



## India Essentials

Thursday, 16 April 2009

### **Oil and Natural Gas Corp (Downgrade to Underperform) 2** Subsidy buffer to crude cuts Jal Irani

Macquarie's oil economist, Jan Stuart, has revised down our oil price forecasts, with FY3/10 and FY3/11 down 19% and 6%, respectively. We revise our earnings forecasts and target price for Oil and Natural Gas Corp (ONGC) to take these changes into account.

### **Cairn India (Downgrade to Underperform) 3** Downgrades follow crude cuts Jal Irani

Macquarie's oil economist, Jan Stuart, has revised down our oil price forecasts, with FY3/10E and FY3/11E down 19% and 6%, respectively. We have revised our earnings forecasts and target price for Cairn India to take account of these changes, and downgrade our rating to Underperform from Outperform.

### **Reliance Industries (Outperform) 4** Insignificant crude price cut impact Jal Irani

Macquarie's oil economist, Jan Stuart, has revised down our oil price forecasts, with FY3/10 and FY3/11 down 19% and 6%, respectively. The impact is negligible as Reliance's (RIL) upstream business comprises mainly gas priced at US\$25/bbl.

### **Reliance Communications (Outperform) 5** RCOM adds 3m new subs in Mar'09 Shubham Majumder

RCOM has added a solid 3m subscribers in March 2009. This compares with 3.35m subscribers added in February 2009 and 4.95m in January 2009. Record subscriber additions of 11.3m in the Jan-Mar 2009 quarter.

### **Oil price update 6** Lower earnings for E&P companies David Johnson

Our new forecast pegs benchmark Brent crude oil prices at US\$52 per barrel (bbl) this year and US\$70/bbl in 2010, which is down 9% and 8%, respectively, from our previous estimates. For 2011 and 2012, we expect prices will average US\$78/bbl and US\$82/bbl, which is 13% and 11% lower.

### **Oil prices & fundamentals 7** Dizzying demand declines Jan Stuart

Our new forecast pegs benchmark Brent crude oil prices at US\$53 per barrel (bbl) this year and US\$70/bbl in 2010, which is down -9% and -8%, respectively, from before. In 2011 and 2012, we expect prices will average US\$78/bbl and US\$82/bbl, respectively, which is 13% and 11% lower than our previous forecasts.

### **Macquarie Commodities Comment 8** Mixed indicators for the production outlook Isaac Feehely

We examine the OECD composite leading indicator data release this week and contrast its outlook with more encouraging signs in the US PMI. Latest news While aluminium was again left behind, the other metals traded sharply higher again on Wednesday as the more bullish tone prevailed in most markets.

### **India market performance 9**



INDIA

# Oil and Natural Gas Corp

16 April 2009

## ONGC IN Underperform

Stock price as of 14 Apr 09	Rs	896.90
12-month target	Rs	778.00
Upside/downside	%	-13.3
Valuation - DCF	Rs	778.00

GICS sector		energy
Market cap	Rs bn	1,918
30-day avg turnover	US\$m	32.0
Market cap	US\$m	38,452
Number shares on issue	m	2,139

### Investment fundamentals

Year end 31 Mar		2008A	2009E	2010E	2011E
Total revenue	bn	967.8	1,231.7	1,107.1	1,269.5
EBITDA	bn	374.6	471.2	426.4	487.9
EBITDA growth	%	6.6	25.8	-9.5	14.4
EBIT	bn	264.8	310.0	286.0	320.1
EBIT Growth	%	16.6	17.1	-7.8	11.9
Reported profit	bn	198.7	223.1	205.4	232.8
Adjusted profit	bn	198.7	223.1	205.4	232.8
EPS rep	Rs	92.91	104.31	96.01	108.85
EPS adj	Rs	92.91	104.31	96.01	108.85
EPS adj growth	%	14.9	12.3	-8.0	13.4
PE adj	x	9.7	8.6	9.3	8.2
Total DPS	Rs	36.00	38.00	42.00	42.00
Total div yield	%	4.0	4.2	4.7	4.7
ROE	%	29.7	29.3	24.0	24.6
EV/EBITDA	x	4.8	3.8	4.2	3.7
Net debt/equity	%	-15.4	-16.1	-18.4	-20.0
Price/book	x	2.7	2.4	2.1	1.9

### ONGC IN rel SENSEX performance, & rec history



Source: FactSet, Macquarie Research, April 2009 (all figures in INR unless noted)

### Analysts

<b>Jal Irani</b>	
91 22 6653 3040	jal.irani@macquarie.com
<b>Amit Mishra</b>	
91 22 6653 3051	amit.mishra@macquarie.com

## Subsidy buffer to crude cuts

### Event

- Macquarie's oil economist, Jan Stuart, has revised down our oil price forecasts, with FY3/10 and FY3/11 down 19% and 6%, respectively. We revise our earnings forecasts and target price for Oil and Natural Gas Corp (ONGC) to take these changes into account. We downgrade ONGC to Underperform from Outperform.

### Impact

- Oil price forecasts:** We cut our forecasts for FY10, FY11 and FY12 by US\$13/bbl, US\$4.5/bbl and US\$12/bbl, respectively. The WTI average forecasts are now US\$54.5/bbl, US\$77/bbl and US\$81/bbl for the respective fiscal years. We reduce our long-term oil price to US\$75/bbl in 2009 US\$ inflated by the US CPI. This gives a FY14E oil price of US\$79.5/bbl. Our previous forecast was US\$92/bbl from FY13E.
- Subsidy buffers sharp cut in crude prices:** The fall in ONGC's earnings to crude oil price is buffered by a drop in the oil subsidy burden in the medium term. We believe this buffer will decline below US\$55/bbl. Our reduced global crude oil forecasts of US\$55/bbl for FY3/10E and US\$77/bbl for FY3/11E remain above this US\$55/bbl threshold.
- Terminal oil price hike drives target price downgrade:** Our target price for ONGC is based on discounted cashflow (DCF). Terminal value contributes towards 78% of the weight. As we downgrade the long-term price of oil from US\$92/bbl to US\$73/bbl, we cut our target price for ONGC by 6% to Rs778.

### Earnings and target price revision

- We cut the FY3/10E PAT by 7.0% and FY3/11E PAT by 5.0% to factor in the changes in our crude price assumptions.
- We have cut our DCF-based target price for ONGC by 6% to Rs778/sh to factor in our new oil price forecasts.

### Price catalyst

- 12-month price target: Rs778.00 based on a DCF methodology.
- Catalyst: Recovery in oil prices and new exploratory finds.

### Action and recommendation

- ONGC is caught in a unique no-win situation:** Its upside is capped as the subsidy burden rises in a high oil price environment, while earnings get impacted by low crude prices.
- Rating downgraded to Underperform:** ONGC stock has risen ~30% in the past one month and significantly outperformed the SENSEX in the last three months. ONGC now trades ahead of our DCF-based valuation. Our target price suggests 13% downside.

Please refer to the important disclosures and analyst certification on inside back cover of this document, or on our website [www.macquarie.com.au/research/disclosures](http://www.macquarie.com.au/research/disclosures).

INDIA

# Cairn India

16 April 2009

**CAIR IN** **Underperform**

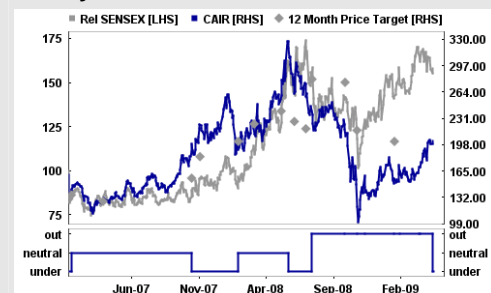
Stock price as of 14 Apr 09	Rs	202.95
12-month target	Rs	175.00
Upside/downside	%	-13.8
Valuation	Rs	175.00
- DCF		

GICS sector		energy
Market cap	Rs m	384,929
30-day avg turnover	US\$m	15.0
Market cap	US\$m	7,716
Number shares on issue	m	1,897

**Investment fundamentals**

Year end 31 Mar		2008A	2009E	2010E	2011E
Total revenue	m	11,244	15,716	29,003	90,110
EBITDA	m	5,501	10,693	19,982	64,898
EBITDA growth	%	34.3	94.4	86.9	224.8
EBIT	m	3,492	8,826	16,031	59,281
EBIT Growth	%	72.9	152.7	81.6	269.8
Reported profit	m	1,590	8,103	13,819	49,483
Adjusted profit	m	3,137	7,936	13,819	49,483
EPS rep	Rs	0.88	4.27	7.29	26.09
EPS adj	Rs	1.70	4.18	7.29	26.09
EPS adj growth	%	67.2	145.7	74.1	258.1
PE adj	x	119.2	48.5	27.9	7.8
Total DPS	Rs	0.00	0.00	0.00	0.00
Total div yield	%	0.0	0.0	0.0	0.0
ROE	%	1.1	2.5	4.1	13.8
EV/EBITDA	x	66.6	34.3	18.3	5.6
Net debt/equity	%	-4.1	-6.5	3.8	-2.8
Price/book	x	1.3	1.2	1.1	1.0

**CAIR IN rel SENSEX performance, & rec history**



Source: FactSet, Macquarie Research, April 2009 (all figures in INR unless noted)

**Analysts**

**Jal Irani**  
91 22 6653 3040 [jal.irani@macquarie.com](mailto:jal.irani@macquarie.com)

**Amit Mishra**  
91 22 6653 3051 [amit.mishra@macquarie.com](mailto:amit.mishra@macquarie.com)

## Downgrades follow crude cuts

### Event

- Macquarie's oil economist, Jan Stuart, has revised down our oil price forecasts, with FY3/10E and FY3/11E down 19% and 6%, respectively. We have revised our earnings forecasts and target price for Cairn India to take account of these changes, and downgrade our rating to Underperform from Outperform.

### Impact

- Oil price forecast.** We cut our oil price forecasts for FY10, FY11 and FY12 by US\$13/bbl, US\$4.5/bbl and US\$12/bbl, respectively. The WTI average forecasts are now US\$54.5/bbl, US\$77/bbl and US\$81/bbl for the respective fiscal years. Our long-term oil price has been reduced to US\$75/bbl in 2009 US\$ inflated by the US CPI. This gives a FY14E oil price of US\$79.5/bbl. Our previous forecast was US\$92/bbl from FY13E.
- Potential for addition to reserves.** Cairn plans to use enhanced oil-recovery (EOR) techniques at the Rajasthan fields. If successful, EOR may increase the recovery factor by 10–20%, or P2 reserves, by 309m boe compared with 794m boe currently, thus extending the production plateau.
- Pricing and cess remain unsettled.** The crude benchmark and potential discount for pricing the Rajasthan crude is still undecided. In addition, the government has asked Cairn to pay a cess (ranging at US\$2.8–8.1/bbl) for its fields in Rajasthan, which it has disputed.

### Earnings and target price revision

- Lower crude price shifts government profit share by a year.** We have cut FY10E PAT by 33.0% on the back of our lower crude price assumptions. Our FY11E PAT estimate, however, is increased by 9% as government profit share would now kick in in FY12E as opposed to FY11E earlier.
- Target price cut by 12% to Rs175 (from Rs202).** We derive a sum-of-parts value (DCF for Rajasthan and Ravva fields and relative valuation for other fields) of Rs175/sh. We have ascribed a premium of Rs20/sh (~11% of equity value) for Cairn's strong track record in striking oil.

### Price catalyst

- 12-month price target: Rs175.00 based on a DCF methodology.
- Catalyst: New finds, revision of reserves and pricing of Rajasthan crude.

### Action and recommendation

- Downgrade rating to Underperform.** Cairn India stock has risen ~30% in the past month and has significantly outperformed the Sensex in the past three months. Cairn now trades ahead of our sum-of-parts based valuation. Our target price suggests 14% downside.

Please refer to the important disclosures and analyst certification on inside back cover of this document, or on our website [www.macquarie.com.au/research/disclosures](http://www.macquarie.com.au/research/disclosures).

INDIA

# Reliance Industries

16 April 2009

**RIL IN** **Outperform**

Stock price as of 14 Apr 09	Rs	1,769.25
12-month target	Rs	2,035.00
Upside/downside	%	+15.0
Valuation	Rs	2,035.00
- Sum of Parts		

GICS sector		energy
Market cap	Rs bn	2,784
30-day avg turnover	US\$m	230.0
Market cap	US\$m	55,812
Number shares on issue	m	1,574

**Investment fundamentals**

Year end 31 Mar		2008A	2009E	2010E	2011E
Total revenue	bn	1,371.5	1,564.6	1,685.4	2,055.3
EBITDA	bn	231.4	232.4	358.7	404.4
EBITDA growth	%	15.0	0.4	54.3	12.8
EBIT	bn	181.4	183.3	275.8	317.5
EBIT Growth	%	19.1	1.0	50.5	15.1
Reported profit	bn	195.2	146.5	228.0	272.6
Adjusted profit	bn	147.9	146.5	228.0	272.6
EPS rep	Rs	124.07	89.18	138.80	165.95
EPS adj	Rs	93.99	89.18	138.80	165.95
EPS adj growth	%	13.1	-5.1	55.6	19.6
PE adj	x	18.8	19.8	12.7	10.7
Total DPS	Rs	12.13	12.13	18.88	22.57
Total div yield	%	0.7	0.7	1.1	1.3
ROE	%	19.2	13.8	17.7	19.1
EV/EBITDA	x	14.0	14.5	9.4	8.3
Net debt/equity	%	51.6	35.8	35.2	18.1
Price/book	x	3.3	2.3	2.2	1.9

**RIL IN rel SENSEX performance, & rec history**



Source: FactSet, Macquarie Research, April 2009 (all figures in INR unless noted)

**Analysts**

<b>Jal Irani</b>	
91 22 6653 3040	jal.irani@macquarie.com
<b>Amit Mishra</b>	
91 22 6653 3051	amit.mishra@macquarie.com

## Insignificant crude price cut impact

**Event**

- Macquarie's oil economist, Jan Stuart, has revised down our oil price forecasts, with FY3/10 and FY3/11 down 19% and 6%, respectively. The impact is negligible as Reliance's (RIL) upstream business comprises mainly gas priced at US\$25/bbl. Our target price increase of 22% to Rs2,035 is primarily due to higher upstream potential and higher benchmark valuations.

**Impact**

- Oil price forecast:** We cut our forecasts for FY10, FY11 and FY12 by US\$13/bbl, US\$4.5/bbl and US\$12/bbl, respectively. The WTI average is now US\$54.5/bbl for FY10, US\$77/bbl for FY11 and US\$81/bbl for FY12. We still forecast FY09 as the peak year for oil prices.
- 25% upgrade in KG-D6 valuations:** RIL has sought approval from the Directorate General of Hydrocarbons (DGH) to develop nine additional wells in the KG-D6 block. If approved, gas production will rise by 50% and it will incur additional capex of US\$5.5bn in KG-D6. Since the production-sharing contract for KG-D6 allows full cost recovery, the higher capex will defer the government's higher profit share. This enhances net value to RIL by 25%.
- Further upgrade in upstream valuations:** We value RIL's other E&P blocks, primarily NEC-25, CBM Sohagpur and KG-D9, based on EV/reserve multiples for its Indian peer, Oil and Natural Gas Corp (ONGC IN, Rs896.90, Underperform, TP: Rs778.00, 13% downside). The multiple has increased sharply in the past one month due to a ~30% rally in ONGC stock. We upgraded the value of these blocks on the back of this. We also factored in a higher value for RIL's treasury stocks, in line with current market prices.

**Earnings and target price revision**

- RIL's oil production is restricted to the Panna and Mukta fields, while commercial oil production from KG-D6 is expected to start in the next few months. We downgrade our FY10E earnings by 10% primarily due to the delay to the start of the commercial commissioning of Reliance Petroleum refinery. We raise our target price by 22% to Rs2,035 on higher upstream potential and higher benchmark valuations.

**Price catalyst**

- 12-month price target: Rs2,035.00 based on a Sum of Parts methodology.
- Catalyst: New oil and gas finds; enhanced clarity on organised retail.

**Action and recommendation**

- World's largest finds started production recently:** RIL has added the highest reserves among private sector companies globally since 2000. RIL started production from its first deepwater block KG-D6 block recently.
- KG-D9 – the next big thing:** Hardy Oil (10% partner to RIL) and DGH believe KGD9 could be larger than KGD6. It is likely to be more oil-bearing and four-way closures suggest higher recovery potential. Hardy's plan to drill in KGD9 over the next two quarters may confirm its potential.
- We reiterate RIL as top sector pick:** We forecast 55% growth in FY10 earnings, primarily from volume growth despite an assumed margin pressure in cyclical businesses.

Please refer to the important disclosures and analyst certification on inside back cover of this document. or on our website [www.macquarie.com.au/research/disclosures](http://www.macquarie.com.au/research/disclosures).

INDIA

# Reliance Communications

16 April 2009

**RCOM IN** **Outperform**

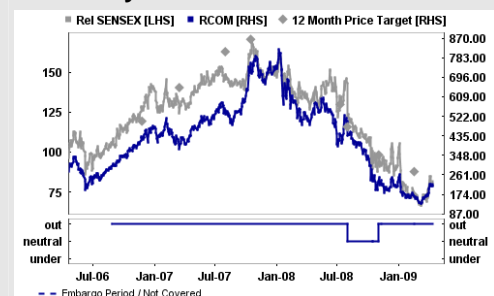
Stock price as of 15 Apr 09	Rs	219.20
12-month target	Rs	275.00
Upside/downside	%	+25.5
Valuation	Rs	275.00
- DCF (WACC 12.5%, beta 1.1, ERP 6.0%, RFR 9.0%, TGR 3.5%)		

GICS sector	telecommunication services	
Market cap	Rs m	452,435
30-day avg turnover	US\$m	56.5
Market cap	US\$m	9,069
Number shares on issue	m	2,064

## Investment fundamentals

Year end 31 Mar		2008A	2009E	2010E	2011E
Total revenue	bn	190.7	229.9	273.2	315.3
EBITDA	bn	82.0	92.2	109.1	127.2
EBITDA growth	%	43.3	12.5	18.3	16.6
EBIT	bn	53.9	51.1	56.0	67.1
Adjusted profit	bn	53.6	57.1	56.5	64.5
EPS adj	Rs	24.86	26.28	25.91	29.57
EPS adj growth	%	59.0	5.7	-1.4	14.1
PE adj	x	8.8	8.3	8.5	7.4
Total DPS	Rs	0.50	2.00	2.00	1.00
Total div yield	%	0.2	0.9	0.9	0.5
ROA	%	8.1	5.7	5.2	5.7
ROE	%	20.9	18.4	15.5	15.3
EV/EBITDA	x	8.0	7.2	6.1	5.2
Net debt/equity	%	31.5	63.1	66.1	52.0
Price/book	x	1.7	1.4	1.2	1.1

## RCOM IN rel SENSEX performance, & rec history



Source: FactSet, Macquarie Research, April 2009 (all figures in INR unless noted)

## Analyst

**Shubham Majumder**  
9122 66533049 shubham.majumder@macquarie.com  
**Nitin Mohta**  
91 22 6653 3050 nitin.mohta@macquarie.com  
**Tim Smart**  
852 3922 3565 tim.smart@macquarie.com

## RCOM adds 3m new subs in Mar'09

### Event

- RCOM has added a solid 3m subscribers in March 2009. This compares with 3.35m subscribers added in February 2009 and 4.95m in January 2009.

### Impact

- Record subscriber additions of 11.3m in the Jan-Mar 2009 quarter.** RCOM launched its new GSM services in 14 circles during January 2009, making it a pan-India GSM operator. Stellar subscriber net addition performance in the current quarter sets the base for improvement in wireless operating performance for RCOM from the June 2009 quarter onward. We note that RCOM has reported weak quarterly wireless operating performance in the last couple of quarters due to inferior quality of subscribers on its legacy CDMA technology platform.
- 11.3m new subscriber additions in the quarter, absolutely in line with our expectations. As detailed in our RCOM report dated 17 February 2009, we expected RCOM to add 8m subscribers on its new GSM platform and 11.3m subscribers combining GSM and CDMA, in the Jan-Mar 2009 quarter.** Our 8m subscriber add estimate in the 14 new GSM circles was derived based on the required subscriber base that RCOM would need to achieve for receiving additional 1.8MHz spectrum in each one of the 14 new GSM circles. **Of the 11.3m subscribers, we estimate about 9m were added on GSM (8m in the 14 New GSM circles and 1m in the 8 old GSM circles) and 2.3m in the pan India CDMA business.** However, we note that the company has not formally disclosed break up of new subscriber addition information by CDMA and GSM platforms, and these are our estimates based on industry sources.
- Investor concerns on irrational pricing unfounded.** We highlight that RCOM has rolled back its initial promotional pricing on Lifetime prepaid connection to Rs49 from Rs25 within two months of launch. In addition, based on our interaction with the company management, we do not believe RCOM would indulge in a tariff war on a sustained basis. As such, we see limited possibility of a full-blown tariff war hurting the profitability of incumbents like Bharti Airtel (BHARTI IN, Rs685, Outperform, TP: Rs975).

## Earnings revision

- No change.

## Price catalyst

- 12-month price target: Rs275.00 based on a DCF methodology.
- Catalyst: Launch of paid tariff plans in 14 new GSM circles and ARPU stability

## Action and recommendation

- Recommend investors to buy Bharti and RCOM, in that order. Bharti is one of our top two telco picks in Asia, and we recommend investors to switch from Idea Cellular (IDEA IN, Rs57, Underperform, TP: Rs45) to Bharti. We believe RCOM shares would be even more appealing on a pullback below Rs200.

Please refer to the important disclosures and analyst certification on inside back cover of this document, or on our website [www.macquarie.com.au/research/disclosures](http://www.macquarie.com.au/research/disclosures).



HONG KONG

# Oil price update

16 April 2009

## Valuations

Company	Old Rating	New Rating	Price	TP	Up/
			Lcy	Lcy (down)	
CNOOC	883 HK	OP	N	8.78	9.25 5.4%
PetroChina	857 HK	OP	OP	6.55	9.35 42.7%
Sinopec	386 HK	OP	OP	5.83	8.45 44.9%
PTTEP	PTTE P TB	OP	OP	99.00	120.00 21.2%
Inpex Corp	1605 JP	OP	OP	726,000	950,000 30.9%
JAPEX	1662 JP	OP	OP	4,120	5,200 26.2%
Cairn India	CAIR IN	OP	UP	202.95	175.00 -
ONGC	ONGC IN	OP	UP	896.90	778.00 -
					13.3%

Share price date as of 14 April 2009.  
Source: Bloomberg, Macquarie Research, April 2009

## Lower earnings for E&P companies

### Cutting 10–20% off our 2009–12 and long-run forecast

Our new forecast pegs benchmark Brent crude oil prices at US\$52 per barrel (bbl) this year and US\$70/bbl in 2010, which is down 9% and 8%, respectively, from our previous estimates. For 2011 and 2012, we expect prices will average US\$78/bbl and US\$82/bbl, which is 13% and 11% lower. Lastly, we lower our long-run price to US\$73/bbl Brent (2009 US\$ prices).

### Key demand trends turned, others shifted lower

The dizzying decline of oil prices from US\$147/bbl last July to below US\$40/bbl in December may have steadied. But we think that's largely a technical and money-flow story. We think fundamentally, this commodity is not out of the woods by a long shot. Last year, global oil demand fell 0.3% YoY. This year it could fall by 2.4%. That's not supposed to happen. Oil is used everywhere and used for almost everything. So for decades, as population, production and trade grew, oil demand grew in step. Its decline illustrates the depth of this global recession and makes this a macro story. Latest data show demand declines accelerating in 1Q09. We see it stabilising in 2010, but we believe oil demand may not recover to 2007 levels until late 2011.

### Huge inventories ... so what about supply?

Oil inventories are already some 300 million barrels above normal and are still rising. Such unprecedented surpluses could take a year or more to work off. OPEC is trying to speed up the correction, but it was late in dialling down output and may have trouble taking the next step. We think the next significant move comes from non-OPEC. As the industry cuts spending drastically, decline rates accelerate, projects are delayed and aggregate oil supply falls faster. But this takes time.

### Prospects of long-run scarcity recede, but don't fade

Looking into 2011–12 and beyond, we see global spare capacity reduced to zero by 2013. Prices will again need to rise to accelerate upstream spending. We don't think, however, that production can be ratcheted up quickly enough. Oil prices could then rally to reflect scarcity, just like they did in 2Q of last year. The bigger risk to our forecast for the long term is to the upside.

### Oil price forecast

US\$/bbl	2008A	2009E	2010E	2011E	2012E
Brent					
<b>New forecast</b>	<b>98.52</b>	<b>52.25</b>	<b>70.00</b>	<b>78.00</b>	<b>82.00</b>
Old forecast		59.00	76.00	90.00	92.00
change %		-11%	-8%	-13%	-11%

Source: Macquarie Research, April 2009

## Analysts

**David Johnson**  
852 3922 4691 david.johnson-hkg@macquarie.com  
**Christina Lee**  
822 3705 8670 christina.lee@macquarie.com  
**Polina Diyachkina**  
81 3 3512 7886 polina.diyachkina@macquarie.com  
**Jal Irani**  
91 22 6653 3040 jal.irani@macquarie.com

Please refer to the important disclosures and analyst certification on inside back cover of this document, or on our website [www.macquarie.com.au/research/disclosures](http://www.macquarie.com.au/research/disclosures).



GLOBAL

# Oil prices & fundamentals

15 April 2009



## Inside

Dizzying demand declines	2
In this note	4
How can oil prices stay this high	5
What is so bad about oil demand?	8
Slippage on the supply side	11
Bottom line	14
Appendices	15

## Dizzying demand declines

### Cutting 10–20% off our 2009–12 and long-run forecast

Our new forecast pegs benchmark Brent crude oil prices at US\$53 per barrel (bbl) this year and US\$70/bbl in 2010, which is down -9% and -8%, respectively, from before. In 2011 and 2012, we expect prices will average US\$78/bbl and US\$82/bbl, respectively, which is 13% and 11% lower than our previous forecasts. Lastly, we take down our long run price the most, by 16% to US\$73/bbl for Brent (see inside for a full forecast deck for WTI and Tapis grades as well).

### Key demand trends turned, others shifted lower

The dizzying decline of oil prices from US\$147 last July to below US\$40/bbl in December may have steadied. But we think that's largely a technicals and money-flow story. Fundamentally, this commodity is not out of the woods by a long shot. Last year, global oil demand fell 0.3% YoY. This year it's falling 2.4%. That's not supposed to happen. Oil is used everywhere to do anything. So for decades, as population, production and trade grew, oil demand grew in step. Its decline illustrates the depth of this global recession and makes this a macro story. Latest data show demand declines accelerating in 1Q09. Visibility is poor. We see it stabilizing in 2010, but global oil demand may not reach 2007 levels until late-2011.

### Huge inventories ... so what about supply?

Oil inventories are already some 300m barrels above normal and are still rising. Such unprecedented surpluses could take a year or more to work off.

Opec is trying to speed up the correction, but it was late to dial down output and may have trouble taking the next step. We think the next significant move comes from non-Opec. As the industry cuts spending drastically, decline rates accelerate, projects are delayed and aggregate oil supply falls faster. But, this takes time.

### Prospects of long run scarcity recede, but don't fade

When looking out into 2011–12 and beyond, we see global spare capacity reduced to zero by 2013. Prices will again need to rise to accelerate upstream spending. We do not think, however, that production can be ratcheted higher fast enough. Oil prices could then rally to reflect scarcity, just like they did in 2Q of last year. The bigger risk to our forecast for the long term is to the upside.

### Cutting our price deck (more detail inside)

	2008A	Q109A	Q209E	Q309E	Q409E	2009E	2010E	2011E	2012E	Long Run
Brent										
New US\$	98.52	45.73	53.00	59.00	53.00	52.70	70.00	78.00	82.00	73.00
Old			51.50	67.00	73.00	59.00	76.00	90.00	92.00	87.00
Chg			1.50	-8.00	-20.00	-6.30	-6.00	-12.00	-10.00	-14.00
Chg %			3%	-12%	-27%	-11%	-8%	-13%	-11%	-16%
Futures			52.49	55.81	58.49	53.13	63.66	69.88	72.08	80.39

Note: Futures are 10-day averages on 14 April.

Source: Bloomberg, Macquarie Research, April 2009

## Analyst

Jan Stuart  
212 231 2485

jan.stuart@macquarie.com



Thursday 16 April 2009

**LME cash price**

	US ¢/lb	% Change day on day
Aluminium	67.1	0.1
Copper	218.2	3.0
Lead	70.4	4.7
Nickel	562.4	5.6
Tin	519.6	3.0
Zinc	67.4	5.7

**Other prices**

		% Change day on day
Gold (\$/oz)	891.00	0.4
Silver (\$/oz)	12.94	2.3
Platinum (\$/oz)	1216.00	-0.5
Palladium (\$/oz)	234.00	-0.4
Oil WTI	49.44	0.0
Cobalt (99.8%)	15.75	0.0
\$/US/€ exchange rate	1.32	-0.4
US\$/A\$ exchange rate	0.73	0.0

**LME/COMEX stocks**

	Tonnes	Change
LME Aluminium	3,666,875	15,600
Nymex Aluminium	9,830	0
Nymex Al. Pieces	17,057	1,790
LME Copper	480,400	-11,600
Comex Copper	43,033	18
Lead	60,375	-425
Nickel	105,264	-804
Tin	11,680	-390
Zinc	349,125	-2,375

Source: LME, Comex, Nymex, SHFE, Metal Bulletin, Reuters, LBMA, Macquarie Research

**Analysts**

<b>Jim Lennon</b> 44 20 3037 4271	jim.lennon@macquarie.com
<b>Adam Rowley</b> 44 20 3037 4272	adam.rowley@macquarie.com
<b>Max Layton</b> 44 20 3037 4273	max.layton@macquarie.com
<b>Isaac Feehely</b> 44 20 3037 4061	isaac.feehely@macquarie.com

# Commodities Comment

## Mixed indicators for the production outlook

### Feature article

- We examine the OECD composite leading indicator data release this week and contrast its outlook with more encouraging signs in the US PMI.

### Latest news

- While aluminium was again left behind, the other metals traded sharply higher again on Wednesday as the more bullish tone prevailed in most markets.
- US retail sales fell 1.1% MoM in March, after rising in both January and February, while the prices received by US producers also fell 1.2% YoY. Total 1Q09 sales were down 8.8% YoY. US consumer prices in March were down 0.4% YoY, the first example of YoY deflation in the US since 1955. The price decline was driven mostly by energy price contraction, with core inflation (excluding food and energy) up 0.2% YoY.
- Rio Tinto's Australian iron ore operations produced 36mt of ore in 1Q09, down 15% YoY but flat QoQ, after weaker demand and flooding interrupted both mine and rail operations. Copper production was up 17% QoQ and 32% YoY at Kennecott Utah Copper as the mine moved away from molybdenum production and concentrated on areas of higher copper and gold grades. Escondida mined copper production was up 18% QoQ, but down 33% YoY on lower ore grades. Aluminium production was down 4% QoQ and 6% YoY.
- Rio Tinto's hard coking coal production fell 37.4% QoQ to 1.7mt, although it remained ahead of last year's flood-affected 1Q, when Rio Tinto's mines produced 1.3mt of hard coking coal. Production was down 24% QoQ at Kestrel, where Rio had previously announced a 15% production cut, and down 42% at Hail Creek, where Rio Tinto had not announced any cut at all. Rio Tinto subsidiary Coal & Allied's coal production in Australia fell to 4.2mt in 1Q09, 9% down YoY and 11% down QoQ, citing wet weather.
- The benchmark price for high grade manganese ore for 2Q09 has been settled at \$4.80/Mn 1% fob between Nippon Steel and BHP Billiton. This is 71% lower than the benchmark price through 1Q09, \$16.59/Mn 1% fob.
- The Macquarie Group is acting as Advisor to Rio Tinto Ltd and Rio Tinto PLC in relation to its strategic partnership with Chinalco as announced 12 February 2009.

**Analyst Certification:** The views expressed in this research accurately reflect the personal views of the analyst(s) about the subject securities or issuers and no part of the compensation of the analyst(s) was, is, or will be directly or indirectly related to the inclusion of specific recommendations or views in this research. The analyst principally responsible for the preparation of this research receives compensation based on overall revenues of Macquarie Group Ltd ABN 94 122 169 279 (AFSL No. 318062) (MGL) and its related entities (the Macquarie Group) and has taken reasonable care to achieve and maintain independence and objectivity in making any recommendations.

**Disclaimers:** Macquarie Securities (Australia) Ltd; Macquarie Capital (Europe) Ltd; Macquarie Capital Markets Canada Ltd; Macquarie Capital Markets North America Ltd; Macquarie Capital (USA) Inc; Macquarie Capital Securities Ltd; Macquarie Capital Securities (Singapore) Pte Ltd; Macquarie Securities (NZ) Ltd; and Macquarie First South Securities (Pty) Limited are not authorised deposit-taking institutions for the purposes of the Banking Act 1959 (Commonwealth of Australia), and their obligations do not represent deposits or other liabilities of Macquarie Bank Limited ABN 46 008 583 542 (MBL) or MGL. MBL does not guarantee or otherwise provide assurance in respect of the obligations of any of the above mentioned entities. MGL provides a guarantee to the Monetary Authority of Singapore in respect of the obligations and liabilities of Macquarie Capital Securities (Singapore) Pte Ltd for up to SGD 35 million. This research has been prepared for the general use of the wholesale clients of the Macquarie Group and must not be copied, either in whole or in part, or distributed to any other person. If you are not the intended recipient you must not use or disclose the information in this research in any way. Nothing in this research shall be construed as a solicitation to buy or sell any security or product, or to engage in or refrain from engaging in any transaction. In preparing this research, we did not take into account the investment objectives, financial situation and particular needs of the reader. Before making an investment decision on the basis of this research, the reader needs to consider, with or without the assistance of an adviser, whether the advice is appropriate in light of their particular investment needs, objectives and financial circumstances. There are risks involved in securities trading. The price of securities can and does fluctuate, and an individual security may even become valueless. International investors are reminded of the additional risks inherent in international investments, such as currency fluctuations and international stock market or economic conditions, which may adversely affect the value of the investment. This research is based on information obtained from sources believed to be reliable but we do not make any representation or warranty that it is accurate, complete or up to date. We accept no obligation to correct or update the information or opinions in it. Opinions expressed are subject to change without notice. No member of the Macquarie Group accepts any liability whatsoever for any direct, indirect, consequential or other loss arising from any use of this research and/or further communication in relation to this research.

**Other Disclaimers:** In Canada, securities research is prepared, approved and distributed by Macquarie Capital Markets Canada Ltd, a participating organisation of the Toronto Stock Exchange, TSX Venture Exchange & Montréal Exchange. Macquarie Capital Markets North America Ltd., which is a registered broker-dealer and member of FINRA, accepts responsibility for the contents of reports issued by Macquarie Capital Markets Canada Ltd in the United States and to US persons and any person wishing to effect transactions in the securities described in the reports issued by Macquarie Capital Markets Canada Ltd should do so with Macquarie Capital Markets North America Ltd. Securities research is issued and distributed by Macquarie Securities (Australia) Ltd (AFSL No. 238947) in Australia, a participating organisation of the Australian Securities Exchange; Macquarie Securities (NZ) Ltd in New Zealand, a licensed sharebroker and New Zealand Exchange Firm; Macquarie Capital (Europe) Ltd in the United Kingdom, which is authorised and regulated by the Financial Services Authority (No. 193905); Macquarie Capital Securities Ltd in Hong Kong, which is licensed and regulated by the Securities and Futures Commission; Macquarie Capital Securities (Japan) Limited in Japan, a member of the Tokyo Stock Exchange, Inc., Osaka Securities Exchange Co. Ltd, and Jasdq Securities Exchange, Inc. (Financial Instruments Firm, Kanto Financial Bureau (kin-sho) No. 231, a member of Japan securities Dealers Association and Financial Futures Association of Japan); Macquarie First South Securities (Pty) Limited in South Africa, a member of the JSE Limited and in Singapore, Macquarie Capital Securities (Singapore) Pte Ltd (Company Registration Number: 198702912C), a Capital Markets Services licence holder under the Securities and Futures Act to deal in securities and provide custodial services in Singapore. Pursuant to the Financial Advisers (Amendment) Regulations 2005, Macquarie Capital Securities (Singapore) Pte Ltd is exempt from complying with sections 25, 27 and 36 of the Financial Advisers Act. Clients should contact analysts at, and execute transactions through, a Macquarie Group entity in their home jurisdiction unless governing law permits otherwise. Macquarie Capital (USA) Inc., which is a registered broker-dealer and member of FINRA, accepts responsibility for the content of each research report prepared by one of its non-US affiliates when the research report is distributed in the United States by Macquarie Capital (USA) Inc. Macquarie Capital (USA) Inc. affiliate research reports and affiliate employees are not subject to the disclosure requirements of FINRA rules. Any persons receiving this report directly from Macquarie Capital (USA) Inc. and wishing to effect a transaction in any security described herein should do so with Macquarie Capital (USA) Inc. The information contained in this document is confidential. If you are not the intended recipient, you must not disclose or use the information in this document in any way. If you received it in error, please tell us immediately by return e-mail and delete the document. We do not guarantee the integrity of any e-mails or attached files and are not responsible for any changes made to them by any other person. MGL has established and implemented a conflicts policy at group level (which may be revised and updated from time to time) (the "Conflicts Policy") pursuant to regulatory requirements (including the FSA Rules) which sets out how we must seek to identify and manage all material conflicts of interest. Disclosures with respect to the issuers, if any, mentioned in this research are available at [www.macquarie.com/research/disclosures](http://www.macquarie.com/research/disclosures). © Macquarie Group

Level 31 CityPoint 1 Ropemaker St, London EC2Y 9HD  
Toll Free (from Australia) 1800 142 266

[www.macquarie.com/research](http://www.macquarie.com/research)

London (44 20) 3037 4400  
Sydney (612) 8232 9555  
Hong Kong (852) 2823 3588

New York (1 212) 231 2500  
Melbourne (613) 9635 8139  
Singapore (65) 6231 1111





INDIA

# Market performance

16 April 2009

including the quarterly results calendar



## Market performance

	Last	% chg 1D	% chg YTD
BSE Sensex	11,285	2.9	17.0
NSE NIFTY	3,484	3.0	17.7
CNX Mid-cap	3,958	4.2	6.0
S&P 500	842	-2.0	-6.8
NASDAQ	1,626	-1.7	3.1
FTSE 100	3,968	-0.5	-10.5
NIKKEI - 225	8,743	-1.1	-1.3

Source: Bloomberg, Macquarie Research, April 2009

## Fixed income, currencies, commodities

	Last	% chg 1D	% chg YTD
10-year govt bond	6.7	-0.6	34.0
Interbank rate	3.6	1.4	-44.6
US\$1 = Rs	49.7	0.5	-1.7
Gold (US\$/oz)	892.3	0.2	1.2
Crude (US\$/bbl)	51.6	0.5	23.6

Source: Bloomberg, Macquarie Research, April 2009

## ADR/GDR (US\$)

	Last price	% chg 1D	Prem/Disc
Satyam Infoway	1.4	4.4	N.A.
SBI (GDR)	53.1	3.1	1.9
MTNL	2.9	1.7	-4.6
Reliance Industrie (GDR)	73.5	0.7	-0.2
Ranbaxy (GDR)	3.9	0.0	-3.2
Cognizant Technologies	23.1	-1.8	N.A.
Rediff.com	2.1	-1.9	N.A.
HDFC Bank	69.2	-2.0	6.0
Dr Reddy	10.4	-2.3	-5.1
Infosys	28.8	-2.4	4.3
Wipro	8.4	-3.5	56.0
ICICI Bank	17.0	-4.1	-4.9
Tata Motors	7.4	-4.7	30.0
Satyam	2.0	-11.1	4.6

Source: Bloomberg, Macquarie Research, April 2009

## Daily net flows (US\$m)

	Date	Last	MTD	YTD
Foreign funds equity (Net)	09/04/2009	1.8	337.9	-1005.4
Indian Mutual funds equity (Net)	09/04/2009	7.2	-18.4	-147.6
FII Net stock futures	13/04/2009	-13.8	-89.1	321.2
FII Net index futures	13/04/2009	93.9	831.6	548.2

Source: Bloomberg, Macquarie Research, April 2009

### Derivatives (open interest)

(US\$)	Last	% chg 1D	% chg YTD
Stock futures (13/04)	4293.6	3.3	58.3
Index futures (13/04)	3229.0	2.0	65.6

### Market turnover

	US\$ m	% chg 1D
BSE turnover	1,068	-8.3
NSE turnover	4,227	36.4

### BSE (Top 5)

Top Gainers	Last price	% chg 1D
Tata Motors	281.5	11.6
Gujarat Ambuja	85.9	10.2
DLF	257.0	9.4
BHEL	1667.1	9.3
Reliance Infrastructure	710.2	6.9

### BSE (Bottom 5)

Top Losers	Last price	% chg 1D
Infosys	1370.6	-2.7
Satyam	47.6	-2.5
TCS	577.7	-2.5
HDFC Bank	1082.8	-1.4
ITC	185.2	-1.0

Source: Bloomberg, Macquarie Research, April 2009

Trading/Dealing Line: + 91 22 6653 3200

US Toll Free: 1888 622 7862

Please refer to the important disclosures on inside back cover of this document, or on our website [www.macquarie.com.au/research/disclosures](http://www.macquarie.com.au/research/disclosures).

**4Q FY09 results calendar**

Mon	Tue	Wed	Thurs	Fri	Sat	Sun
06-Apr	07-Apr	08-Apr	09-Apr	10-Apr	11-Apr	12-Apr
13-Apr	14-Apr	15-Apr	16-Apr	17-Apr	18-Apr	19-Apr
		Infosys Technologies		Power Finance		
20-Apr	21-Apr	22-Apr	23-Apr	24-Apr	25-Apr	26-Apr
Axis Bank		ACC Limited Marico Zee Entertainment	HDFC Bank	Maruti Suzuki India		
27-Apr	28-Apr	29-Apr	30-Apr	01-May	02-May	03-May
Bank of Baroda	IDFC Glaxosmithkline Pharmaceuticals	Dabur india Titan	ABB			
04-May	05-May	06-May	07-May	08-May	09-May	10-May
HDFC Ltd					SBI	
11-May	12-May	13-May	14-May	15-May	16-May	17-May
18-May	19-May	20-May	21-May	22-May	23-May	24-May
25-May	26-May	27-May	28-May	29-May	30-May	31-May

Source: Macquarie Research, April 2009

**Important disclosures:**

<p><b>Recommendation definitions</b></p> <p><b>Macquarie - Australia/New Zealand</b>                  Outperform – return &gt;5% in excess of benchmark return                  Neutral – return within 5% of benchmark return                  Underperform – return &gt;5% below benchmark return</p> <p><b>Macquarie – Asia/Europe</b>                  Outperform – expected return &gt;+10%                  Neutral – expected return from -10% to +10%                  Underperform – expected return &lt;-10%</p> <p><b>Macquarie First South - South Africa</b>                  Outperform – expected return &gt;+10%                  Neutral – expected return from -10% to +10%                  Underperform – expected return &lt;-10%</p> <p><b>Macquarie - Canada</b>                  Outperform – return &gt;5% in excess of benchmark return                  Neutral – return within 5% of benchmark return                  Underperform – return &gt;5% below benchmark return</p> <p><b>Macquarie - USA</b>                  Outperform (Buy) – return &gt;5% in excess of benchmark return                  Neutral (Hold) – return within 5% of benchmark return                  Underperform (Sell) – return &gt;5% below benchmark return</p> <p><b>Recommendations</b> – 12 months</p> <p><b>Note:</b> Quant recommendations may differ from Fundamental Analyst recommendations</p>	<p><b>Volatility index definition*</b></p> <p>This is calculated from the volatility of historical price movements.</p> <p><b>Very high–highest risk</b> – Stock should be expected to move up or down 60–100% in a year – investors should be aware this stock is highly speculative.</p> <p><b>High</b> – stock should be expected to move up or down at least 40–60% in a year – investors should be aware this stock could be speculative.</p> <p><b>Medium</b> – stock should be expected to move up or down at least 30–40% in a year.</p> <p><b>Low–medium</b> – stock should be expected to move up or down at least 25–30% in a year.</p> <p><b>Low</b> – stock should be expected to move up or down at least 15–25% in a year.</p> <p>* Applicable to Australian/NZ/Canada stocks only</p>	<p><b>Financial definitions</b></p> <p>All "Adjusted" data items have had the following adjustments made:                  Added back: goodwill amortisation, provision for catastrophe reserves, IFRS derivatives &amp; hedging, IFRS impairments &amp; IFRS interest expense                  Excluded: non recurring items, asset revals, property revals, appraisal value uplift, preference dividends &amp; minority interests</p> <p><b>EPS</b> = adjusted net profit / efpowa*  <b>ROA</b> = adjusted ebit / average total assets  <b>ROA Banks/Insurance</b> = adjusted net profit / average total assets  <b>ROE</b> = adjusted net profit / average shareholders funds  <b>Gross cashflow</b> = adjusted net profit + depreciation                  *equivalent fully paid ordinary weighted average number of shares</p> <p>All Reported numbers for Australian/NZ listed stocks are modelled under IFRS (International Financial Reporting Standards).</p>
---	---	--

**Recommendation proportions – For quarter ending 31 March 2009**

	AU/NZ	Asia	RSA	USA	CA	EUR
Outperform	40.44%	49.55%	44.83%	38.49%	67.19%	43.84%
Neutral	38.60%	15.57%	39.66%	46.43%	28.12%	39.04%
Underperform	20.96%	34.88%	15.52%	15.08%	4.69%	17.12%

**Analyst Certification:** The views expressed in this research accurately reflect the personal views of the analyst(s) about the subject securities or issuers and no part of the compensation of the analyst(s) was, is, or will be directly or indirectly related to the inclusion of specific recommendations or views in this research. The analyst principally responsible for the preparation of this research receives compensation based on overall revenues of Macquarie Group Ltd ABN 94 122 169 279 (AFSL No. 318062 )(MGL) and its related entities (the Macquarie Group) and has taken reasonable care to achieve and maintain independence and objectivity in making any recommendations.

**Disclaimers:** Macquarie Securities (Australia) Ltd; Macquarie Capital (Europe) Ltd; Macquarie Capital Markets Canada Ltd; Macquarie Capital Markets North America Ltd; Macquarie Capital (USA) Inc; Macquarie Capital Securities Ltd; Macquarie Capital Securities (Singapore) Pte Ltd; Macquarie Securities (NZ) Ltd; and Macquarie First South Securities (Pty) Limited are not authorised deposit-taking institutions for the purposes of the Banking Act 1959 (Commonwealth of Australia), and their obligations do not represent deposits or other liabilities of Macquarie Bank Limited ABN 46 008 583 542 (MBL) or MGL. MBL does not guarantee or otherwise provide assurance in respect of the obligations of any of the above mentioned entities. MGL provides a guarantee to the Monetary Authority of Singapore in respect of the obligations and liabilities of Macquarie Capital Securities (Singapore) Pte Ltd for up to SGD 35 million. This research has been prepared for the general use of the wholesale clients of the Macquarie Group and must not be copied, either in whole or in part, or distributed to any other person. If you are not the intended recipient you must not use or disclose the information in this research in any way. Nothing in this research shall be construed as a solicitation to buy or sell any security or product, or to engage in or refrain from engaging in any transaction. In preparing this research, we did not take into account the investment objectives, financial situation and particular needs of the reader. Before making an investment decision on the basis of this research, the reader needs to consider, with or without the assistance of an adviser, whether the advice is appropriate in light of their particular investment needs, objectives and financial circumstances. There are risks involved in securities trading. The price of securities can and does fluctuate, and an individual security may even become valueless. International investors are reminded of the additional risks inherent in international investments, such as currency fluctuations and international stock market or economic conditions, which may adversely affect the value of the investment. This research is based on information obtained from sources believed to be reliable but we do not make any representation or warranty that it is accurate, complete or up to date. We accept no obligation to correct or update the information or opinions in it. Opinions expressed are subject to change without notice. No member of the Macquarie Group accepts any liability whatsoever for any direct, indirect, consequential or other loss arising from any use of this research and/or further communication in relation to this research.

**Other Disclaimers:** In Canada, securities research is prepared, approved and distributed by Macquarie Capital Markets Canada Ltd, a participating organisation of the Toronto Stock Exchange, TSX Venture Exchange & Montréal Exchange. Macquarie Capital Markets North America Ltd., which is a registered broker-dealer and member of FINRA, accepts responsibility for the contents of reports issued by Macquarie Capital Markets Canada Ltd in the United States and to US persons and any person wishing to effect transactions in the securities described in the reports issued by Macquarie Capital Markets Canada Ltd should do so with Macquarie Capital Markets North America Ltd. Securities research is issued and distributed by Macquarie Securities (Australia) Ltd (AFSL No. 238947) in Australia, a participating organisation of the Australian Securities Exchange; Macquarie Securities (NZ) Ltd in New Zealand, a licensed sharebroker and New Zealand Exchange Firm; Macquarie Capital (Europe) Ltd in the United Kingdom, which is authorised and regulated by the Financial Services Authority (No. 193905); Macquarie Capital Securities Ltd in Hong Kong, which is licensed and regulated by the Securities and Futures Commission; Macquarie Capital Securities (Japan) Limited in Japan, a member of the Tokyo Stock Exchange, Inc., Osaka Securities Exchange Co. Ltd, and Jasdqa Securities Exchange, Inc. (Financial Instruments Firm, Kanto Financial Bureau(kinsho) No. 231, a member of Japan securities Dealers Association and Financial Futures Association of Japan); Macquarie First South Securities (Pty) Limited in South Africa, a member of the JSE Limited and in Singapore, Macquarie Capital Securities (Singapore) Pte Ltd (Company Registration Number: 198702912C), a Capital Markets Services licence holder under the Securities and Futures Act to deal in securities and provide custodial services in Singapore. Pursuant to the Financial Advisers (Amendment) Regulations 2005, Macquarie Capital Securities (Singapore) Pte Ltd is exempt from complying with sections 25, 27 and 36 of the Financial Advisers Act. Clients should contact analysts at, and execute transactions through, a Macquarie Group entity in their home jurisdiction unless governing law permits otherwise. Macquarie Capital (USA) Inc., which is a registered broker-dealer and member of FINRA, accepts responsibility for the content of each research report prepared by one of its non-US affiliates when the research report is distributed in the United States by Macquarie Capital (USA) Inc. Macquarie Capital (USA) Inc. affiliate research reports and affiliate employees are not subject to the disclosure requirements of FINRA rules. Any persons receiving this report directly from Macquarie Capital (USA) Inc. and wishing to effect a transaction in any security described herein should do so with Macquarie Capital (USA) Inc. The information contained in this document is confidential. If you are not the intended recipient, you must not disclose or use the information in this document in any way. If you received it in error, please tell us immediately by return e-mail and delete the document. We do not guarantee the integrity of any e-mails or attached files and are not responsible for any changes made to them by any other person. MGL has established and implemented a conflicts policy at group level (which may be revised and updated from time to time) (the "Conflicts Policy") pursuant to regulatory requirements (including the FSA Rules) which sets out how we must seek to identify and manage all material conflicts of interest. Disclosures with respect to the issuers, if any, mentioned in this research are available at [www.macquarie.com/research/disclosures](http://www.macquarie.com/research/disclosures). © Macquarie Group

<b>Auckland</b> Tel: (649) 377 6433	<b>Bangkok</b> Tel: (662) 694 7999	<b>Calgary</b> Tel: (1 403) 218 6650	<b>Hong Kong</b> Tel: (852) 2823 3588	<b>Jakarta</b> Tel: (62 21) 515 1818	<b>Johannesburg</b> Tel: (2711) 853 2000	<b>Kuala Lumpur</b> Tel: (60 3) 2059 8833
<b>London</b> Tel: (44 20) 3037 4400	<b>Manila</b> Tel: (63 2) 857 0888	<b>Melbourne</b> Tel: (613) 9635 8139	<b>Montreal</b> Tel: (1 514) 925 2850	<b>Mumbai</b> Tel: (91 22) 6653 3000	<b>Perth</b> Tel: (618) 9224 0888	<b>Seoul</b> Tel: (82 2) 3705 8500
<b>Shanghai</b> Tel: (86 21) 6841 3355	<b>Singapore</b> Tel: (65) 6231 1111	<b>Sydney</b> Tel: (612) 8232 9555	<b>Taipei</b> Tel: (886 2) 2734 7500	<b>Tokyo</b> Tel: (81 3) 3512 7900	<b>Toronto</b> Tel: (1 416) 848 3500	<b>New York</b> Tel: (1 212) 231 2500

Available to clients on the world wide web at [www.macquarie.com/research](http://www.macquarie.com/research) and through Thomson Financial, FactSet, Reuters and Bloomberg.

## Asia Research

### Head of Equity Research

Stephen O'Sullivan (852) 3922 3566

### Automobiles/Auto Parts

Kenneth Yap (Indonesia) (6221) 515 7343  
Clive Wiggins (Japan) (813) 3512 7856  
Dan Lucas (Japan) (813) 3512 6050  
Eunsook Kwak (Korea) (822) 3705 8644  
Linda Huang (Taiwan) (8862) 2734 7521

### Banks and Non-Bank Financials

Ismael Pili (Asia, Japan) (813) 3512 5979  
Nick Lord (Asia, China, Hong Kong) (852) 3922 4774  
Sarah Wu (China) (8621) 2412 9035  
Seshadri Sen (India) (9122) 6653 3053  
Ferry Wong (Indonesia) (6221) 515 7335  
Chin Soong Tay (Malaysia, S'pore) (65) 6231 2837  
Nadine Javeliana (Philippines) (632) 857 0890  
Matthew Smith (Taiwan) (8862) 2734 7514  
Alastair Macdonald (Thailand) (662) 694 7741

### Chemicals/Textiles

Jal Irani (India) (9122) 6653 3040  
Christina Lee (Korea) (822) 3705 8670  
Sunaina Dhanuka (Malaysia) (603) 2059 8993

### Conglomerates

Gary Pinge (Asia) (852) 3922 3557  
Leah Jiang (China) (8621) 2412 9020  
Kenneth Yap (Indonesia) (6221) 515 7343  
Ashwin Sanketh (Singapore) (65) 6231 2830

### Consumer

Mohan Singh (Asia) (852) 3922 1111  
Jessie Qian (China, Hong Kong) (852) 3922 3568  
Unmesh Sharma (India) (9122) 6653 3042  
Toby Williams (Japan) (813) 3512 7392  
Heather Kang (Korea) (822) 3705 8677  
HongSuk Na (Korea) (822) 3705 8678  
Edward Ong (Malaysia) (603) 2059 8982  
Alex Pomento (Philippines) (632) 857 0899  
Linda Huang (Taiwan) (8862) 2734 7521

### Emerging Leaders

Jake Lynch (Asia) (8621) 2412 9007  
Minoru Tayama (Japan) (813) 3512 6058  
Robert Burghart (Japan) (813) 3512 7853  
Heather Kang (Korea) (822) 3705 8677

### Industrials

Inderjeetsingh Bhatia (India) (9122) 6653 3166  
Christopher Cintavey (Japan) (813) 3512 7432  
Janet Lewis (Japan) (813) 3512 7475  
Michael Na (Korea) (822) 2095 7222  
Sunaina Dhanuka (Malaysia) (603) 2059 8993  
David Gambrell (Thailand) (662) 694 7753

### Insurance

Mark Kellock (Asia) (852) 3922 3567  
Seshadri Sen (Asia, India) (9122) 6653 3053  
Makarim Salman (Japan) (813) 3512 7421

### Media

Jessie Qian (China, Hong Kong) (852) 3922 3568  
Shubham Majumder (India) (9122) 6653 3049  
Prem Jearajasingam (Malaysia) (603) 2059 8989  
Alex Pomento (Philippines) (632) 857 0899

### Oil and Gas

David Johnson (Asia, China) (852) 3922 4691  
Jal Irani (India) (9122) 6653 3040  
Polina Diyachkina (Japan) (813) 3512 7886  
Christina Lee (Korea) (822) 3705 8670  
Edward Ong (Malaysia) (603) 2059 8982  
Sunaina Dhanuka (Malaysia) (603) 2059 8993  
Ashwin Sanketh (Singapore) (65) 6231 2830

### Pharmaceuticals

Abhishek Singhal (India) (9122) 6653 3052  
Naomi Kumagai (Japan) (813) 3512 7474  
Christina Lee (Korea) (822) 3705 8670

### Property

Matt Nacard (Asia) (852) 3922 4731  
Eva Lee (China, Hong Kong) (852) 3922 3573  
Chris Cheng (China, Hong Kong) (852) 3922 3581  
Unmesh Sharma (India) (9122) 6653 3042  
Chang Han Joo (Japan) (813) 3512 7885  
Hiroshi Okubo (Japan) (813) 3512 7433  
Tuck Yin Soong (Singapore) (65) 6231 2838  
Elaine Cheong (Singapore) (65) 6231 2839  
Corinne Jian (Taiwan) (8862) 2734 7522  
Patti Tomaitrichitr (Thailand) (662) 694 7727

### Resources / Metals and Mining

Andrew Dale (Asia) (852) 3922 3587  
Xiao Li (China) (852) 3922 4626  
YeeMan Chin (China) (852) 3922 3562  
Rakesh Arora (India) (9122) 6653 3054  
Adam Worthington (Indonesia) (6221) 515 7338  
Polina Diyachkina (Japan) (813) 3512 7886  
Christina Lee (Korea) (822) 3705 8670

### Technology

Warren Lau (Asia) (852) 3922 3592  
Damian Thong (Japan) (813) 3512 7877  
David Gibson (Japan) (813) 3512 7880  
George Chang (Japan) (813) 3512 7854  
Yukihiro Goto (Japan) (813) 3512 5984  
Do Hoon Lee (Korea) (822) 3705 8641  
Michael Bang (Korea) (822) 3705 8659  
Patrick Yau (Singapore) (65) 6231 2835  
Chia-Lin Lu (Taiwan) (8862) 2734 7526  
Daniel Chang (Taiwan) (8862) 2734 7516  
James Chiu (Taiwan) (8862) 2734 7517  
Nicholas Teo (Taiwan) (8862) 2734 7523

### Telecoms

Tim Smart (Asia, China) (852) 3922 3565  
Bin Liu (China) (852) 3922 3634  
Shubham Majumder (India) (9122) 6653 3049  
Kenneth Yap (Indonesia) (6221) 515 7343  
Nathan Ramler (Japan) (813) 3512 7875  
Prem Jearajasingam (Malaysia) (603) 2059 8989  
Ramakrishna Maruvada (Philippines, Singapore, Thailand) (65) 6231 2842

### Transport & Infrastructure

Gary Pinge (Asia) (852) 3922 3557  
Anderson Chow (Asia, China) (852) 3922 4773  
Jonathan Windham (Asia, China) (852) 3922 5417  
Wei Sim (China, Hong Kong) (852) 3922 3598  
Janet Lewis (Japan) (813) 3512 7475  
Eunsook Kwak (Korea) (822) 3705 8644  
Heather Kang (Korea) (822) 3705 8677  
Sunaina Dhanuka (Malaysia) (603) 2059 8993

### Utilities

Carol Cao (China, Hong Kong) (852) 3922 4075  
Adam Worthington (Indonesia) (6221) 515 7338  
Kakutoshi Ohori (Japan) (813) 3512 7296  
Prem Jearajasingam (Malaysia) (603) 2059 8989  
Alex Pomento (Philippines) (632) 857 0899

### Commodities

Jim Lennon (4420) 3037 4271  
Adam Rowley (4420) 3037 4272  
Jonathan Butcher (4420) 3037 4276  
Max Layton (4420) 3037 4273  
Bonnie Liu (8621) 2412 9008  
Henry Liu (8621) 2412 9005  
Rakesh Arora (9122) 6653 3054

### Data Services

Andrea Clohessy (Asia) (852) 3922 4076

### Economics

Bill Belchere (Asia) (852) 3922 4636  
Rajeev Malik (ASEAN, India) (65) 6231 2841  
Richard Gibbs (Australia) (612) 8232 3935  
Paul Cavey (China) (852) 3922 3570  
Richard Jerram (Japan) (813) 3512 7855

### Quantitative

Martin Emery (Asia) (852) 3922 3582  
Viking Kwok (Asia) (852) 3922 4735  
George Platt (Australia) (612) 8232 6539  
Raelene de Souza (Australia) (612) 8232 8388  
Tsumugi Akiba (Japan) (813) 3512 7560

### Strategy/Country

Tim Rocks (Asia) (852) 3922 3585  
Daniel McCormack (Asia) (852) 3922 4073  
Desh Peramunetilleke (Asia) (852)3922 3564  
Mahesh Kedia (Asia) (852) 3922 3576  
Michael Kurtz (China) (8621) 2412 9002  
Seshadri Sen (India) (9122) 6653 3053  
Ferry Wong (Indonesia) (6221) 515 7335  
Chris Hunt (Japan) (813) 3512 7878  
Peter Eadon-Clarke (Japan) (813) 3512 7850  
Prem Jearajasingam (Malaysia) (603) 2059 8989  
Edward Ong (Malaysia) (603) 2059 8982  
Alex Pomento (Philippines) (632) 857 0899  
Tuck Yin Soong (ASEAN, Singapore) (65) 6231 2838  
Daniel Chang (Taiwan) (8862) 2734 7516  
Alastair Macdonald (Thailand) (662) 694 7741

### Find our research at

Macquarie: [www.macquarie.com.au/research](http://www.macquarie.com.au/research)  
Thomson: [www.thomson.com/financial](http://www.thomson.com/financial)  
Reuters: [www.knowledge.reuters.com](http://www.knowledge.reuters.com)  
Bloomberg: MAC GO  
Factset: <http://www.factset.com/home.aspx>  
Email [macresearch@macquarie.com](mailto:macresearch@macquarie.com) for access

## Sales

### Regional Heads of Sales

Peter Slater (Boston) (1 617) 598 2502  
Michelle Paisley (China, Hong Kong) (852) 3922 3516  
Ulrike Pollak-Tsutsumi (Frankfurt) (49) 69 7593 8747  
Thomas Renz (Geneva) (41) 22 818 7712  
Ajay Bhatia (India) (9122) 6653 3200  
Stuart Smythe (India) (9122) 6653 3200  
Chris Gray (Indonesia) (6221) 515 7304  
Gino C Rojas (Philippines) (632) 857 0761  
Greg Norton-Kidd (New York) (1 212) 231 2527  
Luke Sullivan (New York) (1 212) 231 2507  
Scot Mackie (New York) (1 212) 231 2848  
Sheila Schroeder (San Francisco) (1 415) 835 1235

### Regional Heads of Sales cont'd

Giles Heyring (Singapore, Malaysia) (65) 6231 2888  
Mark Duncan (Korea, Taiwan) (8862) 2734 7510  
Angus Kent (Thailand) (662) 694 7601  
Michael Newman (Tokyo) (813) 3512 7920  
Charles Nelson (UK/Europe) (44) 20 3037 4832  
Rob Fabbro (UK/Europe) (44) 20 3037 4865  
Nick Ainsworth (Generalist) (852) 3922 2010

### Sales Trading

Adam Zaki (Asia) (852) 3922 2002  
Mona Lee (Hong Kong) (852) 3922 2085  
Mike Keen (Europe) (44) 20 3037 4905

### Sales Trading cont'd

Brendan Rake (India) (9122) 6653 3204  
Edward Robinson (London) (44) 20 3037 4902  
Robert Risman (New York) (1 212) 231 2555  
Isaac Huang (Taiwan) (8862) 2734 7582  
Jon Omori (Tokyo) (813) 3512 7838

### Alternative Strategies

Convertibles - Roland Sharman (852) 3922 2095  
Depository Receipts - Robert Ansell (852)3922 2094  
Derivatives - Wayne Edelist (852) 3922 2134  
Futures - Tim Smith (852) 3922 2113  
Structured Products - Andrew Terlich (852) 3922 2013