Company

5 July 2010 | 9 pages

Sterlite Industries (India) (STRL.BO)

No Visible Triggers

Equity ☑
Target price change ☑
Estimate change ☑

- **Cutting TP** — We reduce our target price to Rs151 (from Rs180.75, adjusted for stock splits) taking into account our lower LME price forecasts and delay in purchase of minority stakes. We continue to value Sterlite on Jun 11 earnings and our TP is based on SOTP: 1) Rs81/sh taking zinc at 5.2x core P/E + cash and 2) Rs70/sh using P/E and P/B for non-zinc operations.
- **Sell maintained** — We expect a zinc surplus until 2012 keeping prices range bound. Zinc provides ~70% of cons. EBITDA. We lack visibility on triggers like captive bauxite, stake acquisitions & possible restructuring benefits. We do not expect captive bauxite from Niyamgiri until FY13; earlier availability would raise cons. FY12 PAT by 12%. We delay timing of minority purchase stake from Sep10 to Dec10 (for Balco) and from Dec10 to Mar11 (for HZL).
- **Revising earnings** — We cut attributable EPS for FY11 by 32% and FY12 by 17%. This takes into account: 1) our new LME price forecasts: zinc cut by 14-20%, lead by 15-18% and aluminium by 6-11%; 2) new FX estimates Rs/$ of 44.5 vs. 43.5 in FY11 and 41.5 vs 41 in FY12; 3) delays in stake purchases in Balco and HZL.
- **Well diversified; strong volume growth** — HZL (~70% of cons. EBITDA) is a low-cost zinc producer, with volume growth of 10-34% pa in FY11-12E and $2.6bn of net cash. Balco's volumes rise 18% in FY11 and 44% in FY12. Copper volumes fall slightly in FY11, but jump 68% in FY12. The group is developing 4,400MW in stages by FY14. VAL (30% held) will have 1.75mtpa of aluminium & 5mtpa of alumina by FY13. Sterlite's overall net cash is US$3.6bn.
- **Price sensitivity & sector preference** — A 5% change in zinc-lead LME prices would impact FY11 and 12 PAT by 4%. A 5% change in Rs/US$ rate would impact PAT by 5%. Our order of preference is: aluminium, alumina, zinc.

Sell/Medium Risk	3M
Price (02 Jul 10)	Rs160.65
Target price	Rs151.00
from Rs180.75	
Expected share price return	-6.0%
Expected dividend yield	0.5%
Expected total return	**-5.5%**
Market Cap	Rs540,041M
	US$11,593M

Price Performance (RIC: STRL.BO, BB: STLT IN)

Figure 1. Sterlite Industries – Statistical Abstract

YE 31 Mar	Net Profit (Rsm)	EPS (Rs)	EPS growth (%)	P/E (x)	EV/EBITDA (x)	ROE (%)
FY07	46,215	20.7	175%	7.8	5.1	46%
FY08	43,994	15.5	-25%	10.3	5.5	20%
FY09	35,400	12.5	-20%	12.9	7.1	14%
FY10E	36,224	10.8	-14%	14.9	7.6	9%
FY11E	41,454	12.3	14%	13.0	7.1	10%
FY12E	61,363	18.3	48%	8.8	4.8	15%

Source: Company Reports and Citi Investment Research and Analysis estimates. Price as on 2 July 2010.

Pradeep Mahtani
+91-22-6631-9882
pradeep.mahtani@citi.com

Raashi Chopra, CFA
+91-22-6631-9862
raashi.chopra@citi.com

See Appendix A-1 for Analyst Certification, Important Disclosures and non-US research analyst disclosures.

Fiscal year end 31-Mar	2008	2009	2010E	2011E	2012E
Valuation Ratios					
P/E adjusted (x)	10.3	12.9	14.9	13.0	8.8
EV/EBITDA adjusted (x)	5.6	6.9	6.1	5.5	4.6
P/BV (x)	2.0	1.8	1.4	1.4	1.3
Dividend yield (%)	2.5	2.2	1.9	0.5	0.6
Per Share Data (Rs)					
EPS adjusted	15.52	12.49	10.78	12.33	18.25
EPS reported	15.52	12.49	10.78	12.33	18.25
BVPS	78.70	90.38	116.67	117.88	122.18
DPS	4.00	3.50	3.00	0.80	0.90
Profit & Loss (RsM)					
Net sales	247,054	211,442	238,451	267,043	367,349
Operating expenses	-158,796	-149,865	-169,872	-190,579	-274,563
EBIT	**88,257**	**61,577**	**68,579**	**76,463**	**92,786**
Net interest expense	-3,051	-3,973	-3,153	-5,169	-9,904
Non-operating/exceptionals	0	0	0	0	0
Pre-tax profit	**85,207**	**57,604**	**65,425**	**71,295**	**82,882**
Tax	-21,027	-8,550	-13,490	-15,608	-21,547
Extraord./Min.Int./Pref.div.	-20,186	-13,654	-15,711	-14,233	27
Reported net income	**43,994**	**35,400**	**36,224**	**41,454**	**61,363**
Adjusted earnings	43,994	35,400	36,224	41,454	61,363
Adjusted EBITDA	94,207	68,584	75,557	85,655	105,044
Growth Rates (%)					
Sales	1.3	-14.4	12.8	12.0	37.6
EBIT adjusted	-5.5	-30.2	11.4	11.5	21.3
EBITDA adjusted	-7.1	-27.2	10.2	13.4	22.6
EPS adjusted	-25.0	-19.5	-13.7	14.4	48.0
Cash Flow (RsM)					
Operating cash flow	**63,767**	**58,382**	**-18,549**	**49,320**	**47,870**
Depreciation/amortization	5,949	7,007	6,978	9,192	12,258
Net working capital	2,032	13,636	-75,547	-1,055	-8,216
Investing cash flow	**-36,592**	**-37,714**	**-10,072**	**-65,299**	**-113,901**
Capital expenditure	-30,119	-40,095	-32,257	-54,612	-25,649
Acquisitions/disposals	-15,958	-5,314	-1,858	0	0
Financing cash flow	**80,989**	**3,651**	**97,577**	**13,410**	**48,770**
Borrowings	5,130	12,762	28,417	20,000	62,000
Dividends paid	-1,324	-3,938	-3,012	-3,102	-3,326
Change in cash	**108,165**	**24,320**	**68,956**	**-2,569**	**-17,261**
Balance Sheet (RsM)					
Total assets	**375,484**	**450,526**	**630,223**	**678,217**	**667,724**
Cash & cash equivalent	24,536	55,048	127,729	130,899	163,638
Accounts receivable	15,623	8,760	15,763	17,877	23,890
Net fixed assets	124,367	172,104	211,838	258,058	249,649
Total liabilities	**96,227**	**126,264**	**154,448**	**181,335**	**254,281**
Accounts payable	13,554	23,747	15,432	17,534	24,669
Total Debt	50,745	70,135	98,552	118,552	180,552
Shareholders' funds	**279,257**	**324,262**	**475,775**	**496,882**	**413,442**
Profitability/Solvency Ratios (%)					
EBITDA margin adjusted	38.1	32.4	31.7	32.1	28.6
ROE adjusted	27.3	14.8	11.2	10.5	15.2
ROIC adjusted	41.6	28.7	21.3	18.0	19.6
Net debt to equity	9.4	4.7	-6.1	-2.5	4.1
Total debt to capital	15.4	17.8	17.2	19.3	30.4

For further data queries on Citi's full coverage universe please contact CIR Data Services Asia Pacific at CIRDataServicesAsiaPacific@citi.com or +852-2501-2791

Powered by: dataCentral

Estimate Revisions

Figure 2. Sterlite Industries – Estimate Changes, FY11-12E

	FY11E			FY12E		
	Old	**New**	**% chg**	**Old**	**New**	**% chg**
Average Copper LME (US$/t)	7,999	6,971	-13%	7,821	7,214	-8%
Average Zinc LME (US$/t)	2,375	1,911	-20%	2,338	2,000	-14%
Average Lead LME (US$/t)	2,212	1,819	-18%	2,214	1,885	-15%
Average Aluminium LME (US$/t)	2,350	2,090	-11%	2,416	2,273	-6%
Copper TC/RC LME (USc/lb)	13.8	13.8	0%	20.0	20.6	3%
Rs/US$ rate	43.5	44.5		41.0	41.5	
Net sales (Rs bn)	299.7	267.0	-11%	393.4	367.3	-7%
EBITDA (Rs bn)	108.5	85.7	-21%	121.5	105.0	-14%
PAT before MI and associate income (Rs bn)	73.8	55.7	-24%	73.5	61.3	-17%
Net profit available to shareholders (Rs bn)	60.5	41.5	-32%	74.0	61.4	-17%
Number of shares*	3,362	3,362	0%	3,362	3,362	0%
EPS (Rs)*	18.0	12.3	-32%	22.0	18.3	-17%

Source: Citi Investment Research and Analysis estimates. *EPS and number of shares adjusted for stock split and bonus issue.

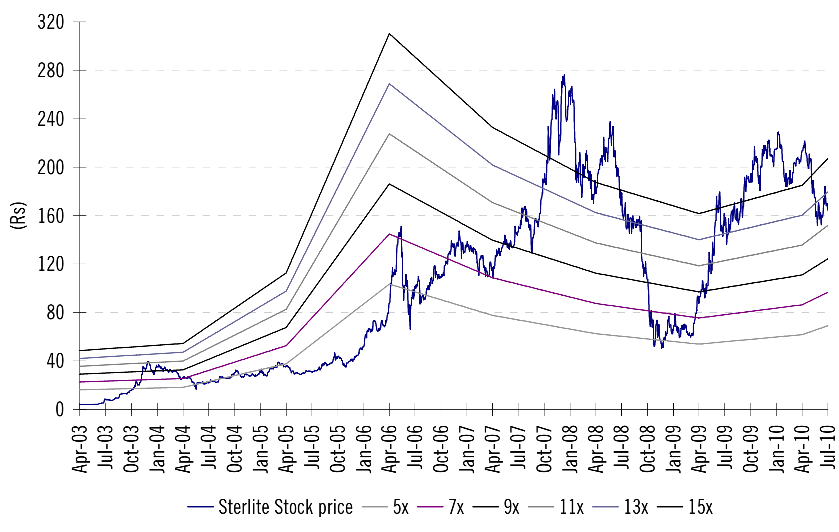
Figure 3. Sterlite – Valuation based on SOTP

Sterlite's businesses	**Value**
HZL (based on HZL's valuation @Rs895/share) (Rs bn)	273.2
Other businesses excl HZL using P/E and P/B (Rs bn)	235.7
Total (Rs bn)	508.8
No. of shares (m)	3,361.6
Target price per share (Rs)	151

Source: Citi Investment Research and Analysis

Sterlite's stock has come off from close to peak multiples on lack of visibility on potential triggers.

Figure 4. Sterlite Industries – Rolling PE Band Chart (1-yr forward)



Source: DataStream, Company Reports and Citi Investment Research and Analysis

Sterlite Industries (India)

Company description

Sterlite is a non-ferrous metals major with a presence in aluminium, zinc and copper. It is a custom copper smelter (capacity 400,000 tpa) with treatment and refining charges (TC/RCs) driving profit. Sterlite is in the lowest-cost quartile of worldwide copper smelting operations. Its aluminium exposure comes from its 51% stake in Bharat Aluminium Co (Balco) and 29.5% stake in Vedanta Aluminium (VAL). Balco's aluminium capacity will rise to 570,000 tpa (from 245,000 tpa) by Sep 2011 and its power capacity will rise to 2,010MW (from 810MW) by Sep 2011. Balco has to source alumina from VAL and other external sources. Surplus power sales will remain an important source of revenue/profits for Balco. VAL will have 1.75m tpa of aluminium capacity (by mid-FY13) and 5m tpa of alumina capacity by mid-2011. VAL will need to buy its bauxite and some power from external sources during FY11-12E. Sterlite's zinc and lead revenues come from its 64.9% holding in Hindustan Zinc Ltd (HZL), an integrated zinc producer with an ~80% domestic share. It is amongst the lowest-cost zinc producers in the world largely due to the low cost of mining ore at the Rampura Agucha mine, which meets 90% of its requirement. Zinc-lead capacity is currently 964,000 tpa and will rise to 1.06m tpa by mid-2010 once its 100,000 lead expansion is completed. The 210,000 tpa zinc expansion was commissioned in March 2010, three months ahead of schedule. We have assumed that the purchase of the minority government stake in Balco (49%) and HZL (29.5%) would be completed by December 2010 and March 2011 respectively.

Investment strategy

We rate Sterlite Sell/Medium Risk (3M) with a target price of Rs151. The stock is well diversified with strong growth plans in its various businesses. However we maintain Sell as we believe there is limited visibility on or upside from potential triggers such as captive bauxite for VAL, acquisition of the minority government stakes in Balco and HZL and likely benefits from re-structuring. We would await a stock correction to enter. Hindustan Zinc (HZL) is the biggest contributor to Sterlite's EBITDA (~65-70%). We expect a zinc surplus until 2012 keeping prices range bound. We expect zinc-lead volumes to rise 34% in FY11 and 10% in FY12 and forecast zinc LME prices of US$1,911/t in FY11 and US$2,000/t in FY12. Balco is expected to contribute ~14-20% to Sterlite's consolidated EBITDA. Aluminium is one of our preferred metals with limited downside. Key positives: 1) a modest deficit in 2011 and 2012; 2) at current prices about 30% of aluminium production is sub-economic; 3) production cuts in China (high end of cost curve) due to falling prices and government measures (capacity closures and higher power tariffs); 4) Inventory levels are high but there is good potential for physically backed aluminium ETF. We forecast average prices of $2,090/t for FY11 and $2,273/t for FY12. In copper, we expect TC/RC margins to remain sluggish at US$13.8c/lb in FY11, but improve to US20.6c/lb in FY12. Commercial production of the first phase of the power project by the Sterlite Group is now expected to begin in Sep 2010 and be completed by 2H 2011, a bit delayed from the original time table.

Valuation

We value Sterlite using sum-of-the-parts (SOTP). For the zinc business (HZL), we apply a P/E of 5.2x (its 5-year average) to its June 2011E core earnings. Adding on the HZL cash gives us a target price of Rs895 for HZL. This translates into a value of Rs81 per Sterlite share. We value the non-zinc businesses using P/E and P/B in line with or lower than domestic peers. The non-zinc value works out to Rs70 per Sterlite share resulting in a target price of Rs151. At our target price, the stock would trade at an adjusted Jun11 P/E of 10.9x and EV/EBITDA of 6.2x. Our valuations assume that the acquisition of the minority stake of Balco and HZL are completed by December 2010 and March 2011 respectively.

Risks

Our quantitative risk-rating system, which tracks 260-day historical share price volatility, suggests a Medium Risk rating for Sterlite shares. We feel this is appropriate based on its diversified business lines and low cost of production in both zinc and copper. Upside risks that could cause the shares to continue to trade above our target price include: (1) Stronger-than-expected commodity prices or TC/RC margins; (2) Quicker acquisition of minority stakes in Hindustan Zinc and Balco than we assumed; (3) Higher capacity utilization than we assume; (4) Trends in exchange rates/import duties for non-ferrous metals; (5) Faster availability of captive bauxite for VAL.

Hindustan Zinc (HZNC.BO; 3M; Rs940.7)

Valuation

We use P/E as our preferred valuation parameter for HZL. We value HZL's core business at 5.2x June11 P/E (5-year trading average) and arrive at a value of Rs485/share. We add cash/share of Rs410 to the PE derived value and arrive at a target price of Rs895. At our TP, HZL would trade at a June 11 PE of 8.3x and EV/EBITDA of 3.3x.

Risks

Our quantitative risk-rating system, which tracks 260-day historical share price volatility, suggests a Medium Risk rating for Hindustan Zinc shares. We feel this is appropriate based on the company's status as an integrated, low-cost zinc producer, and net cash position. Upside risks that could cause the shares to continue to trade above our target price include: (1) Higher-than-expected zinc and lead prices; (2) Rupee depreciation; (3) Increase in zinc import duty; (4) Higher volumes than we expect.

Appendix A-1

Analyst Certification

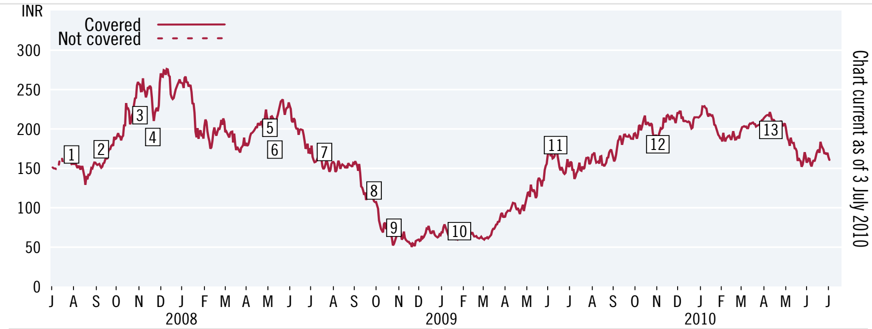
The research analyst(s) primarily responsible for the preparation and content of all or any identified portion of this research report hereby certifies that, with respect to each issuer or security or any identified portion of the report with respect to an issuer or security that the research analyst covers in this research report, all of the views expressed in this research report accurately reflect their personal views about those issuer(s) or securities. The research analyst(s) also certify that no part of their compensation was, is, or will be, directly or indirectly, related to the specific recommendation(s) or view(s) expressed by that research analyst in this research report.

IMPORTANT DISCLOSURES

Sterlite Industries (India) (STRL.BO)

Ratings and Target Price History
Fundamental Research

Analyst: Pradeep Mahtani
Covered since July 31 2007



	Date	Rating	Target Price	Closing Price
1	30-Jul-07	*1M	*227.50	155.10
2	10-Sep-07	1M	*237.25	150.73
3	2-Nov-07	*1L	*302.25	256.64
4	21-Nov-07	1L	*280.75	221.38
5	5-May-08	1L	*243.50	205.21
6	12-May-08	1L	*263.25	212.03
7	21-Jul-08	1L	*194.25	150.86
8	29-Sep-08	*1M	*141.50	108.21
9	27-Oct-08	1M	*86.25	53.94
10	27-Jan-09	*3M	*58.75	66.95
11	11-Jun-09	3M	*145.25	175.56
12	3-Nov-09	3M	*166.25	180.54
13	11-Apr-10	3M	*180.75	221.54

* Indicates change

Rating/target price changes above reflect Eastern Standard Time

Hindustan Zinc (HZNC.BO)

Ratings and Target Price History
Fundamental Research

Analyst: Pradeep Mahtani
Covered since July 31 2007

	Date	Rating	Target Price	Closing Price
1	30-Jul-07	*1M	*1,155.00	709.10
2	10-Sep-07	1M	*1,194.00	710.80
3	22-Oct-07	1M	*1,128.00	842.40
4	21-Nov-07	1M	*1,007.00	731.25
5	5-May-08	1M	*845.00	629.75
6	21-Jul-08	*2M	*598.00	534.85
7	29-Sep-08	*3M	*430.00	451.65
8	22-Oct-08	*1M	*388.00	294.25
9	27-Jan-09	*3M	*304.00	350.40
10	11-Jun-09	3M	*588.00	616.65
11	3-Nov-09	3M	*842.00	857.55
12	11-Apr-10	3M	*1,090.00	1,243.95

* Indicates change

Rating/target price changes above reflect Eastern Standard Time

Pradeep Mahtani, Analyst, holds a long position in the securities of Sterlite Industries (India).

Citigroup Global Markets Inc. or an affiliate received compensation for products and services other than investment banking services from Sterlite Industries (India), Hindustan Zinc in the past 12 months.

Citigroup Global Markets Inc. currently has, or had within the past 12 months, the following as clients, and the services provided were non-investment-banking, securities-related: Sterlite Industries (India), Hindustan Zinc.

Citigroup Global Markets Inc. currently has, or had within the past 12 months, the following as clients, and the services provided were non-investment-banking, non-securities-related: Sterlite Industries (India), Hindustan Zinc.

Rohini Malkani has in the past worked with the India government or its divisions in her personal capacity.

Analysts' compensation is determined based upon activities and services intended to benefit the investor clients of Citigroup Global Markets Inc. and its affiliates ("the Firm"). Like all Firm employees, analysts receive compensation that is impacted by overall firm profitability which includes investment banking revenues.

For important disclosures (including copies of historical disclosures) regarding the companies that are the subject of this Citi Investment Research & Analysis product ("the Product"), please contact Citi Investment Research & Analysis, 388 Greenwich Street, 28th Floor, New York, NY, 10013, Attention: Legal/Compliance. In addition, the same important disclosures, with the exception of the Valuation and Risk assessments and historical disclosures, are contained on the Firm's disclosure website at www.citigroupgeo.com. Valuation and Risk assessments can be found in the text of the most recent research note/report regarding the subject company. Historical disclosures (for up to the past three years) will be provided upon request.

Citi Investment Research & Analysis Ratings Distribution

Data current as of 30 Jun 2010	**Buy**	**Hold**	**Sell**
Citi Investment Research & Analysis Global Fundamental Coverage	54%	35%	12%
% of companies in each rating category that are investment banking clients	47%	45%	40%

Guide to Citi Investment Research & Analysis (CIRA) Fundamental Research Investment Ratings:
CIRA's stock recommendations include a risk rating and an investment rating.
Risk ratings, which take into account both price volatility and fundamental criteria, are: Low (L), Medium (M), High (H), and Speculative (S).
Investment ratings are a function of CIRA's expectation of total return (forecast price appreciation and dividend yield within the next 12 months) and risk rating.

For securities in emerging markets (Asia Pacific, Emerging Europe/Middle East/Africa, and Latin America), investment ratings are:Buy (1) (expected total return of 15% or more for Low-Risk stocks, 20% or more for Medium-Risk stocks, 30% or more for High-Risk stocks, and 40% or more for Speculative stocks); Hold (2) (5%-15% for Low-Risk stocks, 10%-20% for Medium-Risk stocks, 15%-30% for High-Risk stocks, and 20%-40% for Speculative stocks); and Sell (3) (5% or less for Low-Risk stocks, 10% or less for Medium-Risk stocks, 15% or less for High-Risk stocks, and 20% or less for Speculative stocks).

Investment ratings are determined by the ranges described above at the time of initiation of coverage, a change in investment and/or risk rating, or a change in target price (subject to limited management discretion). At other times, the expected total returns may fall outside of these ranges because of market price movements and/or other short-term volatility or trading patterns. Such interim deviations from specified ranges will be permitted but will become subject to review by Research Management. Your decision to buy or sell a security should be based upon your personal investment objectives and should be made only after evaluating the stock's expected performance and risk.
Guide to Citi Investment Research & Analysis (CIRA) Corporate Bond Research Credit Opinions and Investment Ratings: CIRA's corporate bond research issuer publications include a fundamental credit opinion of Improving, Stable or Deteriorating and a complementary risk rating of Low (L), Medium (M), High (H) or Speculative (S) regarding the credit risk of the company featured in the report. The fundamental credit opinion reflects the CIRA analyst's opinion of the direction of credit fundamentals of the issuer without respect to securities market vagaries. The fundamental credit opinion is not geared to, but should be viewed in the context of debt ratings issued by major public debt ratings companies such as Moody's Investors Service, Standard and Poor's, and Fitch Ratings. CBR risk ratings are approximately equivalent to the following matrix: Low Risk Triple A to Low Double A; Low to Medium Risk High Single A through High Triple B; Medium to High Risk Mid Triple B through High Double B; High to Speculative Risk Mid Double B and Below. The risk rating element illustrates the analyst's opinion of the relative likelihood of loss of principal when a fixed income security issued by a company is held to maturity, based upon both fundamental and market risk factors. Certain reports published by CIRA will also include investment ratings on specific issues of companies under coverage which have been assigned fundamental credit opinions and risk ratings. Investment ratings are a function of CIRA's expectations for total return, relative return (to publicly available Citigroup bond indices performance), and risk rating. These investment ratings are: Buy/Overweight the bond is expected to outperform the relevant Citigroup bond market sector index (Broad Investment Grade, High Yield Market or Emerging Market), performances of which are updated monthly and can be viewed at https://fidirect.citigroup.com/ using the "Indexes" tab; Hold/Neutral Weight the bond is expected to perform in line with the relevant Citigroup bond market sector index; or Sell/Underweight the bond is expected to underperform the relevant sector of the Citigroup indexes.

NON-US RESEARCH ANALYST DISCLOSURES
Non-US research analysts who have prepared this report (i.e., all research analysts listed below other than those identified as employed by Citigroup Global Markets Inc.) are not registered/qualified as research analysts with FINRA. Such research analysts may not be associated persons of the member organization and therefore may not be subject to the NYSE Rule 472 and NASD Rule 2711 restrictions on communications with a subject company, public appearances and trading securities held by a research analyst account. The legal entities employing the authors of this report are listed below:

Citigroup Global Markets India Private Limited	Pradeep Mahtani,Raashi Chopra, CFA

OTHER DISCLOSURES

The subject company's share price set out on the front page of this Product is quoted as at 02 July 2010 04:00 PM on the issuer's primary market.

Citigroup Global Markets Inc. and/or its affiliates has a significant financial interest in relation to Sterlite Industries (India). (For an explanation of the determination of significant financial interest, please refer to the policy for managing conflicts of interest which can be found at www.citigroupgeo.com.)

For securities recommended in the Product in which the Firm is not a market maker, the Firm is a liquidity provider in the issuers' financial instruments and may act as principal in connection with such transactions. The Firm is a regular issuer of traded financial instruments linked to securities that may have been recommended in the Product. The Firm regularly trades in the securities of the issuer(s) discussed in the Product. The Firm may engage in securities transactions in a manner inconsistent with the Product and, with respect to securities covered by the Product, will buy or sell from customers on a principal basis.

Securities recommended, offered, or sold by the Firm: (i) are not insured by the Federal Deposit Insurance Corporation; (ii) are not deposits or other obligations of any insured depository institution (including Citibank); and (iii) are subject to investment risks, including the possible loss of the principal amount invested. Although information has been obtained from and is based upon sources that the Firm believes to be reliable, we do not guarantee its accuracy and it may be incomplete and condensed. Note, however, that the Firm has taken all reasonable steps to determine the accuracy and completeness of the disclosures made in the Important Disclosures section of the Product. The Firm's research department has received assistance from the subject company(ies) referred to in this Product including, but not limited to, discussions with management of the subject company(ies). Firm policy prohibits research analysts from sending draft research to subject companies. However, it should be presumed that the author of the Product has had discussions with the subject company to ensure factual accuracy prior to publication. All opinions, projections and estimates constitute the judgment of the author as of the date of the Product and these, plus any other information contained in the Product, are subject to change without notice. Prices and availability of financial instruments also are subject to change without notice. Notwithstanding other departments within the Firm advising the companies discussed in this Product, information obtained in such role is not used in the preparation of the Product. Although Citi Investment Research & Analysis (CIRA) does not set a predetermined frequency for publication, if the Product is a fundamental research report, it is the intention of CIRA to provide research coverage of the/those issuer(s) mentioned therein, including in response to news affecting this issuer, subject to applicable quiet periods and capacity constraints. The Product is for informational purposes only and is not intended as an offer or solicitation for the purchase or sale of a security. Any decision to purchase securities mentioned in the Product must take into account existing public information on such security or any registered prospectus.

Investing in non-U.S. securities, including ADRs, may entail certain risks. The securities of non-U.S. issuers may not be registered with, nor be subject to the reporting requirements of the U.S. Securities and Exchange Commission. There may be limited information available on foreign securities. Foreign companies are generally not subject to uniform audit and reporting standards, practices and requirements comparable to those in the U.S. Securities of some foreign companies may be less liquid and their prices more volatile than securities of comparable U.S. companies. In addition, exchange rate movements may have an adverse effect on the value of an investment in a foreign stock and its corresponding dividend payment for U.S. investors. Net dividends to ADR investors are estimated, using withholding tax rates conventions, deemed accurate, but investors are urged to consult their tax advisor for exact dividend computations. Investors who have received the Product from the Firm may be prohibited in certain states or other jurisdictions from purchasing securities mentioned in the Product from the Firm. Please ask your Financial Consultant for additional details. Citigroup Global Markets Inc. takes responsibility for the Product in the United States. Any orders by US investors resulting from the information contained in the Product may be placed only through Citigroup Global Markets Inc.

Important Disclosures for Morgan Stanley Smith Barney LLC Customers: Morgan Stanley & Co. Incorporated (Morgan Stanley) research reports may be available about the companies that are the subject of this Citi Investment Research & Analysis (CIRA) research report. Ask your Financial Advisor or use smithbarney.com to view any available Morgan Stanley research reports in addition to CIRA research reports.
Important disclosure regarding the relationship between the companies that are the subject of this CIRA research report and Morgan Stanley Smith Barney LLC and its affiliates are available at the Morgan Stanley Smith Barney disclosure website at www.morganstanleysmithbarney.com/researchdisclosures.
The required disclosures provided by Morgan Stanley and Citigroup Global Markets, Inc. on Morgan Stanley and CIRA research relate in part to the separate businesses of Citigroup Global Markets, Inc. and Morgan Stanley that now form Morgan Stanley Smith Barney LLC, rather than to Morgan Stanley Smith Barney LLC in its entirety. For Morgan Stanley and Citigroup Global Markets, Inc. specific disclosures, you may refer to www.morganstanley.com/researchdisclosures and https://www.citigroupgeo.com/geopublic/Disclosures/index_a.html.
This CIRA research report has been reviewed and approved on behalf of Morgan Stanley Smith Barney LLC. This review and approval was conducted by the same person who reviewed this research report on behalf of CIRA. This could create a conflict of interest.

The Citigroup legal entity that takes responsibility for the production of the Product is the legal entity which the first named author is employed by. The Product is made available in Australia through Citigroup Global Markets Australia Pty Ltd. (ABN 64 003 114 832 and AFSL No. 240992), participant of the ASX Group and regulated by the Australian Securities & Investments Commission. Citigroup Centre, 2 Park Street, Sydney, NSW 2000. The Product is made available in Australia to Private Banking wholesale clients through Citigroup Pty Limited (ABN 88 004 325 080 and AFSL 238098). Citigroup Pty Limited provides all financial product advice to Australian Private Banking wholesale clients through bankers and relationship managers. If there is any doubt about the suitability of investments held in Citigroup Private Bank accounts, investors should contact the Citigroup Private Bank in Australia. Citigroup companies may compensate affiliates and their representatives for providing products and services to clients. The Product is made available in Brazil by Citigroup Global Markets Brasil - CCTVM SA, which is regulated by CVM - Comissão de Valores Mobiliários, BACEN - Brazilian Central Bank, APIMEC - Associação dos Analistas e Profissionais de Investimento do Mercado de Capitais and ANBID - Associação Nacional dos Bancos de Investimento. Av. Paulista, 1111 - 11º andar - CEP. 01311920 - São Paulo - SP. If the Product is being made available in certain provinces of Canada by Citigroup Global Markets (Canada) Inc. ("CGM Canada"), CGM Canada has approved the Product. Citigroup Place, 123 Front Street West, Suite 1100, Toronto, Ontario M5J 2M3. The Product is made available in France by Citigroup Global Markets Limited, which is authorised and regulated by Financial Services Authority. 1-5 Rue Paul Cézanne, 8ème, Paris, France. The Product may not be distributed to private clients in Germany. The Product is distributed in Germany by Citigroup Global Markets Deutschland AG & Co. KGaA, which is regulated by Bundesanstalt fuer Finanzdienstleistungsaufsicht (BaFin). Frankfurt am Main, Reuterweg 16, 60323 Frankfurt am Main. If the Product is made available in Hong Kong by, or on behalf of, Citigroup Global Markets Asia Ltd., it is attributable to Citigroup Global Markets Asia Ltd., Citibank Tower, Citibank Plaza, 3 Garden Road, Hong Kong. Citigroup Global Markets Asia Ltd. is regulated by Hong Kong Securities and Futures Commission. If the Product is made available in Hong Kong by The Citigroup Private Bank to its clients, it is attributable to Citibank N.A., Citibank Tower, Citibank Plaza, 3 Garden Road, Hong Kong. The Citigroup Private Bank and Citibank N.A. is regulated by the Hong Kong Monetary Authority. The Product is made available in India by Citigroup Global Markets India Private Limited, which is regulated by Securities and Exchange Board of India. Bakhtawar, Nariman Point, Mumbai 400-021. The Product is made available in Indonesia through PT Citigroup Securities Indonesia. 5/F, Citibank Tower, Bapindo Plaza, Jl. Jend. Sudirman Kav. 54-55, Jakarta 12190. Neither this Product nor any copy hereof may be distributed in Indonesia or to any Indonesian citizens wherever they are domiciled or to Indonesian residents except in compliance with applicable capital market laws and regulations. This Product is not an offer of securities in Indonesia. The securities referred to in this Product have not been registered with the Capital Market and Financial Institutions Supervisory Agency (BAPEPAM-LK) pursuant to relevant capital market laws and regulations, and may not be offered or sold within the territory of the Republic of Indonesia or to Indonesian citizens through a public offering or in circumstances which constitute an offer within the meaning of the Indonesian capital market laws and regulations. The Product is made available in Israel through Citibank NA, regulated by the Bank of Israel and the Israeli Securities Authority. Citibank, N.A, Platinum Building, 21 Ha'arba'ah St, Tel Aviv, Israel. The Product is made available in Italy by Citigroup Global Markets Limited, which is authorised and regulated by Financial Services Authority. Foro Buonaparte 16, Milan, 20121, Italy. The Product is made available in Japan by Citigroup Global Markets Japan Inc. ("CGMJ"), which is regulated by Financial Services Agency, Securities and Exchange Surveillance Commission, Japan Securities Dealers Association, Tokyo Stock Exchange and Osaka Securities Exchange. Shin-Marunouchi Building, 1-5-1 Marunouchi, Chiyoda-ku, Tokyo 100-6520 Japan. If the Product was distributed by Nikko Cordial Securities Inc. it is being so distributed under license. In the event that an error is found in an CGMJ research report, a revised version will be posted on the Firm's Global Equities Online (GEO) website. If you have questions regarding GEO, please call (81 3) 6270-3019 for help. The Product is made available in Korea by Citigroup Global Markets Korea Securities Ltd., which is regulated by Financial Services Commission and the Financial Supervisory Service. Hungkuk Life Insurance Building, 226 Shinmunno 1-GA, Jongno-Gu, Seoul, 110-061. The Product is made available in Malaysia by Citigroup Global Markets Malaysia Sdn Bhd, which is regulated by Malaysia Securities Commission. Menara Citibank, 165 Jalan Ampang, Kuala Lumpur, 50450. The Product is made available in Mexico by Acciones y Valores Banamex, S.A. De C. V., Casa de Bolsa, Integrante del Grupo Financiero Banamex ("Accival") which is a wholly owned subsidiary of Citigroup Inc. and is regulated by Comision Nacional Bancaria y de Valores. Reforma 398, Col. Juarez, 06600 Mexico, D.F. In New Zealand the Product is made available through Citigroup Global Markets New Zealand Ltd. (Company Number 604457), a Participant of the New Zealand Exchange Limited and regulated by the New Zealand Securities Commission. Level 19, Mobile on the Park, 157 Lambton Quay, Wellington. The Product is made available in Pakistan by Citibank N.A. Pakistan branch, which is regulated by the State Bank of Pakistan and Securities Exchange Commission, Pakistan. AWT Plaza, 1.1. Chundrigar Road, P.O. Box 4889, Karachi-74200. The Product is made available in Poland by Dom Maklerski Banku Handlowego SA an indirect subsidiary of Citigroup Inc., which is regulated by Komisja Nadzoru Finansowego. Dom Maklerski Banku Handlowego S.A. ul. Chalubinskiego 8, 00-630 Warszawa. The Product is made available in the Russian Federation through ZAO Citibank, which is licensed to carry out banking activities in the Russian Federation in accordance with the general banking license issued by the Central Bank of the Russian Federation and brokerage activities in accordance with the license issued by the Federal Service for Financial Markets. Neither the Product nor any information contained in the Product shall be considered as advertising the securities mentioned in this report within the territory of the Russian Federation or outside the Russian Federation. The Product does not constitute an appraisal within the meaning of the Federal Law of the Russian Federation of 29 July 1998 No. 135-FZ (as amended) On Appraisal Activities in the Russian Federation. 8-10 Gasheka Street, 125047 Moscow. The Product is made available in Singapore through Citigroup Global Markets Singapore Pte. Ltd., a Capital Markets Services Licence holder, and regulated by Monetary Authority of Singapore. 1 Temasek Avenue, #39-02 Millenia Tower, Singapore 039192. The Product is made available by The Citigroup Private Bank in Singapore through Citibank, N.A., Singapore branch, a licensed bank in

Singapore that is regulated by Monetary Authority of Singapore. Citigroup Global Markets (Pty) Ltd. is incorporated in the Republic of South Africa (company registration number 2000/025866/07) and its registered office is at 145 West Street, Sandton, 2196, Saxonwold. Citigroup Global Markets (Pty) Ltd. is regulated by JSE Securities Exchange South Africa, South African Reserve Bank and the Financial Services Board. The investments and services contained herein are not available to private customers in South Africa. The Product is made available in Spain by Citigroup Global Markets Limited, which is authorised and regulated by Financial Services Authority. 29 Jose Ortega Y Gassef, 4th Floor, Madrid, 28006, Spain. The Product is made available in Taiwan through Citigroup Global Markets Taiwan Securities Company Ltd., which is regulated by Securities & Futures Bureau. No portion of the report may be reproduced or quoted in Taiwan by the press or any other person. No. 1, Songzhi Road, Taipei 110, Taiwan. The Product is made available in Thailand through Citicorp Securities (Thailand) Ltd., which is regulated by the Securities and Exchange Commission of Thailand. 18/F, 22/F and 29/F, 82 North Sathorn Road, Silom, Bangrak, Bangkok 10500, Thailand. The Product is made available in Turkey through Citibank AS which is regulated by Capital Markets Board. Tekfen Tower, Eski Buyukdere Caddesi # 209 Kat 2B, 23294 Levent, Istanbul, Turkey. In the U.A.E, these materials (the "Materials") are communicated by Citigroup Global Markets Limited, DIFC branch ("CGML"), an entity registered in the Dubai International Financial Center ("DIFC") and licensed and regulated by the Dubai Financial Services Authority ("DFSA" to Professional Clients and Market Counterparties only and should not be relied upon or distributed to Retail Clients. A distribution of the different CIRA ratings distribution, in percentage terms for Investments in each sector covered is made available on request. Financial products and/or services to which the Materials relate will only be made available to Professional Clients and Market Counterparties. The Product is made available in United Kingdom by Citigroup Global Markets Limited, which is authorised and regulated by Financial Services Authority. This material may relate to investments or services of a person outside of the UK or to other matters which are not regulated by the FSA and further details as to where this may be the case are available upon request in respect of this material. Citigroup Centre, Canada Square, Canary Wharf, London, E14 5LB. The Product is made available in United States by Citigroup Global Markets Inc, which is regulated by FINRA and the US Securities and Exchange Commission. 388 Greenwich Street, New York, NY 10013. Unless specified to the contrary, within EU Member States, the Product is made available by Citigroup Global Markets Limited, which is regulated by Financial Services Authority. Many European regulators require that a firm must establish, implement and make available a policy for managing conflicts of interest arising as a result of publication or distribution of investment research. The policy applicable to CIRA's Products can be found at www.citigroupgeo.com. Compensation of equity research analysts is determined by equity research management and Citigroup's senior management and is not linked to specific transactions or recommendations. The Product may have been distributed simultaneously, in multiple formats, to the Firm's worldwide institutional and retail customers. The Product is not to be construed as providing investment services in any jurisdiction where the provision of such services would not be permitted. Subject to the nature and contents of the Product, the investments described therein are subject to fluctuations in price and/or value and investors may get back less than originally invested. Certain high-volatility investments can be subject to sudden and large falls in value that could equal or exceed the amount invested. Certain investments contained in the Product may have tax implications for private customers whereby levels and basis of taxation may be subject to change. If in doubt, investors should seek advice from a tax adviser. The Product does not purport to identify the nature of the specific market or other risks associated with a particular transaction. Advice in the Product is general and should not be construed as personal advice given it has been prepared without taking account of the objectives, financial situation or needs of any particular investor. Accordingly, investors should, before acting on the advice, consider the appropriateness of the advice, having regard to their objectives, financial situation and needs. Prior to acquiring any financial product, it is the client's responsibility to obtain the relevant offer document for the product and consider it before making a decision as to whether to purchase the product.

ADDITIONAL INFORMATION IS AVAILABLE UPON REQUEST