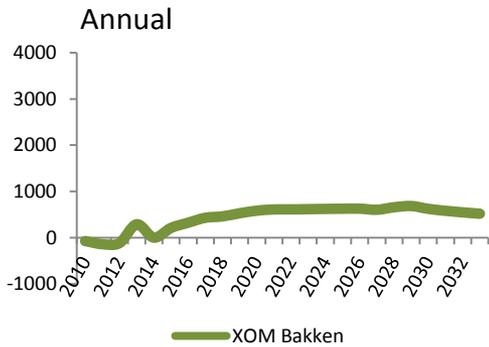
Super-Major Production “Porcupine Charts” Over a decade of missed long-term production plans



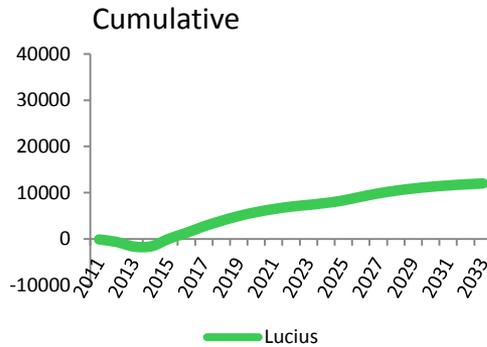
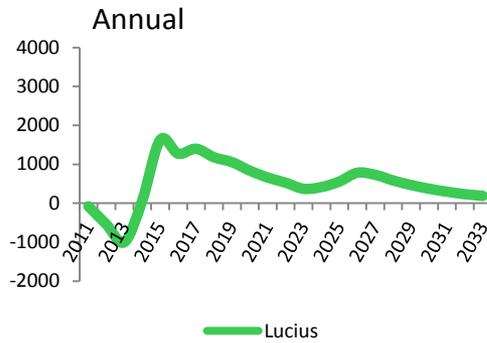
CVX – Production vs guidance



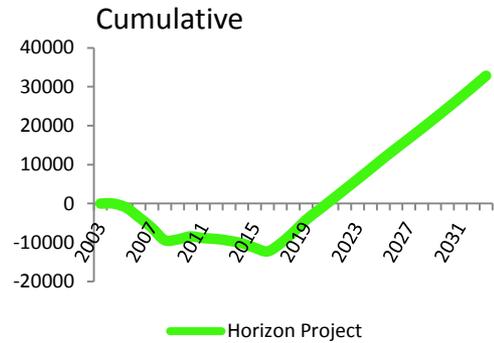
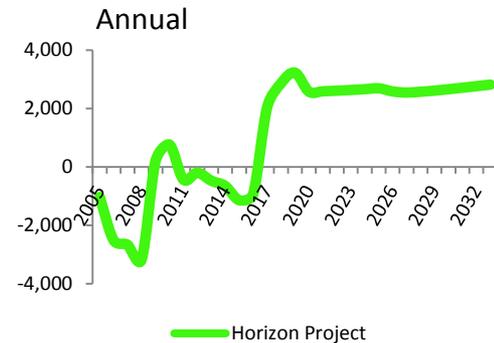
U.S. Unconventional



Deepwater Gulf of Mexico



Canadian Oil Sands

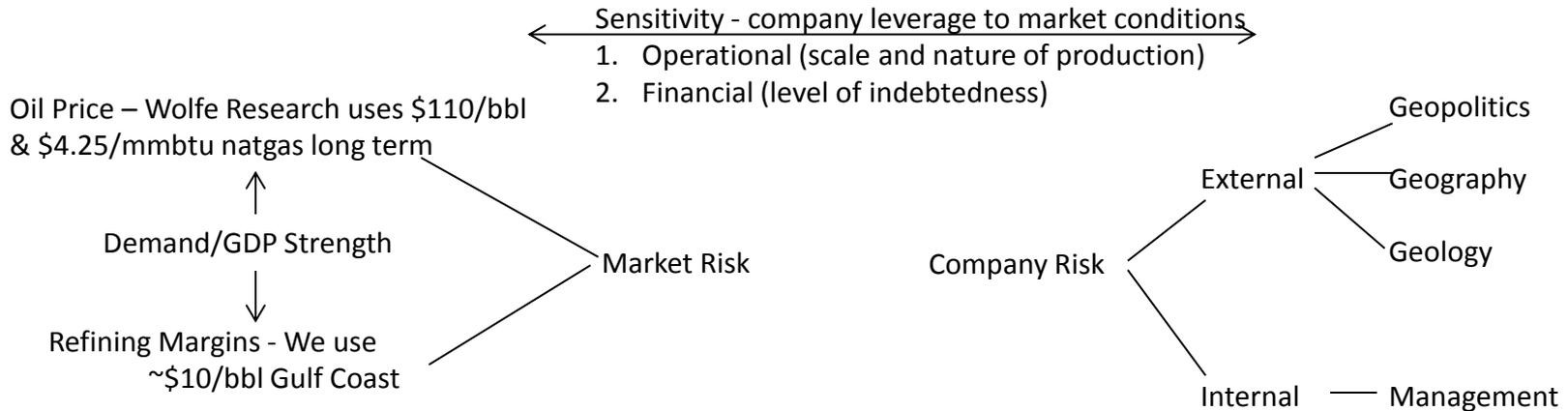


Risks to Net Asset Value

Simply, the present value of the future free cashflow (enterprise value) from a given asset base (gross asset value) is subject to two major uncertainties:

1. **Market variation:** For oil companies, can be simplified to the oil price, US natgas price, and refining margins.
2. **Company specific risk:** Where anticipated corporate performance falls short or exceeds expectations, in two sub-risks
 - external (such as thieving governments, crazy weather, gigantic global financial meltdowns)
 - and internal (management competence, both operational and financial)

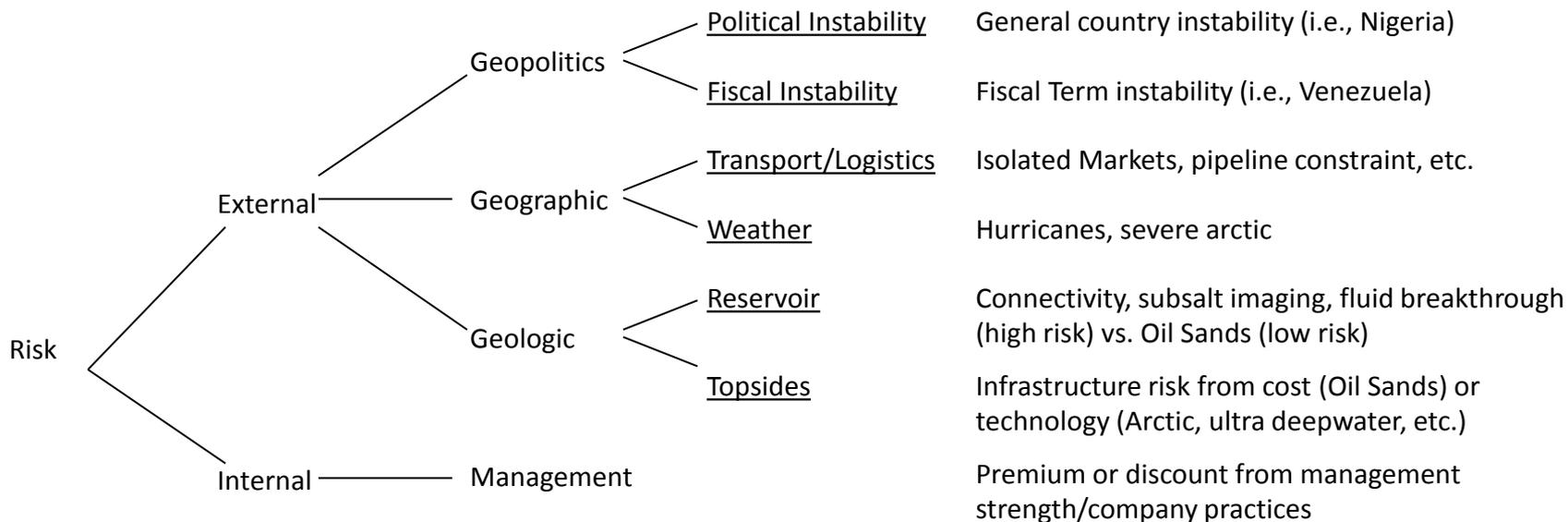
Note: Enterprise value/Gross asset value less net debt = equity value . Equity value / number of shares = share price value



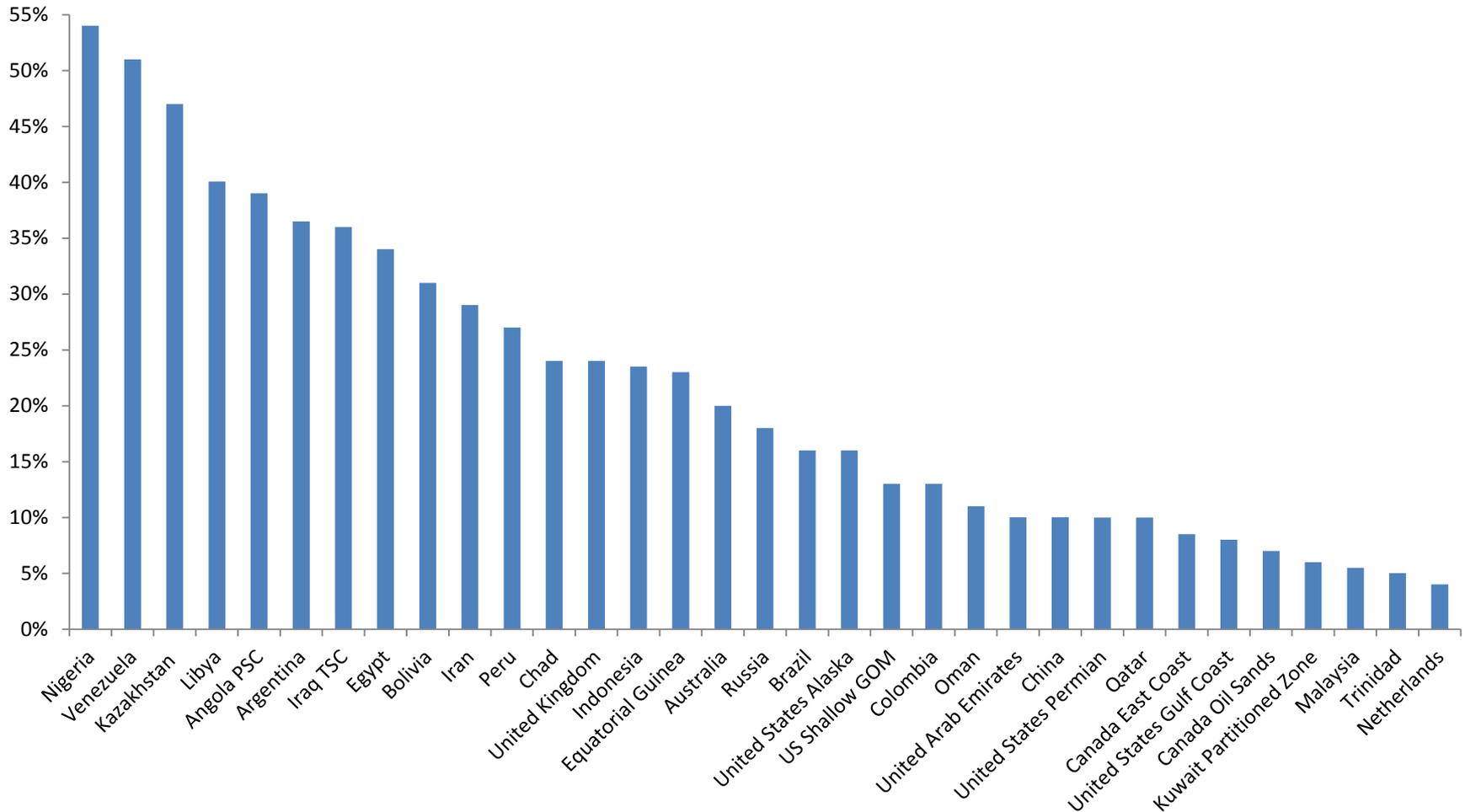
Corporate Risk Categories

Asset values are exposed to significant external risk ranging from political volatility to reservoir underperformance to weather. Basic core value takes each company’s upstream assets based on 2P reserves for 1,000s of individual fields for some 190 different oil and gas fiscal regimes. We then net these from “unrisked” to “risked” to reflect the “three G’s” of risk:

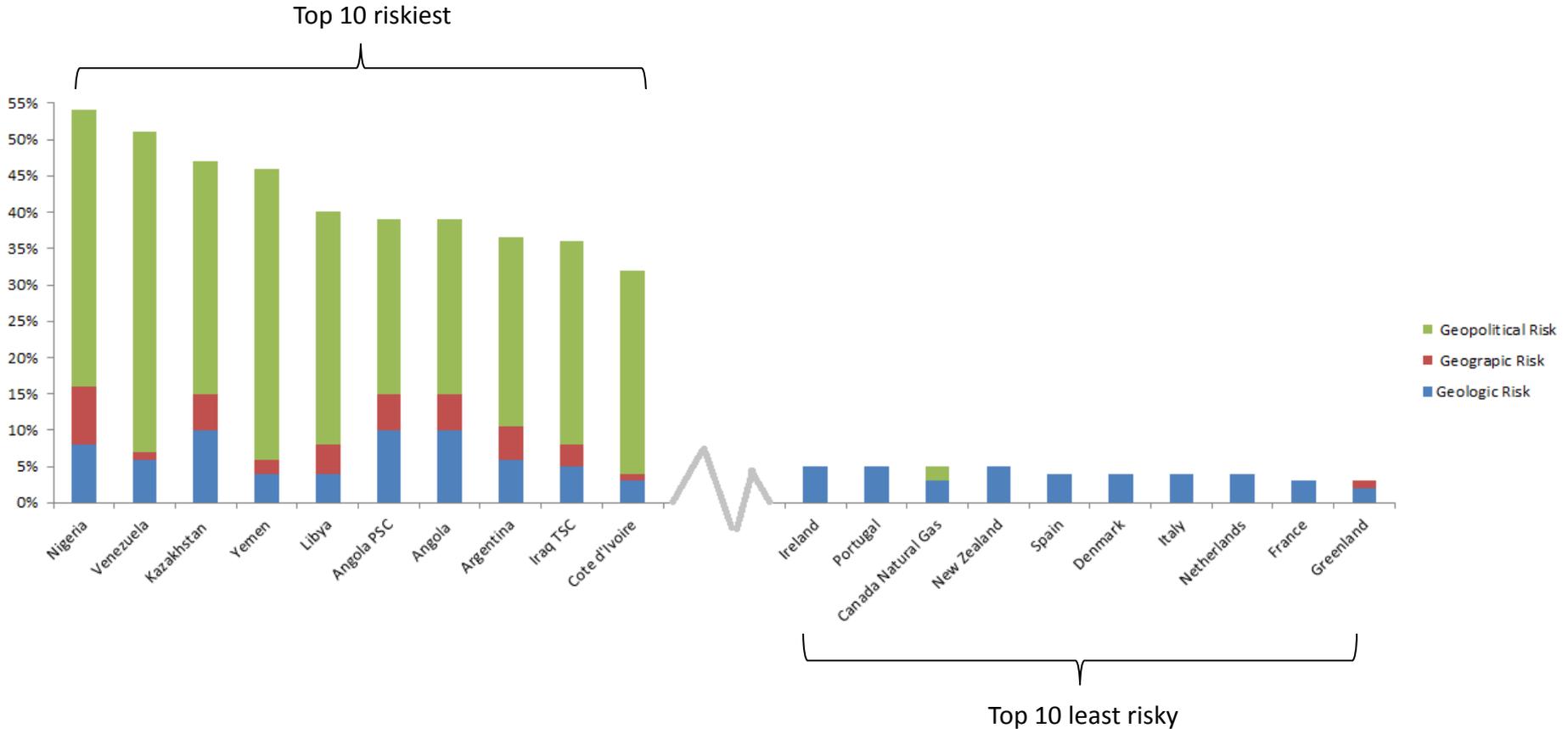
- **Geology**, in terms of reservoir and production facilities required
- **Geography**, in terms of proximity to market of oil – particularly (stranded) gas reserves – and weather, and
- **Geopolitics**, in terms of political and fiscal stability



What is the risk discount we apply by regime?



Source: Wolfe Research



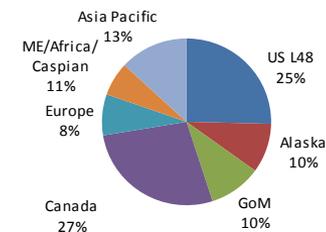
Source: Wolfe Research estimates

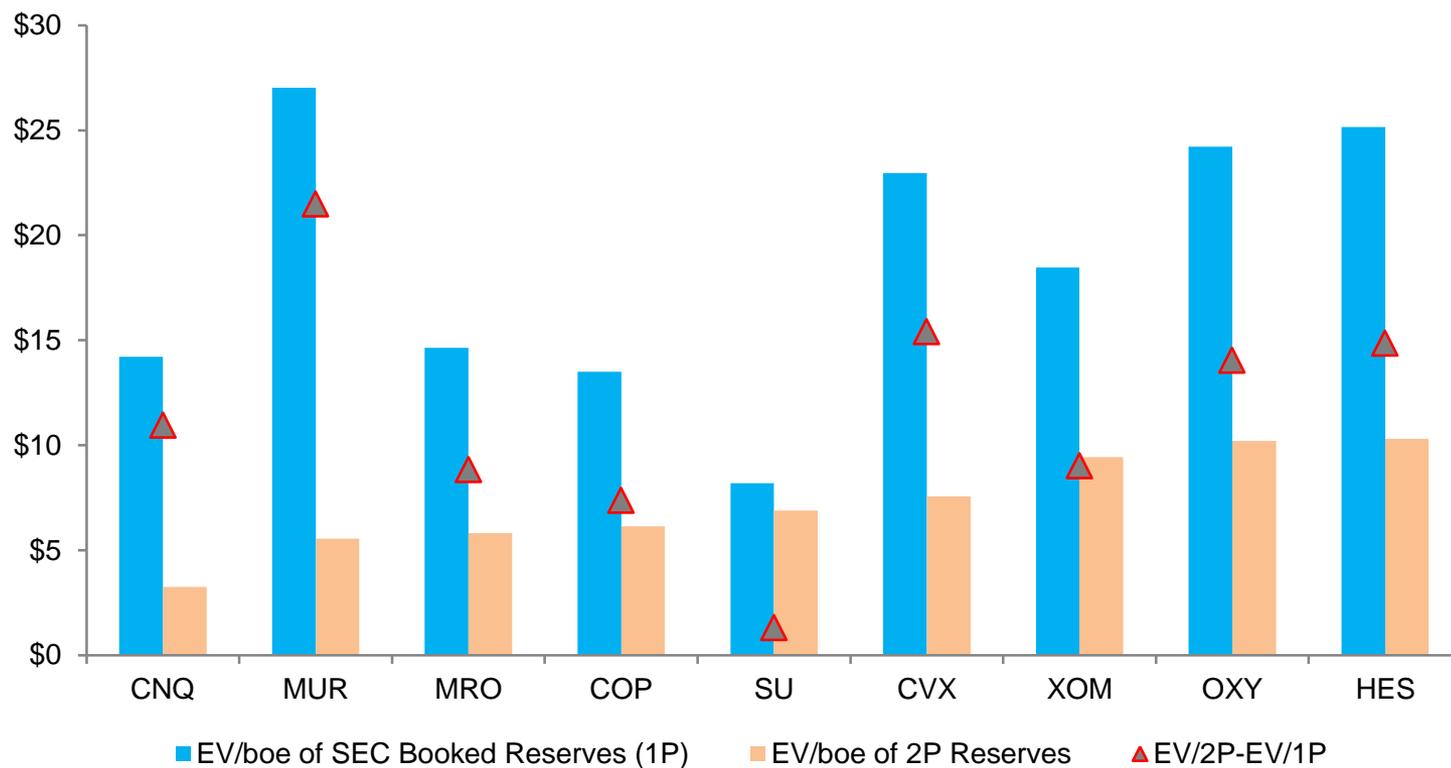
Example Net Asset Value

ConocoPhillips
Sum-of-the-
Parts NAV

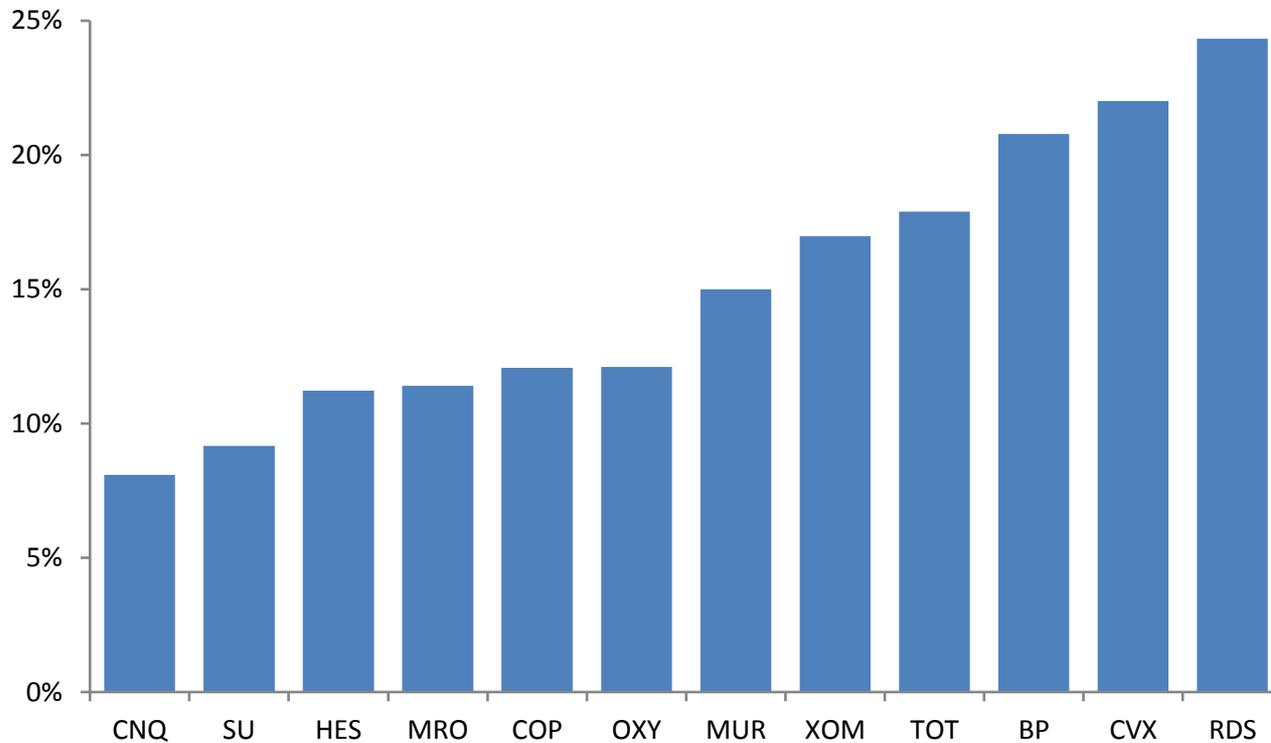
Upstream Regions	Key Assets/Comments	Risky Value			Unrisky Value			Resource		
		\$/Share	% of EV	Risky	Total	2P	3P	2P	3P	\$/2Pboe
United States										
Permian		6.58	4.7%	8,159	9,066	9,066	0			
Bakken		3.28	2.3%	4,072	4,475	4,475	0			
Alaska	Prudhoe Bay, Kuparuk, Colville River, West Sak, Mooses Tooth	13.07	9.3%	16,209	19,297	14,390	4,907			
GOM	Value will grow via discovery development - Tiber, Coronado	13.76	9.8%	17,069	20,200	11,425	8,775			
Eagle Ford	Huge EF position in core area	17.16	12.3%	21,279	23,130	23,130	0			
Rockies		4.85	3.5%	6,020	6,616	6,616	0			
Mid/Southern Gas		2.83	2.0%	3,506	3,811	3,811	0			
Total US	Nice balance across US unconventional plays	61.53	44.0%	76,315	86,594	72,912	13,682	7,814	2,186	9.77
Canada										
Western Canada	Cardium	6.99	5.0%	8,668	9,320	9,320	0			
Oil Sands	50/50 at FCCL (CVE a top-notch operator), Surmont	25.98	18.6%	32,221	34,646	24,041	10,605			
Offshore Arctic	Beaufort Sea	4.41	3.2%	5,473	6,439	1,520	4,919			
Total Canada		37.38	26.7%	46,362	50,405	34,881	15,524	6,446	4,837	7.19
Europe										
Norway	Ekofisk, Eldfisk, Alvheim, Heidrun, Troll, Visund, Oseberg	6.51	4.7%	8,073	9,071	8,929	142	935	63	8.63
United Kingdom	Clair, Jasmine, Britannia	4.37	3.1%	5,418	7,130	6,849	281	436	45	12.42
Total Europe		10.88	7.8%	13,491	16,200	15,778	423	1,372	108	9.84
Sub-Saharan Africa										
Nigeria	Awaiting close on sale of assets for \$1.79B	1.44	1.0%	1,790	2,787	2,690	97	624	404	2.87
Total Sub-Saharan Africa		1.44	1.0%	1,790	2,787	2,690	97	624	404	2.87
Middle East/North Africa										
Libya	Waha partner	0.55	0.4%	678	1,256	1,251	6	458	233	1.48
Qatar	QatarGas 3	6.88	4.9%	8,531	9,478	9,478	0	581	0	14.68
Total MENA		7.42	5.3%	9,208	10,735	10,729	6	1,039	233	8.86
Caspian/Russia										
Russian Federation	Polar Lights	0.10	0.1%	125	167	167	0	9	0	14.12
Total Caspian/Russia		0.10	0.1%	125	167	167	0	9	0	14.12
Asia Pacific										
Australia	APLNG, Greater Sunrise	6.33	4.5%	7,847	9,178	7,260	1,917	937	1,064	8.38
China	Troubled Peng Lai project	4.02	2.9%	4,985	5,540	5,111	428	309	31	16.12
Indonesia	South Natuna, Corridor	3.40	2.4%	4,211	5,505	5,367	138	510	110	8.26
Malaysia	Kebabangan, Block SB J, SB G	3.41	2.4%	4,233	4,577	4,409	168	445	230	9.52
Timor-Leste/Australia JPDA	Bayu-Undan	0.74	0.5%	922	1,079	1,079	0	136	9	6.79
Total Asia Pacific		17.90	12.8%	22,199	25,877	23,226	2,651	2,336	1,462	9.50
Upstream Total		136.65	97.7%	169,490	192,765	160,383	32,383	19,640	9,230	8.63
Midstream Assets										
US	TAPS stake + Alaska tanker fleet	2.01	1.4%	2,496						
International		1.21	0.9%	1,500						
Midstream Total		3.22	2.3%	3,996						
Total Enterprise Value		139.87	100.0%	173,487						
Net Debt		11.03		13,686						
PV of Corporate Expenses		6.63		8,224						
Pension Underfunding		0.97		1,197						
Value of Out. Options/SAR/Restricted Stock		0.42		522						
NAV TO EQUITY		120.82		149,857						
Current Market Cap		85.67		106,262						
Upside/Downside to NAV		41%								

Upstream value mix by region

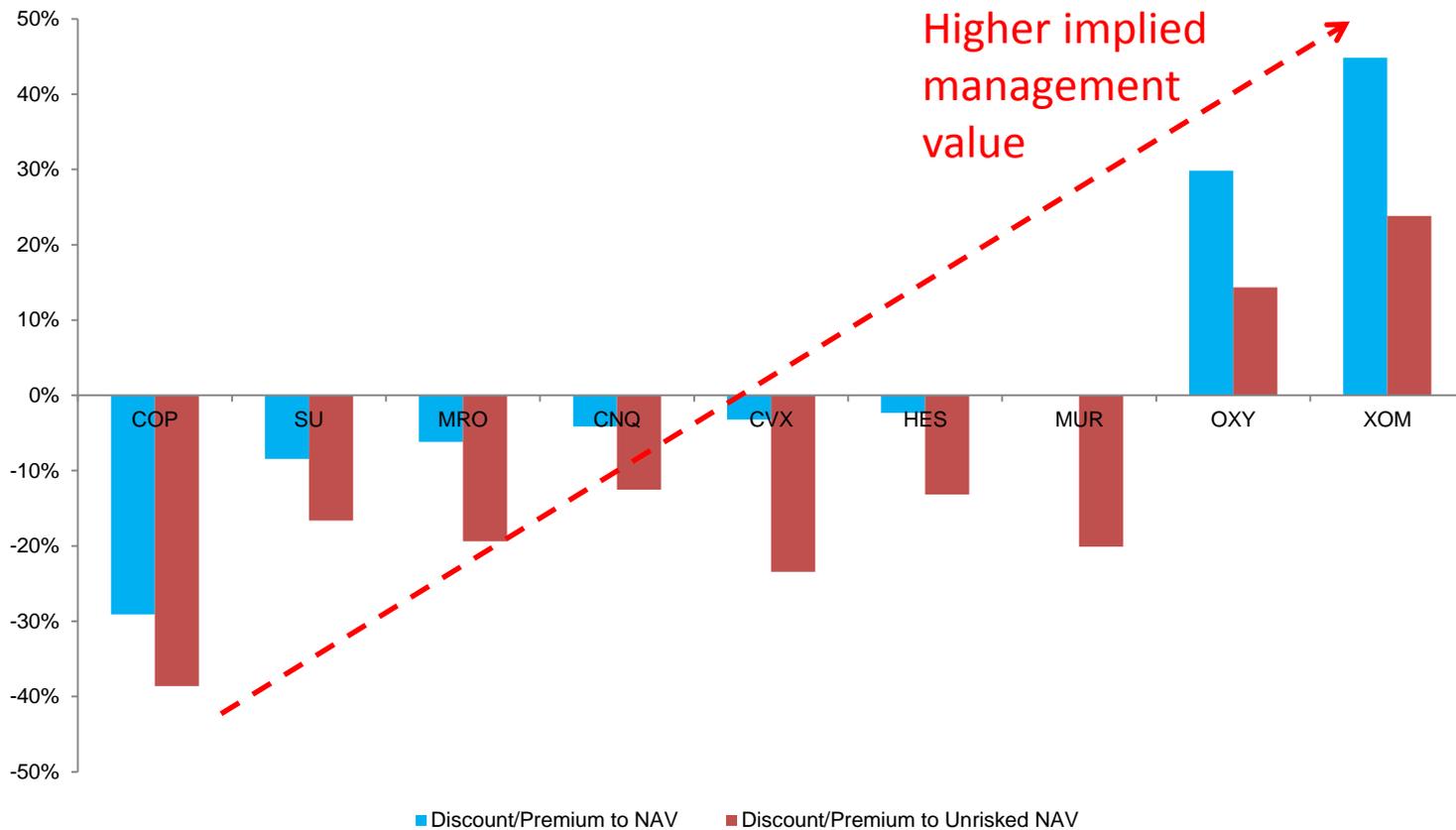




% reduction in estimated upstream NAV due to risking



Premium/Discount to NAV



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Peer Perform: 48% 0% Investment Banking Clients

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