genial | Equity Research

VALE

4Q23 Review: Driven by overhangs, not by operation

LatAm Metals & Mining

Main takeaways:

(i) Robust net revenue, with no surprises; **(ii)** C1/t returning to more normalized levels; **(iii)** C1 Guidance is met, helped by higher volumes; **(iv)** Freight costs going sideways; **(V)** EBITDA with strong growth, in line with the estimate; **(vi)** Net income is the only disappointment, impacted by provisions for Samarco; **(vii)** Sturdy dividends, higher than our estimates; **(viii)** China: what are we seeing that the consensus doesn't? We comment a little on our take section, at the end of the report; **(ix)** Notification of the suspension of the operating license for the Sossego and Onça Puma mines. For us, appears to be possible government retaliation against the company; **(x)** Agreement signed with Anglo American in Minas-Rio seems positive for Vale; **(xi)** Investors are putting excess provisions vs. guidance in their models in relation to Samarco/Mariana; **(xii)** Penalized beyond the fair point by the **overhangs**, since the **company's operation is at robust levels**, we continue with our **BUY rating**, based on a **24E EV/EBITDA** of **3.95x** (below the historical average), with a **12M Target Price** of **R$82.50** for **VALE3-B3** and **US$16.75** for **ADRs-NYSE**, presenting an **upside** of **+22.73%**.

Analysts

Igor Guedes
+55 (11) 3206-8286
igor.guedes@genial.com.vc

Lucas Bonventi
+55 (11) 3206-8244
lucas.bonventi@genial.com.vc

Rafael Chamadoira
+55 (11) 3206-1457
rafael.chamadoira@genial.com.vc

Company

VALE US Equity
Buy

Price: US$ 13.51 (22-Feb-2024)
Target Price 12M: US$ 16.75 (NYSE)

VALE3 BZ Equity
Target Price 12M: R$ 82.50 (B3)

Vale released its 4Q23 results yesterday, February 22, after the market closed. Operating figures came in mostly within expectations. **Net revenue** clocked in at US$13bn (+23% q/q; +9.1% y/y) **and EBITDA came in line** at US$6.3bn (-2.4% vs. Genial Est.), with **strong growth of +51.4% q/q and +36.2% y/y**. However, **Net Profit** was **well below expectations** (by us and by consensus), due to the **higher provisioning** for **Samarco**, linked to the **Mariana (MG)** accident. Even though net profit was reported below our projections, reaching US$2.4bn (-43% vs. Genial Est.), **the market had already reacted negatively to the risk** of the provision being much higher than the guidance.

In other words, our perception is that **investors were already aware of this possibility**, since BHP (Vale's partner in Samarco) had announced **8 days** ago that it would **double the provisions** related to the Fundão dam collapse accident in Mariana (MG) in the 2H23 results, which were released 2 days ago by the company (before Vale released its own). Therefore, we believe that the fall in Vale's shares, by ~5% in the week leading up to BHP's own result, reflects the market's pricing of the possibility of Vale's 4Q23 result coming with a considerable increase in provisions that would push net income down.

Table1. Income Statement Summary (4Q23 vs. Genial Est.)

(US$ millions)	Reported	Genial Est.		Reported				
Income Statement	**4Q23A**	**4Q23E**	**% Diff.**	**4Q23A**	**3Q23A**	**% q/q**	**4Q22A**	**% y/y**
Net Revenue	13.054	13.300	**-1,9%**	13.054	10.610	**23,0%**	11.963	**9,1%**
Adjusted EBITDA	6.334	6.488	**-2,4%**	6.334	4.185	**51,4%**	4.649	**36,2%**
Net Income	2.442	4.289	**-43,1%**	2.442	2.876	**-15,1%**	3.747	**-34,8%**

Source: Genial Investimentos, Vale

Valuation and recommendation. The company's realized iron ore price figures exceeded expectations, with fines and pellets rising by +2.8% and +1.4% respectively in relation to our projections, made before the release of Vale's production and sales report on January 29.We would like to remind investors that fine iron ore production also exceeded the annual guidance (accelerating to 321Mt), reaching 89.3Mt in 4Q23 (+7.3% vs. Genial Est), with the best December ever recorded by the company in terms of production, and marking a rare effect, with a 4Q showing sequential growth (this has only happened twice in the last 6 years). However, sales of fine products fell short of estimates, at 77.8Mt (-3.5% vs. Genial Est.). Even so, we also would like to point out that the formation of inventory, which occurred due to the gap between production and sales, although relevant, is not calculated simply by the 12% difference between the 89.3Mt of production and the 77.8Mt of shipments.

As we addressed more emphatically in the preview report, which is attached below (Vale 4Q23 Preview), and which was explored in more depth in Vale's release issued yesterday, the natural imbalance between production and sales derives from other explanations: **(i)** to produce 1Mt of pellets, it is necessary to produce 1.2Mt of fines, which is equivalent to a 10-12% mass loss. There is also **(ii)** greater moisture in the extraction vs. the loss of mass in the reduction of moisture throughout the logistical process or subsequent storage before shipment, which equates to 1-1.5%. In addition to these factors, we point out the **(iii)** mass loss in concentration for blending and mix improvement, equivalent to 30-35%. Vale has started to do this more frequently in Chinese ports, with 13Mt of pellet feed produced in 2023 in this situation. Finally, we highlight **(iv)** the delivery time, which forms the stock in transit, with the Tubarão/Qingdao route taking ~45 days.

If we consider these 4 factors of the total production of 321Mt of fines vs. 301Mt of shipments (fines + pellets + ROM), only 8Mt will actually become stockpiled in 2023, or 2% + the stockpile of sinter *feed* in China's ports. We also reinforce our opinion that, with the weak premium dynamics, Vale opted to rebuild inventories and rebalance the supply chain. The **premium for quality** above 62% Fe for fine iron ore **was -US$1.1/t**, with a **discount** in relation to the benchmark curve.

Although the quality premium is one of the main factors that would make an investor interested in Vale rather than its competitors (BHP and Rio Tinto), we recognize that the **market doesn't seem to be being rational**. The price of 62% Fe iron ore is at ~US$125/t and even though it has fallen from the high of ~US$140/t reached in the first days of January; it still remains at an extremely attractive level (+32% above the historical average of the last 10 years). Even in the face of a very high average quality price, premiums for higher quality are anemic. The steel market seems to be **demanding mostly low-grade** iron ore.

We believe that this is because the commodity curve looks too far ahead, based on expectations (and not reality), looking for demand that doesn't exist today. Currently, the rational scenario seems to point to a lack of reasonable demand in the real Chinese economy. While we recognize a pressure on the supply side, with low inventories at China's ports contributing somewhat to the higher price, blast furnace utilization rates at the main Chinese steel mills have already started to fall (they're at 83% today vs. 90% in November), so inventories will gradually go back up, with the supply constraint at the ports alone not seeming to offer enough support for this price level. **This explains the -13% YTD drop in iron ore 62% Fe**, as we anticipated ahead of consensus in a report published in December, the link to which is attached (Metals & Mining: A deep dive into the Chinese government's upcoming stimulus). However, we expect slightly better days for China over the course of the year.

We believe that China will demand slightly more steel domestically in 2024, despite reducing total production to less than 1Bt (exports may decrease by a bit), in the face of more promising segments such as automotive, infrastructure and, above all, social housing. As for social housing, at the end of last year, the People's Bank of China (PBoC) released a package of ¥1trillion (~US$240bn) spread over 4/5 years for the development of housing in suburbs of large cities. In addition, we postulate that recent news correlates with an increase in this amount to up to US$280bn per year (5x more than initially thought), so that demand should gradually increase, reducing housing stocks by ~10%, according to our preliminary calculations (which do not consider the extension recently considered, so the upside could be even greater).

We conclude that, for current levels of demand, even considering pressure from the supply side, we still draw a downward line for the iron ore price of 62%. However, we believe that the **market overvalues the "China factor" in Vale**. Our model indicates that the company could generate substantial cash flow, with a **24E FCF yield of 10-11%**, despite the possible fall in the price of iron ore 62% Fe to US$110-120/t (today at ~US$125/t). This would support a **24E dividend yield near 11%** (without extraordinary). We don't rule out redistributing the cash flow gain from the acquisition of a 13% stake of the base metal’s unit to Ma'aden and PIF. However, with pressure coming for an increase in the pace of provisioning in relation to the Mariana (MG) accident settlement, our opinion is that, in the event that Vale redistributes this amount as extraordinary to shareholders, it should only do so in 2H24. If it chooses to redistribute it, the **24E dividend yield** would be **~13%** (with extraordinary).

Therefore, our assessment is that **Vale showed in 4Q23 that it continues develop a good operational performance**, despite the challenges and overhangs (increased political risk + Mariana agreement + choice of CEO). We continue with our **BUY** rating, based on a **24E EV/EBITDA** of **3.95x** (below the historical average), with a **12M Target Price of R$82.50** for **VALE3-B3** and **US$16.75** for **ADRs-NYSE**, presenting an **upside of +22.73%**.

Rear-view mirror: Production and Sales

In our financial results preview, published after the release of Vale's production and sales report on January 29, the link to which is attached (Vale 4Q23 Preview: Beyond Normal), we commented on the gap observed between the two sides (production and sales), good prices realized, even with low premiums, and revenue and adjusted EBITDA growing sequentially, shifting levels and raising the bar q/q.

Strong iron ore production raising the bar. We mentioned in the preliminary report that Vale reported an iron ore production figure well above consensus, a figure similar to that seen in 3Q22. The 89.4Mt performance in 4Q23, as a result of the improved ramp-up pace at S11D and the satisfactory performance at Itabira and Vargem Grande, led Vale to exceed guidance for the full year 2023 (321Mt vs. 310-320Mt of guidance). Sales were lower, but at high levels compared to the rest of the year, suggesting a possible build-up of inventory. Although stockpiling did indeed occur, it was lower than the 12% gap due to the loss of mass that we pointed out at the beginning of this report and in preview report.

Although premiums were weak, the realized price was attractive. With the price of iron ore with medium grade content at high levels compared to the historical average of the last 10 years, the average of the 62% Fe curve in 4Q23 was US$128/t, so that a low premium on fines (-US$1.1/t) did not prevent the company from reporting a solid performance, exceeding our expectations before the release of the production and sales report (+2.8% vs. Genial Est.), and showing an increase of +12.6% q/q. The price spread between the 65% Fe benchmark (Vale's strong point) and the 62% Fe benchmark continues to narrow, reflecting the market's interest in the lower quality product at the expense of paying extra for quality. From a structural point of view, this is not positive for the company, since it is precisely in quality that Vale differentiates itself from its competitors (BHP and Rio Tinto).

4Q23 Review

Robust net revenue, no surprises. Since Vale disclosed almost all the variables needed to calculate revenue in its January 29th report, we weren't surprised by the number reported now. The company achieved consolidated net revenue of US$13bn (-1.9% vs. Genial Est.), showing an acceleration of +23.0% q/q and +9.1% y/y. The unit responsible for the growth, both in proportional and nominal terms, was the fine iron ore line, with revenues clocking in at US$9.2bn (+25.7% q/q; +18.6% y/y), demonstrating that the current commodity price curve is being taken advantage of. Pellets advanced to US$1.6bn (+21.0% q/q; +15.4% y/y), marking the greater use of the Torto dam with the ramp-up of the Brucutu mine (MG), as well as the execution of sales of this higher volume of fine iron ore directed to the pelletizing plant attached to the Tubarão terminal (ES).

Table2. Net Revenue Vale (4Q23 vs. Genial Est.)

(US$ millions)	4Q23 Reported	4Q23E Genial Est.	% R/E	3Q23 Reported	% q/q	4Q22 Reported	% y/y
Net Revenue	**13.054**	**13.300**	**-1,9%**	**10.610**	**23,0%**	**11.963**	**9,1%**
Iron Ore Fines	9.212	9.214	0,0%	7.327	25,7%	7.767	18,6%
Pellets	1.680	1.681	0,0%	1.388	21,0%	1.456	15,4%
Nickel operations	1.177	1.441	-18,3%	1.023	15,1%	2.051	-42,6%
Copper operations	855	774	10,4%	660	29,5%	498	71,7%
Others	130	190	-31,7%	212	-38,7%	191	-31,9%

Source: Genial Investimentos, Vale

Base metals suffer from nickel downward prices. As for the base metals unit, considering the other commodities that are reported within Vale's operation, such as gold, silver, PGMs and cobalt, which are not disclosed within the production and sales report, but which are aggregated in the nickel result, the figures differ more from our estimates. Therefore, the nickel operation ended up earning a slightly disappointing figure, pressured by the price curve and the effects of other metals, reaching revenues of US$1.1bn (-18.3% vs. Genial Est.), with an increase of +15.1% q/q, due to volume ramp-up, despite the -42.6% y/y drop related to weaker price dynamics. In the case of copper, revenues amounted to US$855mn (+10.4% vs. Genial Est.), up both sequentially (+29.5% q/q) and +71.7% y/y, with better pricing than nickel.

C1/t returning to more normalized levels. The nominal C1 observed was US$1.5bn (+5.3% q/q), due to the increase in volume sold. However, the C1/t (ex. third-party purchases) reported by the company clocked in at US$20.8/t (+20% vs. Genial Est), which although down -5.1% q/q and -10.0% y/y, due to the dilution of fixed costs caused by the increase in volume, was still below our expectations. We confess that we were more optimistic than the consensus regarding the C1/t reduction for 4Q23. The consensus was US$21.2/t, so even though the figure was reported higher than our expectation, Vale still beat the consensus. Even though our recalibration of C1 predicted Vale presenting a better dynamic then consensus was pricing in, by recognizing our over-optimism in this department, the difference of an additional cost-reducing factor driven by this suppressed confidence was offset when we calculated the Proforma EBITDA, since the SG&A reported by the company was less intense than that projected in our model.

C1 guidance achieved, helped by higher volumes. Despite the sequential and annual drop in C1/t, it is important to note that the value was higher than the company has historically practiced during 2023. There are a few reasons for this: **(i)** the impact of the new was of operating on the mines, **(ii**) the impact of geological inflation and **(iii)** the appreciation of the USD/BRL exchange rate as a result of some components. Although in the consolidated movement for 2023, C1/t has shown a new level of costs (which does indeed appear to be structurally higher), Vale had set guidance for year in the range of US$21.5-22.5/t, after the upward revision made in the 2Q23 result. As the year drew to a close, the company proved itself capable in this regard, reaching the range and falling below the upper band, reporting US$22.3/t.The figure put an end to the market's uncertainty about cost dynamics that had been hanging over the heads of some investors after the significant loss of fixed cost dilution capacity with the temporary interruption of shipments from the Ponta da Madeira (MA) terminal. The terminal had suffered damage to its port structure as a result of the torrential rains in 1Q23, and throughout the year Vale "fought" to stay within the cost target, having managed to achieve the new proposed target with the help of the greater dilution capacity seen both in 3Q23, but especially now in 4Q23.

Table 3. COGS Vale (4Q23 vs. Genial Est.)

	3Q23E	4Q23		3Q23		4Q22	
(US$ millions)	Genial Est.	Genial Est.	% R/E	Reported	% q/q	Reported	% y/y
COGS	**(6.891)**	**(6.358)**	**8,4%**	**(6.243)**	**10,4%**	**(7.155)**	**-3,7%**
Iron Ore Fines	(3.704)	(3.450)	7,4%	(3.408)	8,7%	(3.744)	-1,1%
Pellets	(768)	(790)	-2,8%	(669)	14,8%	(735)	4,5%
Nickel operations	(980)	(845)	16,0%	(925)	5,9%	(1.378)	-28,9%
Copper operations	(427)	(329)	29,6%	(341)	25,2%	(279)	53,0%
Others	(157)	(59)	165,7%	(120)	31,1%	(119)	31,9%
Depreciação e Amort.	(855)	(884)	-3,3%	(780)	9,6%	(900)	-5,0%

Source: Genial Investimentos, Vale

Freight costs going flat. Regarding freight, there were no surprises, the figure was in line with our estimates, US$18.8/t (+0.2% vs. Genial Est.), consolidating a very mild reduction of -0.2% t/t, basically stable, due to Vale's lower exposure to *spot* freight rates. We would point out that the *spot* cost of the SSY (Tubarão-Qingdao) freight curve is still very high, and this is due to the war in the Middle East which has put pressure on the cost of *bunker* fuel (maritime fleet), with the higher Brent oil barrel curve in the short term.

EBITDA with strong growth, in line with estimates. Vale reported a consolidated adjusted EBITDA of US$6.3bn (-2.4% vs. Genial Est.), within expectations, showing a significant increase of +51.4% q/q and +36.2% y/y. Proforma EBITDA, which excludes provisions for Brumadinho indemnity payments, dam de-characterization and other adjustments, calculating only the performance of the business lines, stood at US$6.7bn (+49.9% q/q; +34.0% y/y).

As we have already mentioned, C1/t came in above our estimate, which was calibrated to achieve the guidance with a greater margin than what ended up happening, although the figure came in slightly below the consensus projections, which we believed to be too pessimistic on this point. Even so, we weighed more heavily on the S&GA estimates and provisions with Brumadinho + dam de-characterization, which helped to purge our excess optimism from C1, trimming the adjusted EBITDA reported by Vale to fit perfectly within our estimates. Proforma EBITDA for fine iron ore came in at US$5.4bn (-2% vs. Genial Est.), up +47.9% q/q and +37.4% y/y, with pellets at US$925mn (+1.2% vs. Genial Est.), accelerating by +29.9% q/q and +37.4% y/y.

Despite the good performance of the steelmaking solutions unit, the EBITDA of the base metals' unit was below expectations. The copper operations posted Proforma EBITDA of US$375mn (-10.3% vs. Genial Est.) and the nickel operations diverged even more from what we expected, reaching US$152m (-72.5% vs. Genial Est.). While copper grew q/q and y/y, nickel had a very weak result, falling -75% y/y. Even though the performance was less than ideal, we are aware of the difficult situation in nickel pricing and as the base metals unit has little weight in Vale's consolidated performance, we wouldn't necessarily put this specific situation down as disappointing or in any way generating very negative market interpretations when trading sections opens after the result.

Table 4. Proforma EBITDA Vale (4Q23 vs. Genial Est.)

(US$ millions)	4Q23E Genial Est.	4Q23 Genial Est.	% R/E	3Q23 Reported	% q/q	4Q22 Reported	% y/y
Proforma EBITDA	6.730	7.238	**-7,0%**	4.490	**49,9%**	5.024	**34,0%**
Iron Ore Fines	5.467	5.578	-2,0%	3.696	47,9%	3.978	37,4%
Pellets	925	914	1,2%	712	29,9%	743	24,5%
Nickel operations	152	553	-72,5%	100	52,0%	610	-75,1%
Copper operations	375	418	-10,3%	269	39,4%	165	127,3%
Others	(189)	(224)	-15,7%	(287)	-34,2%	(472)	-60,0%

Source: Genial Investimentos, Vale

Net income is the only big disappointment, impacted by provisions for Samarco. Last week we had a few conversations with investors, where the main question was how much would be reported in provisions for the Brumadinho cases and especially in the line attributed to non-controlling shareholders, for Samarco, the JV that has Vale and BHP as equal partners (50% each) and which operated the

Fundão dam in Mariana (MG). As we commented at the beginning of the report, Vale seems to have followed in the footsteps of BHP, its partner in Samarco. To clarify the crossroads involved in estimating this provision, let's take a look back. Placed as a parameter since the 2022 Investor Day and reaffirmed at the 2023 Investor Day on December 5th (at final stretch of 2023 and with great visibility over whole year), the company had disclosed in its guidance that it would make a provision of US$2bn in 2023 for both cases (US$1.4bn for Brumadinho + US$600mn for Samarco).

Therefore, from the beginning of the year, in order to be more vigilant, we calculated a safety margin for these events (+25% vs. annual guidance), in the suspicion that the amount proposed by Vale would be exceeded at some point during the year. We had estimated US$750mn for 4Q23, which corresponded to ~40% of the entire guidance coming in just one quarter. However, the figure we projected, somewhat conservatively, was half of what the company disclosed (~US$1.5bn), which was obviously not a good sign.

This means that, although we were talkative on this point, we weren't conservative enough at first. It's worth saying that not even the consensus was able to measure the magnitude of this issue (Net profit -40% vs. consensus, similar to our estimate). So, despite a mostly in-line result, with an excellent operating performance, reflected in the double-digit acceleration of EBITDA, net income was insufficient, and came in at just US$2.4bn (-43.1% vs. Genial Est.); marking a drop of -15.1% q/q and -34.8% y/y.

Table 5. Income Statement Vale (4Q23 vs. Genial Est.)

	4Q23	4Q23E		3Q23		4Q22	
(US$ millions)	**Reported**	**Genial Est.**	**% R/E**	**Reported**	**% q/q**	**Reported**	**% y/y**
Net Revenue	**13.054**	**13.300**	**-1,9%**	**10.610**	**23,0%**	**11.963**	**9,1%**
COGS	(6.891)	(6.358)	8,4%	(6.243)	10,4%	(7.155)	-3,7%
Adjusted EBITDA	**6.334**	**6.488**	**-2,4%**	**4.185**	**51,4%**	**4.649**	**36,2%**
EBITDA Margin (%)	48,5%	48,8%	-0,26p.p	39,4%	9,08p.p	38,9%	9,66p.p
Adjusted EBIT	**5.479**	**5.604**	**-2,2%**	**3.405**	**60,9%**	**3.749**	**46,1%**
EBIT Margin (%)	42,0%	42,1%	-0,16p.p	32,1%	9,88p.p	31,3%	10,63p.p
D&A	(855)	(884)	-3,3%	(780)	9,6%	(900)	-5,0%
Financial Result	(874)	(916)	-4,6%	(421)	107,6%	(658)	32,8%
Net Income	**2.442**	**4.289**	**-43,1%**	**2.876**	**-15,1%**	**3.747**	**-34,8%**
Net Margin (%)	18,7%	32,2%	-13,54p.p	27,1%	-8,39p.p	31,3%	-12,61p.p

Source: Genial Investimentos, Vale

Our Take on Vale

The release of Vale's 4Q23 results revealed operating figures in line with expectations, but a lower-than-expected net profit, due to higher provisions for Samarco related to the Mariana (MG) accident. Although the bottom line disappointed, this was to be expected given BHP's prior warning about the increase in provisions related to the same incident.

It is worth noting that iron ore production exceeded annual guidance, indicating exemplary growth, consolidating a very strong 4Q23 if seasonality is considered, for a quarter that is already hit by torrential rains as the temperature starts to warm up towards the end of the year. Although sales in fines were below estimates, stockpiling is not merely a question of the difference between production and sales, but also suffers from the confluence of various factors, including **(i)** mass losses in the pelletizing process, **(ii**) weight loss due to reduced humidity and **(iii)** delivery times in relation to stock in transit + inventory for blending at the ports.

Strong dividends, higher than our estimates. Apparently, we believe that the market is underestimating Vale, as its operations remain solid despite YTD pressures on 62% Fe iron ore prices (down ~13% since January) and other *overhangs* pressuring share prices. Our model suggests significant potential for cash flow generation **(24E FCF Yield** above **10%**), with support for an attractive **24E Dividend Yield (11% without extraordinary** and **13% with extraordinary** in 2H24). As proof of this, the company announced an **excellent distribution**, equivalent to **~US$0.55/share** (R$2.74/share), exceeding our estimates. According to our results preview, we had anticipated a dividend of US$0.50/share (already factoring in an increase vs. 3Q23). The payment date will be March 19, in March 12 it becomes ex dividend, and makes up an **annualized Dividend Yield** of an **exuberant ~16%**.

China: what are we seeing that the consensus doesn't? Our view of China always seems to go against the consensus. When most investors expected a strong recovery after the end of Covid-zero, we adopted a much more skeptical tone, and we were right. Now, after several banks and brokerages have revised down China's growth for the next few years (2024 to 2026), we've taken a slightly less pessimistic approach. It is important to stress that we are not optimistic about China, we just think that the stabilization of China's growth compared to the end of the cycle of high single-digit GDP expansion seen in the decade before the pandemic has already been priced in.

In addition, our studies indicate a 2024 with a slightly better performance of the industrial PMI in 2024 vs. 2023 and with a less pressured domestic steel consumption in China, due to the reduction in interest rates and 3 other points: **(i)** tax collection and budget activity, **(ii)** easing of the fiscal deficit limit to 3.8% of GDP and **(iii)** new social housing program.

In 2024, we project a slight increase in steel demand vs. 2023, especially in the automotive, infrastructure and social housing sectors. Significant investments, such as those by the People's Bank of China (PBoC), aimed at building housing in urban areas, indicate President Xi Jinping's commitment to reviving ideas of greater state interventionism, especially with all the talk in recent days about *social housing*. These investment plans, which could grow to US$280b per year (vs. US$240b over 4/5 years in the previous idea), should further boost the need for steel in civil construction (which we agree will be apathetic in 2023), potentially benefiting companies like Vale in terms of demand for iron ore.

Of course, this demand has not yet reached the real economy... We don't believe that the social housing package completely solves the serious problem of the Chinese real estate market. And once the money is released through the housing voucher system (not in cash this time), supported by LGFVs, it still takes a while for the effect to kick in within the demand for the steel mills. So, things aren't instantaneous, and it seems to us that the investors are very impatient after the disappointment with China's growth in 2023 (anticipated by us, but which was new for the consensus at a time). From a very early stage, we have been of the opinion that the difficulties encountered by middle- and high-income private developers, with many projects in small and medium-sized cities, are structural and not cyclical.

A package of incentives won't solve the cash flow squeeze and the low interest in acquiring new properties seen on the balance sheet of these developers, with a population that already has more properties than children to inherit them. But it's also worth remembering that social housing targets middle and high incomes and seeks to attack the stimulus to construction from another angle. So, the situation, from a rational point of view, doesn't seem to be as bad as the market is currently pricing Vale's shares.

Notice of suspension of the operating license for the Sossego and Onça Puma mines. Vale has received notification of the suspension of the Operating License for the Sossego and Onça Puma mines, both in Pará (Nickel and Copper), and is evaluating measures to resolve the issue. The company reaffirmed its commitment to environmental laws and the well-being of local communities and ratified the regular submission of reports on its social programs to environmental agencies. We infer this as a possible government retaliation against the company, one of the **big overhangs** that are keeping investors away from the stock.

Agreement signed with Anglo American in Minas-Rio. The company also announced the acquisition of a 15% stake in Anglo American's operations in Brazil, strengthening its presence in the market. The transaction includes funds from Serpentina and an outlay of US$157.5mn. We expect deal closing in 4Q24, subject to regulatory approvals from CADE. Vale will be entitled to a portion of Minas-Rio's production and an additional call option. Minas-Rio and Serpentina both have vast growth potential that we think is interesting. Looking at the Minas-Rio asset first, it already has a production capacity of 26.5Mtpy, with the potential to reach 31Mtpy. With resources estimated at 4.3Bt, Serra da Serpentina promises significant expansion opportunities. The expansion of Minas-Rio will consider various logistical options, including the use of Vale's rail and port infrastructure. The transaction does not affect Anglo American's stake in the export unit at the Port of Açu. We assess the transaction as positive for Vale.

Investors seem to be modeling Vale with excessive provisions vs. guidance. Although the provision on the line attributed to non-controlling shareholders, Samarco, for the Fundão dam collapse in Mariana (MG) was already a topic discussed by the market days before the results, due to BHP's announcement that it would double the rate of provisioning, the situation was a surprise to us and to the consensus, not in terms of exceeding the guidance, but in terms of intensity.

We believe that there wasn't enough time or proper information released by the company to help reduce this asymmetry between the guidance reinforced at the Investor Day on December 5 and what we saw in the 4Q23 figures in relation to this sensitive issue. We know, through rounds of conversations we've had with institutional investors, that for some months now, many have been building into their Vale models a considerable increase in relation to the guidance that Vale releases at its events (Investor Day 2022 and 2023).

Therefore, there is a lack of belief on the part of the market in general that the expectations of an agreement envisioned by Vale (and BHP...) in relation to the sewing of a fixed amount for the indemnities (+ recent R$47bn collective damages lawsuit) will not in fact be greater than the provisioning flow currently proposed by the company.

This is based on the assumption that investors today have in their models a settlement of between R$126-R$155bn. The more pessimistic the investor is about the case, the closer to the upper band of this range it is.

We have a projection of R$132bn Genial Est., to be divided by Vale and BHP in 50% each, also removing from this account what has already been paid and provisioned by Vale. This would give a rate of provisioning 25% above that measured by Vale in its guidance, paid until almost 2030. Among other **overhangs** that we see putting pressure on the shares, removing buyer flow, **this seems to us to be the biggest**. The sewing of this agreement with the Federal Public Prosecutor's Office (MPF) and the other parties involved is essential to attract investors back to the stock, since those who are targeting the upper band of the range (~R$155bn) may be discounting Vale's valuation too much in their models.

As there is no clarity or consensus on the subject, it is difficult to know whether there is in fact a pessimistic exaggeration. Our bet is that the value will be much higher than Vale mentions in its guidance, and the proof of this was 4Q23 dynamic, but it shouldn't go to the extreme that we see some investors putting in their models...

Driven by overhangs, not by the operation. Therefore, while we recognize the challenges faced by Vale, especially with the impacts of the Mariana/Samarco + government pressures (which may have led to the revocation of licenses in base metals), we remain bullish about its future performance and strong cash flow generation, especially given its ability to adapt and resilience and capacity to pay dividends. We believe that the company has been discounted due to external rumors and suspicions, leading the stock to trade at irrational levels. We continue with our **BUY rating**, based on a **24E EV/EBITDA** of **3.95x** (below the historical average), with a **12M Target Price of R$82.50** for **VALE3-B3** and **US$16.75** for **ADRs-NYSE**, presenting an **upside of +22.73%**.

Appendix: Vale

Figure 1. Vale – Income Statement in US$ Millions (Genial Est. 2023-2028)

Income Statement	2023E	2024E	2025E	2026E	2027E	2028E
Net Revenue	**42.019**	**43.005**	**43.540**	**43.639**	**43.135**	**44.642**
(-) COGS	(22.451)	(25.218)	(26.388)	(27.587)	(28.752)	(29.890)
Gross Profit	**19.567**	**17.788**	**17.152**	**16.052**	**14.383**	**14.752**
(-) Expenses	(3.327)	(4.586)	(3.465)	(3.527)	(3.025)	(3.002)
Adjusted EBITDA	**18.281**	**16.269**	**16.981**	**15.889**	**14.858**	**15.388**
(-) D&A	(3.099)	(3.227)	(3.392)	(3.549)	(3.698)	(3.840)
EBIT	**15.181**	**13.043**	**13.589**	**12.340**	**11.160**	**11.548**
(+/-) Financial Result	(2.169)	(2.728)	(2.639)	(2.612)	(2.760)	(2.609)
(-) Taxes	(2.372)	(978)	(1.029)	(924)	(801)	(851)
Net income	**10.640**	**9.337**	**9.922**	**8.805**	**7.599**	**8.088**
Profitability						
Net margin (%)	25,32%	21,71%	22,79%	20,18%	17,62%	18,12%

Figure 2. Vale– Cash Flow in US$ Millions (Genial Est. 2023-2028)

Cash Flow (FCFF)	2023E	2024E	2025E	2026E	2027E	2028E
Net Revenue	**42.019**	**43.005**	**43.540**	**43.639**	**43.135**	**44.642**
(-) COGS	(22.451)	(25.218)	(26.388)	(27.587)	(28.752)	(29.890)
Adjusted EBITDA	**18.281**	**16.269**	**16.981**	**15.889**	**14.858**	**15.388**
Adjusted EBIT	**15.181**	**13.043**	**13.589**	**12.340**	**11.160**	**11.548**
(-) Taxes	(2.372)	(978)	(1.029)	(924)	(801)	(851)
(+) D&A	3.099	3.227	3.392	3.549	3.698	3.840
(+/-) Δ WK	(412)	(1.256)	690	(553)	-177	(113)
(-) Capex	(5.928)	(6.500)	(6.500)	(6.500)	(6.500)	(6.500)
FCFF	**9.568**	**7.535**	**10.143**	**7.912**	**7.380**	**7.925**

Disclosure Section

1. GENERAL DISCLAIMER

This report has been produced by the research department ("Genial Institutional Research") of Genial Institutional Corretora de Câmbio, Títulos e Valores Mobiliários S.A. ("GENIAL INSTITUTIONAL CCTVM"). Genial Institutional is a brand name of Genial Investimentos CCTVM.

Genial Rating

	Definition	Coverage
Buy	Expected return above +10% in relation to the Company's sector average	**49%**
Neutral	Expected return between +10% and -10% relative to the Company's industry average	**41%**
Sell	Expected return below -10% in relation to the Company's sector average	**5%**
under Review	Under review	**5%**

This report may not be reproduced or redistributed to any other person, in whole or in part, for any purpose, without the prior written consent of GENIAL INSTITUTIONAL CCTVM. GENIAL INSTITUTIONAL CCTVM accepts no liability whatsoever for the actions of third parties in this respect.

This research report is for distribution only under such circumstances as may be permitted by applicable law. This research report has no regard to the specific investment objectives, financial situation or particular needs of any specific recipient, even if sent only to a single recipient. This research report is not guaranteed to be a complete statement or summary of any securities, markets, reports or developments referred to in this research report. Neither GENIAL INSTITUTIONAL CCTVM nor any of its directors, officers, employees or agents shall have any liability, however arising, for any error, inaccuracy or incompleteness of fact or opinion in this research report or lack of care in this research report's preparation or publication, or any losses or damages which may arise from the use of this research report

GENIAL INSTITUTIONAL CCTVM may rely on information barriers, such as "Chinese Walls" to control the flow of information within the areas, units, divisions, groups, or affiliates of GENIAL INSTITUTIONAL CCTVM.

Investing in any non-U.S. securities or related financial instruments (including ADRs) discussed in this research report may present certain risks. The securities of non-U.S. issuers may not be registered with, or be subject to the regulations of, the U.S. Securities and Exchange Commission. Information on such non-U.S. securities or related financial instruments may be limited. Foreign companies may not be subject to audit and reporting standards and regulatory requirements comparable to those in effect within the United States.

The value of any investment or income from any securities or related financial instruments discussed in this research report denominated in a currency other than U.S. dollars is subject to exchange rate fluctuations that may have a positive or adverse effect on the value of or income from such securities or related financial instruments.

Past performance is not necessarily a guide to future performance and no representation or warranty, express or implied, is made by GENIAL INSTITUTIONAL CCTVM with respect to future performance. Income from investments may fluctuate. The price or value of the investments to which this research report relates, either directly or indirectly, may fall or rise against the interest of investors. Any recommendation or opinion contained in this research report may become outdated as a consequence of changes in the environment in which the issuer of the securities under analysis operates, in addition to changes in the estimates and forecasts, assumptions and valuation methodology used herein.

The locally listed shares of Brazilian companies may only be purchased by investors outside of Brazil who are "eligible investors" within the meaning of applicable laws and regulations.

2. ANALYST(S) DISCLOSURES AND CERTIFICATION

The principal analyst, IGOR GUEDES, is responsible for the content of this report and for meeting the requirements of Securities and Exchange Commission of Brazil (CVM) Instruction 598/2018.

The analysts hereby certify that the views expressed in this research report accurately reflect their personal views about the subject securities or issuers and it was prepared in an independent manner, including with respect to the person and to GENIAL INSTITUTIONAL.

The analyst hereby certifies that he (she) has no connection with any individual who works for the issuer(s) discussed in this report.

The analyst hereby certifies that he (she), or his (her) spouse or companion, either directly or indirectly, in his or her own name or on behalf of a third party, does not hold any of the securities covered in this report.

The analyst hereby certifies that he (she), or his (her) spouse or companion, is not directly or indirectly involved in the purchase, disposal or brokering of the securities covered in this report.

The analyst hereby certifies that he (she), or the his (her) spouse or companion, has no direct or indirect financial interest in the issuer covered in this report (other than trading shares in investment funds, in which the analyst cannot control, directly or indirectly, the administration or management of the fund, or which do not concentrate investments in sectors or companies that are covered by reports produced by the analyst).

The analyst's compensation is, directly or indirectly, determined by income from GENIAL INSTITUTIONAL´s business and financial operations.

In addition, the analysts certify that no part of their compensation was, is, or will be directly or indirectly related to the specific recommendations or views expressed in this research report.

The compensation of the analyst who prepared this report is determined by research management and senior management (not including investment banking). Analyst compensation is not based on investment banking revenues, however, compensation may relate to the revenues of GENIAL INSTITUTIONAL CCTVM, its affiliates and/or subsidiaries as a whole, of which investment banking, sales and trading are a part. Compensation paid to analysts is the sole responsibility of GENIAL INSTITUTIONAL CCTVM.

The analyst hereby certifies that he (she), or his (her) spouse or companion, does not serve as an officer, director, or advisory board member of the subject company.

The principal analyst is responsible for the content of this report and for meeting the requirements of Securities and Exchange Commission of Brazil (CVM) Instruction 598/2018.

Unless otherwise stated, the individuals listed on the cover page of this report are research analysts.

3. ADDITIONAL DISCLOSURE

(i) This document was prepared by GENIAL INSTITUTIONAL Research and is hereby supplied for the sole purpose of providing information about companies and their securities.

(ii) The information contained herein is provided for informational purposes only and does not constitute an offer to buy or sell, and should not be construed as a solicitation to acquire, any securities in any jurisdiction. The opinions expressed herein regarding the purchase, sale or holding of securities, or with respect to the weighting of such securities in a real or hypothetical portfolio, are based on careful analysis by the analysts who prepared this report and should not be construed by current or future investors as recommendations for any particular investment decision or action. The investor's final decision should be made considering all of the risks and fees involved. This report is based on information obtained from primary or secondary public sources, or directly from companies, and is combined with estimates and calculations prepared by GENIAL INSTITUTIONAL CCTVM. This report does not purport to be a complete statement of all material facts related to any company, industry, security or market strategy mentioned. The information has been obtained from sources believed to be reliable, but GENIAL INSTITUTIONAL CCTVM does not make any express or implied representation or warranty as to the completeness, reliability or accuracy of such information. The information, opinions, estimates and projections contained in this document are based on current data and are subject to change. Prices and availability of financial instruments are indicative only and subject to change without notice. GENIAL INSTITUTIONAL CCTVM is under no obligation to update or revise this document or to advise of any changes in such data.

(iii) The securities discussed in this report, as well as the opinions and recommendations contained herein, may not be appropriate for every type of investor. This report does not take into account the investments objectives, financial situation or particular needs of any particular investor. Investors who wish to buy, sell or invest in securities that are covered in this report should seek independent financial advice that takes individual characteristics and needs into consideration, before making any investment decision with respect to the securities in question. Each investor should make independent investment decisions after carefully analyzing the risks, fees and commissions involved. If a financial instrument is denominated in a currency other than an investor's currency, changes in exchange rates may adversely affect the price or value of, or the income derived from the financial instrument, and the reader of this report assumes all foreign exchange risks. Income from financial instruments may vary, and therefore their price or value may rise or fall, either directly or indirectly. The information, opinions and recommendations contained in this report do not constitute and should not be interpreted as a promise or guarantee of a particular return on any investment. Past performance does not necessarily indicate future results, and no representation or warranty, express or implied, is made herein regarding future performance. Therefore, GENIAL INSTITUTIONAL CCTVM, its affiliated companies, and the analysts involved in this report take no responsibility for any direct, indirect or consequential loss resulting from the use of the information contained in this report, and anyone using this report undertakes to irrevocably indemnify GENIAL INSTITUTIONAL CCTVM and its affiliates from any claims and demands.

(iv) Prices in this report are believed to be reliable as of the date on which this report was issued and are derived from one or more of the following: (i) sources as expressly specified alongside the relevant data; (ii) the quoted price on the main regulated market for the security in question; (iii) other public sources believed to be reliable; or (iv) GENIAL INSTITUTIONAL CCTVM's proprietary data or data available to GENIAL INSTITUTIONAL CCTVM.

(v) No representation or warranty, either express or implied, is provided in relation to the accuracy, completeness or reliability of the information contained herein, except with respect to information concerning GENIAL INSTITUTIONAL CCTVM, its subsidiaries and affiliates. In all cases, investors should conduct their own investigation and analysis of such information before taking or omitting to take any action in relation to securities or markets that are analyzed in this report.

(vi) GENIAL INSTITUTIONAL CCTVM makes no representations herein that investors will obtain profits. GENIAL INSTITUTIONAL CCTVM will not share with investors any investment profits nor accept any liability for any investment losses. Investments involve risks and investors should exercise prudence in making their investment decisions. GENIAL INSTITUTIONAL CCTVM accepts no fiduciary duties on behalf of recipients of this report and in communicating this report is not acting in a fiduciary capacity. This report is not to be relied upon in substitution for the exercise of recipient's independent judgment. Opinions, estimates, and projections expressed herein constitute the current judgment of the analyst responsible for the substance of this report as of the date on which the report was issued and are therefore subject to change without notice and may differ or be contrary to opinions expressed by other business areas or groups of GENIAL INSTITUTIONAL CCTVM as a result of using different assumptions and criteria. The information, opinions and recommendations contained in this report do not constitute and should not be interpreted as a promise or guarantee of a particular return on any investment.

(vii) Because the personal views of analysts may differ from one another, GENIAL INSTITUTIONAL CCTVM, its subsidiaries and affiliates may have issued or may issue reports that are inconsistent with, and/or reach different conclusions from, the information presented herein. Any such opinions, estimates, and projections must not be construed as a representation that the matters referred to therein will occur. Prices and availability of financial instruments are indicative only and subject to change without notice. Income from financial instruments may vary, and therefore their price or value may rise or fall, either directly or indirectly.

(viii) This document may not be: (a) photocopied or duplicated in any manner, in whole or in part, and/or (b) distributed without GENIAL INSTITUTIONAL CCTVM's prior written consent. GENIAL INSTITUTIONAL CCTVM accepts no liability whatsoever for the actions of third parties in this respect.

(ix) Neither GENIAL INSTITUTIONAL CCTVM nor any of its affiliates, nor any of their respective directors, employees or agents, accepts any liability for any loss or damage arising out of the use of all or any part of this report.

(x) GENIAL INSTITUTIONAL CCTVM (or its affiliates, officers, directors or employees) may, to the extent permitted by law, have acted upon or used the information herein contained before the publication of this report and may have a position in securities issued by the companies mentioned herein and may make a market or act as a principal in any transactions in any such securities. Genial Institutional may from time to time perform investment banking or other services to, or solicit investment banking or other business from, the companies mentioned herein.

4. IMPORTANT DISCLOSURES FOR U.S. PERSONS

This research report was prepared by Genial Institutional CCTVM, a company authorized to engage in securities activities in Brazil. Genial Institutional CCTVM is not a registered broker-dealer in the United States and, therefore, is not subject to U.S. rules regarding the preparation of research reports and the independence of research analysts. This research report is provided for distribution to "major U.S. institutional investors" in reliance on the exemption from registration provided by Rule 15a-6 of the U.S. Securities Exchange Act of 1934, as amended (the "Exchange Act") and is not being provided pursuant to a soft-dollar arrangement.

Any U.S. recipient of this research report wishing to effect any transaction to buy or sell securities or related financial instruments based on the information provided in this research report should do so only through Brasil Plural Securities LLC, a registered broker dealer in the United States with an office at 545 Madison Ave., New York, NY 10022, (212) 897-3737. Under no circumstances should any recipient of this research report effect any transaction to buy or sell securities or related financial instruments through Genial Institutional CCTVM.

Brasil Plural Securities LLC accepts responsibility for the contents of this research report, subject to the terms set out below, to the extent that it is delivered to a U.S. person other than a major U.S. institutional investor.

The analyst whose name appears in this research report is not registered or qualified as a research analyst with the Financial Industry Regulatory Authority ("FINRA") and may not be an associated person of Brasil Plural Securities LLC and, therefore, may not be subject to applicable restrictions under FINRA Rules on communications with a subject company, public appearances and trading securities held by a research analyst account.

The disclosures contained in research reports produced by GENIAL INSTITUTIONAL CCTVM and distributed by Brasil Plural Securities LLC in the U.S. shall be governed by and construed in accordance with U.S. law. This report may not be reproduced or redistributed to any other person, in whole or in part, for any purpose, without the prior written consent of GENIAL INSTITUTIONAL CCTVM. Additional information relative to the financial instruments discussed in this report is available upon request.

UK Disclaimer:

(i) This document is STRICTLY CONFIDENTIAL to the recipient, may not be distributed to the press or other media and may not be reproduced in any form. this document is directed only at persons who are "INVESTMENT PROFESSIONALS" falling within article 19(5) of the FSMA 2000 (FINANCIAL PROMOTION) ORDER 2005, or HIGH NET WORTH BODIES falling within ARTICLE 49(2) of that order (together THE "RELEVANT PERSONS"). This document must not be acted on or relied on by persons who are not RELEVANT PERSONS.

(ii) The distribution of this document in other jurisdictions may be restricted by law and persons into whose possession this document comes should inform themselves about, and observe, any such restrictions. Any failure to comply with these restrictions may constitute a violation of the laws of any such other jurisdiction.

Copyright 2023 GENIAL GENIAL INSTITUTIONAL CCTVM