30 August 2012 | 23 pages

Oil & Gas Refining & Marketing (GICS) | Refiners (Citi)
Asia Pacific | India

Reliance Industries (RELI.BO)

Whither Growth?

- Company Update
- Rating Change
- Target Price Change
- Estimate Change

- **Downgrade to Neutral** — We believe the stock is factoring in a sustained pick-up in refining, while the E&P 'mispricing' too seems to have been largely corrected for now. While the buy-back provides support (bought back ~$500m or ~1/3rd of max. planned), valns at 1.3x P/B, 11.2x P/E are not compelling enough. Strong earnings momentum will be contingent on refining upsides (improvement in global macro/ supply outages) or a pick-up in petchem demand (still elusive). Without margin surprises, volume-led growth from new projects will only kick in from FY16E, keeping the near-term earnings outlook subdued. We could get more +ve at below Rs750 and prefer Cairn (operational momentum, improved comfort on use of cash).

- **E&P value gap now bridged** — As highlighted in our Aug 1 note, the stock, before the recent run up, was pricing in just ~2-3 tcf of reserves, despite emerging clarity from partners which indicated a range of ~5-7 tcf. We view the stock as having now largely made up for this 'mispricing' (our TP assumes 7.3 tcf); further upside will be more back-ended as trickling in of gov't approvals will more likely ensure a near-term bottom rather than a meaningful uptick in prodn vols in the foreseeable future.

- **Refining to stay range-bound** — We expect Asian margins to be range-bound (mid-cycle level) in CY13, with the next round of major supply arriving in CY14-15. In CY13, expected global net capacity adds of 1.3-m b/d look to outpace demand of 0.9-m b/d, suggesting more closures needed for a balanced mkt. Our FY13/14E GRMs of $8.5/8.7 assume steady recovery from $7.2 in 2HFY12.

- **Meaningful contribution from new projects, but from FY16E** — RIL's two major upcoming projects – refinery off-gas cracker (ROGC) and petcoke gasification – are still c3 yrs away from completion. Our initial understanding of these projects indicates potential incremental EBITDA contribution of ~$2.2-2.6bn (on an investment of c$8bn). This could imply consol core EBITDA increasing ~50-60% over the next 3-5 yrs. Notwithstanding RIL's excellent project execution track record, equity returns will tend to be more back-ended, as often happens with projects of this scale, and a range-bound stock performance is more likely on a 12-mth view.

Neutral	**2**
from Buy	
Price (30 Aug 12)	Rs783.80
Target price	Rs847.00
from Rs818.00	
Expected share price return	8.1%
Expected dividend yield	1.1%
Expected total return	**9.2%**
Market Cap	Rs2,537,007M
	US$45,544M

Price Performance
(RIC: RELI.BO, BB: RIL IN)

Statistical Abstract

Year to 31 Mar	Net Profit (RsM)	Diluted EPS (Rs)	EPS growth (%)	P/E (x)	P/B (x)	ROE (%)	Yield (%)
2011A	192,940	64.53	30.0	12.1	1.5	13.2	1.0
2012A	197,240	66.21	2.6	11.8	1.4	12.2	1.1
2013E	206,450	70.16	6.0	11.2	1.3	11.7	1.1
2014E	213,192	72.45	3.3	10.8	1.1	11.0	1.2
2015E	220,413	74.90	3.4	10.5	1.0	10.4	1.3

Source: Powered by dataCentral

Saurabh Handa
+91-22-6631-9858
saurabh.handa@citi.com

Graham Cunningham
+852-2501-2744
graham.cunningham@citi.com

Abhishek Sahoo
abhishek.sahoo@citi.com

RELI.BO: Fiscal year end 31-Mar | **Price: Rs783.80; TP: Rs847.00; Market Cap: Rs2,537,007m; Recomm: Neutral**

Profit & Loss (Rsm)	**2011**	**2012**	**2013E**	**2014E**	**2015E**
Sales revenue	2,658,110	3,585,010	3,348,505	2,990,782	2,818,820
Cost of sales	-2,185,450	-3,105,920	-3,020,056	-2,643,758	-2,444,345
Gross profit	472,660	479,090	328,449	347,024	374,475
Gross Margin (%)	17.8	13.4	9.8	11.6	13.3
EBITDA (Adj)	**380,440**	**345,080**	**340,797**	**359,501**	**391,551**
EBITDA Margin (Adj) (%)	14.3	9.6	10.2	12.0	13.9
Depreciation	-141,210	-124,010	-118,782	-120,862	-128,406
Amortisation	0	0	0	0	0
EBIT (Adj)	**239,230**	**221,070**	**222,015**	**238,640**	**263,145**
EBIT Margin (Adj) (%)	9.0	6.2	6.6	8.0	9.3
Net interest	-24,110	-28,930	-36,381	-29,761	-40,377
Associates	0	0	0	0	0
Non-op/Except	25,430	61,940	72,722	66,159	62,865
Pre-tax profit	**240,550**	**254,080**	**258,356**	**275,039**	**285,633**
Tax	-47,830	-56,910	-51,907	-61,846	-65,220
Extraord./Min.Int./Pref.div.	220	70	0	0	0
Reported net profit	**192,940**	**197,240**	**206,450**	**213,192**	**220,413**
Net Margin (%)	7.3	5.5	6.2	7.1	7.8
Core NPAT	192,940	197,240	206,450	213,192	220,413
Per share data	**2011**	**2012**	**2013E**	**2014E**	**2015E**
Reported EPS (Rs)	64.53	66.21	70.16	72.45	74.90
Core EPS (Rs)	64.53	66.21	70.16	72.45	74.90
DPS (Rs)	8.00	8.50	9.00	9.50	10.00
CFPS (Rs)	83.53	45.28	92.45	82.14	111.60
FCFPS (Rs)	-6.36	-6.32	-28.11	-48.40	19.67
BVPS (Rs)	515.39	568.80	625.87	686.42	748.79
Wtd avg ord shares (m)	2,990	2,979	2,943	2,943	2,943
Wtd avg diluted shares (m)	2,990	2,979	2,943	2,943	2,943
Growth rates	**2011**	**2012**	**2013E**	**2014E**	**2015E**
Sales revenue (%)	38.1	34.9	-6.6	-10.7	-5.7
EBIT (Adj) (%)	19.1	-7.6	0.4	7.5	10.3
Core NPAT (%)	18.8	2.2	4.7	3.3	3.4
Core EPS (%)	30.0	2.6	6.0	3.3	3.4
Balance Sheet (Rsm)	**2011**	**2012**	**2013E**	**2014E**	**2015E**
Cash & cash equiv.	448,240	679,040	795,638	659,747	675,561
Accounts receivables	156,960	169,390	216,164	250,157	233,486
Inventory	385,200	466,920	506,822	539,898	582,142
Net fixed & other tangibles	1,862,740	1,641,770	1,877,735	2,141,014	2,283,112
Goodwill & intangibles	0	0	0	0	0
Financial & other assets	222,050	314,790	321,516	418,625	424,738
Total assets	**3,075,190**	**3,271,910**	**3,717,874**	**4,009,441**	**4,199,039**
Accounts payable	361,070	403,680	411,754	419,989	428,388
Short-term debt	179,120	270,850	206,094	208,097	210,141
Long-term debt	662,360	653,520	1,006,601	1,031,928	1,013,398
Provisions & other liab	323,600	241,420	243,708	321,549	335,697
Total liabilities	**1,526,150**	**1,569,470**	**1,868,157**	**1,981,563**	**1,987,625**
Shareholders' equity	1,541,020	1,694,450	1,841,728	2,019,888	2,203,424
Minority interests	8,020	7,990	7,990	7,990	7,990
Total equity	**1,549,040**	**1,702,440**	**1,849,718**	**2,027,878**	**2,211,414**
Net debt	**393,240**	**245,330**	**417,057**	**580,279**	**547,978**
Net debt to equity (%)	25.4	14.4	22.5	28.6	24.8

Valuation ratios	**2011**	**2012**	**2013E**	**2014E**	**2015E**
PE (x)	12.1	11.8	11.2	10.8	10.5
PB (x)	1.5	1.4	1.3	1.1	1.0
EV/EBITDA (x)	7.3	7.8	7.7	7.6	7.0
FCF yield (%)	-0.8	-0.8	-3.6	-6.2	2.5
Dividend yield (%)	1.0	1.1	1.1	1.2	1.3
Payout ratio (%)	12	13	13	13	13
ROE (%)	13.2	12.2	11.7	11.0	10.4
Cashflow (Rsm)	**2011**	**2012**	**2013E**	**2014E**	**2015E**
EBITDA	380,440	345,080	340,797	359,501	391,551
Working capital	-84,179	-186,300	-53,189	-92,334	-20,433
Other	-46,510	-23,900	-15,565	-25,448	-42,732
Operating cashflow	**249,751**	**134,880**	**272,043**	**241,720**	**328,387**
Capex	-268,758	-153,710	-354,747	-384,141	-270,505
Net acq/disposals	90,040	230,000	0	0	0
Other	0	0	0	0	0
Investing cashflow	**-178,718**	**76,290**	**-354,747**	**-384,141**	**-270,505**
Dividends paid	-27,720	-29,410	-33,189	-35,032	-36,876
Financing cashflow	**86,412**	**13,320**	**237,181**	**6,529**	**-42,068**
Net change in cash	**157,445**	**224,490**	**154,477**	**-135,891**	**15,814**
Free cashflow to s/holders	**-19,007**	**-18,830**	**-82,704**	**-142,420**	**57,882**

For further data queries on Citi's full coverage universe please contact Citi Research Data Services at CitiRsch.DataServices.Global@citi.com
For definitions of the items in this table, please click here.

Powered by: dataCentral

Whither Growth?

RIL is currently pricing in most of the recent good news on the E&P and refining fronts – the recent strength in refining margins could be short-lived and the global refining industry remains in balance till the next major round of capacity additions in CY14-15. Further, E&P approvals post the recent gov't nod for KG-D6 budgets could only see output bottoming out rather than meaningfully increasing in the near term. Petchem demand trends continue to remain muted and a pick-up may be unlikely before CY13. RIL's new projects (ROGC and petcoke gasification) in its core businesses of refining and petrochemicals are positive, but unlikely to deliver meaningful returns before FY16E, and are therefore relatively premature to be priced in. Given the circumstances and the recent strength in the stock, valuations seem full at ~11x FY13 P/E and ~1.3x P/B.

Downgrade to Neutral

We downgrade RIL to Neutral (from Buy) for the following reasons:

1. Range-bound refining view; near-term strength may not sustain

Refining margins have shown strength in recent months, with Singapore benchmark GRMs averaging US$10.5/bbl in Aug and US$9.2/bbl QTD (US$7.2 in 1HCY12). RIL's strong refining performance in 1QFY13 (US$1 premium to Singapore) was, as per mgmt, due to improvements in — (1) operational efficiencies, (2) optimization of secondary processing capacities (flex in improving high value product yields), (3) crude procurement capabilities (>110 crudes processed; heavy crude diet up from ~30% to ~40% in 2 qtrs), and (4) product placement strategies — which have all started bearing fruit.

Recent margin strength has been driven by seasonality and unexpected supply outages

With RIL reverting to a premium to regional benchmark margins, expectations in recent times have been building of RIL's GRMs going forward being even stronger, which have reflected in the recent stock performance. While this is almost certain to happen in 2QFY13 given QTD margin trends, this strength may be short-lived, since the near-term factors that have driven margins up include unplanned refinery outages in Asia (~2.7% of Asia-ex China capacity – likely to remain shut for ~2 mths) and peak gasoline demand season, suggesting that a reversal is possible.

Gasoline spreads should ease by end-Sep, though stronger mid-distillates in winter could partly offset this

Citi's Global Commodities team believes that recent hurricanes in the US (Isaac being the more prominent one) make an SPR draw more likely, either alone or coordinated, and with the summer gasoline season ending, any price spikes or further rises should ease by end-Sep. We, however, do note that while a likely fall in gasoline spreads could drag down margins, this could be partly mitigated by stronger mid-distillates in winter, which should be supportive of realized margins of Asian refiners.

In CY13, expected global net capacity additions of 1.3m-b/d look to outpace our global demand growth forecast of 0.9m-b/d for the year

We expect Asian refining margin to remain range-bound (at mid-cycle levels) in CY13 and the next round of major supply additions would arrive in CY14-15, dragging down margins. We think the start-up of some Indian projects (IOC, NOCL) is likely to get delayed until end-CY13. In CY13, expected global net capacity additions of 1.3m-b/d look to outpace our global demand growth forecast of 0.9m-b/d for the year, suggesting more closures will be needed for a balanced market to be achieved (see Figure 1).

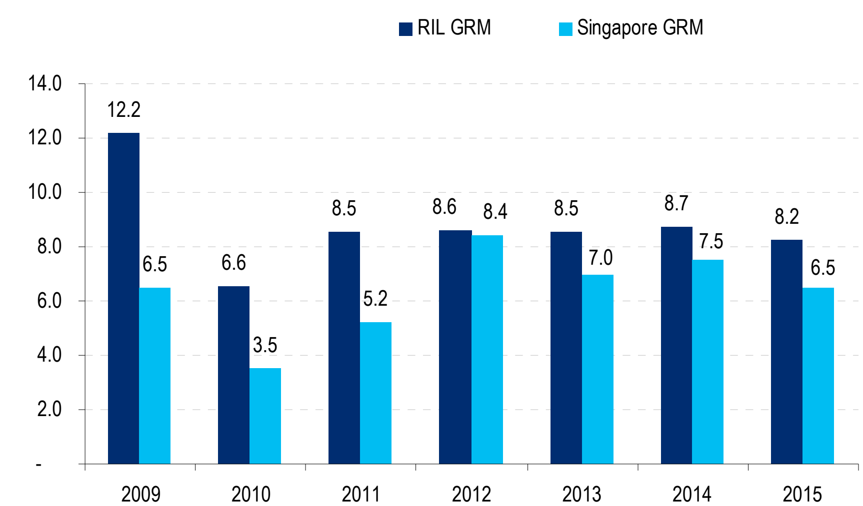
Figure 1. Asian / Global Refining Demand-Supply Balance ('000 b/d)

	2004	2005	2006	2007	2008	2009	2010	2011	2012E	2013E	2014E	2015E
Asia + Middle East												
Oil refining capacity	30,102	30,666	31,955	33,127	33,721	35,503	36,416	37,304	38,126	38,911	40,427	42,366
Oil demand	30,153	30,794	31,490	32,678	32,990	33,557	35,453	36,377	37,230	38,160	39,114	40,092
Change in capacity	1,061	563	1,289	1,173	593	1,783	913	888	823	785	1,516	1,939
Change in demand	1,561	641	696	1,188	312	567	1,897	923	853	931	954	978
Demand-supply delta	**500**	**78**	**(593)**	**15**	**(282)**	**(1,216)**	**984**	**36**	**30**	**146**	**(562)**	**(961)**
World												
Oil refining capacity	85,198	86,027	87,347	88,495	89,324	90,946	91,716	93,104	93,768	95,116	96,809	99,319
Oil demand	82,746	83,925	84,873	86,321	85,768	84,631	87,439	88,034	88,734	89,634	90,834	92,034
New capacity	1,416	830	1,320	1,147	830	2,247	1,582	1,827	1,794	1,483	2,014	2,509
Closures						(625)	(811)	(439)	(1,130)*	(135)	(320)	
Net supply change	**1,416**	**830**	**1,320**	**1,147**	**830**	**1,621**	**771**	**1,387**	**664**	**1,348**	**1,694**	**2,509**
Change in demand	**2,725**	**1,179**	**949**	**1,448**	**(554)**	**(1,136)**	**2,808**	**595**	**700**	**900**	**1,200**	**1,200**
Demand-supply delta	**1,309**	**349**	**(371)**	**301**	**(1,383)**	**(2,758)**	**2,037**	**(792)**	**36**	**(448)**	**(494)**	**(1,309)**
Refinery utilisation	**85.6%**	**86.0%**	**85.3%**	**85.1%**	**83.9%**	**80.4%**	**82.0%**	**81.2%**	**81.3%**	**81.1%**	**80.9%**	**80.1%**

* Closures exclude the plants that plan to be restarted. Source: BP stat review, IEA, Citi Research estimates.

Our FY13E GRM forecast for RIL stands at US$8.5/bbl (US$7.6 in 1Q), and while GRMs could be slightly higher in FY14E (we assume US$8.7), we expect these to fall again in FY15E (to US$8.2) as large refining capacities come online regionally and globally.

Figure 2. RIL – GRM forecasts (US$/bbl)



Source: Citi Research, Company Reports. Note: Year to 31-Mar.

2. Still no signs of petrochemical demand revival

Petrochemical demand trends continue to be weak, especially in China, though there has been some near-term pick-up in recent months which has been driven by a fall in oil prices. Asian margins have risen on lower naphtha input costs. However, this trend could be difficult to sustain given weak underlying demand. Current producers' PE/PP inventories are on the higher side. Margin upsides could also be capped by the low utilization levels of Asian crackers. Favourable gov't policy in China may, however, support demand in 2HCY12, but we see stronger re-stocking and margin recovery only in CY13. In the long term, a slightly lower oil price is more positive for demand. Overall, on the ethylene cycle, we still see an upturn from CY13, but peak cycle PE margin in CY14-15 is unlikely to return to the CY04-07 levels on further ramp-ups of competitive Middle East capacity and increased recycling.

Petchem underlying demand remains weak and the recent pickup was more driven by a fall in oil. We see stronger re-stocking and margin recovery only in CY13.

RIL continues to be plagued by weak conditions in the industry. 1QFY13 performance was particularly discouraging, led by weaker polyester chain deltas, though 2Q should be better. We assume petchem EBITDA for RIL declining from ~Rs104bn in FY12 to ~Rs92bn in FY13 before recovering to ~Rs110bn in FY14E. RIL's polyester expansion is likely to be completed by FY14-15E, and our FY15E segmental EBITDA of ~Rs118bn is largely a function of the resultant volume growth. The ROGC will begin contributing to earnings only subsequently.

3. E&P value 'mispricing' now largely corrected

After a spate of negative news on falling production, lack of budgetary and other approvals, as well as disputes on cost recovery, RIL has finally seen some positive news flow on the E&P front in recent times, including approvals for the FY11-13 budgets as well as approvals for DoC (declaration of commerciality) for three discoveries in the KG-D6 block (D-29, 30, 31). Further, clarity from BP on reserves has helped align estimates of the three block partners to the ~5-7 tcf range.

There has been some recent respite on the E&P front – KG-D6 partners are on the same page on reserves (~5-7 tcf) and gov't approvals have started to come in. However, the good news is probably in the price.

Prior to the recent rally in RIL's stock, it was arguably pricing in only ~2-3 tcf of remaining reserves and no output recovery (equating to ~Rs40/sh of value – see our report titled, '*E&P Takeaways from BP's 2Q Release*' dated Aug 1) vs. our new base case of Rs115/sh (based on reserves of ~7.3 tcf). The recent stock move has bridged this gap to a large extent, and a further pick-up in approvals (post the recently approved FY13 budget) would be more a sentiment +ve (could see production bottoming out, rather than improving) than materially impacting either earnings or E&P value.

Figure 3. RIL – Sensitivity of E&P NAV (Rs/sh) to reserves and gas prices

Gas price w.e.f. FY15 (US$/mmbtu) → Remaining reserves (tcf) ↓	5.0	6.0	7.0	8.0	9.0	FY13-18E prodn profile (mmscmd)	Comments
1.9	32	37	41	45	50	28/21/18/17/14/13	Reserves based on Niko's 2P reserves for KG-D6
4.0	57	66	75	84	93	28/21/18/23/35/35	
6.0	72	84	95	107	113	28/21/18/23/35/41	Reserves in line with RIL's 1P reserves of ~5-5.5 tcf
7.3 (base case)	88	104	115	124	133	30/25/30/35/40/45	Reserves in line with Niko's 1P + 2C (=1.3+6.0 tcf) reserves
10.0	103	115	121	129	142	30/25/30/35/40/50	Reserves in line with Niko's claim that approvals for their development plans could lead to an increase in companywide reserves by 260% (from 0.37 tcf net)

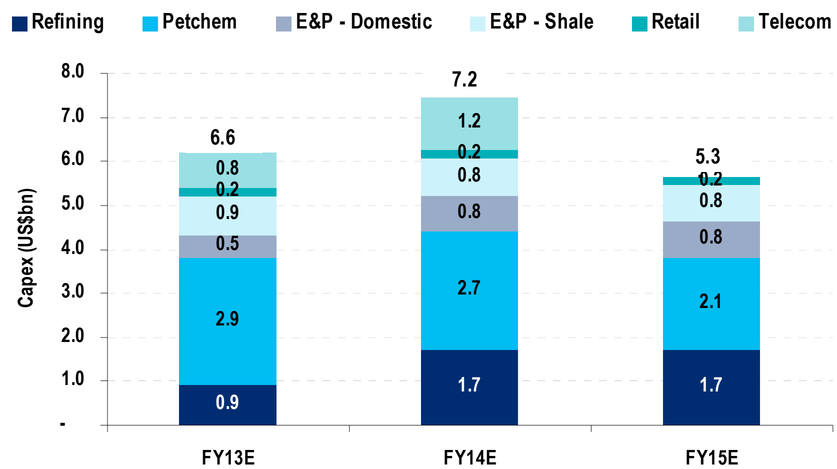
Source: Citi Research estimates

4. Meaningful contribution from new projects only in FY16E; muted earnings outlook till then

RIL's cUS$12bn capex plan for new projects in refining/petchem constitutes a bulk of its ~US$19bn capex over the next three years and compares with ~US$16bn of operating cash flow during the period

Notwithstanding many an unrelated diversification, RIL is also showing much needed signs of core business focus with a plan to invest cUS$12bn in its bread-and-butter refining and petrochemicals businesses, which constitutes a bulk of its ~US$19bn capex over the next three years (see Figure 4). This compares with ~US$16bn of operating cash flow that we expect the company to generate over the same time period.

Figure 4. RIL – Capex breakup by segment

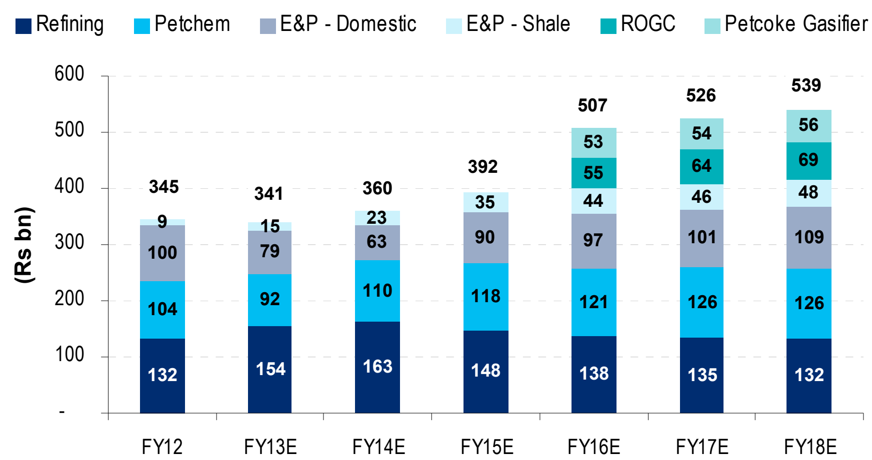


Source: Citi Research estimates, Company Reports. Note: Refining includes capex on the petcoke gasifier, petchem includes capex on the ROGC and the polyester expansions.

RIL's new initiatives in its core businesses should lead to a meaningful EBITDA increase, but not before FY16E, making it premature to price in

Among its ambitious plans include: 1) a cUS$4bn petcoke gasification project that can add ~US$2.5-3.0/bbl to RIL's GRMs and 2) a cUS$8bn petrochemical expansion plan, split between a cUS$4bn ROGC (refinery off-gas cracker) and another cUS$4bn to be invested in polyester capacity expansions. The petcoke gasification and ROGC projects could potentially enhance RIL's annual EBITDA by ~US$2.2-2.6bn over the next 3-5 years, driving a bulk of the ~50-60% EBITDA increase over this period. However, notwithstanding RIL's excellent project execution track record, we believe it could be a trifle early to begin valuing these cash flows in the absence of material progress and details. Contribution from these investments will only begin to kick in from FY16E (save for the polyester expansions, which will be completed earlier), which would mean that RIL's earnings outlook over FY13-15E is likely to remain muted, barring any (refining/petchem) margin surprises. Do note that we only include EBITDA from core businesses for the purpose of these forecasts; earnings from retail/telecom are not included given the lack of clarity on the telecom plans, and as retail has yet to break even.

Figure 5. RIL – EBITDA growth and contribution from new projects



Source: Citi Research. Note: Core refining and petchem EBITDA do no include contribution from the petcoke gasifier and ROGC respectively, which are shown separately.

Refinery Off-Gas Cracker (ROGC)

The petcoke gasification and ROGC projects could potentially enhance RIL's annual EBITDA by ~US$2.2-2.6bn over the next 3-5 years, driving a bulk of the ~50-60% EBITDA increase over this period

RIL is investing cUS$4bn in a refinery off-gas cracker project that will produce petrochemicals like PE and MEG from refinery off-gases which contain ethane and propane through a cracking process which produces ethylene and propylene as intermediates. The capacities that will be added for petrochemicals/intermediates will be able to produce an additional 950 KTPA of PE (HDPE/LDPE) and 733 KTPA of MEG. The company has already roped in Technip as technology supplier and engineering contractor and aims to complete the project within c3 years.

The ROGC project could contribute ~Rs65-70bn (US$1.4-1.5bn) in incremental EBITDA for RIL by FY17-18E. With cash cost of cUS$250-300/T on the ethylene cost curve, this project would rank extremely competitively, likely placed between cheap Middle Eastern crackers (<US$200/T) and gas-based North American crackers (~US$400-500/T).

Figure 6. Downstream expansions to be integrated with the ROGC

(KT)	Current Capacity	Proposed Expansion	Total Capacity
Ethylene	1,883	1,365	3,248
Propylene	759	154	913
MEG	733	733	1,466
PE	1,118	950	2,068

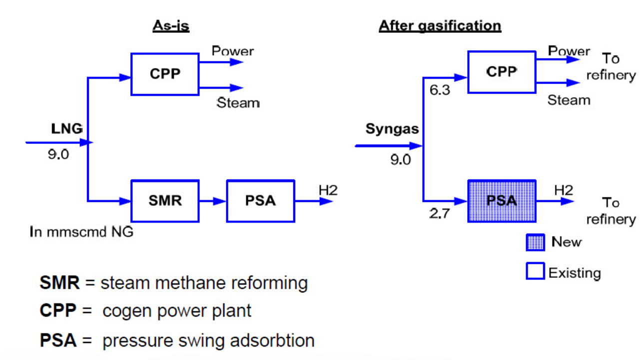
Source: Citi Research, Company

Petcoke Gasification

With a focus on increasing refining margins, RIL is investing cUS$4bn on a petcoke gasification project in its Jamnagar refining complex. This gasifier will be used to convert low-value petcoke from the refinery into 'syngas' (synthetic gas), which will then be used internally as a fuel to generate power, thus substituting more expensive LNG and valuable RFG (refinery fuel gases; which could instead be used in the ROGC unit to produce petrochemicals). This new unit could have the potential to add ~US$2.5-3.0/bbl to RIL's GRMs on initial estimates, generating an incremental EBITDA of ~Rs53-55bn (~US$1.1-1.2bn). The company has already tied up with Phillips 66 for providing its 'E-Gas technology' to this gasification project

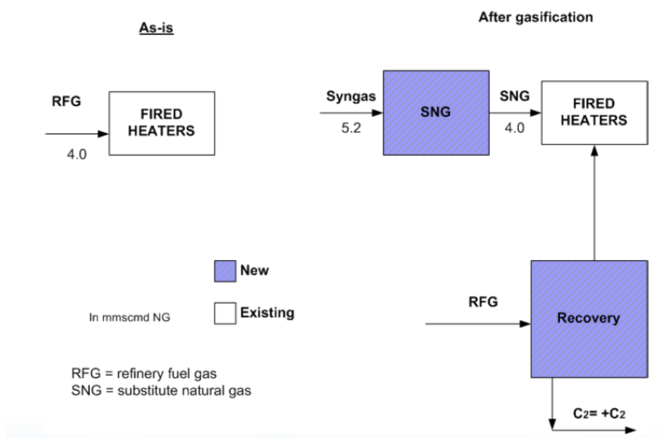
(Phillips 66 will license this technology and provide process engineering design and technical support) and aims to complete the project within three years.

Figure 7. Substituting LNG with Syngas



Source: Company Reports

Figure 8. Substituting RFG with Syngas



Source: Company Reports

Polyester expansions

RIL will also be spending another cUS$4bn to expand its polyester capacities, predicated on the rise in domestic demand for these chemicals/fabric materials. These capacities will be gradually commissioned over the next three years, starting with the PFY expansion (end-CY12) followed by the PET (end-CY13), PTA (2HCY13 and 2HCY14), and PX (2014-15) expansions.

Figure 9. RIL's Polyester & Intermediates capacity expansions

(KT)	Current Capacity	Proposed Expansion	Total Capacity
PFY/PTY	823	535	1358
PTA	2050	2296	4346
PX	1856	1800	3656
PET	290	648	938
PBR	74	40	114
SBR	0	150	150

Source: Citi Research, Company

Key risks

The key risks to our downgrade are:

- Refining surprises led by unexpected supply outages (such as the recent fire in PDVSA's Amuay refinery in Venezuela, impact of hurricane season in the US) and/or RIL's ability to continue delivering superior margins vis-à-vis benchmarks (similar to the 1Q surprise).
- Sharper-than-expected petrochemical demand recovery in China.
- Gas prices being revised earlier (we expect a revision w.e.f. Apr-14) as well as higher (we expect an increase from US$4.2 to US$7.0) than expected.

Key earnings revisions

We change our earnings estimates for RIL by 4-7% to reflect our new assumptions on refining (US$8.5/8.7 over FY13/14E vs. US$7.8/8.1 earlier). We also make minor changes to our E&P and petchem estimates. Our key assumptions are highlighted in Figure 11. Please note that the EPS changes indicated below are distorted given the move from standalone EPS (based on total share count including treasury shares) to consolidated EPS (share count excludes treasury shares).

Figure 10. RIL – Earnings Changes

Year to	Net Profit (Rs Mils.)			Diluted EPS (Rs)			Divi Per Share (Rs)	
31-Mar	Old	New	% Chg	Old	New	% Chg*	Old	New
2013E	192,367	206,450	7.3%	59.38	70.16	18.2%	10.0	9.0
2014E	201,580	213,192	5.8%	62.22	72.45	16.4%	11.0	9.5
2015E	211,860	220,413	4.0%	65.40	74.90	14.5%	11.0	10.0

Source: Citi Research estimates. *EPS changes are distorted given the move from standalone EPS (based on total share count including treasury shares) to consolidated EPS (share count excludes treasury shares).

Figure 11. RIL – Key Assumptions

Year to 31-Mar	Units	FY12	FY13E	FY14E	FY15E
KG gas production	mmscmd	43	30	25	30
MA oil production	kbpd	15	13	11	11
Blended GRM	US$/bbl	8.6	8.5	8.7	8.2
PE less naphtha	US$/MT	403	420	550	610
PP less naphtha	US$/MT	564	440	540	595
PFY less MEG/PTA	US$/MT	628	590	570	580
PSF less MEG/PTA	US$/MT	287	185	190	200
PTA less PX	US$/MT	206	125	120	130
PX less naphtha	US$/MT	591	590	550	350
Petchem EBITDA	US$/MT	229	183	222	242
Exchange rate	Rs/US$	48.0	54.0	53.0	51.0

Source: Citi Research estimates

Target price of Rs847

We raise our TP by 4% to Rs847 as we: 1) raise our refining GRM assumptions for FY13/14E to US$8.5/8.7 (vs. US$7.8/8.1 earlier); 2) marginally change our assumptions on the E&P/petchem businesses to reflect recent events. We continue to value RIL on an SOTP basis, using an EV/EBITDA of 6.5x Sep-13E for the core refining and petrochemical businesses and adding to this the value of its investments in E&P (KG, NEC-25, CBM, PMT, shale) and others (retail, telecom, etc). We also add separately the value of its: 1) net cash and 2) treasury shares.

Figure 12. RIL – SOTP Valuation

	Rs m	Rs/sh	Comments
EV of Petrochem & Refining (Rs m)	1,688,572	**522**	Based on EV/EBITDA of 6.5x Sep-13E
Net Debt/(Cash) (Rs m)	(144,750)	**(45)**	Estimated as on Sep-12E net of estimated capex on future expansions
Key investments:	-50%	-58%	
- E&P Assets: KG, NEC-25, and CBM	372,190	**115**	Based on NAV (7.3 tcf of remaining reserves; US$7.0 gas price post-FY14)
- Other domestic E&P assets	129,751	40	
- Organised retail & other investments	127,964	40	Based on 25% discount to BV of investments so far into organised retail, telecom, etc.
Total value of investments	629,905	**195**	
Value of treasury stock	178,876	**55**	292m treasury shares at 25% discount to TP
Shale gas NPV		**30**	
No. of shares (m.)	3,235		Post shares bought back and cancelled so far but including treasury shares
Target Price		**847**	

Source: Citi Research estimates

Figure 13. Valuation Comparables – Global Refiners

Comp Code	Name	Ric	Rating*	larketcap (mm USD)	Price (LC) 29-Aug-12	EPS (LC) FY11E	FY12E	FY13E	P/E (x) FY11E	FY12E	FY13E	P/BV (x) FY11E	FY12E	FY13E	EV/EBITDA (x) FY11E	FY12E	FY13E	ROE (%) FY12E	Debt/Eq (%) FY12E	Div Yeld FY12E
	European Refiners																			
OMVV.AT	OMV	OMVV.VI	3	10,846	26.5	3.33	4.75	4.26	7.9	5.6	6.2	0.8	0.7	0.7	3.3	2.9	2.6	12.7	34.9	4.2
NES1V.FI	Neste Oil	ES1V.HE	1	2,793	8.7	0.35	0.65	1.13	24.7	13.4	7.7	0.9	0.9	0.8	8.0	6.1	4.7	5.5	97.1	4.0
ERG.IT	ERG	ERG.MI	2	981	5.2	(0.33)	0.03	0.33	-	160.1	15.8	0.5	0.5	0.5	6.4	4.6	4.2	(2.1)	94.9	7.7
HEPr.GR	Hellenic Petroleum	HEPr.AT	2H	2,156	5.6	0.45	0.78	0.87	12.5	7.2	6.5	0.7	0.8	0.7	9.9	6.9	6.4	6.4	116.4	8.0
SRS.IT	Saras	SRS.MI	3	1,022	0.9	(0.02)	(0.05)	0.02	-	-	56.2	0.6	0.6	0.6	5.5	7.0	4.6	0.5	39.8	-
MORr.GR	Motor Oil	MORr.AT	1H	666	4.8	1.16	1.32	1.50	4.1	3.6	3.2	1.0	1.0	0.8	4.7	4.6	3.9	19.6	223.9	11.5
		Mkt wtd average							**21.2**	**18.4**	**13.6**	**1.8**	**1.1**	**1.1**	**8.9**	**7.0**	**5.7**	**9.4**	**61.1**	**3.8**
		Simple average							**17.7**	**35.7**	**16.5**	**1.1**	**0.9**	**0.8**	**7.5**	**6.2**	**5.1**	**7.4**	**94.7**	**5.3**
	US Refiners																			
VLO.US	Valero	VLO.N	1H	16,973	30.8	4.5	3.9	4.6	6.8	7.8	6.7	1.1	1.0	0.9	4.4	4.9	3.7	9.1	43.2	1.9
SUN.US	Sunoco	SUN.N	1H	4,932	47.1	(14.6)	1.2	3.2	-	38.3	14.8	6.1	36.9	40.5	(3.2)	9.4	8.7	21.8	354.4	1.7
TSO.US	Tesoro	TSO.N	2H	5,491	39.3	3.8	5.9	6.7	10.3	6.6	5.9	1.4	1.2	1.0	4.4	3.2	3.2	19.3	36.3	0.6
HFC.US	HollyFrontier	HFC.N	2H	8,116	39.9	6.4	6.1	6.1	6.2	6.6	6.5	1.2	1.5	1.4	4.6	3.5	3.6	23.3	22.3	7.8
		Mkt wtd average							**6.3**	**11.6**	**7.7**	**1.8**	**6.1**	**6.5**	**3.4**	**4.9**	**4.3**	**15.7**	**80.6**	**3.0**
		Simple average							**7.8**	**14.8**	**8.5**	**2.4**	**10.1**	**10.9**	**2.5**	**5.3**	**4.8**	**18.4**	**114.1**	**3.0**
	CEEMEA Refiners																			
MOLB.HU	MOL Magyar Olaj	MOLB.BU	2	7,534	16,300	2,715	2,673	3,377	6.0	6.1	4.8	1.0	0.9	0.8	5.1	4.4	3.7	14.2	36.0	6.4
PKNA.PL	PKN ORLEN	KNA.WA	3	5,003	39.0	3.6	4.5	3.9	10.8	8.6	10.0	0.7	0.6	0.6	6.0	6.0	6.0	7.6	29.5	-
TUPRS.TR	Tupras	UPRS.IS	1	5,608	40.8	5.0	4.3	4.5	8.2	9.5	9.0	2.3	2.4	2.3	4.2	6.9	6.6	24.9	59.6	9.5
		Mkt wtd average							**7.4**	**7.2**	**7.0**	**1.2**	**1.2**	**1.1**	**4.7**	**5.2**	**4.8**	**14.5**	**38.4**	**5.2**
		Simple average							**8.3**	**8.1**	**8.0**	**1.3**	**1.3**	**1.2**	**5.1**	**5.7**	**5.4**	**15.6**	**41.7**	**5.3**
	Asia-Pac Refiners																			
6505.TW	Formosa Petro	6505.TW	3	27,808	87.4	2.4	1.6	4.4	36.4	54.1	19.5	3.7	3.7	3.3	18.6	22.8	12.6	6.8	77.3	1.6
0386.CN	Sinopec	0386.HK	2	83,511	7.5	0.8	0.6	0.9	7.4	10.0	6.7	1.1	1.0	0.9	4.4	5.3	4.2	10.8	50.8	2.5
096770.KR	SK Innovation	6770.KS	1H	14,090	173,000.0	34,233.8	16,020.5	22,525.7	4.8	10.3	7.3	1.0	1.0	0.9	5.3	6.2	4.9	9.8	57.7	1.5
010950.KR	S Oil	0950.KS	1	10,660	107,500.0	10,448.3	8,094.6	12,049.8	9.9	12.8	8.6	2.2	2.0	1.8	7.2	9.3	6.6	16.7	64.4	3.9
078930.KR	GS Hld	8930.KS	2H	5,450	66,600.0	8,299.8	6,500.6	9,511.8	7.8	10.0	6.8	1.0	0.9	0.8	2.2	2.0	1.1	9.6	44.1	2.1
5007.JP	Cosmo Oil	5007.T	3	1,679	156	34.1	(10.7)	(67.2)	4.5	-	-	0.4	0.4	0.5	3.6	5.7	16.7	(2.8)	213.5	5.2
5019.JP	Idemitsu	5019.T	2	3,227	6,350	1,517	1,610	600	4.1	3.9	10.4	0.5	0.4	0.4	3.8	3.8	5.5	11.7	146.6	3.2
5020.JP	JX Hld	5020.T	1	13,052	413	125.4	68.6	47.0	3.3	6.0	8.7	0.6	0.6	0.6	3.3	3.5	5.0	10.1	89.7	3.9
5002.JP	Showa Shell	5002.T	3	2,048	428	61.4	(34.5)	(71.7)	6.9	-	-	0.6	0.7	0.8	3.4	8.6	4.7	(5.3)	88.5	4.3
5012.JP	TonenGeneral	5012.T	1	3,122	674	240.1	31.9	27.5	2.8	21.1	24.5	1.0	1.7	1.7	1.1	5.8	5.4	6.0	152.1	5.6
TOP.TH	Thai Oil	TOP.BK	1	4,362	67.0	7.3	5.7	6.7	9.0	11.6	9.7	1.7	1.6	1.4	6.1	7.4	6.3	14.0	44.3	3.9
PTTGC.TH	PTT Global Chem	TGC.BK	2	8,955	62.3	6.7	5.9	7.8	9.2	10.3	7.8	1.4	1.3	1.2	7.4	7.3	6.0	12.9	48.5	3.9
RELI.IN	Reliance Ind	RELI.BO	1	45,462	782	62.0	61.3	59.4	12.5	12.6	13.0	1.7	1.5	1.4	6.7	6.6	6.6	12.6	41.2	1.1
BPCL.IN	BPCL	BPCL.BO	1	4,603	354.6	21.4	18.1	18.2	16.6	19.5	19.4	1.8	1.7	1.6	10.6	9.8	10.2	9.1	154.2	1.6
CTX.AU	Caltex Australia	CTX.AX	3	4,430	15.9	149.0	135.8	134.0	10.4	11.4	11.5	1.9	2.0	1.7	5.7	7.1	6.7	3.0	40.6	2.5
		Mkt wtd average							**11.8**	**15.9**	**10.3**	**1.6**	**1.5**	**1.4**	**6.8**	**7.9**	**6.2**	**10.5**	**61.0**	**2.4**
		Simple average							**9.5**	**14.6**	**11.7**	**1.3**	**1.3**	**1.2**	**6.0**	**7.5**	**6.9**	**8.3**	**96.3**	**3.1**
		Overall Mkt wtd average							**11.8**	**15.1**	**10.1**	**1.6**	**2.0**	**1.9**	**6.5**	**7.3**	**5.9**	**11.2**	**61.8**	**2.7**
		Overall simple average							**10.7**	**18.6**	**12.0**	**1.4**	**2.4**	**2.4**	**5.8**	**6.7**	**6.1**	**10.1**	**92.8**	**3.8**

Source: Citi Research estimates

Figure 14. Valuation Comparables – Asian Chemicals

Comp Code	Name	Ric	Rating*	Marketcap (mm USD)	Price (LC) 29-Aug-12	EPS (LC) FY11E	EPS (LC) FY12E	EPS (LC) FY13E	P/E (x) FY11E	P/E (x) FY12E	P/E (x) FY13E	P/BV (x) FY11E	P/BV (x) FY12E	P/BV (x) FY13E	EV/EBITDA (x) FY11E	EV/EBITDA (x) FY12E	EV/EBITDA (x) FY13E	ROE (%) FY12E	Debt/Eq (%) FY12E	Div Yeld FY12E
	Chemicals																			
0338.CN	SPC	0338.HK	1	1,875	2.0	0.13	(0.14)	0.14	12.3	-	12.0	0.7	0.7	0.7	5.2	39.0	5.5	(5.8)	53.3	-
3983.CN	China BlueChem	3983.HK	1	2,604	4.4	0.43	0.43	0.48	8.5	8.4	7.6	1.4	1.3	1.2	4.1	4.0	3.7	16.2	2.8	4.7
6505.TW	Formosa Petro	6505.TW	3	27,808	87.4	2.4	1.6	4.4	36.4	54.1	19.5	3.7	3.7	3.3	18.6	22.8	12.6	6.8	77.3	1.6
1303.TW	Nan Ya Plastics	1303.TW	3	14,923	56.9	2.9	1.6	4.2	19.1	35.2	13.4	1.7	1.7	1.6	9.5	15.2	9.9	4.8	40.6	2.1
1301.TW	Formosa Plastics	1301.TW	2	16,560	81.0	5.8	3.9	5.9	13.8	20.8	13.7	2.0	2.0	1.9	9.8	16.3	11.8	9.8	32.9	3.2
1326.TW	Formosa Chem Fib	1326.TW	3	14,787	77.8	5.8	2.7	5.2	13.3	29.0	14.7	1.8	1.8	1.7	9.1	18.1	11.7	6.2	40.9	2.3
1710.TW	Oriental Union	1710.TW	1	1,001	33.9	3.0	2.2	3.1	11.3	15.2	10.7	1.8	1.8	1.7	6.4	7.4	5.1	11.8	-	5.4
051910.KR	LG Chem	051910.KS	1	17,891	306,500	31,794	24,544	34,309	9.4	12.2	8.7	2.1	1.8	1.5	5.7	6.7	5.0	15.9	23.4	1.3
011170.KR	Honam Ptrchm	011170.KS	2H	6,847	244,000	30,701	17,469	31,367	7.6	13.4	7.5	1.4	1.3	1.1	3.7	5.8	3.7	9.7	11.9	0.6
SCC.TH	Siam Cement	SCC.BK	1	12,484	326	21	19.5	25.8	15.4	16.6	12.6	2.8	2.6	2.3	11.0	10.9	8.7	16.1	92.3	3.1
PTTGC.TH	PTT Global Chem	PTTGC.BK	2	8,955	62	6.7	5.9	7.8	9.2	10.3	7.8	1.4	1.3	1.2	7.4	7.3	6.0	12.9	48.5	3.9
RELI.IN	Reliance Ind	RELI.BO	1	45,462	782	62.0	61.3	59.4	12.5	12.6	13.0	1.7	1.5	1.4	6.7	6.6	6.6	12.6	41.2	1.1
PCGB.MY	PETRONAS CG	PCGB.KL	2	16,659	7	0.5	0.4	0.4	14.4	14.8	14.4	2.9	2.6	2.4	-	7.8	7.6	18.4	9.1	3.4
		Mkt wtd average							**16.4**	**22.7**	**13.3**	**2.2**	**2.1**	**1.9**	**8.6**	**12.1**	**8.5**	**11.2**	**43.3**	**2.1**
		Simple average							**14.1**	**20.2**	**12.0**	**1.9**	**1.9**	**1.7**	**8.1**	**12.9**	**7.5**	**10.4**	**36.5**	**2.5**
	Others																			
0297.HK	Sinofert	0297.HK	1	1,331	1.5	0.10	0.13	0.15	12.4	9.2	7.8	0.6	0.6	0.6	3.0	1.1	0.9	6.8	46.2	2.1
0606.HK	China Agr Ind	0606.HK	1	1,973	3.8	0.56	0.51	0.49	7.0	7.8	8.1	0.8	0.7	0.7	10.1	11.2	10.7	9.3	124.8	3.1
		Overall Mkt wtd average							**16.3**	**22.5**	**13.2**	**2.2**	**2.1**	**1.9**	**8.6**	**12.0**	**8.5**	**11.2**	**44.1**	**2.1**
		Overall simple average							**13.5**	**18.5**	**11.4**	**1.8**	**1.7**	**1.5**	**7.9**	**12.0**	**7.3**	**10.1**	**43.0**	**2.5**

Source: Citi Research estimates

Quants View - Contrarian

Puneet Singh
+65-6657-1172
Puneet.singh@citi.com

Data as of: 24-Aug-12

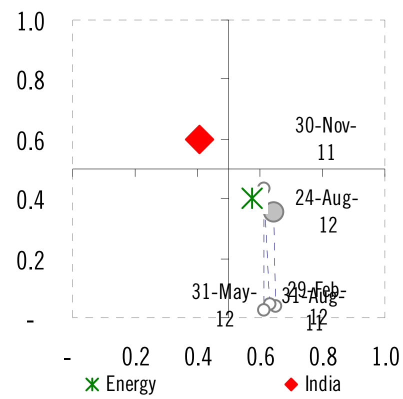
Radar Screen Quadrant Definitions

Glamour *Poor relative value but superior relative momentum*	**Attractive** *Superior relative value and superior relative momentum*
Unattractive *Poor relative value and poor relative momentum*	**Contrarian** *Superior relative value but poor relative momentum*

Reliance Industries lies in the Contrarian quadrant of our Value-Momentum map with relatively weak momentum but strong value scores, having been a resident there for the past twelve months. Compared with its peers in the Energy sector, Reliance Industries fares better on the valuation metric but worse on the momentum metric. Similarly, compared with its peers in its home market of India, Reliance Industries fares better on the valuation metric but worse on the momentum metric.

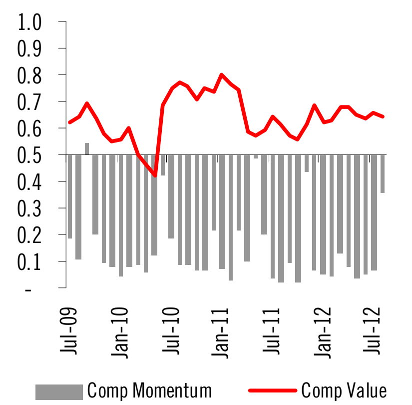
From a macro perspective, Reliance Industries is likely to benefit from tightening Asian interest rates, and a weaker US dollar.

Figure 15. Radar Quadrant Chart History



Source: Citi Research

Figure 16. Radar Valuation and Momentum Scores



Source: Citi Research

Figure 17. Radar Model Inputs

IBES EPS (Actual and Estimates)

FY(-2)	53.40	Implied Trend Growth (%)	3.51
FY(-1)	67.80	Trailing PE (x)	11.82
FY0	66.20	Implied Cost of Debt (%)	4.84
FY1	62.36	Standardised MCap	3.00
FY2	67.26		

Note: Standardised MCap calculated as a Z score – (mkt cap - mean)/std dev – capped at 3

Source: Citi Research, Worldscope, I/B/E/S

Figure 18. Stock Performance Sensitivity to Key Macro Factors

Region	1.10	Commodity ex Oil	0.15
Widening APACxJ CDS	(0.10)	Rising Oil Prices	(0.01)
Growth	(0.23)	Rising Asian IR's	(0.29)
Value	(0.52)	Rising EM Yields	(0.02)
Small Caps Outperform Large Caps	(0.33)	Weaker US$ (vs Asia)	1.13
Widening US Credit Spreads	0.03	Weaker ¥ (vs US$)	(0.04)

Source: Citi Research

Reliance Industries

Company description

Reliance Industries (RIL) is a conglomerate with interests in upstream oil & gas (E&P), refining, and petrochemicals. It has commissioned a super-size refinery project through RPL (now merged with itself) and has commenced gas production at its large gas find in the D6 block in KG basin. RIL is foraying into organized retailing and has plans to enter the broadband telecom space in a meaningful way.

Investment strategy

We rate RIL as Neutral (2) with a Rs847 target price. We believe that RIL lacks earnings growth over the next three years. It faces challenges in all three core businesses. We expect refining margins for RIL to improve moderately in the near term but this could come under pressure in the medium-long term as global refining capacity additions outstrip demand growth. Petchem demand remains muted and margins are not likely to recover before CY13. E&P weakness is likely to continue with falling KG-D6 production. With further approvals post the recent budget nod from the gov't, vols are likely to bottom out at best. Additionally, the uncertainty for revision of KG-D6 gas prices would remain an overhang, even though we believe gas prices are set to structurally rise in India. Any willingness on the part of the gov't to increase KG gas prices (which, along with APM gas, is now the cheapest in the country) would be a positive surprise.

Valuation

Our Rs847 target price is based on a sum-of-the-parts methodology (Rs817/sh), to which we explicitly add the NPV of the shale gas JVs of Rs30/sh. Our SOTP is derived by: 1) Valuing RIL's core petchem and downstream oil business on an EV/EBITDA of 6.5x Sep-13E which yields a value of Rs522/sh; 2) Valuing E&P assets KG, NEC-25 and CBM at Rs115/sh (assuming 7.3 tcf of gross remaining KG-D6/NEC-25 reserves) and other E&P assets incl shale at Rs40/sh using 6.5x Sep-13E EV/EBITDA; 3) Valuing investments in the organized retail business, telecom, etc. at Rs40/sh, based on book value of investments so far; 4) Valuing treasury stock at a 25% discount to target price; 5) Subtracting net debt/(cash) estimated as on Sep-12E (net of capex on future expansion projects such as petchem) of (Rs145)bn or (Rs45)/sh.

Risks

The key downside risks to our investment thesis on RIL are: 1) A further weakening in refining fundamentals; 2) Continued fall in KG-D6 gas production; 3) Further weakness in global petrochemical spreads driven by a weak global macroeconomic environment; 4) Continued lack of clarity and delays in approvals for its producing E&P assets as well as its exploration portfolio; 5) Further announcements on unrelated diversifications. The upside risks to our investment thesis are: 1) Refining surprises led by unexpected outages or RIL's ability to continue delivering superior margins; 2) Sharp petchem demand recovery in China and 3) Gas prices being revised earlier than Apr-14 and higher than our expectations of US$7/mmbtu.

Cairn India

(CAIL.BO; Rs342.20; 1)

Valuation

Our Rs377 TP is based on NAVs of under-development and producing assets and incorporates recovery upside. We prefer NAV to value Cairn's assets as it has long-term visible cash flows from its existing resource base, the value of which cannot be captured using traditional near-term earnings multiples. Given Cairn's leverage to crude, our target of Rs377 is based on an average Mar-13E NAV value derived using two different crude scenarios: 1) Citi crude price forecasts yielding NAV of Rs365, and 2) Brent crude forward curve yielding NAV of Rs428. We believe that the stock would partially factor in a combination of longer-term fundamentals and near-term momentum in underlying crude prices, till it can establish a track record of success outside Rajasthan. We use a 5% discount to NAV to arrive at our TP to factor in uncertainty on Cairn's use of cash following the change in ownership, though clarity has improved recently on Cairn's medium-term capex plans, which are, however, contingent on gov't approvals. Assumptions for our NAV are: crude realization at a 12% discount to Brent; royalty at ~15% of revenue; cess at Rs4,500/MT; plateau production at 230kbpd in 1H14; and total life-of-field development capex (including pipeline) of US$6.6bn. We use a WACC of 11% derived from a 10% cost of debt and 13.9% cost of equity using equity beta of 0.9, risk free rate of 8.5%, risk premium of 6%, and target D/V of 40%. The traditional valuation multiples (P/E, EV/DACF) will become relevant depending on the extent of future exploration success.

Risks

Despite Cairn being in the project stage due to tangible oil reserves, which can be monetized, we have faith in its strong track record displayed so far in project execution and getting required approvals. In addition, Cairn has been able to negotiate the pricing terms for its crude at more or less expected levels. Key downside risks that could prevent the shares from reaching our target price include: 1) Delay in regulatory approvals for production ramp up, revisions to development plans, further exploration, etc; 2) Project execution risks resulting in slow ramp up and/or cost overruns; 3) Infrastructure constraints in downstream capacity (pipelines, processing terminals, etc) which could cap production levels and push back ramp-up timelines; 4) Difficulty in absorbing the crude quantities due to its viscosity and various refinery's readiness; 5) Concerns on strategy and use of cash post the change in ownership; 6) Sharp correction in crude prices; 7) Sharp appreciation of the currency.

Appendix A-1

Analyst Certification

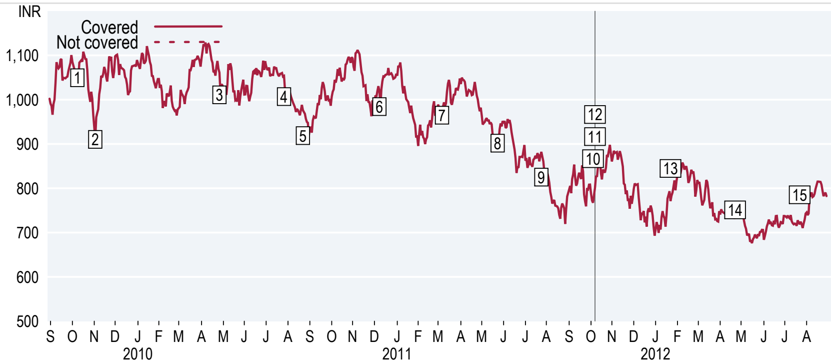
The research analyst(s) primarily responsible for the preparation and content of this research report are named in bold text in the author block at the front of the product except for those sections where an analyst's name appears in bold alongside content which is attributable to that analyst. Each of these analyst(s) certify, with respect to the section(s) of the report for which they are responsible, that the views expressed therein accurately reflect their personal views about each issuer and security referenced and were prepared in an independent manner, including with respect to Citigroup Global Markets Inc and its affiliates. No part of the research analyst's 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 report.

IMPORTANT DISCLOSURES

Reliance Industries (RELI.BO)

Ratings and Target Price History
Fundamental Research

Analyst: Saurabh Handa
Covered since June 18 2010



#	Date	Rating	Target Price	Closing Price
1	8-Oct-09	2L	*1,100.00	1,059.60
2	3-Nov-09	*1L	1,100.00	910.33
3	27-Apr-10	*2L	*1,150.00	1,061.10
4	27-Jul-10	2L	*1,140.00	1,053.50
5	23-Aug-10	*1L	1,140.00	976.40
6	8-Dec-10	1L	*1,184.00	1,019.10
7	7-Mar-11	1L	*1,120.00	976.15
8	24-May-11	1L	*1,115.00	915.25
9	25-Jul-11	1L	*1,082.00	882.15
10	5-Oct-11	1L	*1,001.00	767.25
11	7-Oct-11	Stock rating system changed		
12	7-Oct-11	*1	1,001.00	801.45
13	22-Jan-12	1	*882.00	793.35
14	22-Apr-12	1	*838.00	731.45
15	22-Jul-12	1	*818.00	722.65

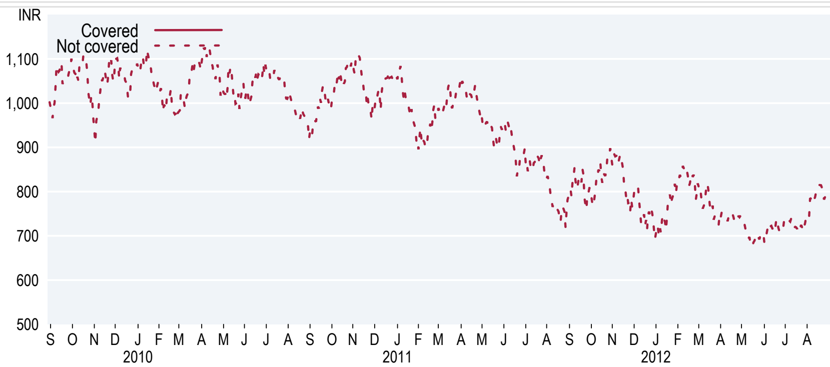
* Indicates change

Rating/target price changes above reflect Eastern Standard Time

Reliance Industries (RELI.BO)

Ratings and Target Price History
Best Ideas Research
Relative Call (3 Month)

Analyst: Saurabh Handa
Covered since June 18 2010



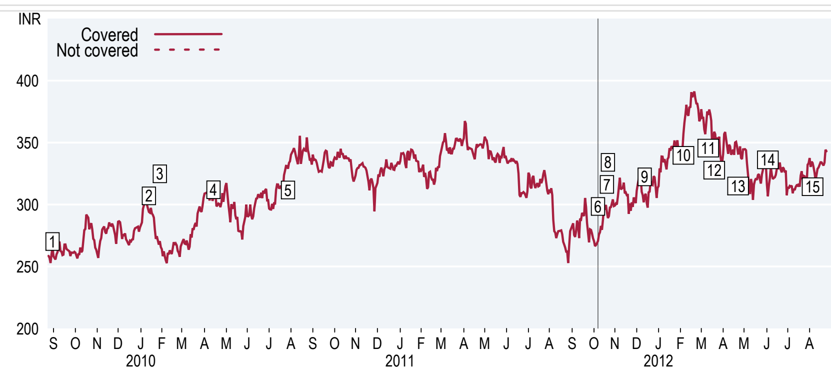
* Indicates change

Rating/target price changes above reflect Eastern Standard Time

Cairn India (CAIL.BO)

Ratings and Target Price History
Fundamental Research

Analyst: Saurabh Handa
Covered since June 18 2010



#	Date	Rating	Target Price	Closing Price
1	27-Aug-09	2L	*268.00	252.80
2	13-Jan-10	*1L	*337.00	294.05
3	28-Jan-10	1L	*323.00	270.45
4	14-Apr-10	1L	*351.00	302.95
5	28-Jul-10	*2L	*363.00	328.90
6	7-Oct-11	Stock rating system changed		
7	20-Oct-11	*1	363.00	293.90
8	21-Oct-11	1	*340.00	289.10
9	13-Dec-11	1	*358.00	307.20
10	6-Feb-12	1	*400.00	357.10
11	12-Mar-12	1	*412.00	372.35
12	20-Mar-12	1	*380.00	358.75
13	22-Apr-12	1	*422.00	346.80
14	4-Jun-12	1	*375.00	306.70
15	5-Aug-12	1	*377.00	334.60

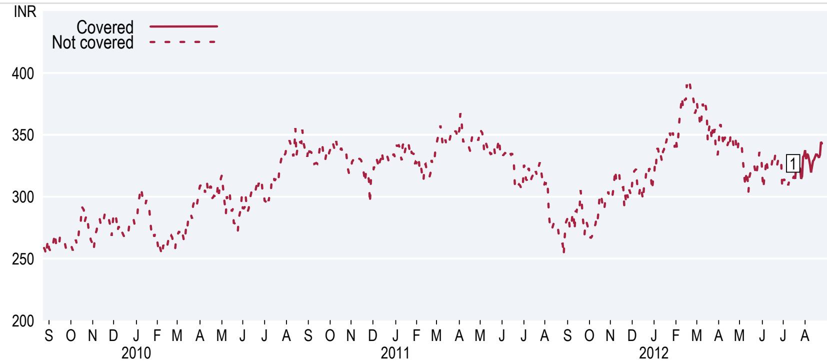
* Indicates change

Rating/target price changes above reflect Eastern Standard Time

Cairn India (CAIL.BO)

Ratings and Target Price History
Best Ideas Research
Relative Call (3 Month)

Analyst: Saurabh Handa
Covered since June 18 2010



	Date	Rating	Target Price	Closing Price
1	16-Jul-12	*ADD MP	-	315.15

* Indicates change

Rating/target price changes above reflect Eastern Standard Time

---

Citi is acting as financial advisor to China Petroleum & Chemical Corp and ENN Energy Holdings in the proposed takeover of China Gas Holdings.

Citigroup Global Markets Australia Pty Limited is assisting Caltex in evaluating a number of capital management initiatives including the potential issuance of hybrid securities.

Citigroup Global Markets Ltd is currently mandated as advisor to AMORIM ENERGIA BV in relation to ENI SPA's agreement with AMORIM ENERGIA and CAIXA GENERAL DE DEPOSITOS to sell their stake in GALP ENERGIA SPGS SA. Consequently,Citi is restricted from offering any view,opinion,rating or target price on GALP ENERGIA SPGS SA.

DMBH is a market maker in the publicly traded equity securities of Polski Koncern Naftowy Orlen SA. DMBH rating distribution versus Investment Banking service provision in the past 12 months as at 30th June 2012 is as follows: Buy (1) representing 51% of the DMBH coverage 0% of which are IB clients,Hold (2) representing 41% of the DMBH coverage 0% of which are IB clients,Sell (3) representing 8% of the DMBH coverage 0% of which are IB clients.

Citigroup Global Markets Inc. or its affiliates beneficially owns 1% or more of any class of common equity securities of Sinopec, Hindustan Petroleum, Sunoco Inc. This position reflects information available as of the prior business day.

Within the past 12 months, Citigroup Global Markets Inc. or its affiliates has acted as manager or co-manager of an offering of securities of Reliance Industries, Sinopec Shanghai Petrochemical, Sinopec, China Agri-Industries Holdings, China BlueChemical, Cairn India, Indian Oil, OMV AG, Valero Energy Corp.

Citigroup Global Markets Inc. or its affiliates has received compensation for investment banking services provided within the past 12 months from Reliance Industries, Honam Petrochemical, Sinofert, Sinopec Shanghai Petrochemical, Sinopec, China Agri-Industries Holdings, SK Innovation, Formosa Plastics, Nan Ya Plastics, Formosa Chemicals & Fiber, China BlueChemical, Showa Shell Sekiyu, TonenGeneral Sekiyu, Formosa Petrochemical, Bharat Petroleum, Cairn India, Caltex Australia, ERG Group, Galp Energia, HollyFrontier Corporation, Hindustan Petroleum, Indian Oil, IRPC, Motor Oil (Hellas)SA, Neste Oil, OMV AG, PETRONAS Chemicals Group, Polski Koncern Naftowy Orlen SA, PTT Global Chemical, Sunoco Inc, Thai Oil, Valero Energy Corp.

Citigroup Global Markets Inc. or its affiliates expects to receive or intends to seek, within the next three months, compensation for investment banking services from Sinofert, Sinopec Shanghai Petrochemical, Sinopec, China Agri-Industries Holdings, China BlueChemical, Showa Shell Sekiyu, Bharat Petroleum, Caltex Australia, Hindustan Petroleum, Indian Oil, MOL Magyar Olaj-es Gazipari Nyrt, OMV AG, PETRONAS Chemicals Group, Polski Koncern Naftowy Orlen SA, Sunoco Inc, Tupras AS.

Citigroup Global Markets Inc. or an affiliate received compensation for products and services other than investment banking services from Reliance Industries, S-Oil, Honam Petrochemical, Dongyue Group, Sinofert, Sinopec Shanghai Petrochemical, Sinopec, LG Chem, China Agri-Industries Holdings, GS Holdings, SK Innovation, Formosa Plastics, Nan Ya Plastics, Formosa Chemicals & Fiber, Oriental Union Chemical, China BlueChemical, Showa Shell Sekiyu, Cosmo Oil, TonenGeneral Sekiyu, Idemitsu Kosan, JX Holdings, Formosa Petrochemical, Bharat Petroleum, Cairn India, Caltex Australia, ERG Group, Galp Energia, Hellenic Petroleum S.A., HollyFrontier Corporation, Hindustan Petroleum, Indian Oil, IRPC, MOL Magyar Olaj-es Gazipari Nyrt, Motor Oil (Hellas)SA, Neste Oil, OMV AG, PETRONAS Chemicals Group, Polski Koncern Naftowy Orlen SA, Siam Cement, Sunoco Inc, Thai Oil, Tesoro Corporation, Tupras AS, Valero Energy Corp in the past 12 months.

Citigroup Global Markets Inc. currently has, or had within the past 12 months, the following as investment banking client(s): Cairn India, Reliance Industries, Honam Petrochemical, Sinofert, Sinopec Shanghai Petrochemical, Sinopec, China Agri-Industries Holdings, SK Innovation, Formosa Plastics, Nan Ya Plastics, Formosa Chemicals & Fiber, China BlueChemical, Showa Shell Sekiyu, TonenGeneral Sekiyu, Formosa Petrochemical, Bharat Petroleum, Caltex Australia, ERG Group, Galp Energia, HollyFrontier Corporation, Hindustan Petroleum, Indian Oil, IRPC, MOL Magyar Olaj-es Gazipari Nyrt, Motor Oil (Hellas)SA, Neste Oil, OMV AG, PETRONAS Chemicals Group, Polski Koncern Naftowy Orlen SA, PTT Global Chemical, Sunoco Inc, Thai Oil, Tupras AS, Valero Energy Corp.

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: Reliance Industries, S-Oil, Honam Petrochemical, Sinofert, Sinopec Shanghai Petrochemical, Sinopec, LG Chem, China Agri-Industries Holdings, GS Holdings, SK Innovation, Formosa Plastics, Nan Ya Plastics, Formosa Chemicals & Fiber, Oriental Union Chemical, China BlueChemical, Showa Shell Sekiyu, Cosmo Oil, TonenGeneral Sekiyu, Idemitsu Kosan, JX Holdings, Formosa Petrochemical, Bharat Petroleum, Cairn India, Caltex Australia, ERG Group, Galp Energia, Hellenic Petroleum S.A., HollyFrontier Corporation, Hindustan Petroleum, Indian Oil, IRPC, MOL Magyar

Olaj-es Gazipari Nyrt, Motor Oil (Hellas)SA, Neste Oil, OMV AG, PETRONAS Chemicals Group, Polski Koncern Naftowy Orlen SA, Siam Cement, Sunoco Inc, Thai Oil, Tesoro Corporation, Tupras AS, Valero Energy Corp.

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: Reliance Industries, S-Oil, Honam Petrochemical, Dongyue Group, Sinofert, Sinopec Shanghai Petrochemical, Sinopec, LG Chem, China Agri-Industries Holdings, GS Holdings, SK Innovation, Formosa Plastics, Nan Ya Plastics, Formosa Chemicals & Fiber, Oriental Union Chemical, China BlueChemical, Showa Shell Sekiyu, Cosmo Oil, TonenGeneral Sekiyu, Idemitsu Kosan, JX Holdings, Formosa Petrochemical, Bharat Petroleum, Cairn India, Caltex Australia, ERG Group, Galp Energia, Hellenic Petroleum S.A., HollyFrontier Corporation, Hindustan Petroleum, Indian Oil, IRPC, MOL Magyar Olaj-es Gazipari Nyrt, Motor Oil (Hellas)SA, Neste Oil, OMV AG, PETRONAS Chemicals Group, Polski Koncern Naftowy Orlen SA, Siam Cement, Sunoco Inc, Thai Oil, Tesoro Corporation, Tupras AS, Valero Energy Corp.

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.

The Firm is a market maker in the publicly traded equity securities of Sinopec, China Agri-Industries Holdings, MOL Magyar Olaj-es Gazipari Nyrt.

For important disclosures (including copies of historical disclosures) regarding the companies that are the subject of this Citi Research product ("the Product"), please contact Citi Research, 388 Greenwich Street, 28th Floor, New York, NY, 10013, Attention: Legal/Compliance [E6WYB6412478]. 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 https://www.citivelocity.com/cvr/eppublic/citi_research_disclosures. 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 Research Ratings Distribution

	12 Month Rating			***Relative Rating***		
Data current as of 30 Jun 2012	**Buy**	**Hold**	**Sell**	**Buy**	**Hold**	**Sell**
Citi Research Global Fundamental Coverage	53%	37%	10%	10%	80%	10%
% of companies in each rating category that are investment banking clients	44%	43%	40%	48%	43%	45%
Citi Research Quantitative World Radar Screen Model Coverage	30%	40%	30%			
% of companies in each rating category that are investment banking clients	27%	22%	18%			
Citi Research Quantitative Decision Tree Model Coverage	50%	0%	50%			
% of companies in each rating category that are investment banking clients	52%	0%	45%			
Citi Research Asia Quantitative Radar Screen Model Coverage	20%	60%	20%			
% of companies in each rating category that are investment banking clients	25%	23%	20%			
Citi Research Australia Radar Model Coverage	48%	0%	52%			
% of companies in each rating category that are investment banking clients	34%	0%	13%			

Guide to Citi Research Fundamental Research Investment Ratings:

Citi Research stock recommendations include an investment rating and an optional risk rating to highlight high risk stocks.

Risk rating takes into account both price volatility and fundamental criteria. Stocks will either have no risk rating or a High risk rating assigned.

Investment Ratings: Citi Research investment ratings are Buy, Neutral and Sell. Our ratings are a function of analyst expectations of expected total return ("ETR") and risk. ETR is the sum of the forecast price appreciation (or depreciation) plus the dividend yield for a stock within the next 12 months. The Investment rating definitions are: Buy (1) ETR of 15% or more or 25% or more for High risk stocks; and Sell (3) for negative ETR. Any covered stock not assigned a Buy or a Sell is a Neutral (2). For stocks rated Neutral (2), if an analyst believes that there are insufficient valuation drivers and/or investment catalysts to derive a positive or negative investment view, they may elect with the approval of Citi Research management not to assign a target price and, thus, not derive an ETR. Analysts may place covered stocks "Under Review" in response to exceptional circumstances (e.g. lack of information critical to the analyst's thesis) affecting the company and / or trading in the company's securities (e.g. trading suspension). As soon as practically possible, the analyst will publish a note re-establishing a rating and investment thesis. To satisfy regulatory requirements, we correspond Under Review and Neutral to Hold in our ratings distribution table for our 12-month fundamental rating system. However, we reiterate that we do not consider Under Review to be a recommendation.

Relative three-month ratings: Citi Research may also assign a three-month relative call (or rating) to a stock to highlight expected out-performance (most preferred) or under-performance (least preferred) versus the geographic and industry sector over a 3 month period. The relative call may highlight a specific near-term catalyst or event impacting the company or the market that is anticipated to have a short-term price impact on the equity securities of the company. Absent any specific catalyst the analyst(s) will indicate the most and least preferred stocks in the universe of stocks under consideration, explaining the basis for this short-term view. This three-month view may be different from and does not affect a stock's fundamental equity rating, which reflects a longer-term total absolute return expectation. For purposes of NASD/NYSE ratings-distribution-disclosure rules, most preferred calls correspond to a buy recommendation and least preferred calls correspond to a sell recommendation. Any stock not assigned to a most preferred or least preferred call is considered non-relative-rated (NRR). For purposes of NASD/NYSE ratings-distribution-disclosure rules we correspond NRR to Hold in our ratings distribution table for our 3-month relative rating system. However, we reiterate that we do not consider NRR to be a recommendation.

Prior to October 8, 2011, the firm's stock recommendation system included a risk rating and an investment rating. **Risk ratings,** which took into account both price volatility and fundamental criteria, were: Low (L), Medium (M), High (H), and Speculative (S). **Investment Ratings** of Buy, Hold and Sell were a function of the Citi Research expectation of total return (forecast price appreciation and dividend yield within the next 12 months) and risk rating. Additionally, analysts could have placed covered stocks "Under Review" in response to exceptional circumstances (e.g. lack of information critical to the analyst's thesis) affecting the company and/or trading in the company's securities (e.g. trading suspension). Stocks placed "Under Review" were monitored daily by management and as practically possible, the analyst published a note re-establishing a rating and investment thesis. For securities in developed markets (US, UK, Europe, Japan, and Australia/New Zealand), investment ratings were:Buy (1) (expected total return of 10% or more for Low-Risk stocks, 15% or more for Medium-Risk stocks, 20% or more for High-Risk stocks, and 35% or more for Speculative stocks); Hold (2) (0%-10% for Low-Risk stocks, 0%-15% for Medium-Risk stocks, 0%-20% for High-Risk stocks, and 0%-35% for Speculative stocks); and Sell (3) (negative total return). For securities in emerging markets (Asia Pacific, Emerging Europe/Middle East/Africa, and Latin America), investment ratings were: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 Research Quantitative Research Investment Ratings:

Citi Research Quantitative Research World Radar Screen recommendations are based on a globally consistent framework to measure relative value and momentum for a large number of stocks across global developed and emerging markets. Relative value and momentum rankings are equally weighted to produce a global attractiveness score for each stock. The scores are then ranked and put into deciles. A stock with a decile rating of 1 denotes an attractiveness score in the top 10% of the universe (most attractive). A stock with a decile rating of 10 denotes an attractiveness score in the bottom 10% of the universe (least attractive).

Citi Research Asia Quantitative Radar Screen model recommendations are based on a regionally consistent framework to measure relative value and momentum for a large number of stocks across regional developed and emerging markets. Relative value and momentum rankings are equally weighted to produce a global attractiveness score for each stock. The scores are then ranked and put into quintiles. A stock with a quintile rating of 1 denotes an attractiveness score in the top 20% of the universe (most attractive). A stock with a quintile rating of 5 denotes an attractiveness score in the bottom 20% of the universe (least attractive).

Citi Research Australia Quantitative Radar Screen model recommendations are based on a robust framework to measure relative value and momentum for a large number of stocks across the Australian market. Stocks with a ranking of 1 denotes a stock that is above average in terms of both value and momentum relative to the stocks in the Australian market. A ranking of 10 denotes a stock that is below average in terms of both value and momentum relative to the stocks in the Australian market.

Citi Research Quantitative Decision Tree model recommendations are based on a predetermined set of factors to rate the relative attractiveness of stocks. These factors are detailed in the text of the report. The Decision Tree model forecasts whether stocks are attractive or unattractive relative to other stocks in the same sector (based on the Russell 1000 sector classifications).

For purposes of NASD/NYSE ratings-distribution-disclosure rules, a Citi Research Quantitative World Radar Screen recommendation of (1), (2) or (3) most closely corresponds to a buy recommendation; a recommendation from this product group of (4), (5), (6) or (7) most closely corresponds to a hold recommendation; and a recommendation of (8), (9) or (10) most closely corresponds to a sell recommendation. An (NR) recommendation indicates that the stock is no longer in the screen.

For purposes of NASD/NYSE ratings distribution disclosure rules, a Citi Research Asia Quantitative Radar Screen recommendation of (1) most closely corresponds to a buy recommendation; a Citi Research Asia Quantitative Radar Screen recommendation of (2), (3), (4) most closely corresponds to a hold recommendation; and a recommendation of (5) most closely corresponds to a sell recommendation. An (NR) recommendation indicates that the stock is no longer in the screen.

For purposes of NASD/NYSE ratings-distribution-disclosure rules, a Citi Research Quantitative Research Decision Tree model or Quantitative Research Australia Radar Screen recommendation of "attractive" (1) most closely corresponds to a buy recommendation. All other stocks in the sector are considered to be "unattractive" (10) which most closely corresponds to a sell recommendation. An (NR)/(0) recommendation indicates that the stock is no longer in the screen.

Recommendations are based on the relative attractiveness of a stock, thus can not be directly equated to buy, hold and sell categories. Accordingly, your decision to buy or sell a security should be based on your personal investment objectives and only after evaluating the stock's expected relative performance.

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	Saurabh Handa; Abhishek Sahoo
Citigroup Global Markets Asia	Graham Cunningham; Oscar Yee; Jimmy Wong; Eddie Lau
Citigroup Global Markets Singapore PTE LIMITED	Puneet Singh; Paul R Chanin
Citigroup Global Markets Ltd	Ioanna Exarchou; Alastair R Syme; Michael J Alsford; Kenan Najafov; Chris Montagu
Citigroup Global Markets Japan Inc.	Takashi Miyazaki
Citigroup Global Markets Inc	Faisel Khan, CFA
Citicorp Securities (Thailand) Ltd.	Suchart Techaposai; Amornrat Cheevavichawalkul, CFA
Dom Maklerski Banku Handlowego SA	Rafal Wiatr, CFA
Citicorp Pty Ltd	Mark Greenwood
Citibank Anonim Sirketi	Osman Memisoglu

OTHER DISCLOSURES

The subject company's share price set out on the front page of this Product is quoted as at 30 August 2012 03:20 PM on the issuer's primary market.

Citigroup Global Markets Inc. and/or its affiliates has a significant financial interest in relation to Reliance Industries, LG Chem, Bharat Petroleum, Caltex Australia, Galp Energia, HollyFrontier Corporation, Indian Oil, Neste Oil, OMV AG, Polski Koncern Naftowy Orlen SA, Sunoco Inc, Tesoro Corporation, Valero Energy Corp. (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.citiVelocity.com.)

Citigroup Global Markets Inc. or its affiliates beneficially owns 2% or more of any class of common equity securities of Sunoco Inc.

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 Research does not set a predetermined frequency for publication, if the Product is a fundamental research report, it is the intention of Citi Research 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. LLC (Morgan Stanley) research reports may be available about the companies that are the subject of this Citi Research research report. Ask your Financial Advisor or use smithbarney.com to view any available Morgan Stanley research reports in addition to Citi Research research reports.
Important disclosure regarding the relationship between the companies that are the subject of this Citi Research 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.
For Morgan Stanley and Citigroup Global Markets, Inc. specific disclosures, you may refer to www.morganstanley.com/researchdisclosures and https://www.citivelocity.com/cvr/eppublic/citi_research_disclosures.
This Citi Research 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 Citi Research. 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 Citi 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. This product is available in **Chile** through Banchile Corredores de Bolsa S.A., an indirect subsidiary of Citigroup Inc., which is regulated by the Superintendencia de Valores y Seguros. Agustinas 975, piso 2, Santiago, Chile. 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 is distributed in **Germany** by Citigroup Global Markets Deutschland AG ("CGMD"), which is regulated by Bundesanstalt fuer Finanzdienstleistungsaufsicht (BaFin). CGMD, Reuterweg 16, 60323 Frankfurt am Main. Research which relates to "securities" (as defined in the Securities and Futures Ordinance (Cap. 571 of the Laws of Hong Kong)) is issued in **Hong Kong** by, or on behalf of, Citigroup Global Markets Asia Limited which takes full responsibility for its content. Citigroup

Global Markets Asia Ltd. is regulated by Hong Kong Securities and Futures Commission. If the Research is made available through Citibank, N.A., Hong Kong Branch, for its clients in Citi Private Bank, it is made available by Citibank N.A., Citibank Tower, Citibank Plaza, 3 Garden Road, Hong Kong. Citibank N.A. is regulated by the Hong Kong Monetary Authority. Please contact your Private Banker in Citibank N.A., Hong Kong, Branch if you have any queries on or any matters arising from or in connection with this document. 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. Via dei Mercanti, 12, 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 SMBC Nikko 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 Citi Velocity website. If you have questions regarding Citi Velocity, 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 the Financial Services Commission, the Financial Supervisory Service and the Korea Financial Investment Association (KOFIA). Citibank Building, 39 Da-dong, Jung-gu, Seoul 100-180, Korea. KOFIA makes available registration information of research analysts on its website. Please visit the following website if you wish to find KOFIA registration information on research analysts of Citigroup Global Markets Korea Securities Ltd. http://dis.kofia.or.kr/fs/dis2/fundMgr/DISFundMgrAnalystPop.jsp?companyCd2=A03030&pageDiv=02. The Product is made available in Korea by Citibank Korea Inc., which is regulated by the Financial Services Commission and the Financial Supervisory Service. Address is Citibank Building, 39 Da-dong, Jung-gu, Seoul 100-180, Korea. The Product is made available in **Malaysia** by Citigroup Global Markets Malaysia Sdn Bhd (Company No. 460819-D) ("CGMM") to its clients and CGMM takes responsibility for its contents. CGMM is regulated by the Securities Commission of Malaysia. Please contact CGMM at Level 43 Menara Citibank, 165 Jalan Ampang, 50450 Kuala Lumpur, Malaysia in respect of any matters arising from, or in connection with, the Product. 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 to 'wholesale clients' only as defined by s5C(1) of the Financial Advisers Act 2008 ('FAA') through Citigroup Global Markets Australia Pty Ltd (ABN 64 003 114 832 and AFSL No. 240992), an overseas financial adviser as defined by the FAA, 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 **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 the **Philippines** through Citicorp Financial Services and Insurance Brokerage Philippines, Inc., which is regulated by the Philippines Securities and Exchange Commission. 20th Floor Citibank Square Bldg. The Product is made available in the Philippines through Citibank NA Philippines branch, Citibank Tower, 8741 Paseo De Roxas, Makati City, Manila. Citibank NA Philippines NA is regulated by The Bangko Sentral ng Pilipinas. 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.Senatorska 16, 00-923 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. ("CGMSPL"), a capital markets services license holder, and regulated by Monetary Authority of Singapore. Please contact CGMSPL at 8 Marina View, 21st Floor Asia Square Tower 1, Singapore 018960, in respect of any matters arising from, or in connection with, the analysis of this document. This report is intended for recipients who are accredited, expert and institutional investors as defined under the Securities and Futures Act (Cap. 289). 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. Please contact your Private Banker in Citibank N.A., Singapore Branch if you have any queries on or any matters arising from or in connection with this document. This report is intended for recipients who are accredited, expert and institutional investors as defined under the Securities and Futures Act (Cap. 289). This report is distributed in Singapore by Citibank Singapore Ltd ("CSL") to selected Citigold/Citigold Private Clients. CSL provides no independent research or analysis of the substance or in preparation of this report. Please contact your Citigold//Citigold Private Client Relationship Manager in CSL if you have any queries on or any matters arising from or in connection with this report. This report is intended for recipients who are accredited investors as defined under the Securities and Futures Act (Cap. 289). 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 Gasset, 4th Floor, Madrid, 28006, Spain. The Product is made available in the **Republic of China** through Citigroup Global Markets Taiwan Securities Company Ltd. ("CGMTS"), 14 and 15F, No. 1, Songzhi Road, Taipei 110, Taiwan and/or through Citibank Securities (Taiwan) Company Limited ("CSTL"), 14 and 15F, No. 1, Songzhi Road, Taipei 110, Taiwan, subject to the respective license scope of each entity and the applicable laws and regulations in the Republic of China. CGMTS and CSTL are both regulated by the Securities and Futures Bureau of the Financial Supervisory Commission of Taiwan, the Republic of China. No portion of the Product may be reproduced or quoted in the Republic of China by the press or any third parties [without the written authorization of CGMTS and CSTL]. If the Product covers securities which are not allowed to be offered or traded in the Republic of China, neither the Product nor any information contained in the Product shall be considered as advertising the securities or making recommendation of the securities in the

Republic of China. The Product is for informational purposes only and is not intended as an offer or solicitation for the purchase or sale of a security or financial products. Any decision to purchase securities or financial products mentioned in the Product must take into account existing public information on such security or the financial products or any registered prospectus. 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 Citi Research 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 a member of FINRA and registered with 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.

Pursuant to Comissão de Valores Mobiliários Rule 483, Citi is required to disclose whether a Citi related company or business has a commercial relationship with the subject company. Considering that Citi operates multiple businesses in more than 100 countries around the world, it is likely that Citi has a commercial relationship with the subject company.

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 Citi Research's Products can be found at https://www.citivelocity.com/cvr/eppublic/citi_research_disclosures.

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.

With the exception of our product that is made available only to Qualified Institutional Buyers (QIBs) and other product that is made available through other distribution channels only to certain categories of clients to satisfy legal or regulatory requirements, Citi Research concurrently disseminates its research via proprietary and non-proprietary electronic distribution platforms. Periodically, individual Citi Research analysts may also opt to circulate research posted on such platforms to one or more clients by email. Such email distribution is discretionary and is done only after the research has been disseminated via the aforementioned distribution channels. Citi Research simultaneously distributes product that is limited to QIBs only through email distribution.

The level and types of services provided by Citi Research analysts to clients may vary depending on various factors such as the client's individual preferences as to the frequency and manner of receiving communications from analysts, the client's risk profile and investment focus and perspective (e.g. market-wide, sector specific, long term, short-term etc.), the size and scope of the overall client relationship with Citi and legal and regulatory constraints.

Citi Research product may source data from dataCentral. dataCentral is a Citi Research proprietary database, which includes Citi estimates, data from company reports and feeds from Reuters and Datastream.

ADDITIONAL INFORMATION IS AVAILABLE UPON REQUEST