



INDIA

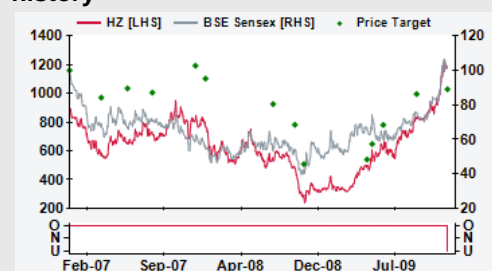
HZ IN Underperform
Price 14 Dec 09 Rs1,186.45

| | | |
|-------------------------------|--------------|------------------|
| 12-month target | Rs | 1,029.00 |
| Upside/Downside | % | -13.3 |
| Valuation | Rs | 1,029.00 |
| - PER | | |
| GICS sector | | Materials |
| Market cap | Rsm | 501,313 |
| 30-day avg turnover | US\$m | 3.1 |
| Market cap | US\$m | 10,773 |
| Number shares on issue | m | 422.5 |

Investment fundamentals

| Year end 31 Mar | | 2009A | 2010E | 2011E | 2012E |
|-----------------|----|-------|-------|-------|--------|
| Total revenue | bn | 56.8 | 73.8 | 86.7 | 102.4 |
| EBITDA | bn | 27.3 | 41.9 | 48.8 | 59.0 |
| EBITDA growth | % | -47.6 | 53.3 | 16.3 | 21.1 |
| Reported profit | bn | 27.3 | 38.5 | 39.5 | 44.8 |
| EPS rep | Rs | 64.55 | 91.14 | 93.56 | 106.02 |
| EPS rep growth | % | -38.0 | 41.2 | 2.7 | 13.3 |
| PER rep | x | 18.4 | 13.0 | 12.7 | 11.2 |
| Total DPS | Rs | 4.00 | 4.05 | 5.00 | 5.00 |
| Total div yield | % | 0.3 | 0.3 | 0.4 | 0.4 |
| ROA | % | 16.8 | 21.8 | 20.6 | 20.9 |
| ROE | % | 20.8 | 23.8 | 19.9 | 18.8 |
| EV/EBITDA | x | 14.0 | 9.1 | 7.8 | 6.5 |
| Net debt/equity | % | -67.1 | -66.0 | -66.5 | -72.4 |
| P/BV | x | 3.5 | 2.8 | 2.3 | 1.9 |

Z IN rel BSE Sensex performance, & rec history



Note: Recommendation timeline - if not a continuous line, then there was no Macquarie coverage at the time or there was an embargo period.

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

Hindustan Zinc

Book profit

Event

- **Peaking out:** Our commodities team has upgraded its zinc price forecasts, but believe that current zinc spot price has overshoot the fundamentals and has downside risks. We downgrade the stock to Underperform from Outperform, even though we increase our target price to Rs1,029 from Rs996.

Impact

- **Upgrading zinc and lead price forecasts:** We have upgraded our FY10 and FY12 zinc price forecasts by 9% and 3% to US\$1,854/t and US\$2,094/t, respectively. We have upgraded FY10, FY11 and FY12 lead price forecasts by 3%, 12% and 25% to US\$1,948/t, US\$2,039/t and US\$2,205/t respectively.
- **Government stake sale – awaiting clarity:** Sterlite, the parent company, already owns a 65% stake and is very keen to exercise its option to buy an additional 30% stake from the government. While this should support a higher value, it is uncertain how the listing requirement of a minimum 10% free float is met. Will the minority shareholders get the same value?
- **Too much cash – low ROEs:** Hindustan Zinc has net cash of more than US\$2bn. This is depressing the ROEs to below 20%, in spite of the healthy operating margin of 60%+. Secondly, with management not very keen to distribute it as dividends, we see it as both risky and suboptimal use of funds.

Earnings and target price revision

- We have changed our EPS estimates for FY10, FY11 and FY12 by 10%, 1% and 6%, respectively. We have raised our target price to Rs1,029 from Rs996. We are downgrading Hindustan Zinc to Underperform due to its expensive valuations.

Price catalyst

- 12-month price target: Rs1,029.00 based on a PER methodology.
- Catalyst: Correction in zinc prices leading to downgrades. Uncertainty for minority shareholders following government stake purchase.

Action and recommendation

- **Downgrading to Underperform:** While we continue to like the low-cost assets, but believe that the risks are to the downside. Also, the uncertainty of the minority shareholders' fate after the government stake purchase demands prudence at high valuations. At peak of commodity price, 13x PER looks very expensive, in our view.

Rakesh Arora, CFA

91 22 6653 3054 rakesh.arora@macquarie.com

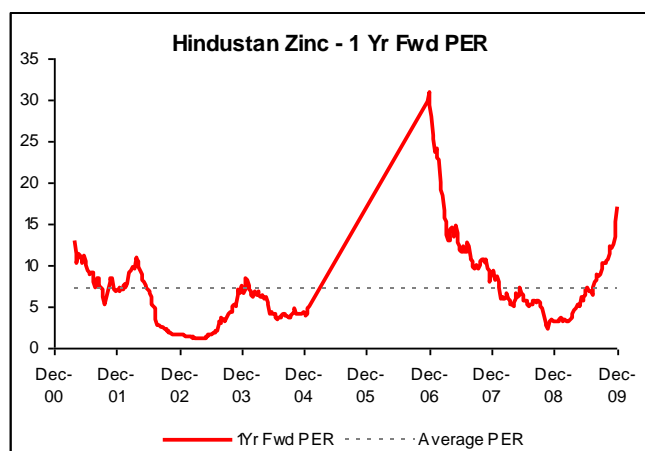
Samidha Gehlot

91 22 6653 3047 samidha.gehlot@macquarie.com

15 December 2009

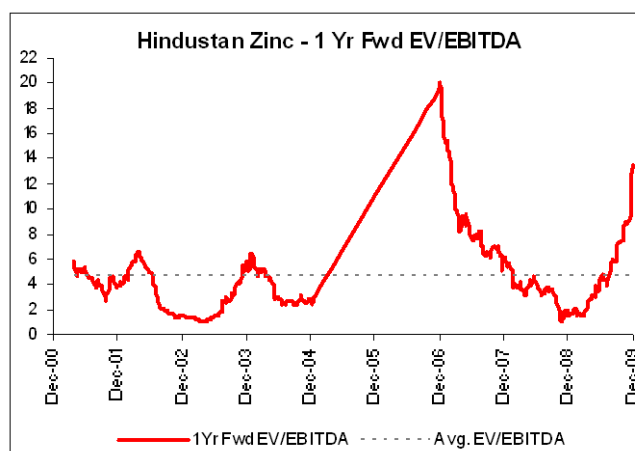
Downgrading on rich valuations and commodity price risk

Fig 1 Hindustan Zinc - 1 Year Forward PER



Source: Macquarie Research, December 2009

Fig 2 Hindustan Zinc - 1 Year Forward EV/EBITDA



Source: Macquarie Research, December 2009

Even as we upgrade earnings

Fig 3 Changes in forecasts

| | Sales (Rs m) | | | EBITDA (Rs m) | | | PAT (Rs m) | | | EPS (Rs) | | |
|---------|--------------|---------|------|---------------|--------|------|------------|--------|------|----------|-------|------|
| | Old | New | %chg | Old | New | %chg | Old | New | %chg | Old | New | %chg |
| FY3/10E | 69,198 | 73,769 | 7% | 37,630 | 41,922 | 11% | 35,077 | 38,511 | 10% | 83.0 | 91.1 | 10% |
| FY3/11E | 86,270 | 86,727 | 1% | 48,363 | 48,765 | 1% | 39,237 | 39,534 | 1% | 92.9 | 93.6 | 1% |
| FY3/12E | 98,097 | 102,371 | 4% | 55,103 | 59,048 | 7% | 42,115 | 44,798 | 6% | 99.7 | 106.0 | 6% |

Source: Macquarie Research, December 2009

Driven by upgrades to commodity price forecasts

Fig 4 Zinc price forecast changes

| (US\$/ton) | FY08 | FY09A | FY10E | FY11E | FY12E | Long term |
|-----------------------------|--------|--------|-------|-------|-------|-----------|
| Zinc - previous | 2,993 | 1,562 | 1,706 | 1,929 | 2,039 | 1,543 |
| Zinc - new | 2,993 | 1,562 | 1,854 | 1,929 | 2,094 | 1,543 |
| % Change from last forecast | 0% | 0% | 9% | 0% | 3% | 0% |
| % increase (YoY) | -16.3% | -47.8% | 18.7% | 4.0% | 8.6% | N.A. |

Source: Macquarie Research, December 2009

Fig 5 Lead forecast changes

| (US\$/ton) | FY08 | FY09A | FY10E | FY11E | FY12E | Long term |
|-----------------------------|--------|--------|-------|-------|-------|-----------|
| Lead - previous | 2,858 | 1,658 | 1,890 | 1,819 | 1,764 | 1,323 |
| Lead - new | 2,858 | 1,658 | 1,948 | 2,039 | 2,205 | 1,323 |
| % Change from last forecast | 0% | 0% | 3% | 12% | 25% | 0% |
| % increase (YoY) | 100.6% | -42.0% | 17.5% | 4.7% | 8.1% | N.A. |

Source: Macquarie Research, December 2009

...and following changes to our assumptions

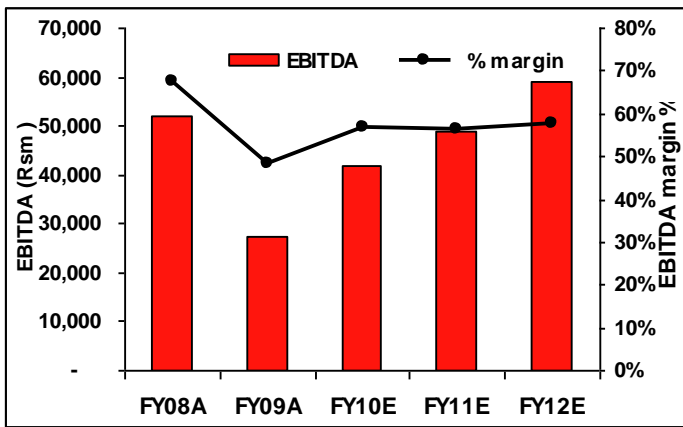
Fig 6 Changes in key assumptions

| | Zinc volume (m tons) | | | Manufacturing costs (RS m) | | | Realisation (Rs/t) | | |
|---------|----------------------|---------|------|----------------------------|--------|------|--------------------|--------|------|
| | Old | New | %chg | Old | New | %chg | Old | New | %chg |
| FY3/10E | 602,100 | 602,100 | 0% | 24,683 | 24,992 | 1% | 88,470 | 95,612 | 8% |
| FY3/11E | 773,520 | 773,520 | 0% | 30,054 | 30,111 | 0% | 91,700 | 90,457 | -1% |
| FY3/12E | 817,470 | 817,470 | 0% | 34,351 | 34,682 | 1% | 93,245 | 94,467 | 1% |

Source: Macquarie Research, December 2009

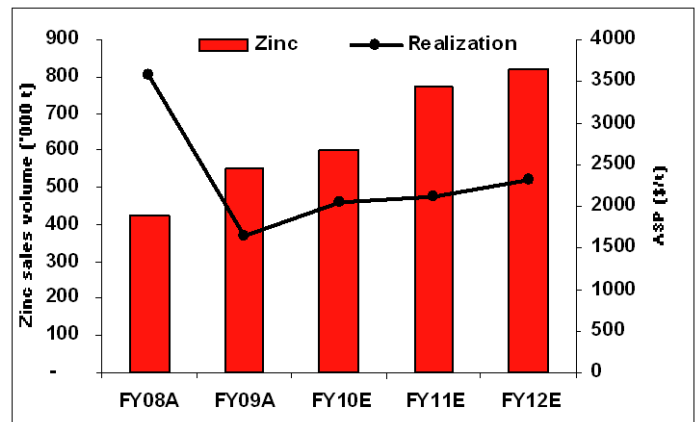
Company snapshot

Fig 7 EBITDA and margins expected to increase



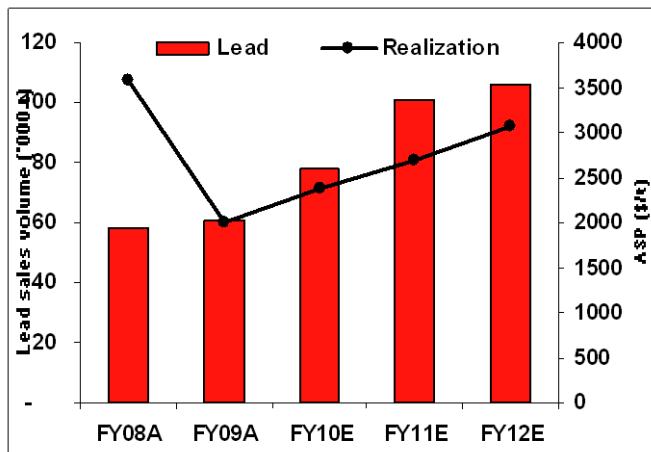
Source: Company data, Macquarie Research, December 2009

Fig 8 Zinc sales volume and realisation assumptions



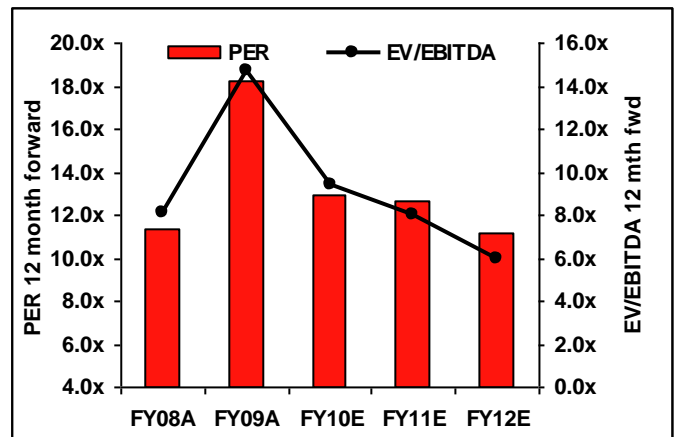
Source: Company data, Macquarie Research, December 2009

Fig 9 Lead sales volume and realisation assumptions



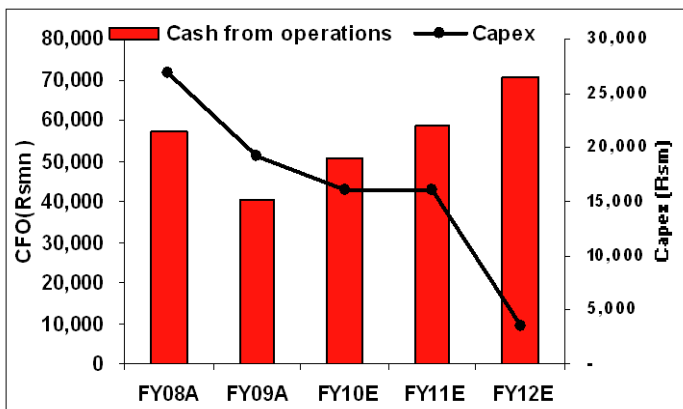
Source: Company data, Macquarie Research, December 2009

Fig 10 Valuation multiples



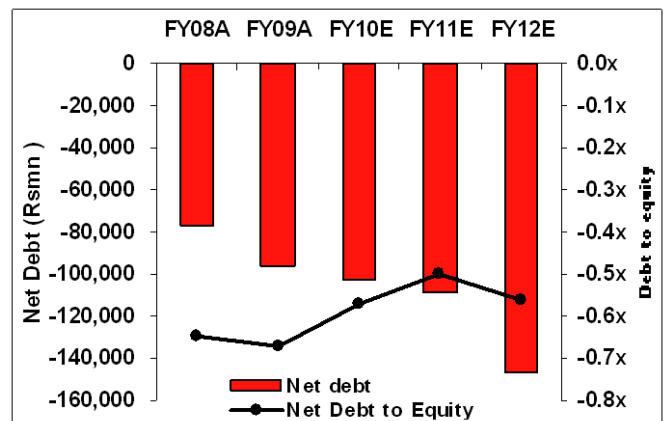
Source: Company data, Macquarie Research, December 2009

Fig 11 Cash flow from operations and capex



Source: Company data, Macquarie Research, December 2009

Fig 12 Net debt assumptions and debt-to-equity



Source: Company data, Macquarie Research, December 2009

Hindustan Zinc (HZ IN, Underperform, Target Price: Rs1,029.00)

| Quarterly Results | | | | | Profit & Loss | | | | | | |
|-------------------------------|----|--------------|--------------|--------------|---------------|-----------------------------------|--------------|--------------|--------------|--------------|--------|
| | | 2Q/10A | 3Q/10E | 4Q/10E | 1Q/11E | | 2009A | 2010E | 2011E | 2012E | |
| Revenue | bn | 15 | 19 | 23 | 20 | Revenue | bn | 57 | 74 | 87 | 102 |
| Gross Profit | bn | 10 | 13 | 15 | 13 | Gross Profit | bn | 34 | 49 | 57 | 68 |
| Cost of Goods Sold | bn | 5 | 6 | 8 | 7 | Cost of Goods Sold | bn | 23 | 25 | 30 | 35 |
| EBITDA | bn | 8 | 11 | 13 | 11 | EBITDA | bn | 27 | 42 | 49 | 59 |
| Depreciation | bn | 1 | 1 | 1 | 1 | Depreciation | bn | 3 | 3 | 4 | 5 |
| Amortisation of Goodwill | bn | 0 | 0 | 0 | 0 | Amortisation of Goodwill | bn | 0 | 0 | 0 | 0 |
| Other Amortisation | bn | 0 | 0 | 0 | 0 | Other Amortisation | bn | 0 | 0 | 0 | 0 |
| EBIT | bn | 8 | 10 | 12 | 10 | EBIT | bn | 24 | 39 | 45 | 54 |
| Net Interest Income | bn | -0 | -0 | -0 | -0 | Net Interest Income | bn | -0 | -0 | -0 | -0 |
| Associates | bn | 0 | 0 | 0 | 0 | Associates | bn | 0 | 0 | 0 | 0 |
| Exceptionals | bn | 0 | 0 | 0 | 0 | Exceptionals | bn | 0 | 0 | 0 | 0 |
| Forex Gains / Losses | bn | 0 | 0 | 0 | 0 | Forex Gains / Losses | bn | 0 | 0 | 0 | 0 |
| Other Pre-Tax Income | bn | 2 | 3 | 3 | 2 | Other Pre-Tax Income | bn | 9 | 10 | 9 | 12 |
| Pre-Tax Profit | bn | 10 | 13 | 15 | 12 | Pre-Tax Profit | bn | 34 | 48 | 53 | 66 |
| Tax Expense | bn | -2 | -3 | -3 | -3 | Tax Expense | bn | -6 | -10 | -14 | -21 |
| Net Profit | bn | 8 | 10 | 12 | 9 | Net Profit | bn | 27 | 39 | 40 | 45 |
| Minority Interests | bn | 0 | 0 | 0 | 0 | Minority Interests | bn | 0 | 0 | 0 | 0 |
| Reported Earnings | bn | 8 | 10 | 12 | 9 | Reported Earnings | bn | 27 | 39 | 40 | 45 |
| Adjusted Earnings | bn | 8 | 10 | 12 | 9 | Adjusted Earnings | bn | 27 | 39 | 40 | 45 |
| EPS (rep) | | 18.23 | 23.70 | 28.25 | 21.96 | EPS (rep) | | 64.55 | 91.14 | 93.56 | 106.02 |
| EPS (adj) | | 18.23 | 23.70 | 28.25 | 21.96 | EPS (adj) | | 64.55 | 91.14 | 93.56 | 106.02 |
| EPS Growth yoy (adj) | % | -19.7 | 171.5 | 116.5 | 4.7 | EPS Growth (adj) | % | -38.0 | 41.2 | 2.7 | 13.3 |
| | | | | | | PE (rep) | x | 18.4 | 13.0 | 12.7 | 11.2 |
| | | | | | | PE (adj) | x | 18.4 | 13.0 | 12.7 | 11.2 |
| EBITDA Margin | % | 56.8 | 56.8 | 56.8 | 56.2 | Total DPS | | 4.00 | 4.05 | 5.00 | 5.00 |
| EBIT Margin | % | 52.5 | 52.5 | 52.5 | 51.5 | Total Div Yield | % | 0.3 | 0.3 | 0.4 | 0.4 |
| Earnings Split | % | 20.0 | 26.0 | 31.0 | 23.5 | Weighted Average Shares | m | 423 | 423 | 423 | 423 |
| Revenue Growth | % | -15.4 | 86.0 | 81.3 | 17.6 | Period End Shares | m | 423 | 423 | 423 | 423 |
| EBIT Growth | % | -10.4 | 414.0 | 151.0 | 15.1 | | | | | | |
| Profit and Loss Ratios | | 2009A | 2010E | 2011E | 2012E | Cashflow Analysis | 2009A | 2010E | 2011E | 2012E | |
| Revenue Growth | % | -26.4 | 29.9 | 17.6 | 18.0 | EBITDA | bn | 27 | 42 | 49 | 59 |
| EBITDA Growth | % | -47.6 | 53.3 | 16.3 | 21.1 | Tax Paid | bn | -6 | -10 | -14 | -21 |
| EBIT Growth | % | -51.0 | 58.3 | 15.1 | 20.7 | Chgs in Working Cap | bn | 4 | -1 | 0 | -1 |
| Gross Profit Margin | % | 60.0 | 66.1 | 65.3 | 66.1 | Net Interest Paid | bn | -0 | -0 | -0 | -0 |
| EBITDA Margin | % | 48.1 | 56.8 | 56.2 | 57.7 | Other | bn | 9 | 10 | 9 | 12 |
| EBIT Margin | % | 43.1 | 52.5 | 51.5 | 52.6 | Operating Cashflow | bn | 34 | 40 | 44 | 49 |
| Net Profit Margin | % | 48.0 | 52.2 | 45.6 | 43.8 | Acquisitions | bn | 0 | 0 | 0 | 0 |
| Payout Ratio | % | 6.2 | 4.4 | 5.3 | 4.7 | Capex | bn | -13 | -16 | -16 | -4 |
| EV/EBITDA | x | 14.0 | 9.1 | 7.8 | 6.5 | Asset Sales | bn | 0 | 0 | 0 | 0 |
| EV/EBIT | x | 15.6 | 9.9 | 8.6 | 7.1 | Other | bn | -6 | 0 | 0 | 0 |
| Balance Sheet Ratios | | | | | | Investing Cashflow | bn | -19 | -16 | -16 | -4 |
| ROE | % | 20.8 | 23.8 | 19.9 | 18.8 | Dividend (Ordinary) | bn | -2 | -2 | -2 | -2 |
| ROA | % | 16.8 | 21.8 | 20.6 | 20.9 | Equity Raised | bn | 0 | 0 | 0 | 0 |
| ROIC | % | 47.9 | 65.7 | 53.9 | 50.4 | Debt Movements | bn | 0 | 0 | 0 | 0 |
| Net Debt/Equity | % | -67.1 | -66.0 | -66.5 | -72.4 | Other | bn | 0 | 0 | 0 | 0 |
| Interest Cover | x | 111.9 | 92.6 | 106.5 | 128.6 | Financing Cashflow | bn | -2 | -2 | -2 | -2 |
| Price/Book | x | 3.5 | 2.8 | 2.3 | 1.9 | Net Chg in Cash/Debt | bn | 13 | 22 | 26 | 43 |
| Book Value per Share | | 339.8 | 426.2 | 513.9 | 614.1 | Free Cashflow | bn | 21 | 24 | 28 | 46 |
| | | | | | | Balance Sheet | 2009A | 2010E | 2011E | 2012E | |
| | | | | | | Cash | bn | 96 | 119 | 145 | 188 |
| | | | | | | Receivables | bn | 2 | 4 | 5 | 6 |
| | | | | | | Inventories | bn | 5 | 5 | 5 | 6 |
| | | | | | | Investments | bn | 0 | 0 | 0 | 0 |
| | | | | | | Fixed Assets | bn | 52 | 65 | 77 | 75 |
| | | | | | | Intangibles | bn | 0 | 0 | 0 | 0 |
| | | | | | | Other Assets | bn | 4 | 4 | 4 | 5 |
| | | | | | | Total Assets | bn | 159 | 197 | 236 | 280 |
| | | | | | | Payables | bn | 0 | 0 | 0 | 0 |
| | | | | | | Short Term Debt | bn | 0 | 0 | 0 | 0 |
| | | | | | | Long Term Debt | bn | 0 | 0 | 0 | 0 |
| | | | | | | Provisions | bn | 2 | 1 | 1 | 2 |
| | | | | | | Other Liabilities | bn | 14 | 15 | 17 | 19 |
| | | | | | | Total Liabilities | bn | 16 | 17 | 19 | 21 |
| | | | | | | Shareholders' Funds | bn | 144 | 180 | 217 | 259 |
| | | | | | | Minority Interests | bn | 0 | 0 | 0 | 0 |
| | | | | | | Other | bn | 0 | 0 | 0 | 0 |
| | | | | | | Total S/H Equity | bn | 144 | 180 | 217 | 259 |
| | | | | | | Total Liab & S/H Funds | bn | 159 | 197 | 236 | 280 |

All figures in INR unless noted.

Source: Company data, Macquarie Research, December 2009

Important disclosures:

| Recommendation definitions | Volatility index definition* | Financial definitions |
|---|--|--|
| <p>Macquarie - Australia/New Zealand Outperform – return >5% in excess of benchmark return Neutral – return within 5% of benchmark return Underperform – return >5% below benchmark return</p> <p>Macquarie – Asia/Europe Outperform – expected return >+10% Neutral – expected return from -10% to +10% Underperform – expected return <-10%</p> <p>Macquarie First South - South Africa Outperform – expected return >+10% Neutral – expected return from -10% to +10% Underperform – expected return <-10%</p> <p>Macquarie - Canada Outperform – return >5% in excess of benchmark return Neutral – return within 5% of benchmark return Underperform – return >5% below benchmark return</p> <p>Macquarie - USA Outperform (Buy) – return >5% in excess of Russell 3000 index return Neutral (Hold) – return within 5% of Russell 3000 index return Underperform (Sell)– return >5% below Russell 3000 index return</p> <p>Recommendations – 12 months</p> <p>Note: Quant recommendations may differ from Fundamental Analyst recommendations</p> | <p>This is calculated from the volatility of historical price movements.</p> <p>Very high–highest risk – 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>High – 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>Medium – stock should be expected to move up or down at least 30–40% in a year.</p> <p>Low–medium – stock should be expected to move up or down at least 25–30% in a year.</p> <p>Low – 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>All "Adjusted" data items have had the following adjustments made: Added back: goodwill amortisation, provision for catastrophe reserves, IFRS derivatives & hedging, IFRS impairments & IFRS interest expense Excluded: non recurring items, asset revals, property revals, appraisal value uplift, preference dividends & minority interests</p> <p>EPS = adjusted net profit / epowa* ROA = adjusted ebit / average total assets ROA Banks/Insurance = adjusted net profit / average total assets ROE = adjusted net profit / average shareholders funds Gross cashflow = 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 30 September 2009

| | AU/NZ | Asia | RSA | USA | CA | EUR | |
|--------------|--------|--------|--------|--------|--------|--------|--|
| Outperform | 45.08% | 54.02% | 40.00% | 42.31% | 62.86% | 43.61% | (for US coverage by MCUSA, 0.35% of stocks covered are investment banking clients) |
| Neutral | 39.77% | 19.10% | 45.00% | 43.36% | 31.90% | 39.85% | (for US coverage by MCUSA, 0.35% of stocks covered are investment banking clients) |
| Underperform | 15.15% | 26.88% | 15.00% | 14.34% | 5.24% | 16.54% | (for US coverage by MCUSA, 0.00% of stocks covered are investment banking clients) |

Company Specific Disclosures:

Important disclosure information regarding the subject companies covered in this report is available at www.macquarie.com/research/disclosures.

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.

General 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 authorized 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. 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. 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 your investment objectives, financial situation or particular needs. Before making an investment decision on the basis of this research, you need to consider, with or without the assistance of an adviser, whether the advice is appropriate in light of your 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. Clients should contact analysts at, and execute transactions through, a Macquarie Group entity in their home jurisdiction unless governing law permits otherwise.

Country-Specific Disclaimers:

Australia: In Australia, research is issued and distributed by Macquarie Securities (Australia) Ltd (AFSL No. 238947), a participating organisation of the Australian Securities Exchange. **New Zealand:** In New Zealand, research is issued and distributed by Macquarie Securities (NZ) Ltd, a NZX Firm. **Canada:** In Canada, 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 sent to US persons. 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. The Research Distribution Policy of Macquarie Capital Markets Canada Ltd is to allow all clients that are entitled to have equal access to our research. **United Kingdom:** In the United Kingdom, research is issued and distributed by Macquarie Capital (Europe) Ltd, which is authorised and regulated by the Financial Services Authority (No. 193905). **Hong Kong:** In Hong Kong, research is issued and distributed by Macquarie Capital Securities Ltd, which is licensed and regulated by the Securities and Futures Commission. **Japan:** In Japan, research is issued and distributed by Macquarie Capital Securities (Japan) Limited, a member of the Tokyo Stock Exchange, Inc., Osaka Securities Exchange Co. Ltd, and Jasdax 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). **South Africa:** In South Africa, research is issued and distributed by Macquarie First South Securities (Pty) Limited, a member of the JSE Limited. **Singapore:** In Singapore, research is issued and distributed by Macquarie Capital Securities (Singapore) Pte Ltd (Company Registration Number: 198702912C), a Capital Markets Services license 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. All Singapore-based recipients of research produced by Macquarie Capital (Europe) Limited, Macquarie Capital Markets Canada Ltd, Macquarie First South Securities (Pty) Limited and Macquarie Capital (USA) Inc. represent and warrant that they are institutional investors as defined in the Securities and Futures Act. **United States:** In the United States, research is issued and distributed by Macquarie Capital (USA) Inc., which is a registered broker-dealer and member of FINRA. Macquarie Capital (USA) Inc. 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.'s affiliate's analysts are not registered as research analysts with FINRA, may not be associated persons of Macquarie Capital (USA) Inc., and therefore may not be subject to FINRA rule restrictions on communications with a subject company, public appearances, and trading securities held by a research analyst account. 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. Important disclosure information regarding the subject companies covered in this report is available at www.macquarie.com/research/disclosures, or contact your registered representative at 1-888-MAC-STOCK, or write to the Supervisory Analysts, Research Department, Macquarie Securities, 125 W.55th Street, New York, NY 10019.

© Macquarie Group

| | | | | | | |
|---|---|--|--|---|---|--|
| Auckland Tel: (649) 377 6433 | Bangkok Tel: (662) 694 7999 | Calgary Tel: (1 403) 218 6650 | Hong Kong Tel: (852) 2823 3588 | Jakarta Tel: (62 21) 515 1818 | Johannesburg Tel: (2711) 583 2000 | Kuala Lumpur Tel: (60 3) 2059 8833 |
| London Tel: (44 20) 3037 4400 | Manila Tel: (63 2) 857 0888 | Melbourne Tel: (613) 9635 8139 | Montreal Tel: (1 514) 925 2850 | Mumbai Tel: (91 22) 6653 3000 | Perth Tel: (618) 9224 0888 | Seoul Tel: (82 2) 3705 8500 |
| Shanghai Tel: (86 21) 6841 3355 | Singapore Tel: (65) 6231 1111 | Sydney Tel: (612) 8232 9555 | Taipei Tel: (886 2) 2734 7500 | Tokyo Tel: (81 3) 3512 7900 | Toronto Tel: (1 416) 848 3500 | New York Tel: (1 212) 231 2500 |

Available to clients on the world wide web at www.macquarieresearch.com and through Thomson Financial, FactSet, Reuters, Bloomberg, CapitalIQ and TheMarkets.com.

Asia Research

Head of Equity Research

| | |
|-----------------------------------|-------------------|
| John O'Connell (Global Co – Head) | (612) 8232 7544 |
| David Rickards (Global Co – Head) | (44 20) 3037 4399 |
| Chris Hunt (Asia – Head) | (852) 3922 1119 |
| Tim Smart (Asia – Deputy Head) | (852) 3922 3565 |

Automobiles/Auto Parts

| | |
|-----------------------|------------------|
| Leah Jiang (China) | (8621) 2412 9020 |
| Clive Wiggins (Japan) | (813) 3512 7856 |
| Dan Lucas (Japan) | (813) 3512 6050 |
| ES Kwak (Korea) | (822) 3705 8644 |
| Linda Huang (Taiwan) | (8862) 2734 7521 |

Banks and Non-Bank Financials

| | |
|----------------------------------|------------------|
| Ismael Pili (Asia) | (813) 3512 5979 |
| Nick Lord (Asia) | (852) 3922 4774 |
| Sarah Wu (China) | (852) 3922 4068 |
| Jemmy Huang (Hong Kong, Taiwan) | (8862) 2734 7530 |
| Ferry Wong (Indonesia) | (6221) 515 7335 |
| Chan Hwang (Korea) | (822) 3705 8643 |
| Michael Na (Korea) | (822) 2095 7222 |
| Chin Seng Tay (Malaysia, S'pore) | (65) 6231 2837 |
| Nadine Javellana (Philippines) | (632) 857 0890 |
| Matthew Smith (Taiwan) | (8862) 2734 7514 |
| Alastair Macdonald (Thailand) | (662) 694 7741 |

Chemicals/Textiles

| | |
|----------------------------|------------------|
| Christina Lee (Hong Kong) | (852) 3922 3571 |
| Jal Irani (India) | (9122) 6653 3040 |
| Shawn Park (Korea) | (822) 3705 8669 |
| Sunaina Dhanuka (Malaysia) | (603) 2059 8993 |

Conglomerates

| | |
|--------------------|------------------|
| Gary Pinge (Asia) | (852) 3922 3557 |
| Leah Jiang (China) | (8621) 2412 9020 |

Consumer

| | |
|--------------------------------|------------------|
| Mohan Singh (Asia) | (852) 3922 1111 |
| Jessie Qian (China, Hong Kong) | (852) 3922 3568 |
| Toby Williams (Japan) | (813) 3512 7392 |
| 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 |

Industrials

| | |
|-------------------------------|------------------|
| Inderjeetsingh Bhatia (India) | (9122) 6653 3166 |
| Christopher Cintavey (Japan) | (813) 3512 7432 |
| Janet Lewis (Japan) | (813) 3512 7475 |
| Chang Han Joo (Korea) | (822) 3705 8511 |
| Sunaina Dhanuka (Malaysia) | (603) 2059 8993 |
| David Gambrill (Thailand) | (662) 694 7753 |

Insurance

| | |
|------------------------|-----------------|
| Mark Kellock (Asia) | (852) 3922 3567 |
| Makarim Salman (Japan) | (813) 3512 7421 |

Media

| | |
|--------------------------------|------------------|
| Jessie Qian (China, Hong Kong) | (852) 3922 3568 |
| Shubham Majumder (India) | (9122) 6653 3049 |
| George Hogan (Japan) | (813) 3512 7851 |
| Prem Jearajasingam (Malaysia) | (603) 2059 8989 |
| Alex Pomento (Philippines) | (632) 857 0899 |

Oil and Gas

| | |
|-----------------------------|------------------|
| Laban Yu (Asia) | (852) 3922 4691 |
| Christina Lee (Hong Kong) | (852) 3922 3571 |
| Jal Irani (India) | (9122) 6653 3040 |
| Polina Diyachkina (Japan) | (813) 3512 7886 |
| Shawn Park (Korea) | (822) 3705 8669 |
| Edward Ong (Malaysia) | (603) 2059 8982 |
| Sunaina Dhanuka (Malaysia) | (603) 2059 8993 |
| Linda Huang (Taiwan) | (8862) 2734 7521 |
| Trevor Buchinski (Thailand) | (662) 694 7829 |

Pharmaceuticals

| | |
|---------------------------|------------------|
| Christina Lee (Hong Kong) | (852) 3922 3571 |
| Abhishek Singhal (India) | (9122) 6653 3052 |
| Naomi Kumagai (Japan) | (813) 3512 7474 |

Property

| | |
|--------------------------------|------------------|
| Matt Nacard (Asia) | (852) 3922 4731 |
| Eva Lee (China, Hong Kong) | (852) 3922 3573 |
| Chris Cheng (China, Hong Kong) | (852) 3922 3581 |
| Hiroshi Okubo (Japan) | (813) 3512 7433 |
| Chang Han Joo (Korea) | (822) 3705 8511 |
| 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 |
| Christina Lee (Hong Kong) | (852) 3922 3571 |
| Rakesh Arora (India) | (9122) 6653 3054 |
| Adam Worthington (Indonesia) | (65) 6231 2981 |
| Riaz Hyder (Indonesia) | (6221) 2598 8486 |
| Polina Diyachkina (Japan) | (813) 3512 7886 |

Technology

| | |
|-------------------------|------------------|
| Michael Bang (Asia) | (822) 3705 8659 |
| Patrick Yau (Hong Kong) | (852) 3922 1264 |
| Zona Chen (Hong Kong) | (852) 3922 3578 |
| Damian Thong (Japan) | (813) 3512 7877 |
| David Gibson (Japan) | (813) 3512 7880 |
| George Chang (Japan) | (813) 3512 7854 |
| Michiko Kakiya (Japan) | (813) 3512 7868 |
| Yukihiro Goto (Japan) | (813) 3512 5984 |
| 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

| | |
|-------------------------------|------------------|
| Shubham Majumder (Asia) | (9122) 6653 3049 |
| Ramakrishna Maruvada (ASEAN) | (65) 6231 2842 |
| Bin Liu (China) | (852) 3922 3634 |
| Tim Smart (China) | (852) 3922 3565 |
| Riaz Hyder (Indonesia) | (6221) 2598 8486 |
| Nathan Ramlar (Japan) | (813) 3512 7875 |
| Prem Jearajasingam (Malaysia) | (603) 2059 8989 |

Transport & Infrastructure

| | |
|----------------------------|-----------------|
| Anderson Chow (Asia) | (852) 3922 4773 |
| Jonathan Windham (Asia) | (852) 3922 5417 |
| Wei Sim (China, Hong Kong) | (852) 3922 3598 |
| Janet Lewis (Japan) | (813) 3512 7475 |
| Chang Han Joo (Korea) | (822) 3705 8511 |
| ES Kwak (Korea) | (822) 3705 8644 |
| Sunaina Dhanuka (Malaysia) | (603) 2059 8993 |

Utilities

| | |
|-------------------------------|------------------|
| Adam Worthington (Asia) | (65) 6231 2981 |
| Carol Cao (China, Hong Kong) | (852) 3922 4075 |
| Jeff Evans (India) | (9122) 3356 3053 |
| Prem Jearajasingam (Malaysia) | (603) 2059 8989 |
| Alex Pomento (Philippines) | (632) 857 0899 |

Commodities

| | |
|--------------|------------------|
| Jim Lennon | (4420) 3037 4271 |
| Max Layton | (4420) 3037 4273 |
| Bonnie Liu | (8621) 2412 9008 |
| Rakesh Arora | (9122) 6653 3054 |

Data Services

| | |
|------------------------|-----------------|
| Andrea Clohessy (Asia) | (852) 3922 4076 |
| Eric Yeung | (852) 3922 4077 |

Economics

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

Quantitative

| | |
|--------------------------|-----------------|
| Martin Emery (Asia) | (852) 3922 3582 |
| Viking Kwok (Asia) | (852) 3922 4735 |
| George Platt (Australia) | (612) 8232 6539 |
| Patrick Hansen (Japan) | (813) 3512 7876 |

Strategy/Country

| | |
|-----------------------------------|------------------|
| Daniel McCormack (Asia) | (852) 3922 4073 |
| Michael Kurtz (China) | (8621) 2412 9002 |
| Matt Nacard (Hong Kong) | (852) 3922 4731 |
| Ferry Wong (Indonesia) | (6221) 515 7335 |
| David Gibson (Japan) | (813) 3512 7880 |
| Peter Eadon-Clarke (Japan) | (813) 3512 7850 |
| Chan Hwang (Korea) | (822) 3705 8643 |
| 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 |
| Thomson: | www.thomson.com/financial |
| Reuters: | www.knowledge.reuters.com |
| Bloomberg: | MAC GO |
| Factset: | http://www.factset.com/home.aspx |
| CapitalIQ | www.capitaliq.com |
| TheMarkets.com | www.themarkets.com |
| Email macresearch@macquarie.com for access | |

Sales

Regional Heads of Sales

| | |
|----------------------------------|------------------|
| Chris Gray (ASEAN) | (65) 6231 2888 |
| Peter Slater (Boston) | (1 617) 598 2502 |
| Thomas Renz (Geneva) | (41) 22 818 7712 |
| Andrew Mouat (India) | (9122) 6653 3200 |
| Stanley Dunda (Indonesia) | (6221) 515 1555 |
| Kenneth Yap (Indonesia) | (6221) 515 1555 |
| JJ Kim (Korea) | (822) 3705 8799 |
| Jason Lee (Malaysia) | (603) 2059 8888 |
| 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

| | |
|-----------------------------|-------------------|
| 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 |
| Mike Keen (Europe) | (44) 20 3037 4905 |
| Yat Quan Tan (Hong Kong) | (852) 3922 2028 |
| Stanley Dunda (Indonesia) | (6221) 515 1555 |
| Michael Santos (Philippines) | (632) 857 0813 |
| Dominic Shore (Thailand) | (662) 694 7707 |

Sales Trading cont'd

| | |
|--------------------------|-------------------|
| Mario Argyrides (Korea) | (822) 3705 8610 |
| Edward Robinson (London) | (44) 20 3037 4902 |
| Matthew Ryan (Singapore) | (65) 6231 2888 |
| 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 |