Industry Focus

10 October 2007 | 12 pages

India Sugar

New Measures Positive at the Margin but Supply Overhang Exists

- **New Government Measures** — 1) Compulsory 5% ethanol blending; mandatory 10% blending from Oct 2009, priced at Rs21.5/litre; 2) Direct conversion of cane juice to ethanol permitted; 3) Export subsidies extended for another year; 4) Debt repayment schedule relaxed for sugar mills.
- **Marginal Impact** — Near-term profit margins of sugar companies are unlikely to rise sharply on account of the new measures, but cash flow crunch would ease. While ethanol blending is a positive step, at Rs21.5/litre, direct conversion does not offer great economics to UP-based mills at current cane costs.
- **How Much Sugar Can Ethanol Replace?** — Based on our analysis, 5% ethanol blending across India will take 1.14m tons of sugar out of the system and 10% blending 2.3m tons — not enough to curtail next year's oversupply and lead to a dramatic turn in prices.
- **Supply Overhang Despite Exports of 3m Tons** — Extension of export subsidies is positive, given that global prices remain weak. At an estimated 3m tons of sugar exports in FY08, 20.8m tons of consumption and 2.2m tons for ethanol, we expect excess sugar supply of 2.5m tons.
- **Cane Price Is Critical** — Cane prices will determine near-term margins for sugar companies. At current prices, UP-based mills are incurring cash losses. UP is expected to announce new prices; unless there is a reduction, we do not see much earnings upside for either BHL or BRCM.

Princy Singh[1]
+91-22-6631-9871
princy.singh@citi.com

Pragati Khadse[1]
+91-22-6631-9856
pragati.khadse@citi.com

Aditya Mathur[1]
aditya.mathur@citi.com

See Appendix A-1 for Analyst Certification and important disclosures.

[1]Citigroup Global Markets India Private Limited

New Measures Positive at the Margin

The government has announced new concessions for the Indian sugar industry, including: 1) 5% ethanol blending has been made compulsory, 10% blending is mandatory from Oct 2009, priced at Rs21.5/litre; 2) direct conversion of cane juice to ethanol has been permitted; 3) export subsidies have been extended for another year; and 4) debt repayment schedules for sugar mills have been relaxed. We believe that while these measures are positive for the sugar industry at the margin, they will not dramatically change the demand-supply dynamics in the near term. South India and coastal-based mills look better positioned to benefit given their export advantages.

How much sugar will ethanol absorb?

By our estimates, total ethanol required for 5% nationwide blending in FY08E would be about 742m tons and for 10% blending 1,485m tons. By extension, these requirements would take away 1.14m tons and 2.28m tons sugar from the system, respectively — material, but not enough to reverse the oversupply, which we believe will persist for at least 12 more months.

Figure 1. Sugar to Ethanol Conversion

	FY08E	Units
Total Petrol Consumption	11	MT
Total Petrol Consumption	14850	Million Ltrs.
Ethanol required (5% blending)	742.5	Million Ltrs.
Sugar Foregone (65% conversion ratio)	1.14	Million Tons
% of Consumption	5.7	%
Ethanol required (10% blending)	1485	Million Ltrs.
Sugar Foregone (65% conversion ratio)	2.28	Million Tons
% of Consumption	11.4	%

Source: Company Reports and Citi Investment Research estimates

Do Ethanol Conversion Economics Work?

We estimate that for Uttar Pradesh (UP)-based mills such as Bajaj Hindusthan and Balrampur Chini, the economics of direct conversion of cane juice to ethanol are weak. Currently, ethanol in India is manufactured from molasses, a byproduct of sugar. Switching to direct conversion for ethanol will allow sugar companies to increase the output of ethanol while cutting sugar output. We estimate that for a typical 10,000TCD sugar mill based in the North Indian state of UP, the cost of manufacturing up to the operating level will be Rs20.4/litre, using the direct conversion route. Our calculations are based on the current sugarcane price of Rs1,250/t and average sugar recovery of 10%.

Figure 2. UP State Ethanol Manufacturing Economics — Direct Conversion Route

	Value	Units
Crushing Capacity	10,000	TCD
Crushing Season	160	Days
Sugarcane Crushed	1,600,000	MT
Sugar Recovery	10%	%
Sugar Quantity (in Juice)	16,00000	Ltrs.
Sugar to Alcohol Ratio	65.0	Ltrs / 100 Kg. of Sugar
Alcohol Production	1,040,000	Ltrs.
Fermentation Efficiency	95	%
Distillation Efficiency	98	%
Actual Alcohol Production	**968,240.00**	**Ltrs.**
Sugarcane Price Rs. / MT	**1,250**	**Rs. / MT**
Sugarcane Value	2,000	Rs. Million
COST OF PRODUCTION		
Sugarcane Cost	20.66	Rs. / Ltr.
Milling & Other Costs - Upto Clarified Juice	1.75	Rs. / Ltr.
Conversion Cost - Clarified Juice to Ethanol	2.50	Rs. / Ltr.
Total Production Cost	24.91	
Less: Recoveries from Cogeneration & Press Mud	4.50	Rs. / Ltr.
Net Production Cost	**20.4**	**Rs. / Ltr.**

Source: Company Reports and Cit Investment Research estimates

At an operating cost of Rs20.4/litre, manufacturing ethanol through the direct route is unlikely to leave much margin for the UP-based sugar companies, given the government's proposed selling price of Rs21.5/litre. However, margins would improve if cane prices declined or recovery (or fructose content) was higher. In this regard the sugar mills in South India are at an advantage, benefiting from lower cane costs and higher recoveries. A key advantage for the North Indian mills would be curtailing sugar production by switching to ethanol, which may have a positive impact on sugar prices. At the proposed Rs21.5/kg price for ethanol, the sugar price parity is Rs14/kg based on our calculations. At this point, manufacturers would be indifferent between sugar and ethanol production.

How much sugar will exit the system?

According to our oil analyst, Rahul Singh, total ethanol required for 5% nationwide blending in FY08E would be about 742m tons, and 1,485m tons for 10% blending. Based on these estimates, we calculate that 5% nationwide blending, if implemented, could potentially take 1.14m tons of sugar out of the system and 10% blending 2.28m tons of sugar.

Figure 3. Sugar to Ethanol Conversion

	FY08E	Units
Total Petrol Consumption	11	MT
Total Petrol Consumption	14850	Million Ltrs.
Ethanol required (5% blending)	742.5	Million Ltrs.
Sugar Foregone (65% conversion ratio)	1.14	Million Tons
% of Consumption	5.7	%
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% of Consumption	11.4	%

Source: Company Reports and Citi Investment Research estimates

Near-term supply overhang to persist

While all factors point toward a possibility of a quick shift toward direct ethanol conversion, we expect the near-term supply overhang to cap sugar price upside to Rs14.0-14.5/kg over the next 12 months. (We are assuming Rs14/kg in our estimates for UP-based sugar companies.) Assuming a best-case scenario of 10% nationwide blending of fuel from FY08 and sugar companies swiftly moving toward direct ethanol production, sugar production should decline 2.2m tons, on our estimates. However, this would still leave a surplus of 2.5m tons and domestic sugar inventory of 13.4m tons (65.4% of consumption). As such, rising inventory levels are likely to keep sugar prices depressed, although a conversion parity of Rs14/kg between sugar and ethanol may result in sugar prices in North India moving toward the conversion parity. We, however, expect a turn in the sugar price cycle from the 2008E/09E sugar season, when we expect farmers to cut the area under sugarcane cultivation and thus lower sugar output. This should result in inventory depletion, which could get worse if direct conversion to ethanol is adopted.

Figure 4. Indian Sugar Demand Supply Estimates (Million Tons)

	FY04	FY05	FY06	FY07E	FY08E	FY09E
Opening Stock	11.6	8.5	4.7	4.4	10.9	13.4
Production	14.0	12.7	19.5	28.5	28.5	21.0
Imports	0.4	2	0	0	0	0
Total Availability	**26.0**	**23.2**	**24.2**	**32.9**	**39.4**	**34.4**
Domestic Consumption	17.3	18.5	19.2	20.0	20.8	21.4
Used for Ethanol					2.2	2.4
Exports	0.2	0	0.6	2	3	2
Total Requirement	17.5	18.5	19.8	22.0	26.0	25.8
Closing Stock	**8.5**	**4.7**	**4.4**	**10.9**	**13.4**	**8.6**
As % of Consumption	*49.1*	*25.4*	*22.7*	*54.5*	*64.4*	*39.9*

Source: ISMA and Citi Investment Research estimates

Is cost still the most important factor?

The single most important near-term variable that can have a material impact on UP-based sugar company earnings is cane prices. The UP government is likely to set the cane price for the 07/08 crushing season, which is due to commence soon. A best-case scenario, of course, would be a reduction in cane prices. Given UP's large farming community and the ensuing political pressures, we believe that this scenario is unlikely. A more likely scenario, in our view, is cane prices being left unchanged, at Rs1,250/t. However, UP-based mills may be extended interest-free loans to make cane payments (a demand of the UP government placed before the Central government). This would reduce the interest burden to a large extent.

However, despite the loans, at a Rs1,250/t cane price (even if one assumes sugar prices move to Rs14/kg, at a 10% recovery rate), sugar companies in UP would still incur losses in the sugar business, and may switch the bulk of their production to ethanol (assuming that they are allowed and are able to carry out the necessary changes required for switching to the direct route). They may still end up making marginal profits on the distillery business, but the key would be cane prices being left unchanged.

Figure 5. Bajaj Hindusthan — Sensitivity to FY08E Earnings to Cane Price

Change (%)	Sugarcane Cost (Rs./ Ton)	Profit (Rs Mn)	% Divergence
+5%	1312.5	1004.5	-54.9
+4%	1300.0	1249.2	-43.9
+3%	1287.5	1493.9	-32.9
+2%	1275.0	1738.6	-22.0
+1%	1262.5	1983.3	-11.0
Base Case	**1250.0**	**2227.9**	**0.0**
-1%	1237.5	2472.6	11.0
-2%	1225.0	2717.0	22.0
-3%	1212.5	2962.5	33.0
-4%	1200.0	3206.7	43.9
-5%	1187.5	3451.4	54.9

Source: Citi Investment Research estimates

Figure 6. Balrampur Chini — Sensitivity to FY08E Earnings to Cane Price

Change (%)	Sugarcane Cost (Rs./ Ton)	Profit (Rs Mn)	% Divergence
+5%	1312.5	1005.0	-36.8
+4%	1300.0	1122.0	-29.4
+3%	1287.5	1238.4	-22.1
+2%	1275.0	1355.0	-14.7
+1%	1262.5	1472.0	-7.4
Base Case	**1250.0**	**1589.0**	**0.0**
-1%	1237.5	1706.0	7.4
-2%	1225.0	1822.0	14.7
-3%	1212.5	1940.0	22.1
-4%	1200.0	2056.0	29.4
-5%	1187.5	2173.0	36.8

Source: Citi Investment Research estimates

September quarter preview

Our estimates for 4Q FY07 are shown in the table below. We forecast losses to continue in this quarter.

Figure 7. Bajaj Hindusthan — September Quarter Results Preview

Rs mn	4Q FY06	4Q FY07E	%Change
Sales	**3,681.7**	**4,058.1**	**10.2**
Operating Expenses	-3,145.4	-3,936.3	16.3
EBITDA	**536.3**	**121.7**	**-88.9**
Margin (%)	*14.6*	*3.0*	*-2144 bps*
Interest	-15.6	-201.9	-454.8
Depreciation	-157.9	-349.4	76.8
Other Income	129.3	139.3	1,111.3
PBT	**492.1**	**-290.3**	**-130.1**
Tax	-110.1	95.8	-129.3
Tax Rate (%)	*-22.4*	*33.0*	*-86 bps*
PAT	**382.0**	**-194.5**	**-130.4**
No of shares	141.1	141.1	
EPS	**2.7**	**-1.4**	**-130.4**

Source: Company and Citi Investment Research estimates

Figure 8. Balrampur Chini — September Quarter Results Preview

Rs mn	6Q06	4Q07E	% Change
Net Sales	**3,882.2**	**3,494.0**	**-10.0**
Total Expenditure	-3,292.1	-3,354.2	1.9
EBITDA	**590.1**	**139.8**	**-76.3**
EBITDA Margin (%)	*15.2*	*4.0*	*-1120 bps*
Interest	-70.0	-207.2	196.0
Depreciation	-143.8	-205.2	42.7
Other Income	20.4	21.7	6.4
PBT	**396.7**	**-250.9**	**-163.3**
Tax	-74.6	-50.2	-32.7
Tax Rate (%)	*18.8*	*-20.0*	*-3881 bps*
Net Profit	**322.1**	**-301.1**	**-193.5**
No of shares	248.2	264.2	6.4
EPS	**1.3**	**-1.1**	**-187.8**

Source: Company data and Citi Investment Research estimates

Our price and volume assumptions are:

Figure 9. Segmental Revenue Assumptions for 4Q07E

4Q07E	Bajaj Hindusthan	Balrampur Chini
Sugar Volumes (m ton)	0.305	0.15
Sugar Realisations (Rs/ton)	13080	13,500.0
Sugar revenues	3,989	2,025
Ethanol/Alcohol volumes (m Lit)	16.88	2.86
Ethanol real (Rs/lit)	21.84	21.5
Ethanol revenues (Rsm)	368.7	61.5
Power Revenues		1,180.0
Others		10.0

Source: Citi Investment Research estimates

Our replacement cost based valuations for the sugar companies are:

Figure 10. Bajaj Hindusthan — Replacement Cost Analysis

	Capacity (FY08E)	Replacement cost per unit (Rs)	Replacement cost (Rs Million)
Sugar (TCD)	136000	300000	40800
Alcohol (KLPD)	800	3500000	2800
Co-generated Power (MW)	96	40000000	3840
MDF			2400
Total Replacement cost (Rs million)			49840
Total Debt (RsM)			17500
Replacement cost net of Debt (RsM)			32340
Per share replacement cost (Rs)			229.0
Discount to replacement cost (%)			15%
Price Target (Rs)			**195.0**

Source: Citigroup Investment Research estimates

Figure 11. Balrampur Chini — Replacement Cost Analysis

	Capacity (FY08E)	Replacement cost per unit (Rs)	Replacement cost (Rs Million)
Sugar (TCD)	73000	300000	21900
Alcohol (KLPD)	420	3500000	1470
Co-gen Power (MW)	74	40000000	2960
Total Replacement cost (Rs million)			26330
Total Debt (RsM)			4500
Replacement cost net of Debt (RsM)			21830
Per share replacement cost (Rs)			88.0
Discount to replacement cost (%)			15%
Price Target (Rs)			**75.0**

Source: Citigroup Investment Research estimates

Bajaj Hindusthan (BJHN.BO - Rs177.00; 1M)

Valuation: Our target price of Rs195 is based on a replacement cost analysis, to which we apply a 15% discount, given that the company is making cash losses. In this uncertain environment, we believe that asset replacement cost (net of debt) provides base valuations to the stock. We value its sugar assets at Rs300,000 per TCD, which for 136,000TCD gives a value of Rs40.8bn. We value the 800KLPD alcohol assets at Rs3.5m per KLPD, arriving at a value of Rs2.8bn for the assets. We value the co-generation assets at Rs3.8bn, based on Rs40m per MW valuation. Stripped out total debt of Rs17.5bn, the net asset valuation of BJH is Rs32.3bn or Rs229 per share. Applying a 15% discount, we arrive at our target price of Rs195.

Risks: Although our quantitative risk-rating system, which tracks 260-day historical share price volatility, assigns a High Risk to the stock, we rate it as Medium Risk given that it has finished its first phase of capacity expansion. The sugar industry in general, and BHL in particular, faces significant risks, some of which are structural. Key downside risks are: (1) regulations and the possibility of government intervention in an industry with little pricing power; (2) sugarcane output is governed by agro-climatic factors; an adverse climate could lead to crop failures, affecting raw-material availability; and (3) specific to BJH is execution risk, as the company is aggressively expanding capacity. If the impact of these risks is greater than we expect, the share price will likely have difficulty reaching our target price.

Balrampur Chini Mills (BACH.BO - Rs79.65; 2M)

Valuation: Our target price of Rs75 is based on a 15% discount to the replacement cost of assets. We apply a 15% discount to reflect cash losses of the sugar business, which we believe will continue for the next 3-4 quarters. We believe that a discount to the replacement cost is warranted till the time cash losses continue. In such an uncertain environment, we believe that asset replacement cost (net of debt) will provide the base valuations to the stock. Our replacement cost analysis for BRCM is shown below. We value the sugar assets of BRCM at Rs300,000 per TCD, which for 73,000TCD gives a value of Rs21.9bn. We value the 420KLPD alcohol assets at Rs3.5m per KLPD, arriving at a value of Rs1.47bn for the assets. We value the 74MW surplus power co-generation assets at Rs2.96bn, based on Rs40m per MW valuation. Stripping out total debt of Rs4.5bn, the net asset valuation of BRCM in our view is

Rs21.83bn or Rs88 per share. Applying a 15% discount to this yields a per share price of Rs75.

Risks

Although our quantitative risk-rating system, which tracks 260-day historical share price volatility, assigns a High Risk to the stock, we rate BRCM as Medium Risk given that the company has successfully completed part of its capacity expansion and has raised capital for the remaining capex. We believe execution and financial risks stand mitigated to a large extent. The following risks could impede the stock from reaching our target price: (1) Regulations and the possibility of government intervention in pricing in an industry that has little pricing power; (2) Sugarcane output is governed by various agro-climatic factors. An adverse climate could lead to crop failures, affecting raw-material availability; (3) The company is aggressively expanding capacity and any delay could hurt its near-term profitability; (4) BRCM is looking at investing in power generation, which is a highly regulated industry. Any changes in government regulations could hurt business prospects. The key upside risk would be if the UP government's planned new sugar policy is more favorable than the earlier policy, which could significantly alter sentiment and drive the stock price beyond our price target.

Appendix A-1

Analyst Certification

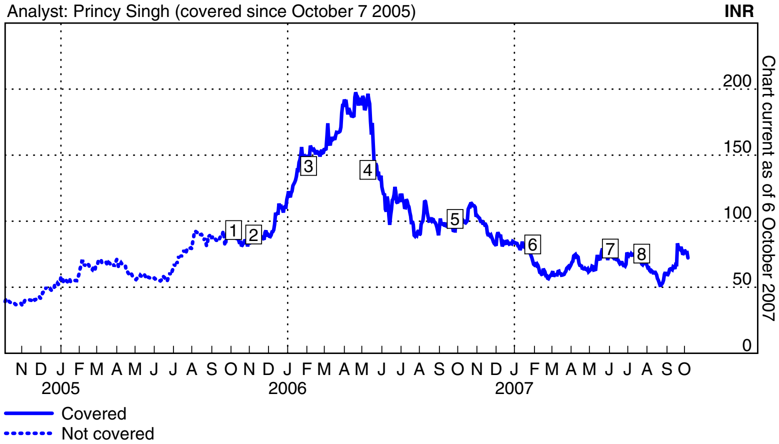
Each research analyst(s), strategist(s) or research associate(s) responsible for the preparation and content of this research report hereby certifies that, with respect to each issuer or security that the research analyst, strategist or research associate covers in this research report, all of the views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

IMPORTANT DISCLOSURES

Balrampur Chini Mills (BACH.BO)

Ratings and Target Price History - Fundamental Research

Analyst: Princy Singh (covered since October 7 2005)



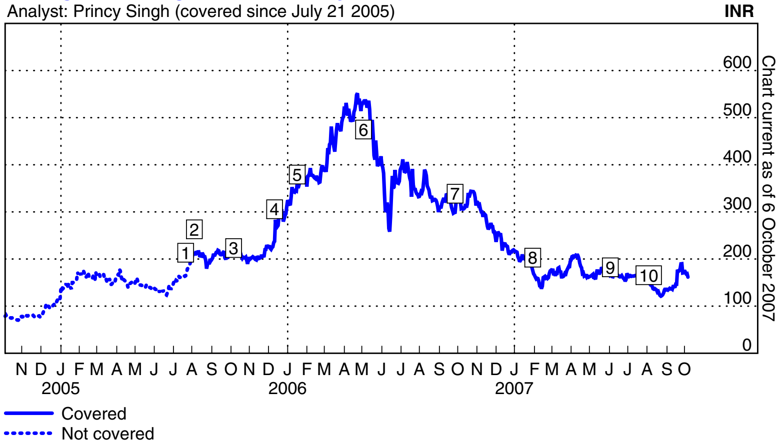
#	Date	Rating	Target Price	Closing Price
1:	6 Oct 05	1H	130.00	87.85
2:	8 Nov 05	1H	*138.00	88.45
3:	3 Feb 06	*1M	*170.00	147.05
4:	10 May 06	1M	*245.00	196.50
5:	27 Sep 06	1M	*130.00	92.70
6:	30 Jan 07	1M	*107.00	NA
7:	4 Jun 07	*2M	*88.00	74.30
8:	24 Jul 07	2M	*75.00	67.55

*Indicates change.

Bajaj Hindusthan (BJHN.BO)

Ratings and Target Price History - Fundamental Research

Analyst: Princy Singh (covered since July 21 2005)



#	Date	Rating	Target Price	Closing Price
1:	21 Jul 05		-	164.45
2:	4 Aug 05	*1H	*216.00	213.35
3:	6 Oct 05	*1M	*280.00	211.80
4:	12 Dec 05	1M	*320.00	237.40
5:	17 Jan 06	1M	*440.00	362.00
6:	3 May 06	1M	*650.00	533.65
7:	27 Sep 06	1M	*467.00	299.00
8:	30 Jan 07	1M	*300.00	NA
9:	4 Jun 07	1M	*229.00	165.70
10:	3 Aug 07	1M	*195.00	151.05

*Indicates change.

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% of companies in each rating category that are investment banking clients	53%	55%	42%

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