

## Coal India

Downgrading to UW- Recent sharp run up building in large price increase and volume delivery, where there could be disappointment

- Downgrading to UW, recommend switch to TATA:** We downgrade COAL to UW from Neutral previously. We maintain our PT (Rs325) and earnings estimates (+5% over consensus for FY12E). In our view near term catalysts of differential coal price increases and easing of environmental concerns have played out and **believe that the stock's recent +25% up-move since end Feb-11 is building in further large price increases and achieving of off-take target for FY12E, both of which in our view are likely to be difficult.**
- March/June seasonally strong quarters:** While March-May-11E off take volume is likely to be strong, we believe this is a seasonal phenomenon as railway rake availability increases, but for the full year FY12E the off take target of 454MT (JPMe 451MT) is predicated on +13.5% increases in coal transportation by rail, compared to 2% over last 3 years, which is difficult.
- Will there be another large price increase in June/July on the back of wage provisions:** Our conversations with investors point to the expectation of another price increase in June/July as COAL starts to provide for wage provision. **While we view the recent differential coal price hike implemented as a structural positive for COAL, the sheer size (30% for non regulated sectors, Grade A, B at 105-218%) of the recent coal price increase makes another large price increase for the non regulated sector difficult in our view. E-auction volumes in our view are likely capped at current levels for FY12E, given that meeting FSA for power sector (329MT in FY12E v/s 305MT in FY11E) even at 90% means additional 17MT of supply to power sector.** Admittedly even after the recent coal price increase, COAL's prices are at a discount (though for non power sector it has sharply come down), however given the near monopoly status (and lack of material ramp up in captive coal production), in our view means that further price increases could be more tempered for the non regulated sectors (cement, aluminum., steel)
- Structural long term story intact, but near term valuations leave little room for any disappointment:** We do not dispute the long term story of COAL given India's coal shortage. However, at ~17x FY12E/P/E (even ahead of NTPC, the state utility) and high expectations, in our view little room for disappointment either on the coal price or volume front.

### ▼ Underweight

Previous: Neutral

COAL.BO, COAL IN

Price: Rs362.00

Price Target: Rs325.00

#### India

#### India Mining

**Pinakin Parekh, CFA<sup>AC</sup>**

(91-22) 6157-3588

pinakin.m.parekh@jpmorgan.com

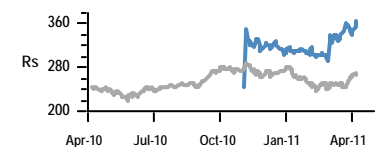
**Neha Manpuria**

(91-22) 6157-3589

neha.x.manpuria@jpmorgan.com

J.P. Morgan India Private Limited

#### Price Performance



	YTD	1m	3m	12m
Abs	15.5%	7.5%	18.6%	49.6%
Rel	20.1%	1.4%	21.4%	40.3%

#### Coal India (Reuters: COAL.BO, Bloomberg: COAL IN)

Rs in mn, year-end Mar	FY10A	FY11E	FY12E	FY13E	52-week Range (Rs)	371.40 - 245.00
Net Sales	446,153	497,062	588,392	636,822	Market cap (Rs mn)	2,286,524
Net Profit	96,224.5	106,566.0	140,315.7	155,719.9	Market cap (\$ mn)	51,766
EPS (Rs)	15.23	16.87	22.21	24.65	Price (Rs)	362.00
Net profit growth (%)	364.1%	10.7%	31.7%	11.0%	Date Of Price	07 Apr 11
ROE	42.9%	35.7%	35.9%	31.1%	3-mth trading volume(mn)	
P/E (x)	24.1	21.7	16.5	14.9	3-mth trading value (\$ mn)	
P/BV (x)	8.8	6.8	5.2	4.1	Shares O/S (mn)	6,316
EV/EBITDA (x)	18.6	14.1	10.2	8.8	BSE30	19,612

Source: Company data, Bloomberg, J.P. Morgan estimates.

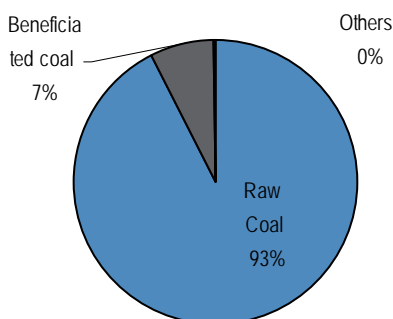
See page 9 for analyst certification and important disclosures, including non-US analyst disclosures.

J.P. Morgan does and seeks to do business with companies covered in its research reports. As a result, investors should be aware that the firm may have a conflict of interest that could affect the objectivity of this report. Investors should consider this report as only a single factor in making their investment decision.

### Company description

Coal India (CIL) is the largest coal producing company in the world (based on raw coal production). CIL is basically a holding company which has 11 direct and indirect subsidiaries, of which nine subsidiaries are involved in coal production. Coal India the largest reserves of coal in the world at 67bn tonnes, with proved reserves of 52bn tonnes (47% of India’s proved reserves) and extractable reserves of 22bn tonnes. As per JORC, CIL’s total reserve (proved + probable) is 18.9bn tonnes, with 16.9bn tonnes of reserves in the 0-300m of depth (open cast mines).

CIL: Revenue Breakup



Source: Company reports.

### EPS estimates: J.P. Morgan vs. consensus

Rs	J.P. Morgan	Consensus
FY11E	16.9	17.3
FY12E	22.2	21.6
FY13E	24.7	24.9

Source: Bloomberg, J.P. Morgan estimates.

### P&L sensitivity metrics

FY12E	EBITDA impact (%)	EPS impact (%)
Sales volume growth assumption (Base case: 5%)		
Impact of each 1%	+/-2%	+/-2%
Avg. realization (raw coal) rate (Base case: 4%)		
Impact of each 1%	+/-3%	+/-3%
Employee cost assumption (Base case: 6%)		
Impact of each 1%	+/-1%	+/-1%

Source: J.P. Morgan estimates.

### Price target and valuation analysis

We value the company at 7.5x FY13E EV/EBITDA, to arrive at our March-12, PT of Rs325. Our multiple is at a premium to global peers. Given CIL’s earnings visibility over the next 3 years, we believe an FY13E multiple is appropriate. We do not dispute the long term story of COAL given India’s coal shortage. However, at ~17x FY16E/P/E (even ahead of NTPC, the state utility) and high expectations, in our view should result in relative underperformance over the next few months.

Our key risks are a) higher than expected volumes; b) large notified coal price increases and c) lower cost inflation.

## Sharp up-move in stock price leaves little room for disappointment

**We downgrade COAL to UW from Neutral previously. We maintain our PT of Rs325 (implying 11% downside from current levels) and our earnings estimates for FY12-13E. After the initial listing day gains, COAL grinded down lower on:**

- a) Disappointment on volume as environmental issues (mainly CEPI) impacted production.
- b) Cost pressures (mainly wages) moved higher given the overall inflation in the economy.

Then in late February, COAL implemented coal price hikes, which was mainly targeted at the non regulated sector (aluminum, steel, cement) and since then the stock has moved up 25%. Environment related issues also seemed to ease (CEPI relaxation came through for Angul-Talcher area, though Ib-Valley still remains under CEPI related restriction).

**We believe the recent stock price up-move is building in:**

- a) **Further LARGE coal price hikes, possibly near June/July as wage provision begins**
- b) **COAL meeting its off-take target for FY12E.**

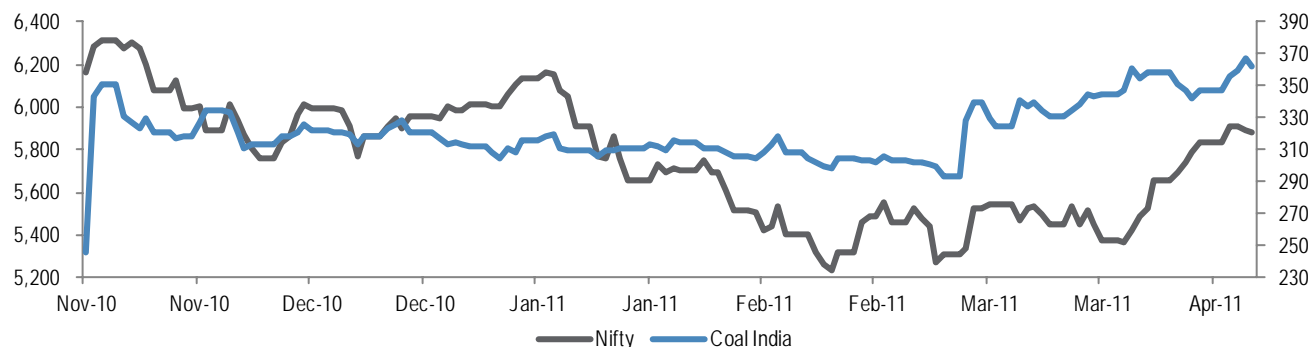
While we have built in coal price increases for FY12E, we believe hikes over and above wage provisions in the near term are likely to be difficult. For the non regulated sector the price increases in some grades have been very steep (+100%), while for other non regulated sector like aluminum and cement, the price increase of 30% is a sharp cost increase and another large price increase in 3 months looks difficult. We expect a general price increase across all grades of coal to essentially off-set the wage provisions likely to be made in July. **In our view, the coal price hike may not happen in July, if the company were to differ providing for wage provisions in July, given that final wage finalization could take some time (COAL could choose to provide the entire provision once the % increase is known and do an ad-hoc coal price revision, like it did the previous time). COAL has officially maintained that they would be providing for the wage provisions starting from July itself.**

Table 1: CIL price hike since de-regulation

	Price hike	
Feb-11	-12%	Increase Grade A&B to import parity (inc. -Rs2000), increase MCL coal prices inline with SECL coal prices and -30% increase for all non-regulated sectors
Oct-09	-11%	15% hike for ECL and BCCL and 10% in other subs of CIL. ECL is authorised to set import parity price for its high quality A/B grades of Raniganj coal
Dec-07	10-15% average	CIL subs hiked by 13%, NEC increased by 15%
Jun-04	Average hike of 16.7%	High grade coking coal - 50%, Other grades-20-30%. Prime thermal coal-20% and balance-15%

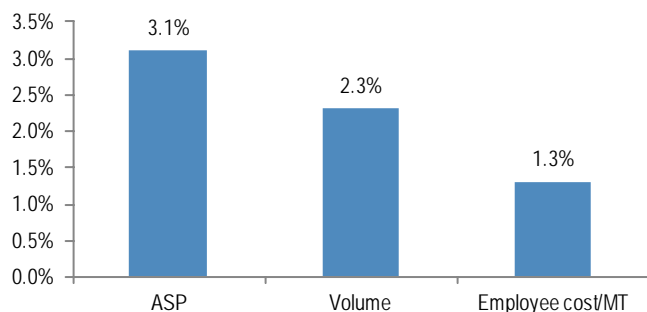
Source: Company reports.

Figure 1: COAL vs. NIFTY Share Price Performance



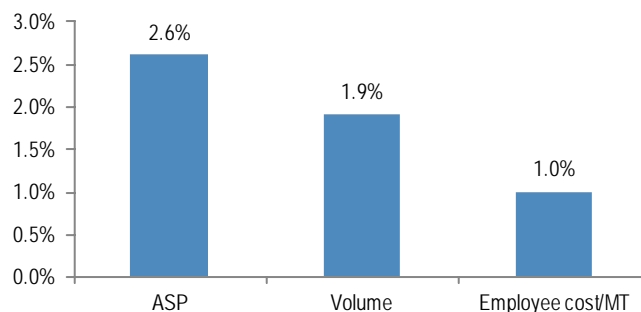
Source: Bloomberg.

Figure 2: CIL's EBITDA sensitivity to 1% change in variables



Source: Company reports and J.P. Morgan estimates.

Figure 3: CIL's EPS sensitivity to 1% change in variables

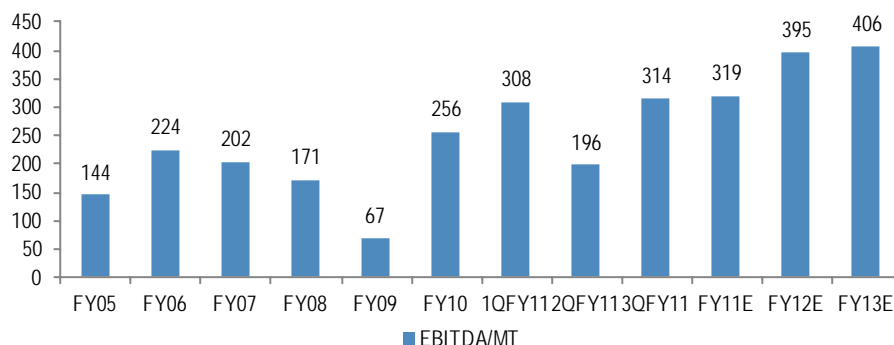


Source: Company reports and J.P. Morgan estimates.

### Structural story intact, but profitability growth gradient not yet firmed up in our view

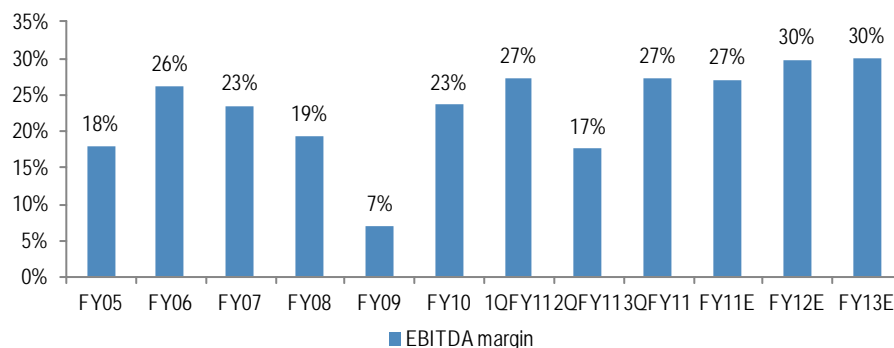
We do not dispute COAL's structural growth story as India remain coal deficient, domestic coal prices are at a discount to global coal prices, and COAL's high employee base is likely to reduce over the next few years, should result in COAL remaining a high free cash flow generating company with steady earnings growth and thus investors with long term holding appetite, would find the stock interesting. However the steady volume growth (initially estimated at 7-7.5%) is likely to be lower in our view at 5.5-6.5%. **More importantly the recent sharp increase in coal prices has increased investor expectations of another large price increase soon which could lead to further earnings upside.** We believe the broader question is not that of earnings/price increases, but the gradient of coal price increases over the next 12-18 months whether it would be sharply ahead of cost increases.

Figure 4: CIL's EBITDA/MT (Rs/MT)



Source: Company reports and J.P. Morgan estimates.

Figure 5: CIL's EBITDA margin (Rs/MT)



Source: Company reports and J.P. Morgan estimates.

### Risks to rating and PT

We value the company at 7.5x FY13E EV/EBITDA, to arrive at our March-12 PT of Rs325. Our multiple is at a premium to global peers. Given CIL's earnings visibility over the next 3 years, we believe an FY13E multiple is appropriate. We do not dispute the long term story of COAL given India's coal shortage. However, at ~16x FY12E/P/E (even ahead of NTPC, the state utility) and high expectations, in our view should result in relative underperformance over the next few months.

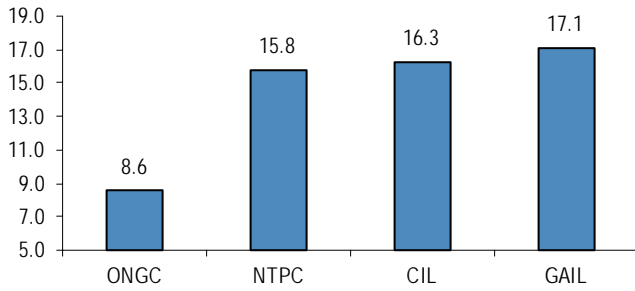
Our key risks are a) higher than expected volumes; b) large notified coal price increases and c) lower cost inflation.

Table 2: Global Coal Valuation Summary

	JPM Rating	Mkt Cap \$MM	CMP LC	P/E		EV/EBITDA	
				CY11/FY12	CY12/FY13	CY11/FY12	CY12/FY13
Arch Coal	Overweight	5,573	34	12.2	9.8	6.2	5.2
CONSOL Energy	Overweight	11,179	51	17.5	10.9	8.1	6.0
Peabody Energy	Overweight	18,695	70	14.6	13.1	7.5	6.7
Massey Energy	Neutral	6,889	68	16.8	15.5	7.3	6.5
China Shenhua	Not rated	73,923	30	13.9	12.3	6.0	5.3
Banpu	Overweight	7,046	780	10.5	11.3	8.6	6.0
Macarthur	Neutral	3,814	12	12.2	10.7	6.9	5.7
Yanzhou Coal	Not rated	16,676	37	20.2	18.0	7.7	7.2
Coal & Allied	Not rated	11,253	124	12.8	13.5	7.7	7.7
China Coal	Not rated	13,226	11	14.3	12.3	4.8	4.3
Coal India	Neutral	50,834	362	16.3	14.7	10.0	8.6

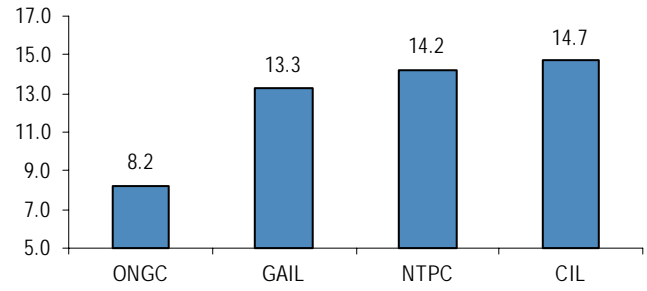
Source: Bloomberg (consensus for companies NR), company reports and J.P. Morgan estimates

Figure 6: FY12 P/E Valuations for PSUs



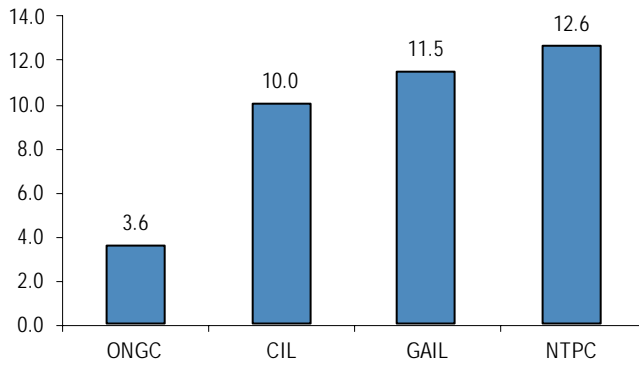
Source: Company reports, Bloomberg and J.P. Morgan estimates.

Figure 7: FY13 P/E Valuations for PSUs



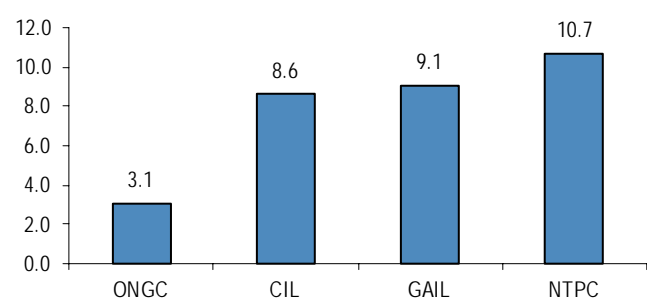
Source: Company reports, Bloomberg and J.P. Morgan estimates.

Figure 8: FY12 EV/EBITDA Valuations for PSUs



Source: Company reports, Bloomberg and J.P. Morgan estimates.

Figure 9: FY13 EV/EBITDA Valuations for PSUs



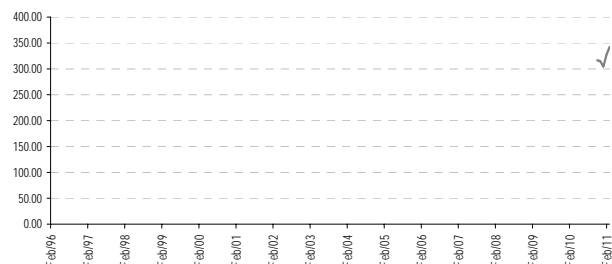
Source: Company reports, Bloomberg and J.P. Morgan estimates.

**JPM Q-Profile**  
**Coal India Ltd. (INDIA / Energy)**  
 As Of: 31-Mar-2011

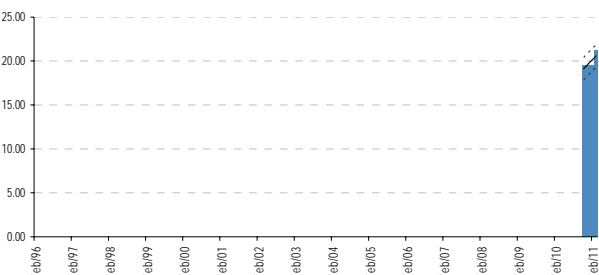
**Global Equity Quantitative Analysis**

Quant\_Strategy@jpmorgan.com

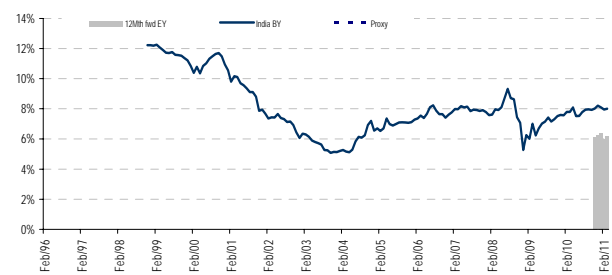
**Local Share Price** Current: **342.20**



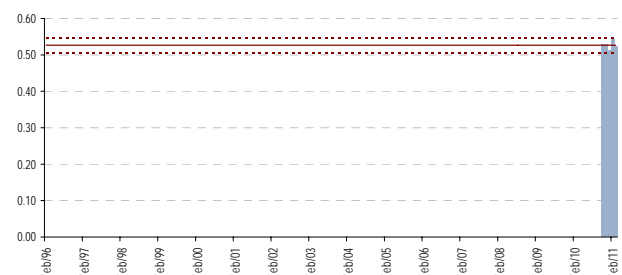
**12 Mth Forward EPS** Current: **21.27**



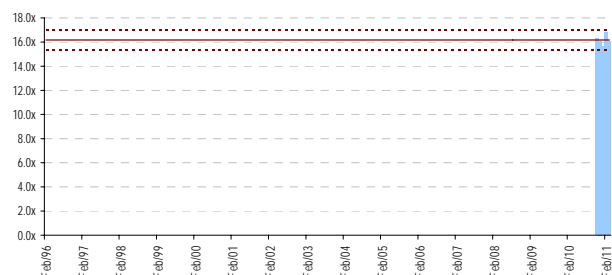
**Earnings Yield (& local bond Yield)** Current: **6%**



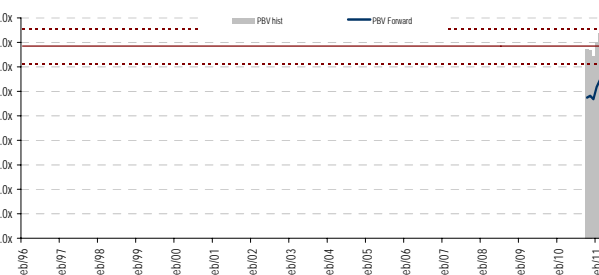
**Implied Value Of Growth\*** Current: **52.22%**



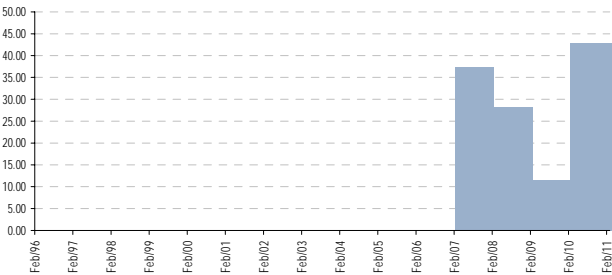
**PE (1Yr Forward)** Current: **16.1x**



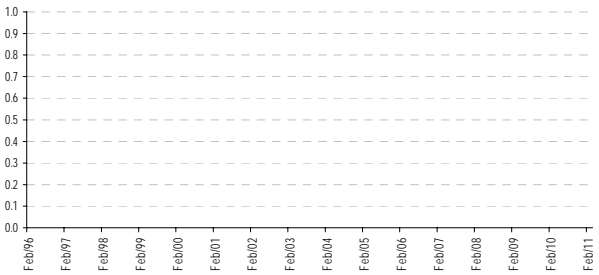
**Price/Book Value** Current: **8.4x**



**ROE (Trailing)** Current: **42.90**



**Dividend Yield (Trailing)** Current: **0.00**



**Summary**

Coal India Ltd.		SEDOL		B4Z9XF5		As Of:		31-Mar-11			
INDIA						Local Price:		342.20			
Energy						EPS:		21.27			
	Latest	Min	Max	Median	Average	2 S.D.+	2 S.D. -	% to Min	% to Max	% to Med	% to Avg
12mth Forward PE	16.09x	15.62	16.81	16.09	16.17	17.03	15.31	-3%	4%	0%	1%
P/BV (Trailing)	8.36x	7.43	8.36	7.73	7.85	8.56	7.13	-11%	0%	-8%	-6%
Dividend Yield (Trailing)	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
ROE (Trailing)	42.90	11.46	42.90	37.37	30.25	54.36	6.15	-73%	0%	-13%	-29%
Implied Value of Growth	52.2%	0.51	0.54	0.53	0.53	0.55	0.50	-2%	4%	1%	1%

Source: Bloomberg, Reuters Global Fundamentals, IBES CONSENSUS, J.P. Morgan Calcs

\* Implied Value Of Growth = (1 - EY/Cost of equity) where cost of equity = Bond Yield + 5.0% (ERP)

## Coal India: Summary of Financials

Income Statement					Cash flow statement				
Rs in millions, year end Mar	FY10	FY11E	FY12E	FY13E	Rs in millions, year end Mar	FY10	FY11E	FY12E	FY13E
Revenues	446,153	497,062	588,392	636,822	Net Income (Pre exceptionals)	96,224	106,566	140,316	155,720
% change Y/Y	15.0%	11.4%	18.4%	8.2%	Depr. & amortization	13,295	15,952	16,589	17,227
EBITDA	104,725	134,012	175,186	190,561	Change in working capital	34,349	-14,975	-4,682	6,280
% change Y/Y	297.1%	28.0%	30.7%	8.8%	Cash flow from operations	143,712	107,293	151,973	178,976
EBITDA Margin	23.5%	27.0%	29.8%	29.9%	Net Capex	-26,272	-22,643	-14,750	-19,750
EBIT	91,431	118,060	158,597	173,334	Free cash flow	117,440	84,650	137,223	159,226
% change Y/Y	866.3%	29.1%	34.3%	9.3%	Equity raised/(repaid)	2,018	-0	0	0
EBIT Margin	20.5%	23.8%	27.0%	27.2%	Debt raised/(repaid)	-	-	-	-
Net Interest	50,849	50,849	53,469	61,724	Other	2,737	0	0	0
Earnings before tax	140,186	166,509	209,426	232,418	Dividends paid	-29,871	-26,855	-35,360	-39,241
% change Y/Y	145.5%	18.8%	25.8%	11.0%	Beginning cash	296,950	390,778	448,573	548,436
Tax	-42,888	-59,943	-69,111	-76,698	Ending cash	390,778	448,573	548,436	667,421
as % of EBT	30.6%	36.0%	33.0%	33.0%	DPS	3.50	3.54	4.67	5.18
Net Income (Pre exceptionals)	96,224	106,566	140,316	155,720					
% change Y/Y	364.1%	10.7%	31.7%	11.0%					
Shares outstanding	6,316	6,316	6,316	6,316					
EPS (reported)	15.23	16.87	22.21	24.65					
% change Y/Y	364.1%	10.7%	31.7%	11.0%					

Balance sheet					Ratio Analysis				
Rs in millions, year end Mar	FY10	FY11E	FY12E	FY13E	Rs in millions, year end Mar	FY10	FY11E	FY12E	FY13E
Cash and cash equivalents	390,778	448,573	548,436	667,421	EBITDA margin	23.5%	27.0%	29.8%	29.9%
Accounts receivable	21,686	24,161	28,600	30,955	Operating margin	20.5%	23.8%	27.0%	27.2%
Inventories	44,018	48,419	53,261	54,859	Net margin	21.6%	21.4%	23.8%	24.5%
Others	86,762	111,269	114,269	120,269	Sales growth	15.0%	11.4%	18.4%	8.2%
Current assets	708,141	804,261	916,816	1,049,526	Net profit growth	364.1%	10.7%	31.7%	11.0%
LT investments	12,823	12,823	14,823	15,823	EPS growth	364.1%	10.7%	31.7%	11.0%
Net fixed assets	142,416	149,358	147,769	150,542	Interest coverage (x)	-	-	-	-
Total Assets	708,141	804,261	916,816	1,049,526	Net debt to total capital	-150.7%	-134.0%	-128.2%	-123.8%
Liabilities					Net debt to equity	-143.1%	-126.5%	-119.1%	-115.5%
Short-term loans	0	0	0	0	Sales/assets	0.67	0.66	0.68	0.65
Payables	7,725	7,957	9,057	9,781	Assets/equity	2.74	2.38	2.07	1.88
Others	406,100	422,276	428,776	444,283	ROE	42.9%	35.7%	35.9%	31.1%
Total current liabilities	601,870	621,454	629,553	654,292	ROCE	37.3%	37.0%	38.5%	33.2%
Long-term debt	20,869	20,869	20,869	20,869					
Other liabilities	-	-	-	-					
Total Liabilities	637,512	657,096	665,196	689,935					
Shareholders' equity	258,453	338,164	443,120	559,599					
BVPS	40.92	53.54	70.15	88.60					

Source: Company reports and J.P. Morgan estimates.



**Other Companies Recommended in This Report (all prices in this report as of market close on 07 April 2011, unless otherwise indicated)**

Tata Steel Ltd (TISC.BO/Rs634.40 [06-April-2011]/Overweight)

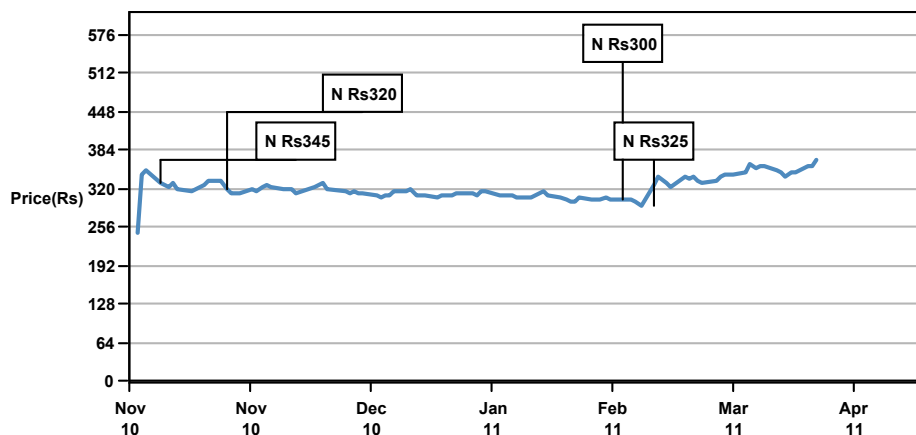
**Analyst Certification:**

The research analyst(s) denoted by an “AC” on the cover of this report certifies (or, where multiple research analysts are primarily responsible for this report, the research analyst denoted by an “AC” on the cover or within the document individually certifies, with respect to each security or issuer that the research analyst covers in this research) that: (1) all of the views expressed in this report accurately reflect his or her personal views about any and all of the subject securities or issuers; and (2) no part of any of the research analyst’s compensation was, is, or will be directly or indirectly related to the specific recommendations or views expressed by the research analyst(s) in this report.

**Important Disclosures**

- **Lead or Co-manager:** J.P. Morgan acted as lead or co-manager in a public offering of equity and/or debt securities for Tata Steel Ltd within the past 12 months.
- **Client of the Firm:** Coal India is or was in the past 12 months a client of JPM. Tata Steel Ltd is or was in the past 12 months a client of JPM; during the past 12 months, JPM provided to the company investment banking services, non-investment banking securities-related service and non-securities-related services.
- **Investment Banking (past 12 months):** J.P. Morgan received, in the past 12 months, compensation for investment banking services from Tata Steel Ltd.
- **Investment Banking (next 3 months):** J.P. Morgan expects to receive, or intends to seek, compensation for investment banking services in the next three months from Tata Steel Ltd.
- **Non-Investment Banking Compensation:** JPMS has received compensation in the past 12 months for products or services other than investment banking from Tata Steel Ltd.

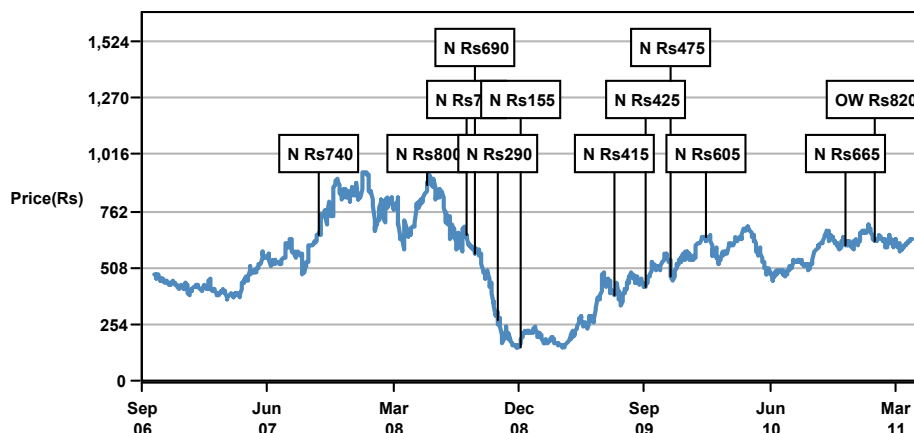
Coal India (COAL.BO) Price Chart



Date	Rating	Share Price (Rs)	Price Target (Rs)
08-Nov-10	N	330.75	345.00
23-Nov-10	N	320.15	320.00
21-Feb-11	N	301.85	300.00
28-Feb-11	N	292.65	325.00

Source: Bloomberg and J.P. Morgan; price data adjusted for stock splits and dividends. Initiated coverage Nov 08, 2010. This chart shows J.P. Morgan’s continuing coverage of this stock; the current analyst may or may not have covered it over the entire period. J.P. Morgan ratings: OW = Overweight, N = Neutral, UW = Underweight.

**Tata Steel Ltd (TISC.BO) Price Chart**



Date	Rating	Share Price (Rs)	Price Target (Rs)
21-Sep-07	N	653.84	740.00
15-May-08	N	881.90	800.00
11-Aug-08	N	651.20	740.00
29-Aug-08	N	571.80	690.00
17-Oct-08	N	269.75	290.00
03-Dec-08	N	148.65	155.00
29-Jun-09	N	387.90	415.00
03-Sep-09	N	416.45	425.00
30-Oct-09	N	467.65	475.00
15-Jan-10	N	645.15	605.00
14-Nov-10	N	606.95	665.00
14-Jan-11	OW	622.45	820.00

Source: Bloomberg and J.P. Morgan; price data adjusted for stock splits and dividends. This chart shows J.P. Morgan's continuing coverage of this stock; the current analyst may or may not have covered it over the entire period.  
 J.P. Morgan ratings: OW = Overweight, N = Neutral, UW = Underweight.

**Explanation of Equity Research Ratings and Analyst(s) Coverage Universe:**

J.P. Morgan uses the following rating system: **Overweight** [Over the next six to twelve months, we expect this stock will outperform the average total return of the stocks in the analyst's (or the analyst's team's) coverage universe.] **Neutral** [Over the next six to twelve months, we expect this stock will perform in line with the average total return of the stocks in the analyst's (or the analyst's team's) coverage universe.] **Underweight** [Over the next six to twelve months, we expect this stock will underperform the average total return of the stocks in the analyst's (or the analyst's team's) coverage universe.] J.P. Morgan Cazenove's UK Small/Mid-Cap dedicated research analysts use the same rating categories; however, each stock's expected total return is compared to the expected total return of the FTSE All Share Index, not to those analysts' coverage universe. A list of these analysts is available on request. The analyst or analyst's team's coverage universe is the sector and/or country shown on the cover of each publication. See below for the specific stocks in the certifying analyst(s) coverage universe.

Coverage Universe: **Pinakin Parekh, CFA:** ACC Limited (ACC.BO), Ambuja Cements Limited (ABUJ.BO), Coal India (COAL.BO), Grasim Industries Ltd (GRAS.BO), Hindalco Industries (HALC.BO), JSW Steel (JSTL.BO), National Aluminium Co Ltd (NALU.BO), Steel Authority of India Ltd (SAIL.BO), Sterlite Industries (STRL.BO), Tata Steel Ltd (TISC.BO), UltraTech Cement Ltd (ULTC.BO)

**J.P. Morgan Equity Research Ratings Distribution, as of March 31, 2011**

	Overweight (buy)	Neutral (hold)	Underweight (sell)
J.P. Morgan Global Equity Research Coverage	47%	42%	11%
IB clients*	50%	45%	33%
JPMS Equity Research Coverage	43%	49%	8%
IB clients*	70%	62%	56%

\*Percentage of investment banking clients in each rating category. For purposes only of FINRA/NYSE ratings distribution rules, our Overweight rating falls into a buy rating category; our Neutral rating falls into a hold rating category; and our Underweight rating falls into a sell rating category.

**Valuation and Risks:** Please see the most recent company-specific research report for an analysis of valuation methodology and risks on any securities recommended herein. Research is available at <http://www.morganmarkets.com>, or you can contact the analyst named on the front of this note or your J.P. Morgan representative.

**Analysts' Compensation:** The equity research analysts responsible for the preparation of this report receive compensation based upon various factors, including the quality and accuracy of research, client feedback, competitive factors, and overall firm revenues, which include revenues from, among other business units, Institutional Equities and Investment Banking.

**Registration of non-US Analysts:** Unless otherwise noted, the non-US analysts listed on the front of this report are employees of non-US affiliates of JPMS, are not registered/qualified as research analysts under FINRA/NYSE rules, may not be associated persons of JPMS, and may not be subject to FINRA Rule 2711 and NYSE Rule 472 restrictions on communications with covered companies, public appearances, and trading securities held by a research analyst account.

## Other Disclosures

---

J.P. Morgan ("JPM") is the global brand name for J.P. Morgan Securities LLC ("JPMS") and its affiliates worldwide. J.P. Morgan Cazenove is a marketing name for the U.K. investment banking businesses and EMEA cash equities and equity research businesses of JPMorgan Chase & Co. and its subsidiaries.

**Options related research:** If the information contained herein regards options related research, such information is available only to persons who have received the proper option risk disclosure documents. For a copy of the Option Clearing Corporation's Characteristics and Risks of Standardized Options, please contact your J.P. Morgan Representative or visit the OCC's website at <http://www.optionsclearing.com/publications/risks/riskstoc.pdf>.

### Legal Entities Disclosures

**U.S.:** JPMS is a member of NYSE, FINRA and SIPC. J.P. Morgan Futures Inc. is a member of the NFA. JPMorgan Chase Bank, N.A. is a member of FDIC and is authorized and regulated in the UK by the Financial Services Authority. **U.K.:** J.P. Morgan Securities Ltd. (JPMSL) is a member of the London Stock Exchange and is authorized and regulated by the Financial Services Authority. Registered in England & Wales No. 2711006. Registered Office 125 London Wall, London EC2Y 5AJ. **South Africa:** J.P. Morgan Equities Limited is a member of the Johannesburg Securities Exchange and is regulated by the FSB. **Hong Kong:** J.P. Morgan Securities (Asia Pacific) Limited (CE number AAJ321) is regulated by the Hong Kong Monetary Authority and the Securities and Futures Commission in Hong Kong. **Korea:** J.P. Morgan Securities (Far East) Ltd, Seoul Branch, is regulated by the Korea Financial Supervisory Service. **Australia:** J.P. Morgan Australia Limited (ABN 52 002 888 011/AFS Licence No: 238188) is regulated by ASIC and J.P. Morgan Securities Australia Limited (ABN 61 003 245 234/AFS Licence No: 238066) is a Market Participant with the ASX and regulated by ASIC. **Taiwan:** J.P. Morgan Securities (Taiwan) Limited is a participant of the Taiwan Stock Exchange (company-type) and regulated by the Taiwan Securities and Futures Bureau. **India:** J.P. Morgan India Private Limited, having its registered office at J.P. Morgan Tower, Off. C.S.T. Road, Kalina, Santacruz East, Mumbai - 400098, is a member of the National Stock Exchange of India Limited (SEBI Registration Number - INB 230675231/INF 230675231/INE 230675231) and Bombay Stock Exchange Limited (SEBI Registration Number - INB010675237/INB010675237) and is regulated by Securities and Exchange Board of India. **Thailand:** JPMorgan Securities (Thailand) Limited is a member of the Stock Exchange of Thailand and is regulated by the Ministry of Finance and the Securities and Exchange Commission. **Indonesia:** PT J.P. Morgan Securities Indonesia is a member of the Indonesia Stock Exchange and is regulated by the BAPEPAM LK. **Philippines:** J.P. Morgan Securities Philippines Inc. is a member of the Philippine Stock Exchange and is regulated by the Securities and Exchange Commission. **Brazil:** Banco J.P. Morgan S.A. is regulated by the Comissao de Valores Mobiliarios (CVM) and by the Central Bank of Brazil. **Mexico:** J.P. Morgan Casa de Bolsa, S.A. de C.V., J.P. Morgan Grupo Financiero is a member of the Mexican Stock Exchange and authorized to act as a broker dealer by the National Banking and Securities Exchange Commission. **Singapore:** This material is issued and distributed in Singapore by J.P. Morgan Securities Singapore Private Limited (JPMSS) [MICA (P) 025/01/2011 and Co. Reg. No.: 199405335R] which is a member of the Singapore Exchange Securities Trading Limited and is regulated by the Monetary Authority of Singapore (MAS) and/or JPMorgan Chase Bank, N.A., Singapore branch (JPMCB Singapore) which is regulated by the MAS. **Malaysia:** This material is issued and distributed in Malaysia by JPMorgan Securities (Malaysia) Sdn Bhd (18146-X) which is a Participating Organization of Bursa Malaysia Berhad and a holder of Capital Markets Services License issued by the Securities Commission in Malaysia. **Pakistan:** J. P. Morgan Pakistan Broking (Pvt.) Ltd is a member of the Karachi Stock Exchange and regulated by the Securities and Exchange Commission of Pakistan. **Saudi Arabia:** J.P. Morgan Saudi Arabia Ltd. is authorized by the Capital Market Authority of the Kingdom of Saudi Arabia (CMA) to carry out dealing as an agent, arranging, advising and custody, with respect to securities business under licence number 35-07079 and its registered address is at 8th Floor, Al-Faisaliyah Tower, King Fahad Road, P.O. Box 51907, Riyadh 11553, Kingdom of Saudi Arabia. **Dubai:** JPMorgan Chase Bank, N.A., Dubai Branch is regulated by the Dubai Financial Services Authority (DFSA) and its registered address is Dubai International Financial Centre - Building 3, Level 7, PO Box 506551, Dubai, UAE.

### Country and Region Specific Disclosures

**U.K. and European Economic Area (EEA):** Unless specified to the contrary, issued and approved for distribution in the U.K. and the EEA by JPMSL. Investment research issued by JPMSL has been prepared in accordance with JPMSL's policies for managing conflicts of interest arising as a result of publication and distribution of investment research. Many European regulators require a firm to establish, implement and maintain such a policy. This report has been issued in the U.K. only to persons of a kind described in Article 19 (5), 38, 47 and 49 of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005 (all such persons being referred to as "relevant persons"). This document must not be acted on or relied on by persons who are not relevant persons. Any investment or investment activity to which this document relates is only available to relevant persons and will be engaged in only with relevant persons. In other EEA countries, the report has been issued to persons regarded as professional investors (or equivalent) in their home jurisdiction. **Australia:** This material is issued and distributed by JPMSAL in Australia to "wholesale clients" only. JPMSAL does not issue or distribute this material to "retail clients." The recipient of this material must not distribute it to any third party or outside Australia without the prior written consent of JPMSAL. For the purposes of this paragraph the terms "wholesale client" and "retail client" have the meanings given to them in section 761G of the Corporations Act 2001. **Germany:** This material is

distributed in Germany by J.P. Morgan Securities Ltd., Frankfurt Branch and J.P.Morgan Chase Bank, N.A., Frankfurt Branch which are regulated by the Bundesanstalt für Finanzdienstleistungsaufsicht. **Hong Kong:** The 1% ownership disclosure as of the previous month end satisfies the requirements under Paragraph 16.5(a) of the Hong Kong Code of Conduct for Persons Licensed by or Registered with the Securities and Futures Commission. (For research published within the first ten days of the month, the disclosure may be based on the month end data from two months' prior.) J.P. Morgan Broking (Hong Kong) Limited is the liquidity provider/market maker for derivative warrants, callable bull bear contracts and stock options listed on the Stock Exchange of Hong Kong Limited. An updated list can be found on HKEx website: <http://www.hkex.com.hk>. **Japan:** There is a risk that a loss may occur due to a change in the price of the shares in the case of share trading, and that a loss may occur due to the exchange rate in the case of foreign share trading. In the case of share trading, JPMorgan Securities Japan Co., Ltd., will be receiving a brokerage fee and consumption tax (shouhizei) calculated by multiplying the executed price by the commission rate which was individually agreed between JPMorgan Securities Japan Co., Ltd., and the customer in advance. Financial Instruments Firms: JPMorgan Securities Japan Co., Ltd., Kanto Local Finance Bureau (kinsho) No. 82 Participating Association / Japan Securities Dealers Association, The Financial Futures Association of Japan. **Korea:** This report may have been edited or contributed to from time to time by affiliates of J.P. Morgan Securities (Far East) Ltd, Seoul Branch. **Singapore:** JPMS and/or its affiliates may have a holding in any of the securities discussed in this report; for securities where the holding is 1% or greater, the specific holding is disclosed in the Important Disclosures section above. **India:** For private circulation only, not for sale. **Pakistan:** For private circulation only, not for sale. **New Zealand:** This material is issued and distributed by JPMSAL in New Zealand only to persons whose principal business is the investment of money or who, in the course of and for the purposes of their business, habitually invest money. JPMSAL does not issue or distribute this material to members of "the public" as determined in accordance with section 3 of the Securities Act 1978. The recipient of this material must not distribute it to any third party or outside New Zealand without the prior written consent of JPMSAL. **Canada:** The information contained herein is not, and under no circumstances is to be construed as, a prospectus, an advertisement, a public offering, an offer to sell securities described herein, or solicitation of an offer to buy securities described herein, in Canada or any province or territory thereof. Any offer or sale of the securities described herein in Canada will be made only under an exemption from the requirements to file a prospectus with the relevant Canadian securities regulators and only by a dealer properly registered under applicable securities laws or, alternatively, pursuant to an exemption from the dealer registration requirement in the relevant province or territory of Canada in which such offer or sale is made. The information contained herein is under no circumstances to be construed as investment advice in any province or territory of Canada and is not tailored to the needs of the recipient. To the extent that the information contained herein references securities of an issuer incorporated, formed or created under the laws of Canada or a province or territory of Canada, any trades in such securities must be conducted through a dealer registered in Canada. No securities commission or similar regulatory authority in Canada has reviewed or in any way passed judgment upon these materials, the information contained herein or the merits of the securities described herein, and any representation to the contrary is an offence. **Dubai:** This report has been issued to persons regarded as professional clients as defined under the DFSA rules.

**General:** Additional information is available upon request. Information has been obtained from sources believed to be reliable but JPMorgan Chase & Co. or its affiliates and/or subsidiaries (collectively J.P. Morgan) do not warrant its completeness or accuracy except with respect to any disclosures relative to JPMS and/or its affiliates and the analyst's involvement with the issuer that is the subject of the research. All pricing is as of the close of market for the securities discussed, unless otherwise stated. Opinions and estimates constitute our judgment as of the date of this material and are subject to change without notice. Past performance is not indicative of future results. This material is not intended as an offer or solicitation for the purchase or sale of any financial instrument. The opinions and recommendations herein do not take into account individual client circumstances, objectives, or needs and are not intended as recommendations of particular securities, financial instruments or strategies to particular clients. The recipient of this report must make its own independent decisions regarding any securities or financial instruments mentioned herein. JPMS distributes in the U.S. research published by non-U.S. affiliates and accepts responsibility for its contents. Periodic updates may be provided on companies/industries based on company specific developments or announcements, market conditions or any other publicly available information. Clients should contact analysts and execute transactions through a J.P. Morgan subsidiary or affiliate in their home jurisdiction unless governing law permits otherwise.

"Other Disclosures" last revised January 8, 2011.

---

**Copyright 2011 JPMorgan Chase & Co. All rights reserved. This report or any portion hereof may not be reprinted, sold or redistributed without the written consent of J.P. Morgan.**