



COAL INDIA LIMITED

VALUATION OF THE COMPANY

Outline

- 01 Our understanding of Coal India Limited and its industry
- 02 Reorgnizing Financial Reporting-Historical and related notes
- 03 Forecasting and Assumptions
- 04 Estimation of Cost of Capital
- 05 Comparables and valuation multiples
- 06 DCF valuation and Analysis
- Appendix and References

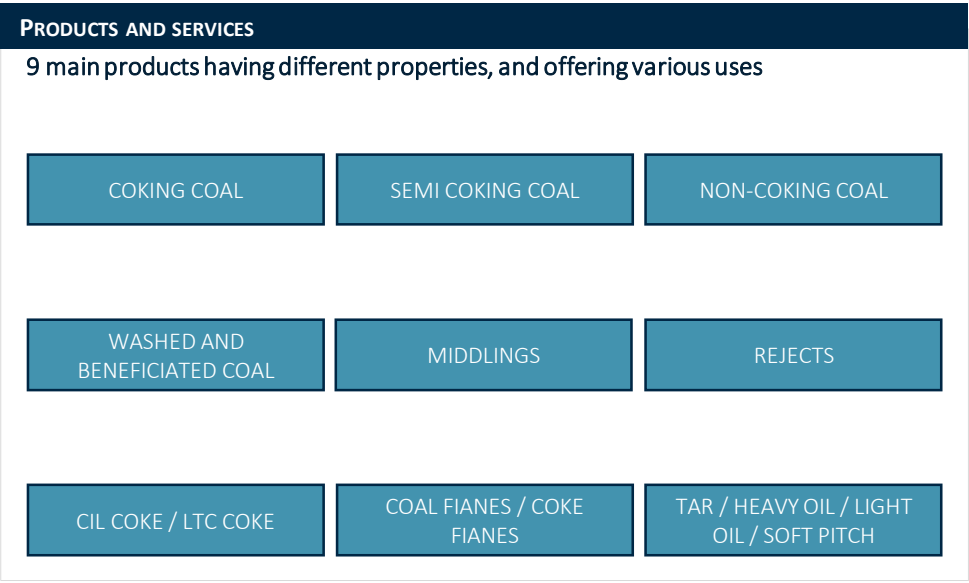
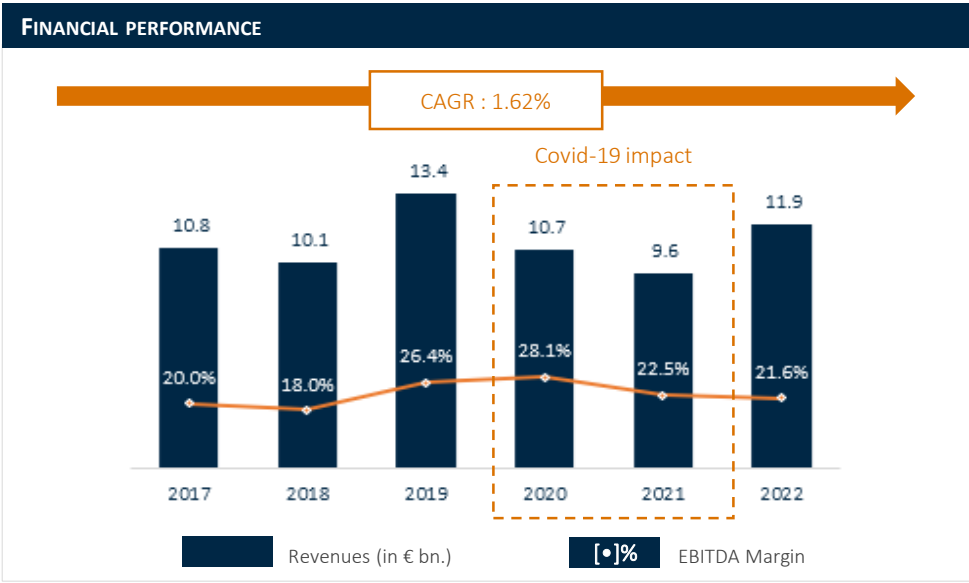
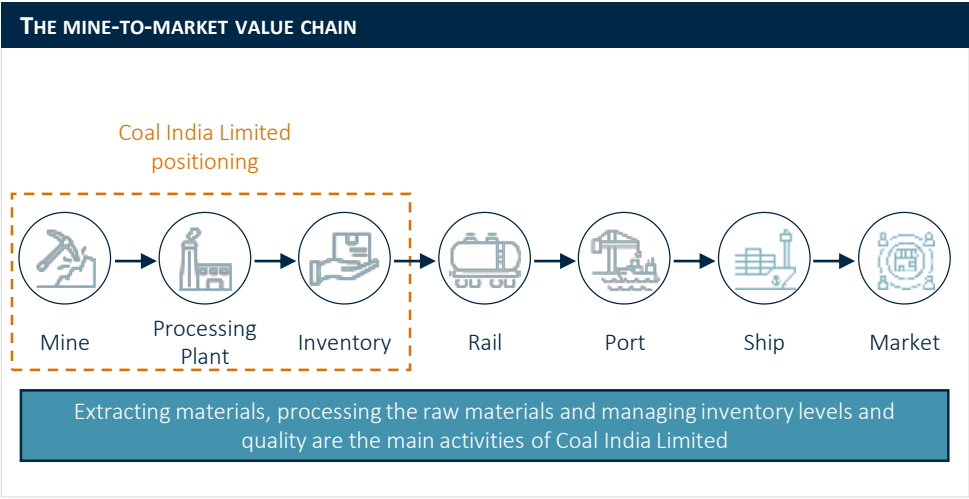
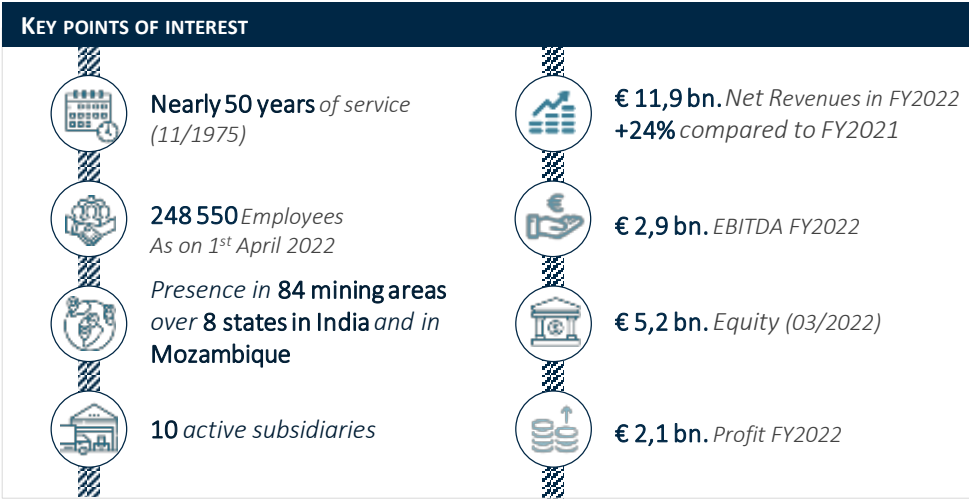


01

OUR UNDERSTANDING OF COAL INDIA LIMITED AND ITS INDUSTRY

1.1 A STATE-OWNED COMPANY WITH A REAL IMPACT...

... which continuously grows, and offers a broad range of products, and good financial performance



1.2 THE MINING INDUSTRY: A GROWING AND STRATEGIC INDUSTRY ...

... with some key players

- **A market impacted by the covid-19 crisis ...**
 - Between January and March 2020, the covid-19 crisis led to a fall in the prices of the main industrial metals and the revenue of mining groups
 - Minerals prices then bounced back following the recovery in global industrial activity, this recovery was also helped by the rebound in demand and prices increase in the second half of 2020
- **... strongly recovering following the trends of the global economy**
 - The development of emerging countries such as China and India, is likely to boost demand for minerals and metals for infrastructure construction and energy production making the global demand rise by 0.7%
 - Coal is mainly used to produce energy, such as electricity and heating (67%), iron and steel (12%), residential and public services (3%)
 - Therefore, the market will not only recover, but will also continue expanding as the demand for coal just in India will continue increasing up to 7% in 2022

COAL INDIA LIMITED, AN APPEALING EQUITY STORY

1

A state-owned indian company founded nearly 50 years ago ...

2

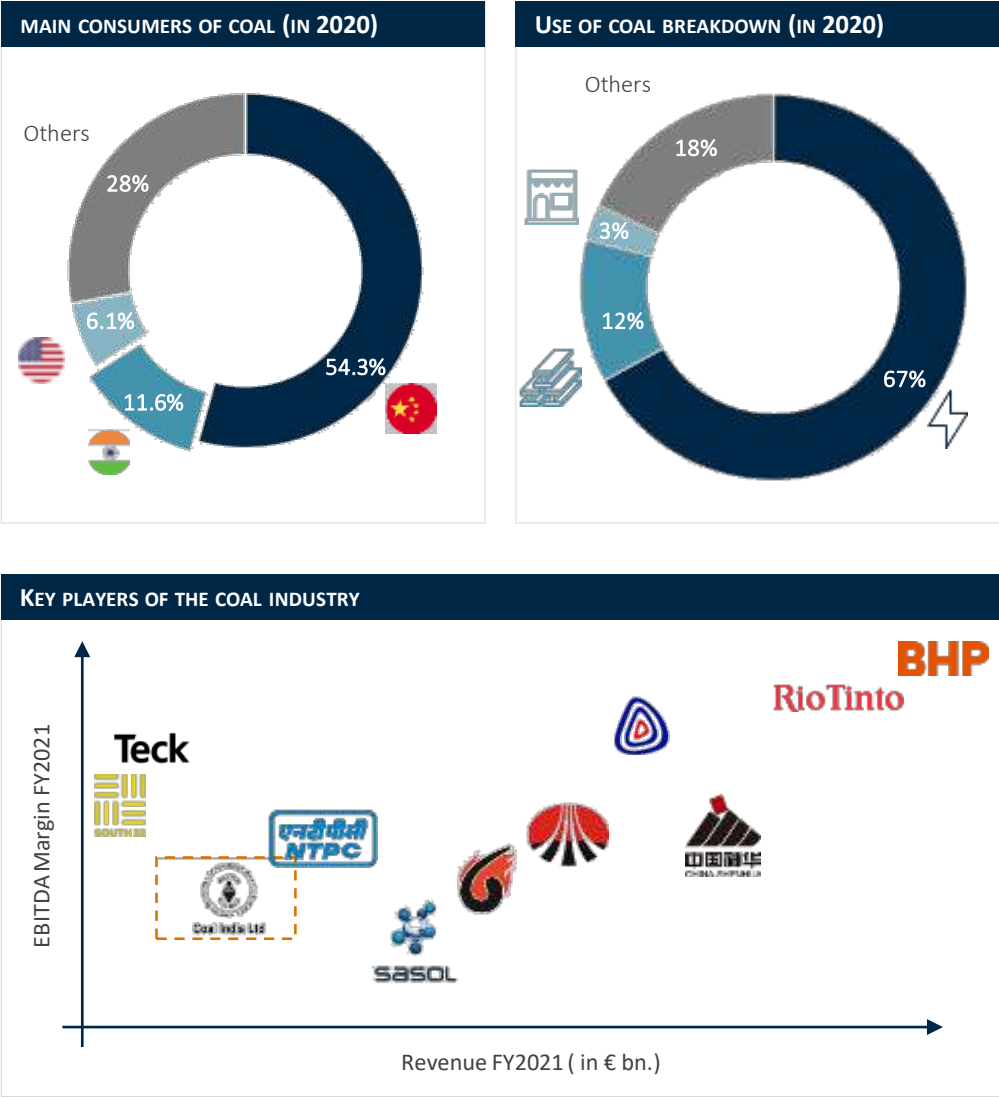
... that contributes to 85% of total domestic coal production and 55% of total domestic power generation ...

3

... thanks to one of the largest workforce in the country ...

4

... enabling the company to offer strong financial performances





02

REORGANIZING FINANCIAL REPORTING-HISTORICAL AND RELATED NOTES

2.1 REORGANIZED INCOME STATEMENT

Reorganized Income Statement (in INR Crores*)	Historical			
	2018	2019	2020	2021
Sales (Net of statutory levies)	92,896.08	89,373.34	82,710.32	100,623.37
Other Operating Revenue (Net of statutory levies)	6,689.53	6,707.00	7,315.69	9,090.13
Revenue	99,585.61	96,080.34	90,026.01	109,713.50
Cost of Materials Consumed	7,331.43	7,065.46	7,588.54	9,442.18
Purchase of Stock-in-Trade	-	60.80	282.34	103.56
Changes in inventories of finished goods/work in progress	856.24	-1,042.62	-2,351.26	2,308.49
Employee Benefits Expense	38,772.85	39,384.08	38,592.42	40,700.82
Power Expense	2,443.08	2,487.32	2,524.67	2,638.46
Contractual Expense	13,337.84	13,911.55	16,045.91	18,866.86
Stripping Activity Adjustment	5,071.19	5,541.87	1,450.37	3,760.86
COGS[1]	67,812.63	67,408.46	64,132.99	77,821.23
Profit margin	31,772.98	28,671.88	25,893.02	31,892.27
Corporate Social Responsibility Expense	416.47	587.84	449.31	548.98
Repairs	1,486.56	1,410.93	1,544.85	1,502.80
Other Expenses	4,752.49	4,605.42	4,246.18	4,965.65
Operating Expenses[1]	6,655.52	6,604.19	6,240.34	7,017.43
Operating Income	25,117.46	22,067.69	19,652.68	24,874.84
Other Income, net of interest income[2]	2,670.02	2,795.73	2,233.36	2,271.03
Share of Joint Venture/Associate's profit/(loss)	-2.00	-1.17	-2.97	-8.59
EBITDA	27,785.48	24,862.25	21,883.07	27,137.28
Depreciation/Amortization/Impairment	3,450.36	3,450.84	3,717.85	4,428.67
Provisions	110.32	117.47	1,017.40	172.77
Write-off	1.29	29.37	5.81	11.56
D&A	3,561.97	3,597.68	4,741.06	4,613.00
EBIT	24,223.51	21,264.57	17,142.01	22,524.28
Interest Income[2]	3,167.04	3,309.67	1,509.47	1,633.49
Finance Costs	263.68	502.92	642.24	541.49
EBT	27,126.87	24,071.32	18,009.24	23,616.28
Tax expense[5]	9,662.45	7,370.98	5,307.07	6,237.86
Net Income	17,464.42	16,700.34	12,702.17	17,378.42
OCI	17.38	-1,334.73	-635.51	51.31
Total comprehensive income	17,481.80	15,365.61	12,066.66	17,429.73

Forecasting-High Growth			
2022E	2023E	2024E	2025E
129,023.08	145,409.01	156,750.91	164,369.00
90,452.55	101,940.02	109,891.34	115,232.06
38,570.53	43,468.99	46,859.57	49,136.94
8,671.86	9,773.18	10,535.49	11,047.52
29,898.67	33,695.80	36,324.08	38,089.43
3,271.27	3,686.73	3,974.29	4,167.44
-3.68	-3.68	-3.68	-3.68
33,166.26	37,378.85	40,294.68	42,253.18
5,364.79	5,975.79	6,670.11	7,400.02
249.00	286.35	314.98	337.03
9.37	10.78	11.86	12.69
5,623.16	6,272.92	6,996.95	7,749.74
27,801.47	31,403.06	33,624.58	34,853.17
2,453.17	2,469.68	2,481.11	2,488.78
697.44	786.01	847.32	888.50
29,557.21	33,086.72	35,258.36	36,453.44
9,024.03	10,101.62	10,764.63	11,129.50
20,533.18	22,985.11	24,493.73	25,323.95

Forecasting-Stable Growth
From2026on
Using a stable rate for FCFF

- [1] GOGS & Operating Expenses
 - In the Financial reporting, CIL classified all expenditure as expense. We reclassified items in the table into COGS and Operating Expenses. After analysis on the main business of CIL, which is coal mining, expenditure on inventory, employees, power, and other activities related to this business should all be classified as COGS.
- [2] Other Income & Interest Income

In INR Crores	2021	2020
Interest income	1633.49	1509.47
Dividend income	11.01	3.94
Gain on Foreign Exchange Transactions		6.31
Gain on Sale of Mutual Fund	138.42	58.02
Lease rent	31.08	42.24
Liability/Provision written back	1186.15	1413.96
Fair value changes (net)	109.07	7.24
Miscellaneous income	795.3	701.65
Total	3904.52	3742.83

 - Interest income was separated from other income, and reclassified as financial items. When calculating free cash flows, interest income was linked to average other bank balances and loans to others.
- [3] Tax Expense
 - We used actual tax expenses per Profit&Loss, but when calculating free cash flows, we firstly used statutory tax rate to compute the tax shield and the remaining amount was allocated to tax on operations.

*1 Crore = 10 million INR

2.2 REORGNIZED BALANCE SHEET

Reorganized Balance Sheet (in INR Crores)					Historical			
	2018	2019	2020	2021				
Operating Assets								
Current Operating Assets								
Inventory	5,583.93	6,618.94	8,947.47	7,075.68	9,316.80	10,500.03	11,319.03	11,869.14
Trade receivable[1]	5,498.55	14,408.22	19,623.12	11,367.68	10,455.26	12,023.55	13,225.90	14,151.72
Other current assets[2]	12,487.76	14,248.66	23,362.00	26,167.40	25,399.97	29,209.97	32,130.97	34,380.13
Total current operating assets	23,570.24	35,275.82	51,932.59	44,610.76	45,172.03	51,733.55	56,675.90	60,400.99
Non-current Operating Assets								
Property, Plant & Equipment	28,546.43	32,302.35	37,753.65	42,697.79				
Capital work in progress	9,618.98	8,271.09	10,403.66	12,713.73				
Exploration and Evaluation Assets	4,036.71	4,443.12	4,605.80	3,873.55				
Intangible Assets	35.18	38.14	45.76	105.62				
Intangible Assets under Development	38.70	57.16	86.17	183.41				
Other Non-Current Assets[2]	2,144.39	1,792.40	4,417.23	6,375.00				
Total non-current operating assets	44,420.39	46,904.26	57,312.27	65,949.10	73,460.09	81,995.31	90,968.07	99,971.15
Total Operating Assets	67,990.63	82,180.08	109,244.86	110,559.86	118,632.12	133,728.86	147,643.97	160,372.14
Financial Assets								
Current Financial Assets								
Investments	1,749.96	99.70	3,632.59	7,279.41	9,850.82	12,555.96	15,102.83	17,480.52
Cash & Cash equivalents	2,302.36	1,776.84	5,112.40	6,277.70				
Other Bank Balances[3]	28,821.87	26,669.99	12,197.90	22,901.75	22,647.88	22,647.88	22,647.88	22,647.88
Loans[4]	502.33	502.65	500.81	0.21	510.95	575.84	620.76	650.93
Other Financial Assets	3,522.09	3,705.66	2,215.65	2,624.09	3,988.43	4,586.69	5,045.36	5,398.54
Total current financial assets	36,898.61	32,754.84	23,659.35	39,083.16				
Non-Current Financial Assets								
Investments	1,419.84	1,873.17	2,317.64	2,426.97				
Loans[4]	1,141.73	638.59	190.00	353.39	756.16	852.20	918.67	963.32
Other Financial Assets	12,098.95	13,782.36	13,140.24	14,532.83				
Total non-current financial assets	14,660.52	16,294.12	15,647.88	17,313.19				
Total Financial Assets	51,559.13	49,048.96	39,307.23	56,396.35				
Total Surplus Assets	13,471.69	18,792.47	13,229.47	13,287.12				
TotalAssets	133,021.45	150,021.51	161,781.57	180,243.33				

- [1] Trade Receivable
 - In the historical financial reporting, trade receivable was presented as financial assets, whereas in our reorganizing and forecasting, we consider that trade receivable is derived from CIL’s operation.
 - This amount was presented as the net value of allowance for bad & doubtful debts.
- [2] Other current/non-current assets
 - According to notes, we analyzed items in other current and non-current assets. Current parts are consisted of advance payment and other deposits and advances, and non-current parts are net of balances of stripping activity. Therefore, we settle down them as operating assets.
- [3] Other Bank Balances
 - According to notes, Other Bank Balances comprises deposits for specific purposes and bank depoits which are expected to realise in cash within 12 months after the reporting date.
- [4] Loans
 - According to notes, Loans in current and non-current parts consisted of loans to body corporate and employees.

[3] and [4] are highly related to interest income, which considered other bank balances and loans as the base for interest income.

2.2 REORGNIZED BALANCE SHEET (CONT'D)

Reorganized Balance Sheet (in INR Crores)					Historical				Forecasting-High Growth				Forecasting-Stable Growth		
					2018	2019	2020	2021	2022E	2023E	2024E	2025E	From 2026 on		
Operating Liabilities														Using a stable rate for FCFF	
Current Operating Liabilities															
Other Current Liabilities					24,966.55	22,378.16	22,889.38	31,384.66	33,022.98	37,216.89	40,119.81	42,069.63			
Provisions					6,826.62	6,790.27	5,522.28	6,094.68	8,272.45	9,323.06	10,050.25	10,538.70			
Total current operating liabilities					41,211.14	39,275.98	36,884.80	46,071.12	53,310.91	60,081.39	64,767.74	67,915.45			
Non-current Operating Liabilities															
Provisions					52,380.16	60,226.60	63,540.59	65,944.00							
Other Non-Current Liabilities					4,853.72	5,396.74	5,685.68	5,983.18							
Total non-current operating liabilities					57,233.88	65,623.34	69,226.27	71,927.18							
Total Operating Liabilities					98,445.02	104,899.32	106,111.07	117,998.30							
Financial Liabilities															
Current Financial Liabilities															
(i) Borrowings[1]					730.47	4,432.61	3,194.79	7.98	2,859.36	3,222.50	3,473.86	3,642.69			
(ia) Lease Liabilities					-	-	0.23	44.22	46.79	52.73	56.84	59.60			
(iii) Other Financial Liabilities					4,156.19	4,755.07	10,507.08	11,279.35	2,299.32	2,591.34	2,793.46	2,929.22			
Total current financial liabilities					4,886.66	9,187.68	13,702.10	11,331.55	5,205.47	5,866.56	6,324.16	6,631.51			
Non-Current Financial Liabilities															
(i) Borrowings[1]					1,472.27	1,993.38	2,688.10	3,301.78	3,066.90	3,456.40	3,726.00	3,907.08			
(ia) Lease Liabilities					-	-	1.11	159.66	11.11	11.11	11.11	11.11			
(ii) Other Financial Liabilities					1,354.56	1,390.13	1,590.02	2,824.19	7,674.42	7,674.42	7,674.42	7,674.42			
Total non-current financial liabilities					2,826.83	3,383.51	4,279.23	6,285.63	10,752.44	11,141.93	11,411.53	11,592.61			
Total Financial Liabilities					7,713.49	12,571.19	17,981.33	17,617.18	15,957.91	17,008.50	17,735.69	18,224.12			
Total Surplus Liabilities					-	-	730.73	811.02							
Total Liabilities					106,158.51	117,470.51	124,823.13	136,426.50							
Equity															
Equity Share Capital[2]					6,162.73	6,162.73	6,162.73	6,162.73							
Other Equity[3]					20,292.41	25,994.19	30,354.63	36,980.31							
Equity attributable to equity holders of the company					26,455.14	32,156.92	36,517.36	43,143.04							
Non-Controlling Interests					407.80	394.08	441.08	673.79							
Total Equity					26,862.94	32,551.00	36,958.44	43,816.83							

- [1] Borrowings
 - Borrowings comprised of loans from banks and others. For the purpose of convenience, we used an average rate per finance costs over total borrowings, rather than effective interest rate.

- [2] Equity Share Capital

In INR Crores	2021	2020
Equity Share Capital	6,162.73	6,162.73
Other Equity	36,980.31	30,354.63
NCI	673.79	441.08
	43,816.83	36,958.44
Outstanding shares	616.27	616.27

- Per financial reporting, we can get that nominal share price is 10 INR/share, then there are totally 616.27 million outstanding shares, which will be used for calculating future share price.

- [3] Other Equity

- One main factor that casused the change in other equity is interim dividend and final dividend, which are paid out to shareholders. These items will also be used in cash flow statement.

In INR Crores	2021	2020
Interim dividend	8,627.82	7,703.44
Final dividend	2,156.97	-
Total	10,784.79	7,703.44

The tables above only disclose details for equity in 2021 and 2020, other details would be presented in assumptons and forecasting in spreadsheet.

2.3 REORGANIZED CASH FLOW STATEMENT & FREE CASH FLOWS

Reorganized Cash Flow Statement (in INR Crores)	Historical		
	2019	2020	2021
Cash flows from operations			
Net Income	16,700.34	12,702.17	17,378.42
Add Non-cash D&A ^[1]	3,597.68	4,741.06	4,613.00
Change in Net operating working capital	-13,640.74	-19,047.95	16,508.15
Change in other assets and liabilities, net	-5,320.78	6,293.73	22.64
Change in other activities	4,623.74	1,721.41	2,070.53
Total Cash flows from operations	5,960.24	6,410.42	40,592.74
Cash flows of Investing activities			
CAPEX ^[2]	-5,934.23	-13,858.85	-12,354.68
Change in Investment	1,984.65	13,077.29	-15,923.82
Total Cash flows from investing activities	-3,949.58	-781.56	-28,278.50
Cash flows of Financing activities			
Change in debt financing	4,857.70	5,410.14	-364.15
Dividend payments ^[3]	-7,393.88	-7,703.44	-10,784.79
Total Cash flows from financing activities	-2,536.18	-2,293.30	-11,148.94
TOTAL CASH FLOWS	-525.52	3,335.56	1,165.30
Change in Cash	-525.52	3,335.56	1,165.30
Beginning Cash Balance	2,302.36	1,776.84	5,112.40
Ending Cash Balance	1,776.84	5,112.40	6,277.70

Free cash flows (in INR Crores)	Historical		
	2019	2020	2021
EBIT	21,264.57	17,142.01	22,524.28
-Tax expense for operations	-6,664.58	-5,088.81	-5,963.03
EBIT after tax	14,599.99	12,053.20	16,561.25
+ D&A ^[1]	3,597.68	4,741.06	4,613.00
+ ΔNWC	-8,436.66	-22,125.81	11,159.40
- CAPEX	-5,934.23	-13,858.85	-12,354.68
FCFF	9,761.01	- 19,190.40	19,978.97
Net finance cost[Finance cost-Interest income]	-2,806.75	-867.23	-1,092.00
Tax shield	706.40	218.26	274.83
Change in debt financing	4,857.70	5,410.14	-364.15
FCFE	16,719.06	- 13,131.29	20,431.99

- [1] D&A
 - Rather than considering merely depreciation and amortization on fixed assets and intangible assets, we take all non-current operating assets into account. And this logic is also used in forecasting.
- [2] CAPEX
 - We calculated CAPEX by adding the D&A for the current year back to the difference between the ending balance and beginning balance of non-current assets.
- [3] Dividend payment was talked in the previous slide.



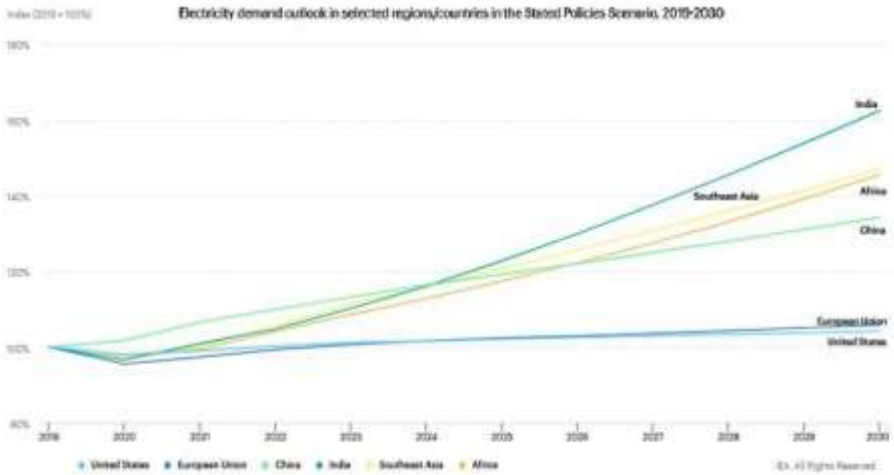
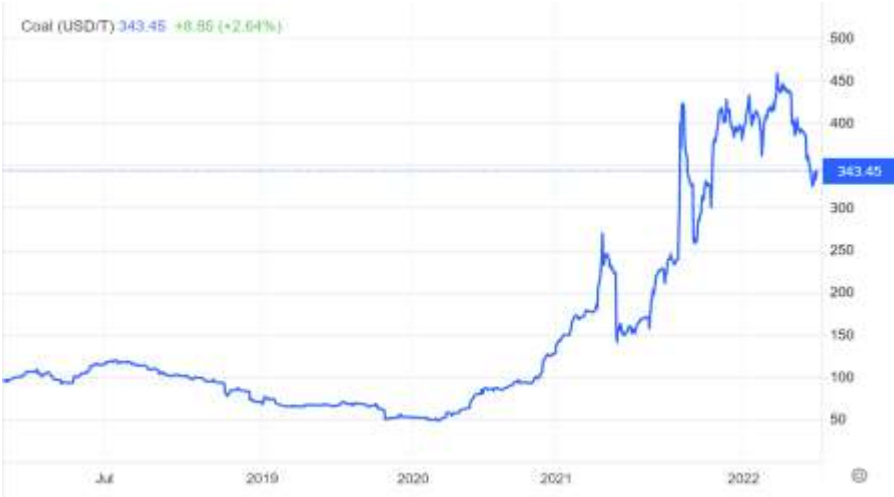
03

FORECASTING AND ASSUMPTIONS

3.1 ASSUMPTIONS

Influencing Factors

COGS	<p>The improvement in quality will inevitably raise the investment and thus increase the overhead cost. Coal India adopt more Surface Miners in opencast mines entailing blast-free extraction of coal in the last financial year (Coal India Annual Report, 2022).↓</p>
Revenue- International	<p><u>From the EU demand side:</u> with the EU committed to ending its reliance on Russian fossil fuels by 2027, the demand generated by the EU country will be a relatively steady increase in the next 6 years (Reuters, 2022). ↑</p> <p>The global coal price has witnessed a dramatic increase in the past five years, despite the small drops in the recent past, the coal price will ensure the increasing revenue to CIL.↑</p>
Leading Position	<p>The leading position of Coal: Coal will remain its leading energy supplier in the next 6 years, despite the call for replacing other alternative eco-friendly suppliers (Coal India Annual Report, 2022). ↑</p>
ESG, BUT...	<p>The unique characteristic of coal: Apart from the climate commitment stated by India at COP 26 in Glasgow (UN Climate Change Conference, 2021), the Indian scenario is distinct from the rest of the world. Coal excels to be the preferred energy engine because of its abundance, availability and affordability (Coal India Annual Report, 2022). ↑</p>



3.2 ASSUMPTIONS

Two-stage:

- 2022-2025: CIL will have a relatively unstable growth rate within this stage, there are many factors to make the aggregate growth rate volatile.
- 2025-2027: during this time, the growth rate will be steady, and our team assume this steady growth will accompany CIL throughout rest of its life.

CIL Production Growth Rate Forecasting

- Total production of CIL increased exactly in the same pattern as Indian national production, which makes CIL's production take account for nearly 80% each year. Therefore, we will use this percentage for future forecasting.
- The central government stated that demand for coal would range between 1192-1325 million tons in next 5 years.




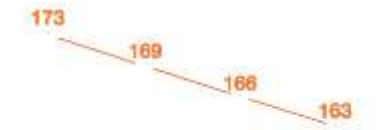
	2017	2018	2019	2020	2021	2022
Off-take of Coal	543.319	580.284	608.137	581.92	574.48	661.89
Dispatch	542.494	581.475	608.137	582.48	573.6	662.57
Dispatch/Production	0.98	1.02	1.00	0.97	0.96	1.06
Production/Offtake	1.020	0.978	0.998	1.035	1.038	0.941

How to forecast the revenue?
Top-bottom method

- Refer to the order demand to decide the quantity: according to the historical data presented by CIL, they tend to maintain a low stock volume and use a demand-driven producing mode. Therefore, our team decide to use the demand generated by the market to estimate the sale volume.
- Similarly, the ratio between Dispatch, Production and Off-take has also reflected this order-oriented mode of production—these ratios are all around 1.00

3.3 FROM PRODUCTION TO EBITDA

From production forecasting to EBITDA

Item		Description	Assumption	Result																
Revenue	Production	<ul style="list-style-type: none">Production increases significantly from 2021 to 2025 in order to reach CIL's target of producing 1000 mt in 2025Production will follow a steady and a slower growth path after 2025	 <table><tr><th>2022</th><th>2023</th><th>2024</th><th>2025</th></tr><tr><td>20%</td><td>15%</td><td>10%</td><td>7%</td></tr></table>	2022	2023	2024	2025	20%	15%	10%	7%	 <table><tr><th>2022</th><th>2023</th><th>2024</th><th>2025</th></tr><tr><td>747</td><td>859</td><td>945</td><td>1011</td></tr></table>	2022	2023	2024	2025	747	859	945	1011
	2022	2023	2024	2025																
20%	15%	10%	7%																	
2022	2023	2024	2025																	
747	859	945	1011																	
Revenue per production	<ul style="list-style-type: none">Revenue per production is mainly influenced by coal priceRevenue per production will decrease with a constant speed of 2% from 2022	 <table><tr><th>2022</th><th>2023</th><th>2024</th><th>2025</th></tr><tr><td>-2%</td><td>-2%</td><td>-2%</td><td>-2%</td></tr></table>	2022	2023	2024	2025	-2%	-2%	-2%	-2%	 <table><tr><th>2022</th><th>2023</th><th>2024</th><th>2025</th></tr><tr><td>173</td><td>169</td><td>166</td><td>163</td></tr></table>	2022	2023	2024	2025	173	169	166	163	
2022	2023	2024	2025																	
-2%	-2%	-2%	-2%																	
2022	2023	2024	2025																	
173	169	166	163																	
COGS		<ul style="list-style-type: none">Assume a constant gross marginForecasted using average % Revenue	Average % Revenue 70.11%	2022	2023	2024	2025													
				90,453	101,940	109,891	115,232													
Other operating expense		<ul style="list-style-type: none">Forecasted using average % Revenue	Average % Revenue 6.72%	8,672	9,773	10,535	11,048													
Other Income		<ul style="list-style-type: none">Forecasted using average % Revenue	Average % Revenue 2.54%	3,271	3,687	3,974	4,167													
Share of Joint Venture/Associate's profit/(loss)		<ul style="list-style-type: none">Forecasted using the past average level	Average Level -3.68	-3.68	-3.68	-3.68	-3.68													


Unit: Crore

3.4 FROM EBIT TO FCFF

From EBIT to FCFF

ITEM	DESCRIPTION	ASSUMPTION	RESULT			
			2022	2023	2024	2025
EBITDA	<ul style="list-style-type: none">EBITDA = Revenue - COGS -Other operating expense + Other income	Based on calculation	33,166	37,379	40,295	42,253
Depreciation & Amortisation	<ul style="list-style-type: none">Forecasted using a PPE PlanAssume a constant D&A / Begin value of non-current asset	Average % Begin value 8.13%	5,623	6,273	6,997	7,750
EBIT	<ul style="list-style-type: none">EBIT = EBITDA - D&A	Average % Revenue 70.11%	27,801	31,403	33,625	34,853
Tax Expense	<ul style="list-style-type: none">Assume a constant average Effective Tax Rate	Average Eff. tax rate 30.53%	30.53%	30.53%	30.53%	30.53%
Capex	<ul style="list-style-type: none">Assue a constant % Revenue	Average % Revenue 9.98%	12,876	14,511	15,643	16,403
ΔNWC	<ul style="list-style-type: none">Forecasted using a current asset and current liabilities plan	Based on annual forecast	-4,446	2,498	2,849	3,031
FCFF	<ul style="list-style-type: none">FCFF = EBIT - Tax Expense + D&A - Capex - ΔNWC	Based on calculation	16,412	10,989	11,776	12,442

Unit: Crore



04

ESTIMATION OF COST OF CAPITAL

4.1 COST OF CAPITAL

Estimation of cost of equity based on multifactor model

Risk free rate

- 1

Considering the government default risk, we calculate the risk free rate as follows:
- 2

Risk free rate in Rupee = India government bond rate - default spread

▪ Time horizon

The Indian government bond rate in nominal Rupee on January 1st, 2022 was 6.45%.

▪ Consistency

Use a nominal risk free rate in Rupee, to ensure the consistency with the nominal cash flows in Rupee

▪ Sovereign Default Spread

Use the rating based spread as the default spread for India don't issue dollar denominated bonds.

Moody's local currency rating for India is Baa3 with a default spread of 1.87%

▪ Rf in Rupee = 6.45% - 1.87% = 4.58%

$\beta \times \text{ERP}_{\text{US}}$

- 1

Divide ERP_India into base ERP in US and country risk premium of India
- 2

We use the bottom-up to estimate β and use implied risk premium for ERP_US

Bottom-up β

▪ Comparables

Six comparables are selected in coal-mining industry. Calculate their regression β and then deleverage them to get the average unlevered β

▪ Blume's Adjustment

Use Blume's adjustment to adjust the levered β of CIL

US Equity risk premium

▪ Implied US ERP

The implied US ERP at the end of 2021 is 4.72%

$\lambda \times \text{CRP}$

- 1

Measure absolute country risk in India by CRP and measure the exposure of CIL by λ
- 2

Estimation method is based on A. Damodaran (2015)

λ Estimation

▪ $\lambda = \beta$

Assume CIL's exposure to India country risk is similar to its exposure to ERP_US

Method of regression vs country bond is not applied, for the weak explanation power of Indian country bond to CIL's stock return

CRP Estimation

▪ CRP Estimation







Use the rating based default spread, adjust it through the Relative equity volatility for emerging markets in A. Damodaran(2015)

▪ $\text{CRP} = 1.89\% \times 1.02 = 1.91\%$

4.2 COST OF CAPITAL

Estimation of β using bottom-up method

- We decided use EBITDA and EBIT multiples as they were the most accurate way to value the company and as they were both non-negative
- We decided to value the company according to FY2022

Comparable companies in the coal-mining industry						
						
Description	Australian multinational mining and metals company	World's second-largest metals and mining company	Coal and platinum producer in the UK	Indian electricity provider also engaged in coal mining	Produce petrol, diesel from coal in South Africa	Canadian company engaged in zinc, copper and coal mining
Revenue (2021)	436 billion USD	40.7 billion USD	27.7 billion USD	10.5 billion USD	10.1 billion USD	8.1 billion USD
MV of Equity	184173 m USD	107219 m USD	49730 m USD	1033180 m IND	136891 m ZAR	19461 m CAD
MV of Debt	20983 m USD	13034 m USD	12856 m USD	2101933 m IND	118623 m ZAR	8068 m CAD
Cash and cash equivalents	15246 m USD	15733 m USD	9095 m USD	47697 m IND	31231 m ZAR	1427 m CAD
Marginal interest rate	30%	29%	19%	25%	28%	27%
Regression β	1.09	0.99	1.47	0.41	3.23	1.28
Unlevered β	1.06	1.01	1.38	0.16	2.22	1.02

Bottom-up beta	
<ul style="list-style-type: none">▪ Business segmentation is not considered, for coal mining is the significant part for CIL, whereas other activities are highly related to it. Six firms in the coal mining industry are selected according to revenue.▪ Conduct regression between stock return and MSCI World for each firms to get Regression β. Deleverage the Regression β to get Unlevered β using Hamada Equation, then calculate average β $\beta_{levered} = \beta_{unlevered} \cdot \left[1 + (1 - t_c) \cdot \frac{D}{E} \right]$ <ul style="list-style-type: none">▪ Leverage the unlevered β using financial data of CIL through Hamada Equation	
Average unlevered β	1.14
Total debt	58,842.3
Cash and cash equivalents	201,915.2
Net debt	-143,072.9
Debt/Equity	803,311.6
Marginal tax rate	25.168%
Levered β	0.99
Adj. levered β	0.99

4.3 COST OF CAPITAL

Cost of debt and build up cost of capital

Cost of Equity	
Indian government bond rate	6.45%
Default spread	1.87%
Risk free rate	4.58%
Adjusted β	0.9935
US ERP implied	4.38%
$\beta \times \text{ERP}_{\text{US}}$	4.35%
λ	0.9935
CRP_India	1.91%
$\lambda * \text{CRP}_{\text{India}}$	1.90%
Cost of Equity	10.83%

Cost of Debt	
EBIT	22524.28
Interest expense	541.49
Interest coverage ratio	41.60
Estimated synthetic bond rating	Aaa/AAA
Default spread	0.69%
Risk free rate	4.58%
Pre-tax Cost of Debt	5.27%
Marginal corporate tax rate	25.17%
After-tax Cost of Debt	3.94%

- Cost of equity = 10.83% and Market value of equity = 803,311.6 crore
- After-tax Cost of debt = 3.94% and Market value of debt = 38,842.3 crore
- **WACC = Cost of equity * [E/(E + D)] + Cost of debt * [D/(E + D)] = 10.36%**



05

COMPARABLES AND VALUATION MULTIPLES

5.1 TRADING COMPARABLES

A small overview of the chosen companies

From a list of 10 different companies supposedly comparable to Coal India Limited, we selected a sample of **4 companies**.

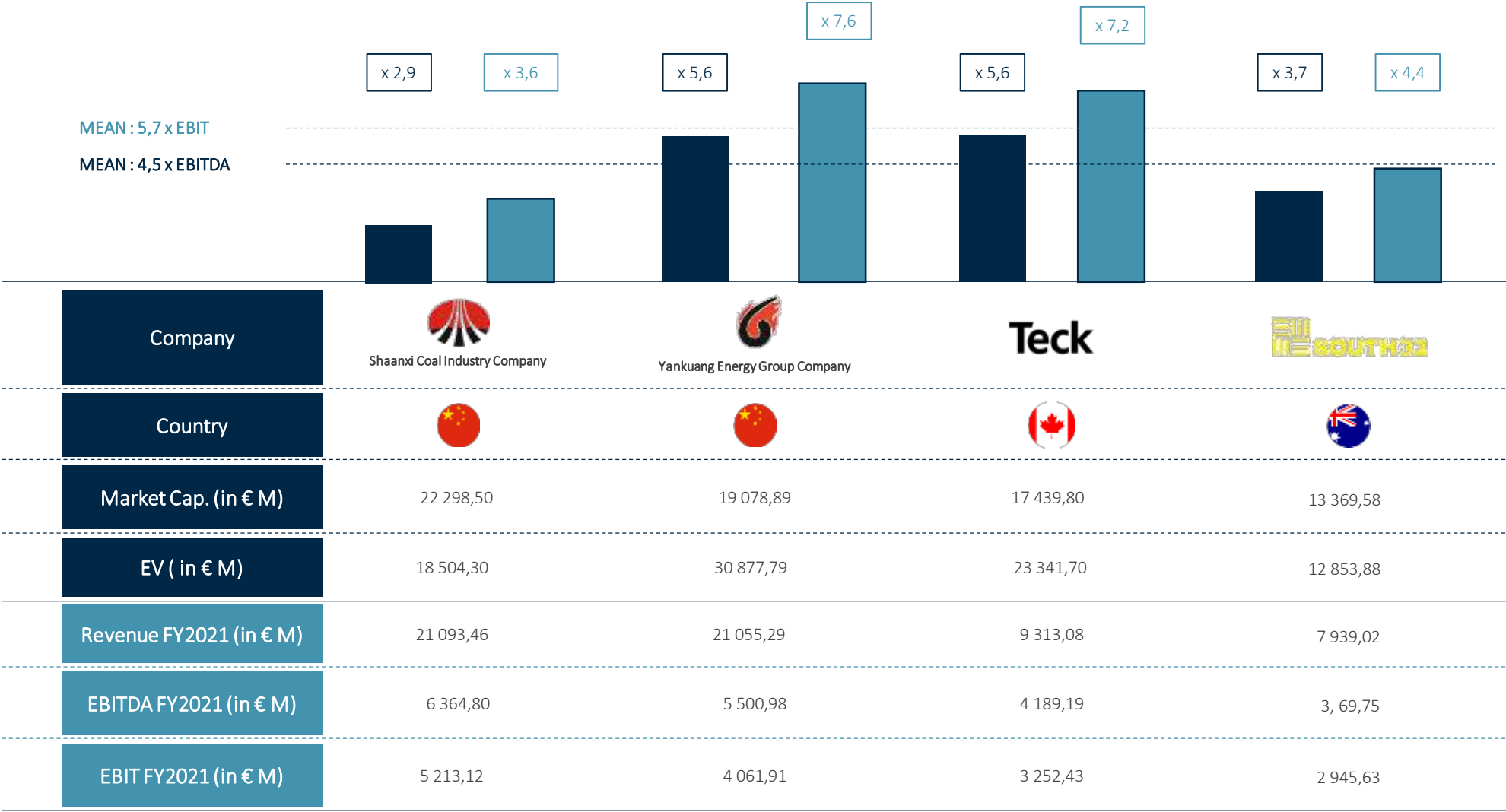
We selected these companies according to different criteria:

- **Industry:** selection of companies operating in the mining sector and with strong coal production incentives
- **Size:** selection of companies with similar market capitalization as Coal India Limited
- **Geography:** selection of companies operating in areas where coal is a strategic raw material for power production

Company	Performance	Market Cap.	Activity
 Shaanxi Coal Industry Company	Revenue FY2021 : € 21 093,46 M EBITDA FY2021 : € 6 364,80 M Earnings FY2021 : € 2 928,48 M	€ 22 298,50 M	Shaanxi Coal Industry Company Limited , together with its subsidiaries, mines, produces, washes, processes, and sells coal in China and internationally. The company primarily explores for power, chemical, and metallurgical coal.
 Yankuang Energy Group Company	Revenue FY2021 : € 21 055,29 M EBITDA FY2021 : € 5 500,98 M Earnings FY2021 : € 2 252,35 M	€ 19 078,89 M	Yankuang Energy Group Company Limited engages in the mining, preparation, and sale of coal worldwide. It offers thermal, PCI, and coking coal for electric power, metallurgy and chemical industry.
 Teck	Revenue FY2021 : € 9 313,08 M EBITDA FY2021 : € 4 189,19 M Earnings FY2021 : € 1 981,30 M	€ 17 439,80 M	Teck Resources Limited engages in exploring for, acquiring, developing, and producing natural resources in Asia, Europe, and North America. It operates through Steelmaking Coal, Copper, Zinc, and Energy segments. The company's principal products include copper, zinc, steelmaking coal, and blended bitumen.
 SOUTH32	Revenue FY2021 : € 7 939,02 M EBITDA FY2021 : € 3 469,75 M Earnings FY2021 : € 2 241,77 M	€ 13 369,58 M	South32 Limited operates as a metals and mining company in Australia, Southern Africa, North America, and South America. It has a portfolio of assets producing mainly metallurgical coal, bauxite, alumina, aluminum, copper, silver, lead, zinc, nickel, manganese, ferronickel, and other base metals.

5.2 TRADING COMPARABLES

EBITDA and EBIT multiples obtained through the comparable companies



5.3 TRADING COMPARABLES

From multiples to valuation

In € M	EBITDA FY2022	EBIT FY2022
	2 934,76	2 426,22
Selected EV multiple	4,45	5,67
Entreprise Value	13 057,36	13 763,81
Cash & Short Term investments	4 223,83	
Total Debt	417,07	
Prefered Equity	-	
Minority Interests	78,98	
Long Term Marketable Securities	-	
Bridge EV to Equity Value	3,727.78	
Equity Value	16 785,14	17 491.59

	x Revenue	x EBITDA	x EBIT	X Earnings
High	2.51	5.61	7.60	8.80
Median	1.54	4.64	5.77	8.04
Mean	1.62	4.45	5.67	7.71
Low	0.88	2.91	3.55	5.96

Key take-away

- We decided use EBITDA and EBIT multiples as they were the most accurate way to value the company and as they were both non-negative
- We decided to value the company according to FY2022
- In order to ease the proceses we decided to use a common currency for all comparables
- EBITDA Multiple:
 - We obtain an implied Entreprise value of **€ 13 057,36 M**
 - By applying the bridge to our implied Entreprise Value we obtain an implied Equity Value of **€ 16 785,14 M**
- EBIT Multiple:
 - We obtain an implied Entreprise Value of **€ 13 763,81 M**
 - By applying the bridge to our implied Entreprise Value we obtain an implied Equity Value of **€ 17 491,59 M**



06

DCF VALUATION AND ANALYSIS

6.1 DCF VALUATION—DISCOUNTED CASH FLOW & FORECASTING-HIGH GROWTH

Discounted FCFF ...

Free cash flows	Historical			Forecasting-High Growth			
	2019	2020	2021	2022E	2023E	2024E	2025E
FCFF in € 10M	117,33	-222,80	237,15	194,81	130,44	139,79	147,69
FCFF	9.761,01	-19.190,40	19.978,97	16.412,38	10.988,86	11.776,34	12.442,00
Net finance cost[Finance cost-Interest income]	-2.806,75	-867,23	-1.092,00	-1.755,73	-1.683,67	-1.633,78	-1.600,28
Tax shield	706,40	218,26	274,83	441,88	423,75	411,19	402,76
Change in debt financing	4.857,70	5.410,14	-364,15	-1.659,27	17.008,50	1.777,78	1.215,63
FCFE in € 10M	214,17	-157,84	237,22	190,71			
FCFE	16.719,06	-13.131,29	20.431,99	16.066,95	29.257,28	14.776,72	14.855,15
Currency(INR:EUR)	0,01202	0,01161	0,01187				
Fiscal Year	2022E	2023E	2024E	2025E	2026E	2027E	...
Projection Year	1	2	3	4			
FCFF	16.412,38	10.988,86	11.776,34	12.442,00	12.939,68	13.457,27	...
Present Value of FCFF	14.872,09	9.023,05	8.762,17	8.388,65	203.552,92		
Present Value of FCFF in € 10M	176,53	107,10	104,01	99,57	2.416,17		

- We have chosen 2022 to 2025 as the forecasting-high growth horizon because we believe Coal India limited will continue to operate and grow steadily as its FCFF is growing steadily at a growth rate of 4%

6.2 ■ DCF VALUATION—TERMINAL VALUE ASSUMPTIONS & ENTERPRISE VALUE / EQUITY VALUE BRIDGE

Enterprise Value and Equity Value

Growth Rate	4,00%
WACC	10,36%
Sum of PV of FCFF in € M	4.872,16
Terminal Value	2.416,173
PV of Terminal Value	16.290,33
Enterprise Value in € M	21.162,49
(+)Cash & Short-Term Investments	4.223,830
(-)Total Debt	417,07
Preferred Equity	-
(-)Minority Interests	78,98
Long Term Marketable Securities	-
Bridge From EV to EqV in € M	3.727,78
Equity Value in € M	24.890,27
Shares Outstanding (mm)	6.162,73
Implied Share Price in €	4,04

Terminal Value Assumptions

- The terminal value is calculated by using the Gordon Shapiro formula below :

$$\text{Terminal Value} = \frac{FCF_{\text{last year}} \cdot (1 + g)}{(WACC - g)}$$

- All the key numbers are change from INR(₹) to EUR(€)
- The terminal value should also be discounted and change to EUR , which is 1629.03

Enterprise Value/ Equity Value Bridge

- There are not preferred equity or long-term marketable securities
- Bridge Enterprise Value to Equity Value is 3727.78 EUR
- Equity Value :
 - For Coal India Limited, the Equity Value is **larger than** the Enterprise Value, which is because Coal India Limited has a monopoly in the Indian coal industry, producing **81%** of the country's total annual coal output. In addition, Coal India Limited has also been a dominant company in the value chain and has a relatively strong bargain power. Therefore, it has less debt and **negative net debt**.

6.3 DCF VALUATION—RESULT COMPARISON

Comparison with the broker's target prices and market price...

Shares Outstanding (mm)	616,27
Implied Share Price in €	4.04
Implied Share Price in ₹	288.84



- Compare with the **brokers' target prices**:
 - **Motilal Oswal** has a target **Rs 325** on the stock since the consensus will continue to upgrade Coal India's FY23 estimates
 - **Numava Institutional Equities** has upped its target for the stock to **Rs 308** from Rs 275 earlier.
 - **ICICI Securities** has buy call on Coal India with a target price of **Rs 294**
 - **JP Morgan** maintained an overweight rating on Coal India but raised the target price to **Rs 265** from Rs 238 earlier
- Compare with the **market price**:
 - The current market price of Coal India Ltd. is **Rs 229.05**
- Prior to the COCOVID-19-Pandemic (2019), the Coal India Limited Stock Price reached a high of over Rs 290. With the macroeconomic recovery in 2021, the stock has shown an aggressive upward trend, that was later amplified by Russian-Ukrainian war.
- Our valuation results are generally consistent with the market's target price, but our results are slightly lower than Motilal Oswal, Numava Institutional Equities, ICICI Securities target price for Coal India limited.
- This difference can be explained by the fact that we made a prudent prediction for the increase of coal production and forecasted revenue for Coal India.

6.4 DCF VALUATION— SENSITIVITY ANALYSIS

Sensitivity analysis and evaluation

- EBITDA Multiple= Enterprise Value / EBITDA = 7.21x
- EBIT Multiple = Enterprise Value / EBIT = 9.4x

Implied Share Price Sensitivity in €						
		Growth Rate				
WACC	4.04	3.00%	3.50%	4.00%	4.50%	5.00%
	9.36%	4.13	4.37	4.66	5.01	5.45
	9.86%	3.87	4.08	4.32	4.61	4.96
	10.36%	3.66	3.83	4.04	4.28	4.56
	10.86%	3.47	3.62	3.79	3.99	4.23
	11.36%	3.30	3.43	3.58	3.75	3.95

- Setting growth rate constant, we found that stock price goes down if WACC increased 0.5% each time, which matches what we considered at first.
- When WACC goes higher, the cost of capital for the company get higher and discounted value (also known as enterprise value) will further get lower. That is the main reason why stock price will go down.
- Simultaneously, if we set WACC at a stable rate, we found that stock price for the company will go higher together with growth rate.
- This will be caused by that the increasing growth rate will bring a more favorable terminal value for the firm. Therefore, the enterprise value and stock price will get into an increasing trend as we thought.