

NOCs and SWFs - How big can they get? A strategic, business and capital markets analysis

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Outline

- 1 Understanding SWFs
 - Background - only 2 conditions:

Oil price goes to 150 (90)

&

They replicate Capital market IOCs/ Statoil

Sovereign Wealth Funds - What is the potential?

Need to root SWF analysis: Focus on *Oil and Gas* in the context of SWF assets. The great divide of the petroleum industry has historically been that a rich IOC discovery meant a dissatisfied host country [Operator profit is far greater than necessary to keep producing]. Host nations realised - went through a period of nationalization - Saudi/ Venezuela. Now SWF own NOCs - participate in resource profits (or PSC's) . Except in 'western' concession regions of course..GoM/ Norway/ UKCS/ Aus

- The questions we examine are:
- How well are SWFs (generally) doing - focus on the jewel in their crowns - the NOC.
- Perform a 'top 100 IOC/NOC benchmarking' across 3 metrics: business, operational, financial
- What is the Equity 'capital market' potential of NOC giants?
- What is their untapped debt 'capital market' potential?
- Emerging issue is simple - SWFs do not list major their prize assets on LSE and NYSE to 'leave value on the table'

Sovereign Wealth Funds - Current state of play

- As at July 2010 the Peoples Bank of China announced that it controlled roughly £1.6 trillion in FX reserves. This is in excess of 1/3 of total global holdings (other holders: Russia, Brazil, India)
- Norway - alone - is estimated to control between 1 and 2 percent of major equity markets. Useful benchmark it is the most transparent of the SWF - arguably smallest reserve base.
- The IMF estimates that that SWF total assets will be at the level of £6.6 trillion by 2012 (note: 2010 estimate predicated on a forward price of oil at 90 USD)
- 40 Percent of commercial property deals in the UK are foreign Investors. 70 Percent of residential properties above £5 Million are foreign. Of this 70 percent, 1/3 are middle east buyers. (source: E.Weiner - The shadow market)
- By 2013, McKinsey Global estimates that Asian and Gulf countries will control assets of £12.5 trillion. GDP of the USA - around 10.6 trillion, the EU - 12 (UK - 1.7).
- By 2050 Goldman Sachs (Jim O Neil) estimate that in 20 years (2030) the G7 will be overtaken by the size and scale of the BRICS or the E7. A TOTAL reversal of the status-quo

Defining Attributes of the NR sector

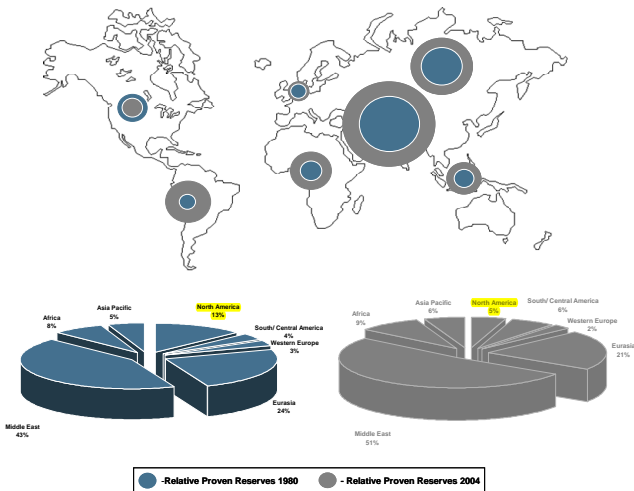
'... The majority of the 7 or so trillion USD invested by Sovereign wealth funds are resource based - notable exceptions are China (SAFE, NSSF) and Singapore (GIC, Temasek). Any SWF discussion therefore needs to begin with a review of the nature of assets in the resource industry - and its unique and defining characteristics'

- Extractives differ from 'mobile' capital market resources in critical respects
- By definition - they deplete
- They are physically constrained by 'location' - i.e. where resources are found pay little homage to western pre-requisites of 'institutional strength, market efficiency, political stability [Venezuela, Middle East, Russia, Angola, Malaysia]
- Success has more to do with the asset attribute than the management expertise, value is largely exogenous (global)

Attributes Gives rise to interesting ownership types

- Possible to tax the asset at the point of extraction/ wellhead OR at the level of the corporate. Note: usually extremely difficult to renegotiate terms once signed
- Model 1: The state 'sells' the asset and then extracts value through taxation. Model preferred in OECD - GoM, UKCS. Companies working these assets, in turn, access capital via listing or capital markets [BP, Shell, Exxon]
- Model 2: S State Retain 'resource' ownership and extract economic rents from production sharing - preferred in many non OECD regions: Angola, CIS, Malaysia
- What characterizes Model 2 is that the state/ SWF participates/ controls asset cash flows
- New hybrid emerging - resource poor NOCs - Sinopec, CNPC, CNOOC. This has been the game changer for IOCs active in UK and USA - they just cannot replace reserves. Resource hosts now have new options....

Global Reserve Replacement - Are NOCs capturing value?



Reserve effects on company returns has been studied - 1980-2004 - but never have IOCs and NOCs been benchmarked - since 1980 'finds' where NOCs dominant...

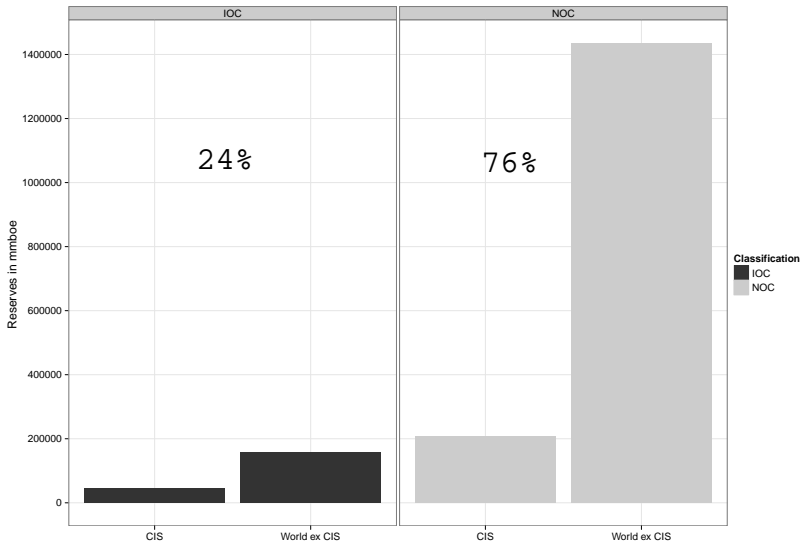
Outline

- 2 DuPont Analysis
 - Data
 - Framework
 - Business Profitability
 - Operational Efficiency
 - Financial Structure

Data

- Energy Intelligence
- Financial year 2008
- Top 100 oil and gas companies
- Key financial and operational indicators
- Allows us to compare IOC and NOC focus on CIS countries
- Missing/ limited data is indicated by *NA*

Distribution of Global Reserves



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Three Part Analysis to highlight differences between IOCs and NOCs - we relate metrics to Production and Reserves

Business Profitability

- Revenue and revenue mix
- ROA
- Operating CF by **Prod./Res./Emp.**
- Net Asset Turnover
- Political Risk

Operational Efficiency

- O&G asset mix
- Finding costs
- Res. rep. ratio
- Capacity utilisation
- **Production/Reserves**
- Refining
- Capex by OpCF/Prod./Res.

Financial Structure

- **Market capitalisation by Prod./Res.**
- **Debt by Prod./Res.**

DuPont aggregation

- All about the components of Return on equity

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Business Profitability

- IOCs have the greatest level of 'Relative' cash flow: **production** profitability (35\$ per barrel vs NOCs - 15\$ vs CIS - 11\$ to 21\$). In 'Absolute' terms NOCs are best performers
- NOCs are 'working assets hard'. But not hard enough relative to IOCs/ top end NOCs like StatOil and PetroBras - and not profitably (T/Over = 1.23x for IOCs, 0.78x for NOCs, Range is 0.58x to 1.21x for CIS)
- NOC Op Cash flow at a production level is reasonably solid - around half that for IOCs.
- BUT - at a **reserve level** NOCs 'weak' (IOCS 2.71\$/bbl - NOCs 0.45\$/bbl) - around 1/5 that of IOCs, suggesting that Op Cash Flow management very weak for NOCs (given their reserve base)
- NOC expenditure needed on reserve development - the 'catch 22' is that low operating efficiency **does limit** the ability to obtain and service capital market funding for reserve development

Business Profitability

Company Name	Region	Class.	Tot. Rev.	Rev.Mix Up.	ROA	Asset TO	OpCt/ Prod.	OpCt/ Res.	OpCt/ Emp.
Panel A: Global IOC									
Reserve Weighted Mean	ALL	IOC	175083.11	42.85	18.67	1.23	35.03	2.71	620.21
	ALL	IOC	61033.74	55.16	15.38	1.12	47.80	3.86	773.98
Panel B: Global NOC									
Reserve Weighted Mean	ALL	NOC	134704.06	30.59	14.64	0.78	15.30	0.45	221.55
	ALL	NOC	56472.21	41.80	16.03	1.05	-10.58	1.10	351.88
Panel C: CIS									
Gazprom	CIS	NOC	140481.00	19.90	18.20	0.58	11.52	0.35	108.40
Rosneft	CIS	NOC	68984.00	18.40	18.40	0.89	17.00	0.65	88.90
Lukoil	CIS	IOC	86715.00	31.80	20.20	1.21	21.94	0.93	93.80
Surgutneftegas	CIS	IOC	21983.00	NA	11.00	0.49	NA	NA	NA
Uzbekneftegas	CIS	NOC	9600.00	NA	NA	NA	NA	NA	NA
Socar	CIS	NOC	21242.00	NA	NA	NA	NA	NA	NA
TNK-BP	CIS	IOC	51886.00	NA	NA	1.81	28.84	2.13	136.70
Kazmunaigas	CIS	NOC	21094.00	NA	NA	0.52	NA	NA	NA
Novatek	CIS	IOC	3180.00	96.70	25.60	0.67	6.34	0.28	286.40
Turkmengas	CIS	NOC	7650.00	NA	NA	NA	NA	NA	NA
Tatneft	CIS	IOC	17298.00	76.50	4.70	1.30	10.11	0.33	25.90
Russneft	CIS	IOC	5513.00	NA	7.00	0.90	NA	NA	NA
Bashneft	CIS	IOC	4903.00	NA	NA	1.30	NA	NA	NA
Turkmenneft	CIS	NOC	1384.00	NA	NA	NA	NA	NA	NA
Mangistaumunaigas	CIS	IOC	4060.00	NA	NA	1.92	37.37	1.06	303.10
Reserve Weighted Mean	CIS	ALL	81445.08	24.92	17.63	0.73	13.65	0.49	108.85
	CIS	ALL	31064.87	48.66	15.01	1.05	19.02	0.82	149.03
Panel D: Global									
Reserve Weighted Mean	ALL	ALL	140032.01	34.88	15.96	0.93	22.32	1.26	363.79
	ALL	ALL	59282.85	52.35	15.53	1.10	34.06	3.20	677.50

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Operational Efficiency

- IOCs and NOCs both have liquid dominated production (IOCs 63 percent - NOCs 77 vs CIS: 8 percent for Gazprom - around 90 percent for Rosneft and Lukoil)
- IOCs are just not replacing reserves 'produced' i.e they have a 73 percent RRR. NOCs have huge reserves and are enjoying much higher RRR - in fact at a RRR of 106 percent they are enjoying new finds (blocking IOCs?)
- Finding costs (FC) higher for IOCs than NOCs (given their reserve base)
- Expenditure on capex and development - 88 percent of operating cash flow for IOCs - 102 percent for global NOCs but development expenditure is 30 percent lower in CIS at 70 percent!

Operational Efficiency

Company Name	Region	Class.	Liq.of Tot.Prod.	Gas.of Tot.Prod.	Tot.Res./ Prod	FC/ Prod.	ORRR	GRRR	Capex/ OpCf
Panel A: Global IOC									
Reserve Weighted Mean	ALL	IOC	63.38	36.62	15.85	0.05	73.16	134.03	88.08
	ALL	IOC	56.23	43.82	15.79	0.17	94.50	174.50	110.65
Panel B: Global NOC									
Reserve Weighted Mean	ALL	NOC	76.79	23.21	97.68	0.01	106.34	396.58	102.74
	ALL	NOC	63.92	36.08	48.98	0.03	96.86	263.00	119.31
Panel C: CIS									
Gazprom	CIS	NOC	8.90	91.10	33.00	NA	NA	NA	70.30
Rosneft	CIS	NOC	91.40	8.60	26.30	0.01	NA	NA	60.70
Lukoil	CIS	IOC	86.00	14.00	23.70	0.02	25.00	321.00	73.60
Surgutneftegas	CIS	IOC	84.50	15.50	19.80	NA	NA	NA	NA
Uzbekneftegas	CIS	NOC	9.00	91.00	22.30	NA	NA	NA	NA
Socar	CIS	NOC	56.90	43.10	53.90	NA	NA	NA	NA
TNK-BP	CIS	IOC	88.90	11.10	13.50	NA	NA	NA	NA
Kazmunaigas	CIS	NOC	78.80	21.20	33.10	NA	NA	NA	NA
Novatek	CIS	IOC	10.50	89.50	22.70	0.01	222.00	156.00	100.30
Turkmengas	CIS	NOC	0.00	100.00	141.20	NA	NA	NA	NA
Tatneft	CIS	IOC	97.60	2.40	30.70	0.03	55.00	NA	126.30
Russneft	CIS	IOC	92.90	7.10	11.00	NA	NA	NA	NA
Bashneft	CIS	IOC	97.60	2.40	27.90	NA	NA	NA	NA
Turkmenneft	CIS	NOC	50.30	49.70	8.00	NA	NA	NA	NA
Mangistaumunaigas	CIS	IOC	94.40	5.60	35.40	NA	NA	NA	NA
Reserve Weighted Mean	CIS	ALL	30.37	69.63	50.78	0.02	66.22	283.74	72.11
	CIS	ALL	63.18	36.82	33.50	0.02	100.67	238.50	86.24
Panel D: Global									
Reserve Weighted Mean	ALL	ALL	75.32	24.68	88.71	0.04	90.67	274.50	97.60
	ALL	ALL	59.24	40.79	28.93	0.15	94.85	187.68	112.44

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Financial Structure - Equity

- Operational and Business efficiency 'performance lag' is reflected in capital markets
- We look at capital market equity 'effect' first: IOCs receive Equity 'Market Cap' of 150 \$ per barrel of production (or expressed against reserves - 11 \$ market cap per barrel of reserve).
- NOCs only receive Equity MKT Cap of 42 \$ per barrel of production - a discount of 67 percent against IOCs (on reserves the discount is even worse - with NOCs receiving only 2 USD of market cap per barrel of reserve - a discount of over 80 percent)

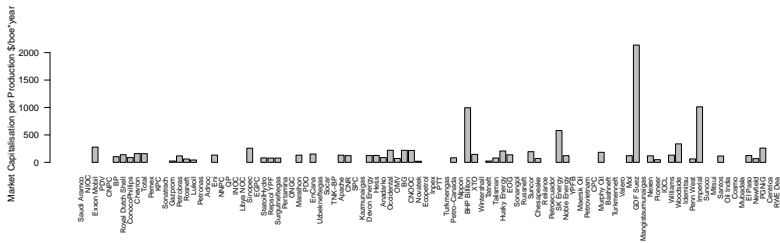
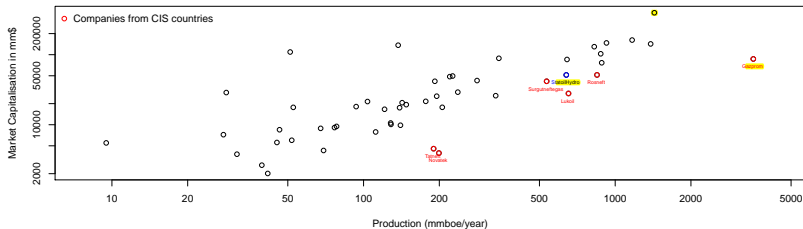
Financial Structure - Debt

- Debt financing: IOCs receive debt market financing of 2081 \$ per barrel of production (or expressed against reserves - 163 \$ debt per barrel of reserve).
- By contrast - NOCs receive Debt financing of 827 \$ per barrel of production - a discount of some 60 percent against IOCs. Again - on reserves - the debt discount is even worse, with NOCs receiving only 22 \$ of debt per barrel of reserve - a discount of 90 percent against IOCs.
- NOTE - operating efficiency enables IOC debt structures to be serviced!

Financial Structure

Company Name	Region	Class.	MarketCap/ Prod.	MarketCap/ Res. Prod.	Debt/ Prod.	Debt/ Res.
Panel A: Global IOC						
Reserve Weighted Mean	ALL	IOC	150.45	11.25	2081.33	163.79
Mean	ALL	IOC	219.22	16.51	4031.38	330.92
Panel B: Global NOC						
Reserve Weighted Mean	ALL	NOC	42.29	2.16	827.37	22.11
Mean	ALL	NOC	150.06	10.31	-509.99	40.38
Panel C: CIS						
Gazprom	CIS	NOC	24.57	0.75	712.70	21.63
Rosneft	CIS	NOC	60.72	2.30	NA	NA
Lukoil	CIS	IOC	42.86	1.81	534.29	22.53
Surgutneftegas	CIS	IOC	78.09	3.95	NA	NA
Uzbekneftegas	CIS	NOC	NA	NA	NA	NA
Socar	CIS	NOC	NA	NA	NA	NA
TNK-BP	CIS	IOC	NA	NA	835.31	61.66
Kazmunaigas	CIS	NOC	NA	NA	NA	NA
Novatek	CIS	IOC	19.77	0.87	NA	NA
Turkmengas	CIS	NOC	NA	NA	NA	NA
Tatneft	CIS	IOC	23.99	0.78	263.29	8.57
Russneft	CIS	IOC	NA	NA	NA	NA
Bashneft	CIS	IOC	NA	NA	NA	NA
Turkmenneft	CIS	NOC	NA	NA	NA	NA
Mangistaumunaigas	CIS	IOC	NA	NA	1082.03	30.66
Reserve Weighted Mean	CIS	ALL	33.87	1.24	682.64	22.42
Mean	CIS	ALL	41.67	1.74	685.52	29.01
Panel D: Global						
Reserve Weighted Mean	ALL	ALL	101.92	7.17	1298.29	75.32
Mean	ALL	ALL	211.08	15.78	3005.91	265.31

Market capitalisation by production



Financial Structure - How big could the NOC Capital Market opportunity actually be?

- Against the backdrop of NOC equity and debt capital market under-performance, we suggest that:
- NOCs **could** raise 3-4 times more equity than they currently do.
- Debt - NOCs could raise between 4-5 times the amount of debt capital they currently raise
- At current oil prices NOCs could raise between 5 times the amount of capital they currently raise...
- Recall - only 15-20 percent of global reserves are 'listed' - making the sector the second largest (by market cap) globally (after financial services). NOCs own around 80 percent of global reserves.

Financial effects - How big could the NOC Capital Market influence be at 150 USD?

- Against the backdrop of NOC equity and debt capital market under-performance, we suggest that:
- A doubling of oil prices could NOCs could raise 4 X times MORE equity than they are worth at 90
- Debt - Likewise 4X
- Adding financial leverage effects to operational efficiencies (4X), then combining these with the multiplier/ exogenous benefits of higher commodity prices (4-5x), we estimate SWFs funds could be up to 10 - 15X time larger than they currently are..

For more detail, please contact PwC visiting Professor - Gavin kretschmar or Robert Dennis | Partner | Advisory | robert.dennis@kz.pwc.com | 29/6 Satpaev Ave, 4th floor | 050040 Almaty | Kazakhstan