

TAIWAN

Teco Co

28 October 2008

1504 TT **Outperform**

Stock price as of 27 Oct 08	NT\$	7.98
12-month target	NT\$	13.00
Upside/downside	%	+62.9
Valuation	NT\$	18.00
- Sum of Parts		

GICS sector		capital goods
Market cap	NT\$m	15,087
30-day avg turnover	NT\$m	49.5
Market cap	US\$m	452
Number shares on issue	m	1,891

Investment fundamentals

Year end 31 Dec		2007A	2008E	2009E	2010E
Total revenue	m	44,455	47,803	48,984	51,854
Reported profit	m	2,708	2,014	1,906	2,138
Profit bonus exp	m	2,708	2,014	1,906	2,138
Bon exp/rep prof	%	0.0	0.0	0.0	0.0
Adjusted profit	m	2,708	2,014	1,906	2,138
EPS rep	NT\$	1.46	1.09	1.04	1.16
EPS rep growth	%	20.5	-24.8	-5.4	12.2
EPS bonus exp	NT\$	1.46	1.09	1.04	1.16
EPS bonus growth %		20.5	-24.8	-5.4	12.2
PE rep	x	5.5	7.3	7.7	6.9
PE bonus exp	x	5.5	7.3	7.7	6.9
Total DPS	NT\$	1.00	0.74	0.70	0.78
Total div yield	%	12.5	9.2	8.8	9.8
ROA	%	4.6	5.1	5.2	5.6
ROE	%	7.3	5.5	5.2	5.8
EV/EBITDA	x	5.0	5.2	5.0	4.6
Net debt/equity	%	20.2	31.1	32.6	32.8
Price/book	x	0.4	0.4	0.4	0.4

1504 TT rel Taiex performance, & rec history



Source: Datastream, Macquarie Research, October 2008 (all figures in NT\$ unless noted)

Analyst

Linda Huang, CFA
886 2 2734 7521 linda.huang@macquarie.com
Victor Fang
886 2 2734 7527 victor.fang@macquarie.com

Taiwan High Speed Rail risk

Event

- We provide an update on Teco's business operations and clarify its Taiwan High Speed Rail (2633 TT, NT\$4.9, Non-Rated) issue following China Steel's (2002 TT, NT\$20.6, UP, TP: 27) write-off on its THSR investment.

Impact

- No Taiwan High Speed Rail write-off in the short term.** Teco owns THSR preferred shares in the amount of NT\$300m and common shares of NT\$4.4bn, equal to 7.63% of THSR's outstanding shares. Unlike China Steel, which wrote down its THSR investment to zero, Teco has no plans to do so and believes that THSR's operation is improving and that it may have a chance to divest in the open market.
- However, the THSR issue lingers due to poor balance sheet.** In our opinion, the write-off risk is still lingering given that THSR is debt ridden and its operation is not strong enough to offset the balance sheet drawback. THSR may consider to restructure by refinancing, through station land development and changing its depreciation method, but none of these can effectively improve the balance sheet. As of 1H08, the debt to asset ratio rose to 87% and total interest bearing debt accounted to 97% of total liabilities. THSR's interest expense reached NT\$8bn, or 74% of the net loss in 1H08.
- Stress-test effect on profits is significant if writing down to zero.** In the worst case, whereby Teco writes down all of its THSR investment to zero, the effect on net profits could reach NT\$1.9/sh, resulting in a net loss of NT\$0.88/sh in 2009, down from our earnings forecast of a profit of NT\$1/sh. However, the asset write-off on valuation is minimal as Teco's chunky value comes from its improving motor business, which accounts for 89% of total NAV, or NT\$16.2/sh. Even in the worst case, whereby THSR is being written down to zero, Teco's NAV could shrink by 8% to NT\$16.8/sh.

Earnings revision

- No change.

Price catalyst

- 12-month price target: NT\$13.00 based on a Sum of Parts methodology.
- Catalyst: Improving industrial motor business; margin appreciation; land asset development

Action and recommendation

- Currently, Teco is trading at 7.7x 2009E PER and 0.4x P/BV. The cheap valuation makes Teco look interesting to watch; however, we suggest investors wait until the market stabilizes and the THSR write-off risk winds down. We retain Outperform with target price of NT\$13.

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.

No write-off THSR investment, but risk lingering

Teco owns NT\$4.7bn of Taiwan High Speed Rail (THSR) (2633 TT, NT\$4.9, Not rated). Unlike China Steel (2002 TT, NT\$22.1, UP, TP: NT\$18), which wrote down to zero its NT\$4.7bn of preferred share holdings in 3Q, the company will not write off its THSR investment stake in 3Q08, according to management.

Teco's investment

According to China Steel, it wrote down its preferred share stake in THSR to zero in 3Q08, resulting in a one-off impact of NT\$4.7bn, equivalent to 8% of Macquarie's FY08E earnings estimates. We believe China Steel adopted the most-conservative accounting principle based on Article 34 because it believed that THSR's investment would decrease or was unlikely to recover.

Teco also invested THSR preferred shares in the amount of NT\$300m, or 32m shares, equivalent to NT\$0.16/sh, or 0.4% of shareholders' equity. Teco decided to convert it into common shares and has no plan to write down this investment. In addition to the preferred shares, Teco also invested THSR common share with a book value of NT\$4.4bn, or 443m shares, equivalent to 7.63% of THSR outstanding shares.

Although Teco will not write off any of its THSR investment in the short term, the risk is still lingering given that THSR is debt ridden and its operation is not strong enough to offset the balance sheet drawback.

Fig 1 Teco owns both preferred and common shares in THSR

	Shares (m)	Book value (NT\$m)	Original investment amount (NT\$m)	Stake in THSR
Common shares	443	4,399	4,399	7.63%
Preferred shares	32	300	300	

Source: Macquarie Research, October 2008

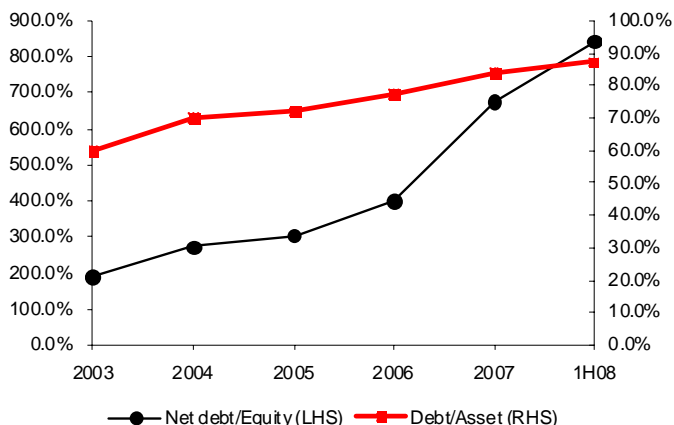
THSR: Debt is the issue

We did recognize that THSR's operation is improving with an increasing number of riders; in particular, it has successfully replaced air traffic, buses and traditional railroads. However, the operational improvement still cannot offset the effect from the debt issue.

As of the 1H08, net debt accounted for 841% of equity and the debt to asset ratio rose to 87% from 60% in 2003. Total interest bearing debt amounted to NT\$381bn, or 97% of total liabilities. The high leverage is the reason for the weak operational results, in our view.

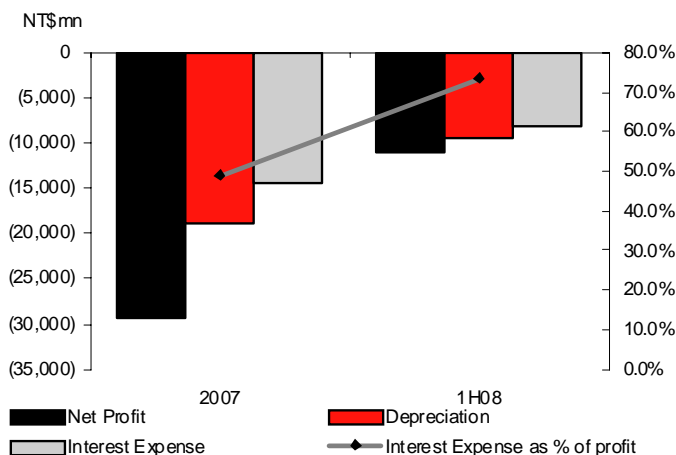
In 2007, THSR's interest expense reached NT\$14bn, or 49% of net loss; this number rose to 74% in 1H08 as interest expense reached NT\$8bn.

Fig 2 THSR's net debt to equity ratio rose to 841% as of 1H08



Source: THSR, Macquarie Research, October 2008

Fig 3 High interest expense attributed to THSR's sizable loss



Source: THSR, Macquarie Research, October 2008

The solutions are not strong enough to cure THSR's debt problem

The company has proposed several solutions to cure THSR's balance-sheet and operations problems. However, we think none of them can effectively resolve the high debt issue.

- **Refinancing:** THSR is aggressively engaging in debt refinancing, which is the most effective way to improve income and cashflow, in our view. However, it is not easy to achieve and the benefit may be limited given the large amount of debt. The NT\$345bn of long-term debt, which accounts for 91% of interest bearing debt, or 88% of total liabilities, carries a high interest rate of 3.75–8.1%. We believe this sizable long-term debt attributed to 80–90% of annual expense of NT\$15–16bn.
- For the sizable syndicate loan (NT\$320bn), major lenders include banks, post office funding and labour pension funds. Bank loans of NT\$38bn carry an interest rate of 8.1%, and post office fundings and labour pension funds carry an interest rate of 3.7%.
- In our view, it takes time to negotiate with lenders to refinance long-term debt due to the large amount of debt. We estimate that THSR can save NT\$7bn of interest expense per year if it can lower its interest rate to 2%, which is a very ideal interest rate level. In our view, this can shorten the time it takes to make ends meet; however, it is not sufficient to create extra cash to repay debt.

Fig 4 THSR is debt ridden

	Amount (NT\$m)	Interest	Maturity
Short-term borrowing	1,833	1.56~3.73%	Before June 30, 2009
Long-term debt	344,564		
	9,000	3.83% ~4.1%	2010
	7,900	4.02% ~ 4.2%	2012
	19,883	5.3%	2013
	7,900	4.32% ~ 4.5%	2014
	20,817	4.46% ~4.5%	2022
	279,064	3.75% ~ 8.1%	2022
Corporate bond	34,168		
	5,947	2.52%	Dec, 2008
	4,000	2.07%	2012
	3,000	2.12%	2013
	2,760	2.17%	2014
	-9	bond amortization	
	6,800	1.89%~1.9%	Sep, 2008
	4,000	1.90%	Apr, 2009
	7,669	Convertible bonds	2012
Total interest bearing debt	380,565		
Net debt	366,907		
Net debt/equity	841%		
Matured before the end of 2009	18,580		
as % of total interest bearing debt	4.9%		

Source: Company data, Macquarie Research, October 2008

- **Station land development:** THSR is currently planning and working on surrounding land development of five THSR stations, including Taoyuan, Hsinchiu, Taichung, Chiayi and Tainan, with total land area of 47ha. The priority on development is land in Taoyuan and Hsinchiu.
- The location of Taoyuan station is only 7km from the government's planned "Taoyuan Aviation City". Land in Hsinchiu is slated for a biotech zone, and land development is likely to start later this year or in 2009.
- Although the potential profit from land development can significantly boost the company's bottom line, we do not believe the land value can be realized in the near term, given that the current outlook for the economy and property sentiment remain weak. Additionally, based on foreign experience, it usually takes a long period of time (10–15 years) to pay back the developing costs.

- **Changing depreciation method:** The depreciation is based on the years of THSR's BOT chartered right, which has 26 years left. Due to the high construction cost, THSR booked a high depreciation expense of NT\$18–19bn per year, accounting for 87% of sales in 1H08. THSR may want to change depreciation years to mitigate the depreciation expense impact. In our view, this can help THSR to reach breakeven earlier; however, it has no effect on cashflow. As a result, we do not think this has any real benefit for THSR's balance-sheet management other than to shorten years of loss.

Stress test

Given that THSR's asset impairment is the risk, even though it does not occur in the short term, we do a stress test to see the impact to Teco's balance sheet and income statement. In our scenario analysis, we assume the impact will occur in its 2009 financial statement.

Currently, Teco still carries the THSR investment at cost, which, at NT\$10/sh while the current share price is in the grey market, has fallen to NT\$4.9/sh.

In the worst case, whereby Teco writes down all its THSR investment to zero, the impact on net profit could reach NT\$1.9/sh, resulting in a net loss of NT\$0.88/sh in 2009 vs our earnings forecast of a profit of NT\$1/sh.

Fig 5 The write-off impact on income statement is significant...

THSR share price	\$10	\$8	\$6	\$4	\$2	\$0
Loss from common shares (NT\$m)	0	855	1741	2627	3513	4399
Loss from preferred shares (NT\$m)	0	44	108	172	236	300
Impact on profit/sh	\$0.0	\$0.4	\$0.8	\$1.1	\$1.5	\$1.9
2009 EPS (NT\$/sh)	\$1.04	\$0.67	\$0.28	-\$0.11	-\$0.49	-\$0.88

Source: Macquarie Research, October 2008

P.S. The grey highlight is our current forecast

However, the asset write-off on valuation is minimal as Teco's chunky value comes from improving the motor business, which accounts for 89% of total NAV, or NT\$16.2/sh. Even in the worst case, whereby THSR is being written down to zero, Teco's NAV could shrink by 8% to NT\$16.8/sh.

Fig 6 but the impact on NAV is minimal

THSR share price	\$5.8	\$4	\$2	\$0
NAV per share	\$18.3	\$17.9	\$17.4	\$16.9
Target price (NT\$/sh)	\$12.8	\$12.5	\$12.2	\$11.8

Source: Macquarie Research, October 2008

The grey highlight is our current forecast

Fig 7 Teco SOP valuation method

	Valuation Method	Valuation (NT\$m)	Teco Stake (%)	Contribution to Teco (NT\$m)	(NT\$/sh)	% to NAV
Core Business	10x PE	29,883	100%	29,883	16.2	89%
Land Asset	0.6x Estimated Value	3,600	100%	3,600	2.0	11%
Taiwan Cogeneration	MV	7,622	2%	105	0.1	0%
Far EasTone	MV	149,891	0%	90	0.0	0%
Cathay FHC	MV	58,912	0%	51	0.0	0%
AUO	MV	321,514	0%	68	0.0	0%
Tecom	MV	4,816	27%	879	0.5	3%
UMC	MV	184,069	0%	579	0.3	2%
High Speed Railroad	MV	45,240	9%	2,569	1.4	8%
Other Investment	0.5x BV	6,555	100%	6,555	3.6	19%
(minus Net Debt)				-10,717	(5.8)	(32%)
Total Value				33,661	18.3	100%
No. of Outstanding Shares (m)				1,840		
Teco NAV per share (NT\$)				\$18		
Target Price (NT\$)				\$13		

Source: Macquarie Research, October 2008

Teco Co (1504 TT, Outperform, Target price: NT\$13.00)

Quarterly Results		1Q/08A	2Q/08E	3Q/08E	4Q/08E	Profit & Loss		2007A	2008E	2009E	2010E
Revenue	m	11,386	11,805	12,515	12,096	Revenue	m	44,455	47,803	48,984	51,854
Gross Profit	m	2,783	2,784	2,732	2,599	Gross Profit	m	10,002	10,899	11,141	11,932
Operating Expenses	m	-1,757	-1,822	-1,931	-1,866	Operating Expenses	m	-6,898	-7,376	-7,446	-7,882
Operating Income	m	1,026	963	801	733	Operating Income	m	3,104	3,523	3,696	4,050
Net Non-operating income	m	-176	-210	-210	-210	Net Non-operating income	m	607	-807	-1,082	-1,121
Pre-Tax Income	m	850	753	591	522	Pre-Tax Income	m	3,711	2,716	2,613	2,930
Tax Expense	m	-277	-151	-118	-104	Tax Expense	m	-933	-650	-653	-732
Exceptionals	m	0	0	0	0	Exceptionals	m	0	0	0	0
Minority Interests	m	-15	-14	-12	-11	Minority Interests	m	-70	-51	-54	-59
Reported Earnings	m	558	588	461	407	Reported Earnings	m	2,708	2,014	1,906	2,138
Reported Earnings (bonus exp)	m	558	588	461	407	Reported Earnings (bonus exp)	m	2,708	2,014	1,906	2,138
Bonus exp / Reported Earnings	%					Bonus exp / Reported Earnings	%				
Adjusted Earnings	m	558	588	461	407	Adjusted Earnings	m	2,708	2,014	1,906	2,138
EBITDA	m	1,457	1,284	1,123	1,054	EBITDA	m	4,677	4,919	5,062	5,497
EPS (rep)	NT\$	0.30	0.32	0.25	0.22	EPS (rep)	NT\$	1.46	1.09	1.04	1.16
EPS pcg growth (rep)	%	-24.9	-20.9	17.2	-49.0	EPS growth (rep)	%	20.5	-24.8	-5.4	12.2
EPS (rep bonus exp)	NT\$	0.30	0.32	0.25	0.22	EPS (rep bonus exp)	NT\$	1.46	1.09	1.04	1.16
EPS pcg growth (rep bonus exp)	%	-24.9	-20.9	17.2	-49.0	EPS growth (rep bonus exp)	%	20.5	-24.8	-5.4	12.2
EPS (adj)	NT\$	0.30	0.32	0.25	0.22	EPS (adj)	NT\$	1.46	1.09	1.04	1.16
EPS pcg growth (adj)	%	-24.9	-20.9	17.2	-49.0	EPS growth (adj)	%	20.5	-24.8	-5.4	12.2
Revenue pcg growth	%	7.6	11.5	7.1	4.3	PE (rep)	x	5.5	7.3	7.7	6.9
Operating Income pcg growth	%	65.4	55.2	10.3	-35.5	PE (rep bonus adj)	x	5.5	7.3	7.7	6.9
Reported Earnings pcg growth	%	-25.7	-21.8	16.0	-49.6	PE (adj)	x	5.5	7.3	7.7	6.9
Gross Profit Margin	%	24.4	23.6	21.8	21.5	Total DPS	NT\$	1.00	0.74	0.70	0.78
Operating Income Margin	%	9.0	8.2	6.4	6.1	Total Div Yield	%	12.5	9.2	8.8	9.8
Reported Earnings Margin	%	4.9	5.0	3.7	3.4	Weighted Average Shares	m	1,860	1,840	1,840	1,840
EBITDA Margin	%	12.8	10.9	9.0	8.7	Period End Shares	m	1,860	1,840	1,840	1,840
Profit and Loss Ratios		2007A	2008E	2009E	2010E	Cashflow Analysis		2007A	2008E	2009E	2010E
Revenue Growth	%	8.5	7.5	2.5	5.9	Reported Earnings	m	2,708	2,014	1,906	2,138
Gross Profit Growth	%	17.0	9.0	2.2	7.1	Depreciation & Amortisation	m	1,573	1,396	1,366	1,446
Operating Income Growth	%	71.1	13.5	4.9	9.6	Chgs in Working Cap	m	1,770	4,164	545	555
Reported Earnings Growth	%	22.0	-25.6	-5.4	12.2	Other	m	-3,548	-9,239	-1,601	-1,621
EBITDA Growth	%	38.1	5.2	2.9	8.6	Operating Cashflow	m	2,503	-1,665	2,216	2,518
Gross Profit Margin	%	22.5	22.8	22.7	23.0	Acquisitions	m	1,531	0	0	0
Operating Income Margin	%	7.0	7.4	7.5	7.8	Capex	m	-1,132	-1,200	-1,200	-1,200
Reported Earnings Margin	%	6.1	4.2	3.9	4.1	Asset Sales	m	0	0	0	0
EBITDA Margin	%	10.5	10.3	10.3	10.6	Other	m	-20	1,000	0	0
Payout Ratio	%	68.7	67.4	67.4	67.4	Investing Cashflow	m	379	-200	-1,200	-1,200
EV/EBITDA	x	5.0	5.2	5.0	4.6	Dividend (Ordinary)	m	-1,311	-1,911	-1,410	-1,334
EV/EBIT	x	7.1	7.1	6.7	6.2	Equity Raised	m	0	0	0	0
Balance Sheet Ratios						Debt Movements	m	-3,150	1,350	645	258
ROE	%	7.3	5.5	5.2	5.8	Other	m	2,833	-317	-255	-240
ROA	%	4.6	5.1	5.2	5.6	Financing Cashflow	m	-1,628	-878	-1,019	-1,316
ROIC	%	4.9	5.8	5.6	6.0	Net Chg in Cash/Debt	m	1,254	-2,743	-3	2
Net Debt/Equity	%	20.2	31.1	32.6	32.8	Free Cashflow	m	1,371	-2,865	1,016	1,318
Interest Cover	x	9.8	12.7	9.7	9.7	FCF per Share	NT\$	0.74	-1.56	0.55	0.72
Price/Book	x	0.4	0.4	0.4	0.4	P/FCF	x	10.8	-5.1	14.4	11.1
Book Value per Share	NT\$	19.8	19.9	20.0	20.2	Balance Sheet		2007A	2008E	2009E	2010E
						Cash	m	6,743	4,003	4,000	4,002
						Receivables	m	9,008	9,104	9,551	9,951
						Inventories	m	11,839	16,437	17,244	17,966
						Investments	m	1,748	1,748	1,748	1,748
						Fixed Assets	m	13,003	12,917	12,750	12,504
						Intangibles	m	0	0	0	0
						Other Assets	m	26,069	25,880	26,381	26,893
						Total Assets	m	68,410	70,089	71,675	73,064
						Payables	m	7,897	8,363	8,800	9,149
						Short Term Debt	m	4,871	6,316	7,056	7,408
						Long Term Debt	m	9,599	9,504	9,409	9,314
						Provisions	m	0	0	0	0
						Other Liabilities	m	7,836	7,900	8,172	8,389
						Total Liabilities	m	30,203	32,083	33,437	34,261
						Total S/H Equity	m	38,206	37,997	38,235	38,796
						Total Liab & S/H Funds	m	68,409	70,080	71,672	73,056

All figures in NT\$ unless noted.
Source: Macquarie Research, October 2008

Important disclosures:

Recommendation definitions

Macquarie - Australia/New Zealand

Outperform – return >5% in excess of benchmark return (>2.5% in excess for listed property trusts)
 Neutral – return within 5% of benchmark return (within 2.5% for listed property trusts)
 Underperform – return >5% below benchmark return (>2.5% below for listed property trusts)

Macquarie – Asia/Europe

Outperform – expected return >+10%
 Neutral – expected return from -10% to +10%
 Underperform – expected return <-10%

Macquarie First South - South Africa

Outperform – expected return >+10%
 Neutral – expected return from -10% to +10%
 Underperform – expected return <-10%

Macquarie – Canada

Outperform – return >5% in excess of benchmark return
 Neutral – return within 5% of benchmark return
 Underperform – return >5% below benchmark return

Macquarie – USA

Outperform (Buy) – return >5% in excess of benchmark return
 Neutral (Hold) – return within 5% of benchmark return
 Underperform (Sell) – return >5% below benchmark return

Recommendations – 12 months

Note: Quant recommendations may differ from Fundamental Analyst recommendations

Volatility index definition*

This is calculated from the volatility of historic price movements.

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.

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.

Medium – stock should be expected to move up or down at least 30–40% in a year.

Low–medium – stock should be expected to move up or down at least 25–30% in a year.

Low – stock should be expected to move up or down at least 15–25% in a year.

* Applicable to Australian/NZ stocks only

Financial definitions

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

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

All Reported numbers for Australian/NZ listed stocks are modelled under IFRS (International Financial Reporting Standards).

Recommendation proportions – For quarter ending 30 September 2008

	AU/NZ	Asia	RSA	USA	CA	EUR
Outperform	43.17%	61.57%	63.08%	53.60%	71.54%	43.00%
Neutral	41.37%	16.43%	30.77%	37.60%	24.61%	48.00%
Underperform	15.47%	22.00%	6.15%	8.80%	3.85%	9.00%

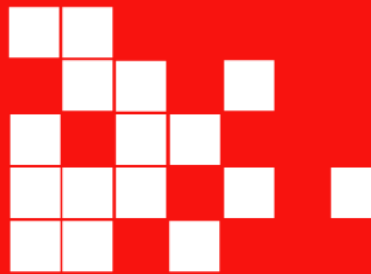
Analyst Certification: The views expressed in this research accurately reflect the personal views of the analyst(s) about the subject securities or issuers and no part of the compensation of the analyst(s) was, is, or will be directly or indirectly related to the inclusion of specific recommendations 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 JASDAQ 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. © 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: (27 11) 343 2258	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.macquarie.com/research and through Thomson Financial, FactSet, Reuters and Bloomberg.



Asia Research

Head of Equity Research

Stephen O'Sullivan (852) 2823 3566

Automobiles/Auto Parts

Deepak Jain (India) (9122) 6653 3157
Kenneth Yap (Indonesia) (6221) 515 7343
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) (65) 6231 2840
Nick Lord (Asia, China, Hong Kong) (852) 2823 4774
Sarah Wu (China) (8621) 2412 9035
Seshadri Sen (India) (9122) 6653 3053
Ferry Wong (Indonesia) (6221) 515 7335
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

Scott Weaver (Taiwan) (8862) 2734 7512
Jal Irani (India) (9122) 6653 3040
Christina Lee (Korea) (822) 3705 8670
Sunaina Dhanuka (Malaysia) (603) 2059 8993

Conglomerates

Gary Pinge (Asia) (852) 2823 3557
Leah Jiang (China) (8621) 2412 9020
Kenneth Yap (Indonesia) (6221) 515 7343
Ashwin Sanketh (Singapore) (65) 6231 2830

Consumer

Mohan Singh (Asia) (852) 3901 1111
Jessie Qian (China, Hong Kong) (852) 2823 3568
Charles Yan (China) (8621) 2412 9033
Unmesh Sharma (India) (9122) 6653 3042
Sarina Lesmina (Indonesia) (6221) 515 7339
Duane Sandberg (Japan) (813) 3512 7867
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
Hui-Lui Ko (China) (852) 2823 4704
Minoru Tayama (Japan) (813) 3512 6058
Robert Burghart (Japan) (813) 3512 7853
Heather Kang (Korea) (822) 3705 8677
Scott Weaver (Taiwan) (8862) 2734 7512

Industrials

Bin Liu (China) (8621) 2412 9006
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 Gambrill (Thailand) (662) 694 7753

Sales

Regional Heads of Sales

Peter Slater (Boston) (1 617) 217 2103
Michelle Paisley (China, Hong Kong) (852) 2823 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
K.Y. Nam (Korea) (822) 3705 8607
Lena Yong (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

Insurance

Mark Kellock (Asia) (852) 2823 3567
Seshadri Sen (Asia, India) (9122) 6653 3053
Makarim Salman (Japan) (813) 3512 7421

Media

Jessie Qian (China, Hong Kong) (852) 2823 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) 2823 4691
Scott Weaver (Taiwan) (8862) 2734 7512
Jal Irani (India) (9122) 6653 3040
Christina Lee (Korea) (822) 3705 8670
Edward Ong (Malaysia) (603) 2059 8982
Sunaina Dhanuka (Malaysia) (603) 2059 8993
Ashwin Sanketh (Singapore) (65) 6231 2830
Trevor Buchinski (Thailand) (662) 694 7728

Pharmaceuticals

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

Property

Matt Nacard (Asia) (852) 2823 4731
Eva Lee (China, Hong Kong) (852) 2823 3573
Tata Goeyardi (Hong Kong) (852) 2823 4077
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) 2823 3587
YeeMan Chin (China) (852) 2823 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
Scott Weaver (Taiwan) (8862) 2734 7512

Technology

Warren Lau (Asia) (852) 2823 3592
Kishore Belai (India) (9122) 6653 3046
Damian Thong (Japan) (813) 3512 7877
David Gibson (Japan) (813) 3512 7880
George Chang (Japan) (813) 3512 7854
Yoshihiro Shimada (Japan) (813) 3512 7862
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
Andy Kung (Taiwan) (8862) 2734 7534
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) 2823 3565
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

Regional Heads of Sales cont'd

Scot Mackie (New York) (1 212) 231 2848
Sheila Schroeder (San Francisco) (1 415) 835 1235
Giles Heyring (Singapore) (65) 6231 2888
Mark Duncan (Taiwan) (8862) 2734 7510
Angus Kent (Thailand) (662) 694 7601
Michael Newman (Tokyo) (813) 3512 7920
Charles Nelson (UK/Europe) (44) 20 7065 2032
Rob Fabbro (UK/Europe) (44) 20 7065 2031

Sales Trading

Adam Zaki (North Asia) (852) 2823 3528
Duncan Rutherford (ASEAN, India) (65) 6231 2888
Mona Lee (Hong Kong) (852) 2823 3519

Transport & Infrastructure

Anderson Chow (Asia, China) (852) 2823 4773
Jonathan Windham (Asia, China) (852) 2823 5417
Tim Bacchus (Asia, China) (852) 2823 3586
Wei Sim (China, Hong Kong) (852) 2823 3598
Eunsook Kwak (Korea) (822) 3705 8644
Sunaina Dhanuka (Malaysia) (603) 2059 8993

Utilities

Carol Cao (China, Hong Kong) (852) 2823 4075
Deepak Jain (India) (9122) 6653 3157
Adam Worthington (Indonesia) (6221) 515 7338
Prem Jearajasingam (Malaysia) (603) 2059 8989
Alex Pomento (Philippines) (632) 857 0899

Commodities

Jim Lennon (4420) 7065 2014
Adam Rowley (4420) 7065 2013
Jonathan Butcher (4420) 7065 5938
Max Layton (4420) 7065 2000
Bonnie Liu (8621) 2412 9008
Henry Liu (8621) 2412 9005
Rakesh Arora (9122) 6653 3054

Data Services

Andrea Clohessy (Asia) (852) 2823 4076

Economics

Bill Belchere (Asia) (852) 2823 4636
Rajeev Malik (ASEAN, India) (65) 6231 2841
Richard Gibbs (Australia) (612) 8232 3935
Paul Cavey (China) (852) 2823 3570
Richard Jerram (Japan) (813) 3512 7855

Quantitative

Martin Emery (Asia) (852) 2823 3582
Viking Kwok (Asia) (852) 2823 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) 2823 3585
Daniel McCormack (Asia) (852) 2823 4073
Desh Peramunetilleke (Asia) (852) 2823 3564
Mahesh Kedia (Asia) (852) 2823 3576
Stewart Ferns (Asia) (852) 2823 4068
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
Eugene Ha (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>
Email macresearch@macquarie.com for access

Sales Trading cont'd

Stuart Goddard (Europe) (44) 20 7065 2033
Brendan Rake (India) (9122) 6653 3204
Edward Robinson (London) (44) 20 7065 5883
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) 2823 4628
Depository Receipts - Robert Ansell (852) 2823 4688
Derivatives - Tim Connolly (852) 2249 3380
Futures - Tim Smith (852) 2823 4637
Hedge Fund Sales - Darin Lester (852) 2823 4736
Structured Products - Andrew Terlich (852) 2249 3225