



# Have the Chinese National Oil Companies Paid Too Much in Overseas Asset Acquisition?

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\* The paper is part of ESRC/DFID project "Chinese national oil companies and the economic development of African oil producers"

14/11/2017



# Outline

Motivation

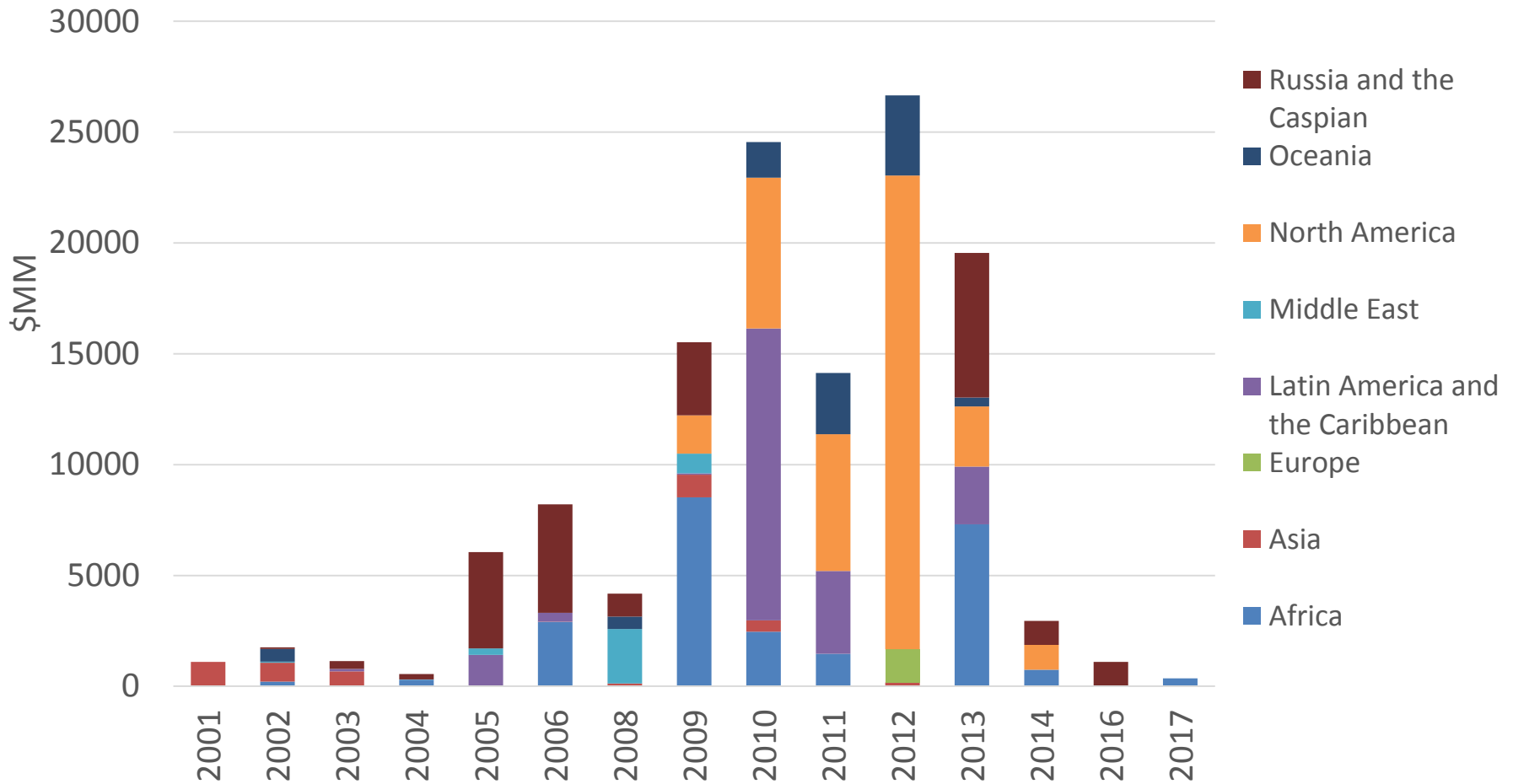
Methodology

Data

Preliminary Result

Discussion and Conclusion

# Spending by Chinese companies in O&G asset acquisition





# Motivation

“the Chinese side **was again happy to overpay**. CNOOC’s bid added a 60 percent premium to Nexen’s closing price the previous day. This is not the first time China has offered so much—it is not even the first time it has done so for a Canadian energy company. ... The PRC often bids against itself.”

---- Scissors & Cheng (2012)

The total premium paid by the Chinese companies increased to 40% above the base case valuation of acquired assets

---- IEA(2011) cited Wood Mackenzie (2010) report

“The question of whether, and under what circumstances, they are paying premiums for their investment has not been answered conclusively, and requires further investigation.”

-- IEA (2011)



# Relevant Literature

The political economy & international business literature focusing on Chinese OFDI

- Kolstad & Wiig (2010), “What determines Chinese outward FDI?”
- Chalmers & Mocker (2017), “The end of exceptionalism? Explaining Chinese National Oil Companies’ overseas investments”



# Methodology

Cash-flow based evaluation?

Event Study?

Econometric analysis

- Compare asset value (\$/BOE) by controlling a number of asset attributes
  - WM estimate of 2P reserve: **rvalue\_rsv**
  - WM estimate 2P reserve + technically recoverable resource. **rvalue\_res**.
- Whether the Chinese NOCs are different



# Data

Mainly from Wood Mackenzie but the deal considerations are cross-checked with Thomson Reuters

Time period: 01/2001-05/2017

## Control Variables

- **Rbrent**: the average of Brent crude price in real dollars for the monthly of transaction announced. Rbrent1, Rbrent3, and Rbrent6 are the Rbrent lagged for one, three, or six months respectively. The oil price data is from EIA.
- **Oversea**=1 if the asset is located overseas from the buyer's perspective, and 0 if domestic.
- **AssetLocation2**, **AssetLocation3**, and **AssetLocation4** are dummies for Offshore Deepwater, Offshore Shallow water and Onshore respectively. The default is "Mixture" of locations.
- **AssetStat2,3,...7** are dummies for Asset Status of 'late life', 'mid life', 'mixture', 'pre-development' and 'under-development'. The default is 'early life'.
- **PrimaryResource1-4** are dummies when the primary resource is respectively conventional gas, conventional oil, heavy oil, mixture. The default category is 'unconventional' including CBM, shale gas and tight gas.
- **DealStyle1, 2, 3, 4** refer to 'auction', 'private', 'public hostile' and 'public recommended'. (Should combine the two public categories by dropping DealsStyle3 from the regression) since only one observation for 'public hostile'.



# Summary Statistics of Acquisition Values

	obs	Mean	Std.Dev	Min	Max
<b>Full Sample</b>					
rvalue_rsv	670	10.50	14.861	0.017	169.855
rvalue_res	749	7.061	10.121	0.015	111.980
<b>Chinese Companies</b>					
rvalue_rsv	78	11.807	16.130	0.026	80.717
rvalue_res	86	7.471	13.521	0.015	97.147
<b>Non-Chinese Companies</b>					
rvalue_rsv	592	10.324	14.691	0.017	169.855
rvalue_res	663	9.218	14.244	0.000	169.855



# Top Ten Transactions (\$/BOE)



Date	Country Primary	Buyer	Buyer Country	Seller	rvalue_rsv	rvalue_res
03/11/2010	Brazil	BP	United Kindom	Devon Energy	169.855	12.099
01/01/2007	Australia	Apache	United States	Woodside Petroleum	161.518	48.025
11/28/2012	United States	Shell	Netherlands	Callon Petroleum	111.980	111.980
10/08/2001	Argentina	Burlington Resources	United States	Canadian Hunter	95.627	95.627
08/18/2010	Colombia	Sinopec Group	China	Houston American Energy Corp	80.717	22.437
08/18/2010	Colombia	Sinopec Group	China	Hupecol	80.717	22.437
04/01/2008	Nigeria	Eni	Italy	Shell	73.168	6.903
11/28/2006	Netherlands	TAQA	Emirates	BP	72.941	72.941
02/28/2002	Tunisia	SINOCHEM	China	Atlantis Technology Services	66.654	1.551

# Regression result on 2p reserve (\$/boe)



	rvalue_rsv	rvalue_rsv	rvalue_rsv	rvalue_rsv	rvalue_rsv
Rbrent	0.100*** (0.017)				
Rbrent1		0.103*** (0.016)			0.102*** (0.017)
Rbrent3			0.095*** (0.016)		
Rbrent6				0.091*** (0.016)	
China	1.971 (2.269)	2.037 (2.270)	2.062 (2.278)	2.180 (2.275)	
ChinaOversea					1.896 (2.471)
Oversea	2.910*** (0.953)	2.919*** (0.955)	2.843*** (0.959)	2.882*** (0.964)	2.868*** (0.974)
Observations	670	670	670	670	670
R-squared	0.136	0.138	0.133	0.129	0.138

(Robust standard errors in parentheses, \*\*\* p<0.01, \*\* p<0.05, \* p<0.1)

# Regression result when technically recoverable resource is included (\$/bbl)



	rvalue_res	rvalue_res	rvalue_res	rvalue_res	rvalue_res
Rbrent	0.054*** (0.012)				
Rbrent1		0.057*** (0.012)			0.057*** (0.012)
Rbrent3			0.056*** (0.012)		
Rbrent6				0.057*** (0.012)	
China	0.931 (1.543)	0.966 (1.538)	0.974 (1.538)	1.053 (1.538)	
ChinaOversea					0.796 (1.622)
Oversea	1.463** (0.675)	1.468** (0.676)	1.430** (0.681)	1.432** (0.682)	1.463** (0.683)
Observations	749	749	749	749	749
R-squared	0.141	0.144	0.145	0.144	0.144

(Robust standard errors in parentheses, \*\*\* p<0.01, \*\* p<0.05, \* p<0.1)

# Estimation results when only three large Chinese NOCs are included



	rvalue_rsv	rvalue_res
Rbrent1	0.103*** (0.016)	0.057*** (0.012)
ChinaNOC	0.308 (2.305)	0.662 (1.708)
Oversea	3.136*** (0.957)	1.517** (0.671)
PrimaryRes1	0.101 (1.692)	0.283 (1.363)
PrimaryRes2	3.067** (1.511)	1.687 (1.143)
PrimaryRes3	-2.042 (1.247)	-2.076** (0.956)
PrimaryRes4	4.682 (3.374)	1.938 (2.474)
Observations	670	749
R-squared	0.136	0.143

(Robust standard errors in parentheses, \*\*\* p<0.01, \*\* p<0.05, \* p<0.1)

# Estimation results focusing on unconventional



	rvalue_rsv	rvalue_res
Rbrent1	0.104*** (0.017)	0.057*** (0.012)
ChinaUnconventional	-0.744 (2.157)	-3.169** (1.360)
unconventional	-1.455 (1.329)	-0.164 (1.115)
Oversea	3.385*** (0.983)	1.829*** (0.701)
Observations	670	749
R-squared	0.124	0.136

(Robust standard errors in parentheses, \*\*\* p<0.01, \*\* p<0.05, \* p<0.1)

# Estimation results when the seller is a major or large cap company



	rvalue_rsv	rvalue_rsv	rvalue_rsv	rvalue_res	rvalue_res	rvalue_res
Rbrent1	0.099*** (0.017)	0.101*** (0.016)	0.100*** (0.016)	0.056*** (0.012)	0.056*** (0.012)	0.056*** (0.012)
ChinaOversea	2.142 (2.664)	4.684 (3.374)	5.387 (3.791)	1.000 (1.755)	0.396 (1.596)	0.599 (1.773)
Oversea	2.902*** (0.978)	2.995*** (1.004)	3.009*** (1.008)	1.524** (0.670)	1.513** (0.681)	1.540** (0.671)
major	-0.592 (1.490)			0.468 (1.098)		
chinamajor	-1.933 (3.871)			-1.968 (2.998)		
largecap		2.095 (1.835)			0.169 (0.937)	
chinalarge		-9.322** (3.929)			1.321 (4.221)	
largemajor			1.361 (1.321)			0.444 (0.853)
chinalargemajor			-8.658** (3.985)			0.486 (3.581)

(Robust standard errors in parentheses, \*\*\* p<0.01, \*\* p<0.05, \* p<0.1)



# Estimation Results for the period post-2007

	rvalue_rsv	rvalue_res
Rbrent1	0.068*** (0.023)	0.048*** (0.014)
ChinaOversea	3.053 (3.345)	-0.217 (1.144)
Oversea	4.311*** (1.227)	1.550* (0.880)
Observations	409	468
R-squared	0.198	0.249

(Robust standard errors in parentheses, \*\*\* p<0.01, \*\* p<0.05, \* p<0.1)

# Estimation results for takeover deals



	rvalue_rsv	rvalue_res
Rbrent1	0.042 (0.056)	-0.003 (0.042)
ChinaOversea	10.324 (8.141)	4.845 (6.691)
Oversea	3.732* (2.121)	4.677** (2.111)
PrimaryRes1	5.661 (6.196)	6.316 (5.806)
PrimaryRes2	6.624* (3.516)	3.777 (3.067)
PrimaryRes3	-5.051 (3.144)	-4.879** (2.271)
PrimaryRes4	1.620 (3.970)	4.357 (5.144)
Observations	129	135
R-squared	0.211	0.142

(Robust standard errors in parentheses, \*\*\* p<0.01, \*\* p<0.05, \* p<0.1)





# Conclusion and Discussion

Chinese NOCs are not systematically overpaying.

The hype may have been driven by a few eye-catching deals

Why?

→ Learning

Among the three Chinese NOCs, CNPC is more advanced than others.

Broader implication for the ownership/privatization literature



Questions and comments?  
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## References

Chalmers A.W. and Mocker, S.T. (2017) “The end of exceptionalism? Explaining Chinese National Oil Companies’ overseas investments” *Review of International Political Economy*”.

Pang, Anatole (2014) “Chinese overseas oil and gas M&A strategy”.

Scissors, Derek & Dean Cheng “China Buys Canadian Energy: Lessons for the U.S.”, *Heritage Foundation Issue Brief*, No. 3680, JULY 27, 2012

Wood Mackenzie (2010), “Chinese NOC’s step-up international expansion”, *London: Wood Mackenzie Corporate Service*, May 2010.

Kolstad & Wiig (2010), “What determines Chinese outward FDI?” *Journal of World Business*