

## Cosan

## 5 reasons to buy Cosan

Reiterate Rating: BUY | PO: 31.00 BRL | Price: 17.60 BRL

## A solid operator

We reiterate our Buy rating on Cosan. We revise our PO from R\$38/share to R\$31/share on lower POs for Raizen and Vale (vs. our latest update in Sep '22). Our revised PO provides 76% upside potential, and a second look at the holding structure allows us to be confident about the group's strength. We see five pillars supporting our Buy:

## #1: Leverage is under control

Cosan has a strong balance sheet, despite R\$30bn net debt at the holding level. The average ratio between dividends received and interest paid in 2023-27E at 2.7x is higher than the historical 2x level. We believe this allows the company to refinance ahead of the 2025 amortization for the debt issued to acquire its stake at Vale.

## #2: Lower interest rate = more cash

Cosan is highly sensitive to interest rates. The company can benefit in multiple ways and lower rates should (1) help the company to deleverage; (2) make the underlying assets more valuable; and (3) free cash to invest in new opportunities.

## #3: Equity offerings to unlock perceived value

Cosan has previously stated it plans to have all subsidiaries listed. Compass and Moove remain private. As was the case with Raizen in 2021, a potential listing of companies could unlock value for Cosan, in our view. Moreover, in terms of liquidity, we understand Cosan would not need to partially divest any of the assets to meet its debt obligations.

## #4 and #5: Vale and LandCo as new growth avenues

Cosan's CEO has been elected to Vale's board of directors and assumes responsibility for the capital allocation committee. At the same time, Cosan has been able to generate value in its land division with asset turnover and land management.

Estimates(Dec) (BRL)	2021A	2022A	2023E	2024E	2025E
EPS	3.37	0.65	(0.52)	0.83	0.45
GAAP EPS	3.37	0.65	(0.52)	0.83	0.45
EPS Change (YoY)	632.6%	-80.7%	NM	NM	-45.8%
Consensus EPS (Bloomberg)			0.69	1.25	1.65
DPS	1.29	0.43	0.43	0.43	0.42
ADR EPS (US\$)	2.50	0.50	(0.43)	0.69	0.37
ADR DPS (US\$)	0.96	0.33	0.35	0.35	0.35
<b>Valuation (Dec)</b>					
P/E	5.2x	27.1x	NM	21.2x	39.1x
GAAP P/E	5.2x	27.1x	NM	21.2x	39.1x
Dividend Yield	7.3%	2.4%	2.4%	2.4%	2.4%
EV / EBITDA*	9.6x	22.1x	19.5x	12.8x	15.5x
Free Cash Flow Yield*	3.7%	8.2%	8.8%	10.7%	13.6%

\* For full definitions of *IQmethod*<sup>SM</sup> measures, see page 10.

19 June 2023

## Equity

## Key Changes

(BRL)	Previous	Current
Price Obj.	38.00	31.00
2023E DPS	0.35	0.43

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## Stock Data

Price (Common / ADR)	17.60 BRL / 14.58 USD
Price Objective	31.00 BRL / 26.00 USD
Date Established	19-Jun-2023 / 19-Jun-2023
Investment Opinion	C-1-7 / C-1-7
52-Week Range	13.45 BRL - 21.76 BRL
Market Value (mn)	32,984 BRL
Average Daily Value	41.43 BRL
Shares Outstanding (mn)	1,874.1 / 468.5
BofA Ticker / Exchange	CSAIF / SAO
BofA Ticker / Exchange	CSAN / NYS
Bloomberg / Reuters	CSAN3 BZ / CSAN3.SA
ROE (2023E)	-4.2%
Net Dbt to Eqty (Dec-2022A)	98.1%

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**Refer to important disclosures on page 11 to 14. Analyst Certification on page 9. Price Objective Basis/Risk on page 9.**

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Timestamp: 19 June 2023 05:14PM EDT

# iQprofile<sup>SM</sup> Cosan

## iQmethod<sup>SM</sup> – Bus Performance\*

(BRL Millions)	2021A	2022A	2023E	2024E	2025E
Return on Capital Employed	21.5%	3.4%	5.7%	6.0%	3.8%
Return on Equity	63.1%	6.4%	-4.2%	6.6%	3.4%
Operating Margin	120,817.7%	NA	NA	NA	NA
Free Cash Flow	1,221	2,702	2,887	3,527	4,498

## iQmethod<sup>SM</sup> – Quality of Earnings\*

(BRL Millions)	2021A	2022A	2023E	2024E	2025E
Cash Realization Ratio	0.2x	2.2x	NM	2.3x	5.3x
Asset Replacement Ratio	0.5x	0.2x	0.8x	1.0x	1.0x
Tax Rate	9.4%	134.3%	NM	37.1%	70.7%
Net Debt-to-Equity Ratio	88.1%	98.1%	107.7%	100.6%	93.0%
Interest Cover	7.9x	1.2x	1.1x	2.1x	1.6x

## Income Statement Data (Dec)

(BRL Millions)	2021A	2022A	2023E	2024E	2025E
Sales	5	0	0	0	0
% Change	482.9%	-100.0%	NA	NA	NA
Gross Profit	6,557	2,986	3,668	5,380	4,549
% Change	380.5%	-54.5%	22.8%	46.7%	-15.5%
EBITDA	6,630	2,873	3,243	4,950	4,101
% Change	773.5%	-56.7%	12.9%	52.7%	-17.2%
Net Interest & Other Income	(847)	(2,319)	(4,820)	(3,171)	(3,051)
<b>Net Income (Adjusted)</b>	<b>6,312</b>	<b>1,214</b>	<b>(967)</b>	<b>1,563</b>	<b>852</b>
<b>% Change</b>	<b>632.9%</b>	<b>-80.8%</b>	<b>NM</b>	<b>NM</b>	<b>-45.5%</b>

## Free Cash Flow Data (Dec)

(BRL Millions)	2021A	2022A	2023E	2024E	2025E
Net Income from Cont Operations (GAAP)	5,229	(238)	(4,535)	(47)	(899)
Depreciation & Amortization	17	14	14	14	14
Change in Working Capital	0	0	0	0	0
Deferred Taxation Charge	NA	NA	NA	NA	NA
Other Adjustments, Net	(4,015)	2,928	7,419	3,574	5,396
Capital Expenditure	(9)	(2)	(11)	(14)	(14)
<b>Free Cash Flow</b>	<b>1,221</b>	<b>2,702</b>	<b>2,887</b>	<b>3,527</b>	<b>4,498</b>
<b>% Change</b>	<b>-4.1%</b>	<b>121.2%</b>	<b>6.8%</b>	<b>22.2%</b>	<b>27.5%</b>

## Balance Sheet Data (Dec)

(BRL Millions)	2021A	2022A	2023E	2024E	2025E
Cash & Equivalents	2,992	2,234	2,134	610	39
Trade Receivables	NA	NA	NA	NA	NA
Other Current Assets	3,893	24,146	21,639	22,752	23,928
Property, Plant & Equipment	68	59	57	57	57
Other Non-Current Assets	28,101	30,157	30,799	31,954	31,343
<b>Total Assets</b>	<b>35,055</b>	<b>56,596</b>	<b>54,629</b>	<b>55,373</b>	<b>55,368</b>
Short-Term Debt	NA	NA	NA	NA	NA
Other Current Liabilities	1,459	1,403	1,393	1,393	1,393
Long-Term Debt	15,981	25,088	26,284	25,340	24,162
Other Non-Current Liabilities	2,864	6,818	4,533	4,047	3,886
<b>Total Liabilities</b>	<b>20,305</b>	<b>33,309</b>	<b>32,210</b>	<b>30,779</b>	<b>29,441</b>
<b>Total Equity</b>	<b>14,750</b>	<b>23,287</b>	<b>22,419</b>	<b>24,593</b>	<b>25,926</b>
<b>Total Equity &amp; Liabilities</b>	<b>35,055</b>	<b>56,596</b>	<b>54,629</b>	<b>55,373</b>	<b>55,368</b>

\* For full definitions of iQmethod<sup>SM</sup> measures, see page 10.

## Company Sector

Food-Commodities

## Company Description

Cosan is a conglomerate operating in several different stakes in businesses within the energy and infrastructure segments through: 1) Raizen, a JV with Shell that operates in upstream and downstream of the biofuel supply chain, 2) Compass, a natural gas player, 3) Moove, a lubricant business in BZ and US, 4) Rumo, a rail concessionaire, 5) Vale, a leading iron ore mining company, 6) Radar, a land management business, and 7) Ligga, a potential JV on iron ore

## Investment Rationale

Cosan is a solid long-term holding. In the short-term, the company should benefit from strong earnings growth at Raizen, as well as from recovery at Comgas and Rumo. Going forward, the development of projects at Compass, Raizen and Rumo and investments through Cosan Investment could unlock value in the stock.

## Stock Data

Average Daily Volume	11,356,280
Shares / ADR	4.00

## Quarterly Earnings Estimates

	2022	2023
Q1	0.28A	-0.56A
Q2	-0.06A	-0.21E
Q3	0A	0.22E
Q4	0.44A	0E

## Key Changes

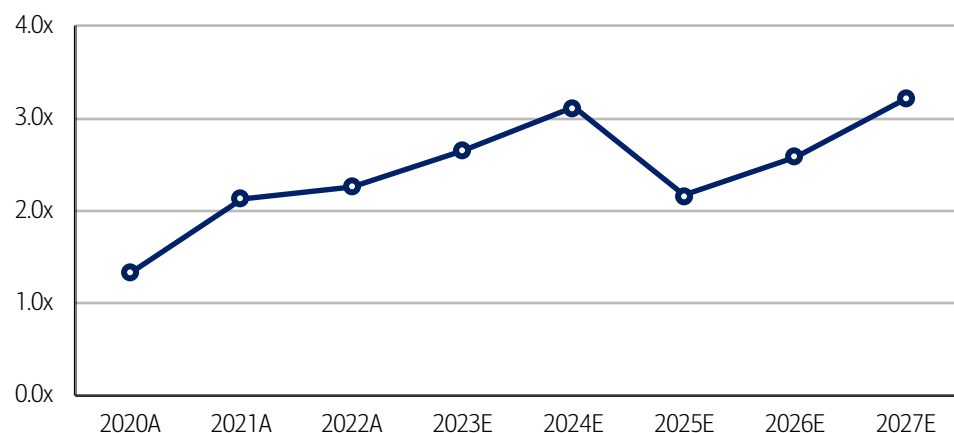
(US\$)	Previous	Current
Price Obj.	29.00	26.00
2023E DPS	0.29	0.35

# #1: Leverage is not an issue

Cosan has a strong balance sheet. Although the holding has R\$30bn of Net Debt, which would imply a ratio of 9x ND/Adj. EBITDA, the ratio between dividends received and interest paid should average 2.7x between 2023-2027E vs the historical 2x since 2020. This indicates that, even though the company would not have enough cash to pay down the debt specifically in 2025, it has enough dividend flow to support refinancing of the debt while maintaining a steady flow of dividends to its shareholders.

## Exhibit 1: Dividend to cash interest expense ratio

Cosan's high dividend to interest expense ratio allows it to roll over its debt



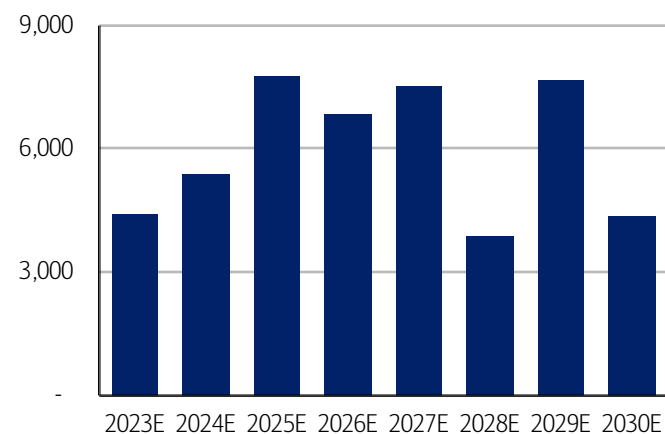
Source: Cosan and BofA Global Research

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We estimate Cosan will need to issue additional R\$6bn of new debt until 2027, while it should pay R\$24bn of debt and interest during this same period.

## Exhibit 2: Breakeven cash flow after dividends (R\$m)

2025 to 2027 should be a period of higher demand for capital

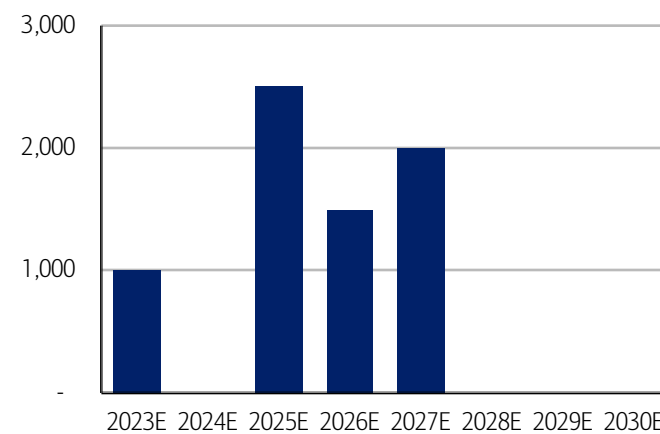


Source: BofA Global Research estimates

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## Exhibit 3: Forecasts of additional debt to be issued (R\$m)

We expect the company to raise R\$6bn in debt from 2025 to 2027



Source: BofA Global Research estimates

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## #2: Lower interest rates = more cash

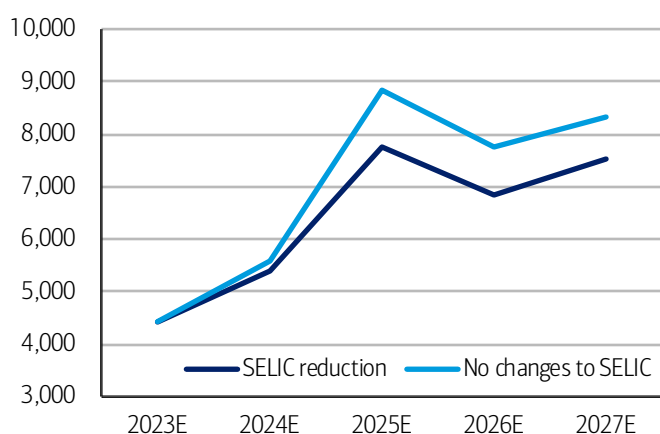
Cosan is highly sensitive to interest rates. The company benefits in multiple ways and lower rates should (1) help the company to deleverage; (2) make the underlying assets more valuable; and (iii) free cash to invest in new opportunities. As such, lower interest rates could lead to:

- Lower interest expenses and lighter debt amortization schedule;
- Appreciation of the underlying businesses through lower cost of capital;
- Greater attractiveness to pursue new businesses.

We estimate the Selic (Brazil's interest rate) will go from 13.75% to 9.5% through 2025 (BofA forecast), which should allow the company to save up to R\$1.2bn in cash as part of the first tranche of the 4131 (Vale-related) debt is due by then. At the same time, the reduction could lead to a scenario of dividend coverage of interest paid being structurally higher through the 2023-2027 investment cycle.

### Exhibit 4: Sensitivity of breakeven cash flow after dividends to SELIC (R\$mn)

Cash demands in 2025 change substantially on lower Selic

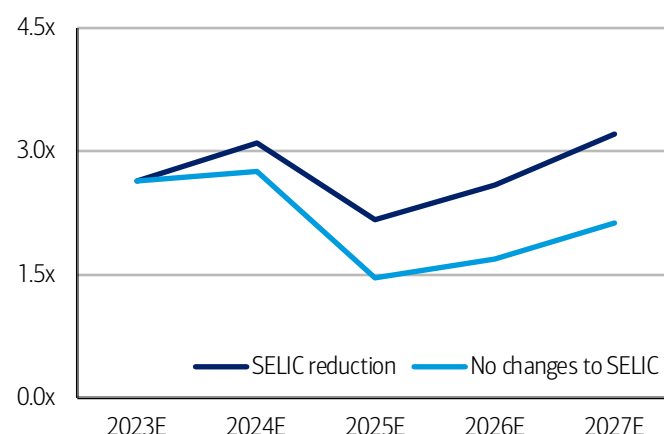


Source: BofA Global Research estimates

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### Exhibit 5: Dividend to cash interest coverage (ratio)

High leverage of the holding makes Cosan sensitive to Selic



Source: BofA Global Research estimates

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## #3: Potential listing of subsidiaries to unlock further value

Cosan has already stated its intentions to list all of its subsidiaries, so each company can grow and have access to financial markets.

We believe this move has the potential to unlock value for Cosan shareholders, as the uncertainties regarding the valuation of each of the businesses creates divergences on how the market assesses the correct value of the cost of running the holding company.

While these events could be positive in terms of value perceived, we do not believe Cosan needs to sell its stake in any of the assets due to liquidity, as the holding has enough capacity to refinance its debt and run the current corporate structure.

We think two companies are already mature enough to be candidates for a potential listing opportunity: (1) Compass; and (2) Moove.

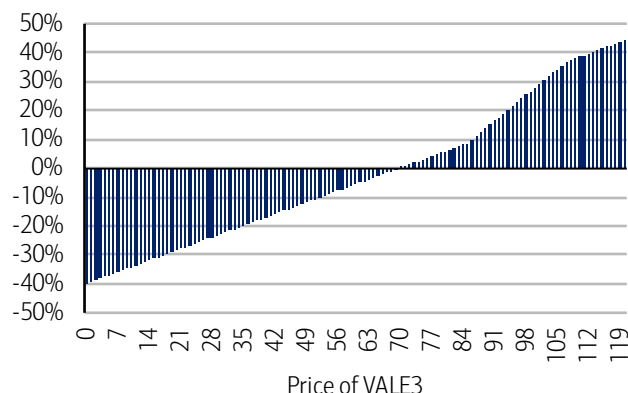
## #4: Vale – It is only beginning

Vale recently elected Cosan CEO Luis Henrique Guimaraes to its board and he now heads the capital allocation committee. Key themes to follow are: (1) carve-out of the base metals division; (2) settlement of the Samarco's liabilities; and (3) creation of a new lead independent director role.

At the current price of VALE3 (R\$69.3/shr), we see the operation as neutral in terms of value creation for Cosan. On the other hand, we reckon the carry of the structure costs approximately R\$1.7bn in annual interest expenses or dividend restrictions.

### Exhibit 6: Sensitivity of return on Vale investment

Current prices of Vale make the P&L virtually zero

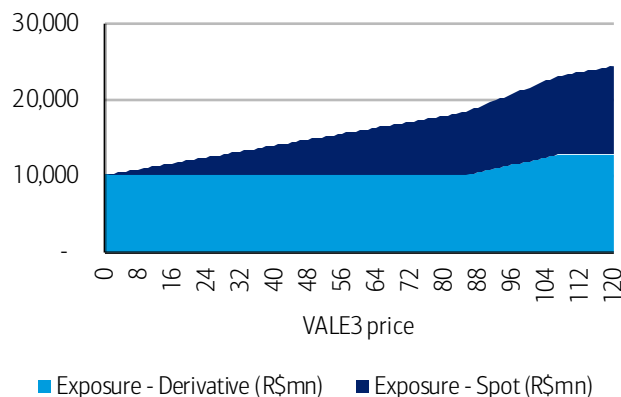


Source: Cosan and BofA Global Research

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### Exhibit 7: Sensitivity of total investment in Vale (R\$m)

Derivatives protect the position from lower prices of Vale (R\$)



Source: Cosan and BofA Global Research

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## #5: LandCo to expand its borders

Cosan recently acquired several land management companies totaling R\$2.5bn – a R\$1.5bn additional stake in Radar and R\$1bn in Janus and Tellus. There are reasons to believe the market underestimates the value of these businesses and even prices them as sunk investments.

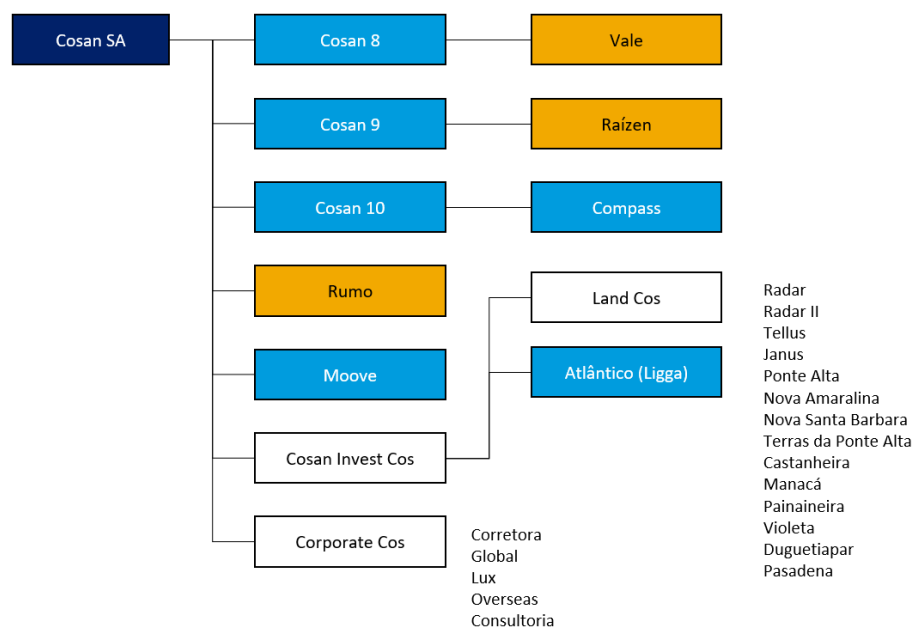
There are three key opportunities for Cosan in the land management business: (1) corporate reorganization; (2) asset turnover; and (3) irrigation investments.

### Creation of a new land management business

As of today, Cosan invests directly in 15 shell companies that manage 318k hectares. A corporate reorganization as a single entity could create a new LandCo business with its own P&L, management and strategies to grow the franchise as was the case with Compass, Raizen and Moove.

**Exhibit 8: Cosan's corporate structure**

The land business is split between many companies



Source: Cosan

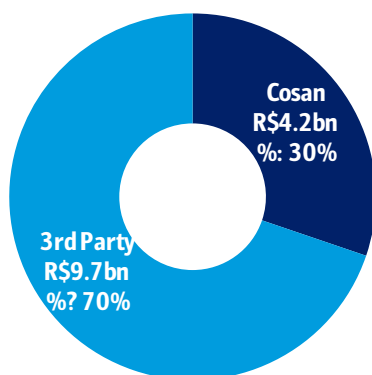
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**Asset turnover as an opportunity to generate cash**

Back in 4Q22, Cosan sold ~R\$500mm in mature land. We expect more to come and the turnover of assets to allow the company to generate cash in the short term and anticipate future leasing agreements. As of today, the land under control is valued at R\$13.9bn, of which R\$4.2bn belongs to Cosan, or R\$2.9bn net of outstanding M&A payables.

**Exhibit 9: Land value split between Cosan and 3<sup>rd</sup> parties**

Cosan holds 30% of the land value

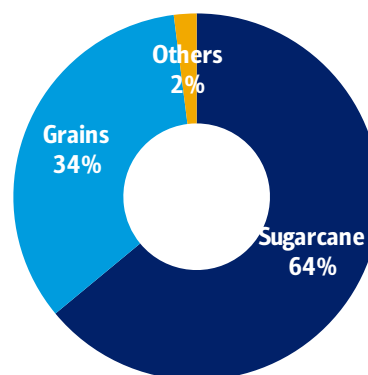


Source: Cosan

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**Exhibit 10: Land distribution per commodity planted**

Most of the area is leased to sugarcane producers



Source: Cosan

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## Owning the land allows Cosan and Raizen to actually invest in it

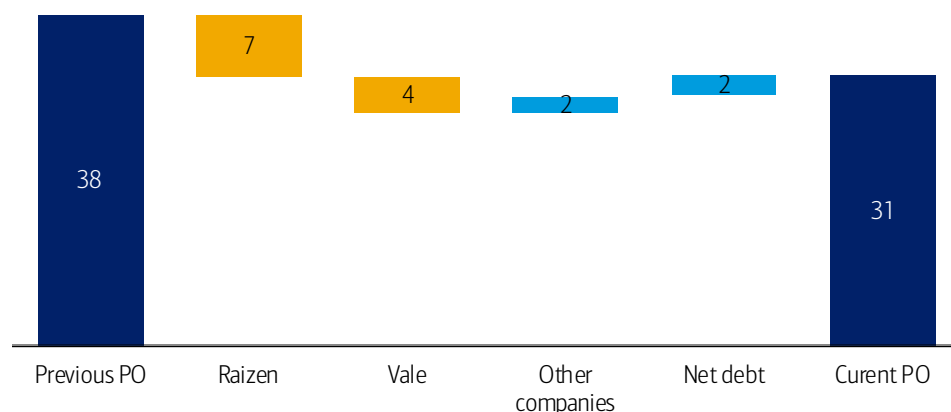
The benefit of being the landlord is that Cosan, as well as Raizen, can invest in the soil and technologies such as irrigation to improve productivity without the risk of not renewing the contracts in place. Furthermore, there are opportunities for Cosan to partner with other agriculture operators to develop land in a partnership given the asset-heavy profile of the business model.

## Revising estimates and PO: R\$31/share

We revise our Cosan PO from R\$38/share to R\$31/share. Our POs for Raizen (from R\$9/shr to R\$5.9/shr) and Vale (from R\$83/shr to R\$81/shr) reduced our valuation by R\$11.4/share, partially offset by the increase Rumo's PO (from R\$23/share to R\$25/share) and the better-than-expected performance of Moove and the land division. We also add R\$2/share from our net debt estimate after stronger-than-expected dividends from Compass and Raizen regarding last year's performance.

### Exhibit 11: Price Objective bridge (R\$/share)

The reduction of PO of Raizen and Vale were the main drivers for our PO reduction of Cosan



Source: BofA Global Research estimates

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Raizen, Compass, Vale and Rumo are the main contributors to our sum-of-the-parts PO of R\$31/share or R\$47/share enterprise value. From the total EV, Raizen is 30%, Compass 25%, Vale 25%, Rumo 15% with the rest distributed between Moove, the land business and Ligga.

### Exhibit 12: PO breakdown (R\$/sh of Cosan)

Raizen, Compass, Vale and Rumo are the bulk of the value of Cosan

Company	Current	Previous	Change
Raizen	14	22	(7)
Compass	12	12	0
Rumo	8	7	1
Moove	4	3	1
LandCo	2	1	0
Ligga	0	0	0
Vale	10	14	(4)
Corporate expenses	(3)	(2)	(0)
<b>Enterprise value</b>	<b>47</b>	<b>57</b>	<b>(10)</b>
Adjusted net debt	(16)	(18)	2
<b>Market value</b>	<b>31</b>	<b>38</b>	<b>(8)</b>

Source: BofA Global Research estimates

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We reduce our estimates for dividends received by Cosan by 9% and 12%, respectively, to align our financials with Cosan's accounting in which dividends are already net of minorities. Our 2023 net income is reduced from positive R\$2bn to negative R\$1bn given (1) the R\$1.5bn in extraordinary tax provisions in 1Q23; (2) the R\$1bn non-cash losses on the mark to market of Vale and its derivatives in Q3; and (3) adoption of the minorities accounting standard, leading to estimated losses of R\$1.1bn.

#### Exhibit 13: New vs old estimates

We reduce our net loss income ests by R\$3bn due to tax provisions, MtM of Vale and accounting standards

		2023E	2024E	2025E
Dividends received (R\$mn)	<b>New Estimates</b>	<b>3,307</b>	<b>3,821</b>	<b>4,957</b>
	Old Estimates	3,647	4,329	5,225
	Change	-9.3%	-11.7%	-5.1%
Adj. EBITDA (R\$mn)	<b>New Estimates</b>	<b>2,936</b>	<b>3,391</b>	<b>4,509</b>
	Old Estimates	3,313	3,981	4,863
	Change	-11.4%	-14.8%	-7.3%
Net Income (R\$mn)	<b>New Estimates</b>	<b>(967)</b>	<b>1,563</b>	<b>852</b>
	Old Estimates	2,007	2,497	2,770
	Change	n.m.	-37.4%	-69.2%
EPS (R\$/share)	<b>New Estimates</b>	<b>(0.52)</b>	<b>0.83</b>	<b>0.45</b>
	Old Estimates	1.07	1.33	1.48
	Change	n.m.	-37.4%	-69.2%
Net Debt (R\$mn)	<b>New Estimates</b>	<b>30,395</b>	<b>30,185</b>	<b>28,887</b>
	Old Estimates	26,692	27,645	27,410
	Change	13.9%	9.2%	5.4%

Source: BofA Global Research estimates

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## Price objective basis & risk

### Cosan (CSAIF / CSAN)

Our PO is R\$31/sh (\$26/ADR) is based on our SOTP analysis. Our breakdown is: 1) Raizen (R\$14/shr, 100% DCF with 50% NPV of E2G projects). We assume a moving WACC that is weighted by the EBITDA share of each business every yr. Our WACC for Sugar is 11.5% in nominal BRL terms, 10.6% for renewables, 10.6% for Mobility in Brazil, 11.2% for Projects, and 31.6% for Mobility in Argentina. 2) Compass (R\$12/shr, 100% DCF based on FCFE with 14.4% Ke and 4% terminal growth rate for Comgás, Sulgás, GasBraisliano, TRSP and the other distributors valued at EV/RAB of Comgás at a disc of 20% due to lower profitability), 3) Rumo (R\$8/shr, 57-year DCF (FCFE), lasts until the last concession (2079), with Ke of 13.3%, in BRL nominal terms), 4) Moove (R\$4/shr, 100% DCF, WACC of 11.6% with 4% terminal growth rate), 5) Cosan Inv (R\$2/shr, Invested value in acquisitions of land companies and Atlántico), 6) Vale (R\$10/sh, blended valuation excluding the additional debt raised to buy the 4.9% stake in the company. We use a normalized hist avg of 4.5x 2023E EV/EBITDA and our DCF at 12.3% WACC and tgr of 2.6%), and we exclude the net debt (R\$16/shr) and corp exps (R\$3/shr, 100% DCF of corp exps, WACC of 11.6% with 4% tgr).

Downside risks to our PO are: 1) lower commodity prices 2) worse execution of Raizen's projects, 3) smaller-than-expected dividend payments from subsidiaries, 4) fiercer competitive environment in the fuel distribution business and at Rumo, 5) execution problems at Rumo

## Analyst Certification

We, Isabella Simonato and Guilherme Palhares, hereby certify that the views each of us has expressed in this research report accurately reflect each of our respective personal views about the subject securities and issuers. We also certify that no part of our respective compensation was, is, or will be, directly or indirectly, related to the specific recommendations or view expressed in this research report.

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### Latin America - Agribusiness, Food & Beverage Coverage Cluster

Investment rating	Company	BofA Ticker	Bloomberg symbol	Analyst
<b>BUY</b>				
	3tentos	XTTUF	TTEN3 BZ	Isabella Simonato
	Arca Continental	EMBVF	AC* MM	Fernando Olvera
	Bimbo	GRBMF	BIMBOA MM	Fernando Olvera
	CCU	XLUDF	CCU CI	Fernando Olvera
	CCU - ADR	CCU	CCU US	Fernando Olvera
	Coca-Cola Andina	AKOBF	ANDINAB CI	Fernando Olvera
	Coca-Cola Andina-ADR	AKOB	AKO/B US	Fernando Olvera
	Coca-Cola Femsa	KOF	KOF US	Fernando Olvera
	Coca-Cola Femsa	COCSF	KOFUBL MM	Fernando Olvera
	Cosan	CSAIF	CSAN3 BZ	Isabella Simonato
	Cosan	CSAN	CSAN US	Isabella Simonato
	Cuervo	BCCLF	CUERVO* MM	Fernando Olvera
	Gruma	GPAGF	GRUMAB MM	Fernando Olvera
	Minerva	MRVSF	BEEF3 BZ	Isabella Simonato
	Raizen	XUXIF	RAIZ4 BZ	Isabella Simonato
<b>NEUTRAL</b>				
	AmBev	ABEV	ABEV US	Isabella Simonato
	AmBev	AVBPF	ABEV3 BZ	Isabella Simonato



## Latin America - Agribusiness, Food &amp; Beverage Coverage Cluster

Investment rating	Company	BofA Ticker	Bloomberg symbol	Analyst
	BRF	BRFS	BRFS US	Isabella Simonato
	BRF	BRFFF	BRFS3 BZ	Isabella Simonato
	Camil Alimentos	XSREF	CAML3 BZ	Isabella Simonato
	JBS	JBSAF	JBSS3 BZ	Isabella Simonato
	Marfrig	MRRTF	MRFG3 BZ	Isabella Simonato
	Sao Martinho	SRTOF	SMT03 BZ	Isabella Simonato
	SQM	SQM	SQM US	Isabella Simonato
<b>UNDERPERFORM</b>				
	Adecoagro	AGRO	AGRO US	Isabella Simonato
	Jalles Machado	XZNZF	JALL3 BZ	Guilherme Palhares
	M. Dias Branco	XDMIF	MDIA3 BZ	Isabella Simonato
	SLC Agrícola	SLCJF	SLCE3 BZ	Guilherme Palhares

**IQmethod<sup>SM</sup> Measures Definitions****Business Performance**

Return On Capital Employed

Return On Equity

Operating Margin

Earnings Growth

Free Cash Flow

**Quality of Earnings**

Cash Realization Ratio

Asset Replacement Ratio

Tax Rate

Net Debt-To-Equity Ratio

Interest Cover

**Valuation Toolkit**

Price / Earnings Ratio

Price / Book Value

Dividend Yield

Free Cash Flow Yield

Enterprise Value / Sales

EV / EBITDA

**Numerator**

NOPAT = (EBIT + Interest Income) × (1 – Tax Rate) + Goodwill Amortization

Net Income

Operating Profit

Expected 5 Year CAGR From Latest Actual

Cash Flow From Operations – Total Capex

**Numerator**

Cash Flow From Operations

Capex

Tax Charge

Net Debt = Total Debt – Cash &amp; Equivalents

EBIT

**Numerator**

Current Share Price

Current Share Price

Annualised Declared Cash Dividend

Cash Flow From Operations – Total Capex

EV = Current Share Price × Current Shares + Minority Equity + Net Debt +

Other LT Liabilities

Enterprise Value

**Denominator**

Total Assets – Current Liabilities + ST Debt + Accumulated Goodwill

Amortization

Shareholders' Equity

Sales

N/A

N/A

**Denominator**

Net Income

Depreciation

Pre-Tax Income

Total Equity

Interest Expense

**Denominator**

Diluted Earnings Per Share (Basis As Specified)

Shareholders' Equity / Current Basic Shares

Current Share Price

Market Cap = Current Share Price × Current Basic Shares

Sales

Basic EBIT + Depreciation + Amortization

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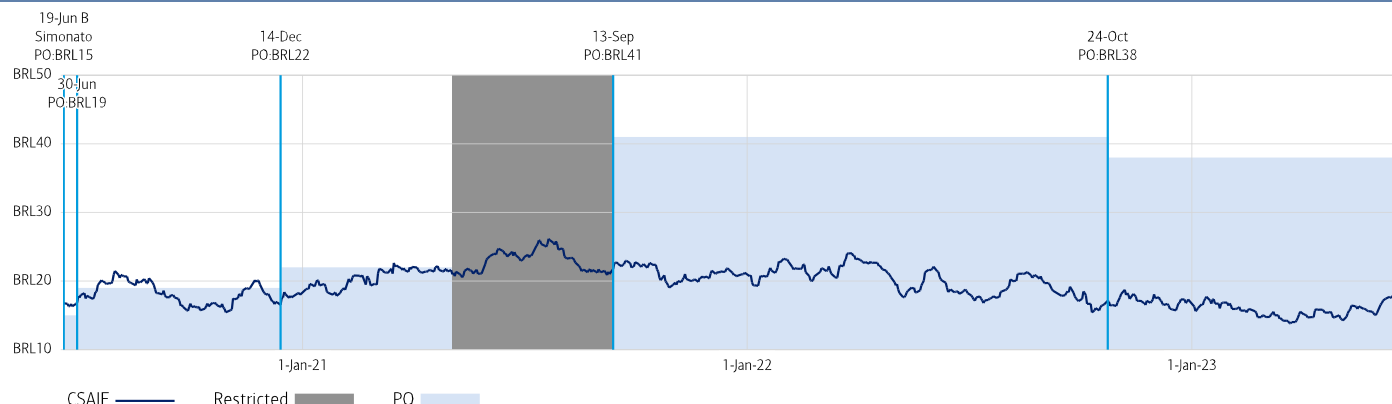
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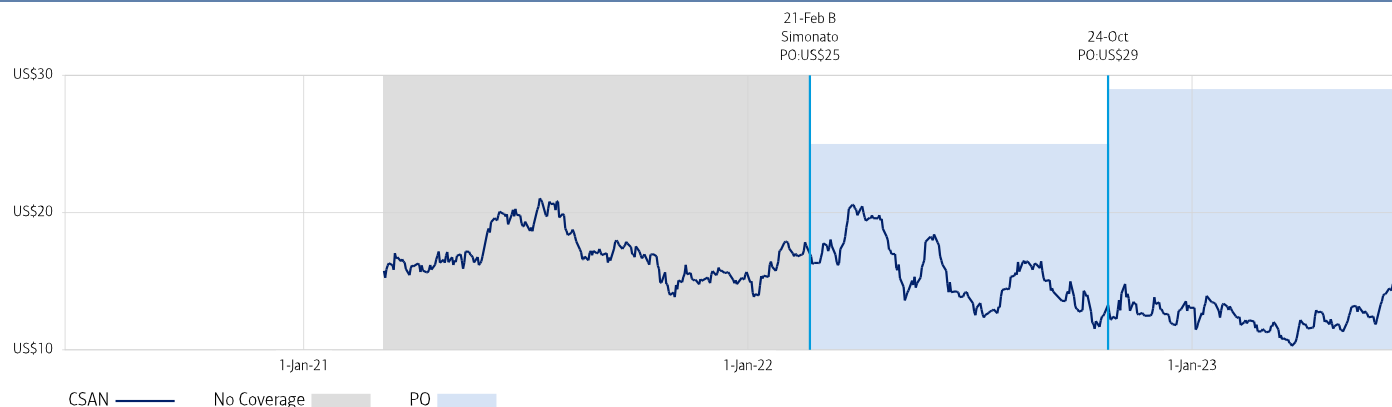
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### Cosan SA (CSAIF) Price Chart



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### Cosan (CSAN) Price Chart



The Investment Opinion System is contained at the end of the report under the heading "Fundamental Equity Opinion Key". Dark grey shading indicates the security is restricted with the opinion suspended. Medium grey shading indicates the security is under review with the opinion withdrawn. Light grey shading indicates the security is not covered. Chart is current as of a date no more than one trading day prior to the date of the report.

### Equity Investment Rating Distribution: Energy Group (as of 31 Mar 2023)

Coverage Universe	Count	Percent	Inv. Banking Relationships <sup>R1</sup>	Count	Percent
Buy	86	60.99%	Buy	68	79.07%
Hold	31	21.99%	Hold	23	74.19%
Sell	24	17.02%	Sell	14	58.33%

### Equity Investment Rating Distribution: Food Group (as of 31 Mar 2023)

Coverage Universe	Count	Percent	Inv. Banking Relationships <sup>R1</sup>	Count	Percent
Buy	30	43.48%	Buy	18	60.00%
Hold	19	27.54%	Hold	11	57.89%
Sell	20	28.99%	Sell	10	50.00%

### Equity Investment Rating Distribution: Global Group (as of 31 Mar 2023)

Coverage Universe	Count	Percent	Inv. Banking Relationships <sup>R1</sup>	Count	Percent
Buy	1869	53.01%	Buy	1030	55.11%
Hold	827	23.45%	Hold	476	57.56%
Sell	830	23.54%	Sell	389	46.87%

<sup>R1</sup> Issuers that were investment banking clients of BofA Securities or one of its affiliates within the past 12 months. For purposes of this Investment Rating Distribution, the coverage universe includes only stocks. A stock rated Neutral is included as a Hold, and a stock rated Underperform is included as a Sell.



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Investment rating	Total return expectation (within 12-month period of date of initial rating)	Ratings dispersion guidelines for coverage cluster <sup>R2</sup>
Buy	≥ 10%	≤ 70%
Neutral	≥ 0%	≤ 30%
Underperform	N/A	≥ 20%

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