Metals & Mining

Has the bearish scenario been fully priced in?

LatAm Metals & Mining

Main takeaways:

(i) In an unorthodox approach, we evaluated how investors are looking at the sector, and what strategies they took to trade short, causing Vale to fall 24% YTD; **(ii)** We tried to answer if the bearish scenario has been fully priced in or there are still more falls to come (either for Vale or CMIN); **(iii)** Were the falls irrational or was there enough motivation? From a fundamentalist point of view, we brought data on supply and demand for iron ore in China, in order to provide an opinion; **(iv)** We did a more detailed analysis on the performance of the subsectors that involve the demand for downstream steel in the May China PMI; **(v)** We comment on the Chinese government's next steps and which avenues should be explored in likely stimulus; **(vi)** We assess China's real estate sector, and whether or not rumors of direct incentives in the sector can unlock demand for iron ore; **(vii)** We take a look back at Vale's and CMIN's 1Q23 results; **(viii)** Looking ahead: we enumerate which dynamics seen in Vale's weak 1Q23 may be put behind and which may continue to make life difficult for the Company; **(ix)** Is Vale discounted? We believe it makes sense buying the dip and we ran sensitivities analysis to show why; **(x)** Looking ahead: we gave our views on how CMIN is regaining investor confidence

In our assessment, the market has reacted with pronounced selling pressure in the mining sector since the Chinese government signaled its 5% GDP target for 2023. As the market consensus expected an exuberant growth of the Chinese economy (something closer to 6%), the 5% target announced on March 4 disappointed a relevant part of the market. From then on, macro indicators led to a wave of pessimism, which came to drastically affect the prices of the iron ore curve.

Consequently, Vale was hit with a hard fall of -19.3% and CMIN, despite being less impacted by the general bad mood, was not immune, accumulating a loss of -5.9%, both cases measured between the release date of the GDP target and their respective 1Q23 results. Of course, there are more reasons for Vale's drastic fall than just the external scenario (we will get to that later). However, this scenario was not only observed in Brazil, other majors in the sector, which we like to compare with Vale, also accumulated losses in the same period. BHP ended up retracting -10.7% and Rio Tinto suffering a -10.5% defeat.

The market usually exaggerates. The truth is that if the market were logical and the trading price always reflected the true value of assets, the role of equity analysts would not only be uninteresting, but also totally disposable. For us, there is an irrationality of the market in certain movements, sometimes they are excessive optimist (seen in November through February), and sometimes they came in pessimistic wave beyond what is necessary (observed from March to today), due to the "herd effect" or speculation planned by investors, taking advantage of the volatility of cyclical stocks such as commodities companies.

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Companies

VALE US Equity
Buy

Price: US$ 13,75 (Jun-05-2023)
Target Price 12M: R$ 16,75 (NYSE)

VALE3 BZ Equity
Target Price 12M: R$ 83,00 (B3)

CMIN3 BZ Equity
Neutral

Price: R$ 4,77 (Jun-05-2023)
Target Price 12M: R$ 5,50

Since the beginning of China's reopening process, at the end of last year, we mentioned that the acceleration of iron ore prices was irrational, and that we were not seeing the emergence of a level of demand, coming from the real economy, that would sustain the curve above the +US$110/t level. Therefore, the current scenario does not surprise us. The 62% Fe reference having traded below this mark as of April 25th was a precise confirmation that our estimates are correct, and not a mere omen based solely on an opinion contrary to the consensus at the time.

What was, six months ago, an opinion contrary to what most thought would happen to the mining sector, has undergone a brutal transformation. As if from water into wine, today the new market consensus seems to be who was then optimist are now opting for a cautious tone.

We have seen, in the last three months, other sell side analysts changing the buy recommendation they had for Vale, which were based on the unlocking value after the reopening of China, and then downgrading the Company's rating to Neutral, disappointed with the release of the Chinese government's official economic indicators, which quickly spread in a more pessimistic tone, taking over the news.

And with this movement, the market, once again, weighed its hand and corrected beyond fair price the sector’s stock prices, especially Vale (considering our Latam coverage). In fact, we saw that the sector had started to trade at more expensive multiples after the rapid rise in share prices since November of last year, but the reversal of the scenario was equally fast, so that the falls seen in the last three months seem exaggerated for us.

This kind of volatile environment opens room for an asymmetry of information and opinions among market participants, which hinders the natural pricing process of the sector’s stock prices at a point closer to fair values, leading then to speculation as well as arbitrage in commodity futures contracts.

Speculation on iron ore is still strong. Even before this turn of the consensus from a more optimistic tone to a more conservative approach, some of the institutional investors we talked to were already expecting a drop in iron ore prices, based on a similar opinion to ours that a rally had been set in motion, driven by an over-optimism about the Chinese reopening. Rationally, we were guided by **(i)** data about the housing market (still in crisis), **(ii)** the inversion of the age pyramid, **(iii)** lower tax revenues to fund stimulus, and **(iv)** consumption driven by the reopening more tied to services than to goods, to then diagnose that the rise in the price curve between November and March made no logical sense, as we detailed in a previous report.

When there is no rationality in price movements (whether bullish or bearish), investors use tools to position themselves contrary to the market wave, often because going short in an operation where the consensus indicates buying means paying a cheap premium or borrow fee, increasing the profitability of the operation if the investor actually gets the price direction right and the consensus proves to be wrong.

We believe that some investors set up trades like this earlier in this year, and with weaker macro data in China, are currently making gains. In our view, as long as the pessimism does not subside, investors who set up short positions earlier will remain with the structure, while new entrants followed the same path, but as they arrived later, they caught the move at higher borrowing rates.

From the point of view of commodity contracts, we also see the possibility of price arbitrage in the futures market. Some investors with whom we are in contact preferred not to play via shares of mining companies and opted directly for the trading of futures contracts, arbitraging prices between the spot value and the future curve, betting on the fall of iron ore with strike maturities in about 3 to 6 months. A higher volume of this type of operation could be more evident to us less time ago, which means that a good part of these contracts have not yet matured.

So, is the bearish scenario not yet fully priced in? To try to answer this question, it is first important to separate the downtrend by two types of traders: **(i)** those who entered early short positions and **(ii)** those who arrived later. Those who took positions earlier, around December to February, before the release of the GDP target, were the ones who saw the opportunity ahead of the consensus by conviction. Conversely, those who arrived later seem to us to have, as a central strategy, not necessarily to find a price asymmetry in relation to expectations in the future curve and reality, but rather to take advantage of the moment to speculate.

Those who entered more recently are (at least in our perception) acting in an opportunistic way by carrying the structure until closer to expiration date, basically to speculate through arbitrage, in the case that the structure has been set up by futures contracts, either of the commodity price or through options of mining companies. Investors now know that the risk of China not growing as expected has already entered the price of assets, causing a general bad mood for theses related to the country's growth. With the negative bias, the price of the ore curve goes down and end up sinking the stocks of mining companies. We believe that as long as the bearish sentiment does not stop being vocalized, assets will continue to fall or going sideways.

And therein lies the reason why, even in the face of economic data being conducive to a GDP of around 5%, considering some probable adjustments that the government must make (we will talk about them later), the mining-related theses seem to have lost any short-term trigger to rise again.

On the rational side, what is the storytelling behind the supply and demand data?

We have shown so far an unorthodox approach to explaining the fall of China-linked assets, focusing on the strategy of investors when betting on the flattening of the iron ore curve or the collapse of mining company stock prices. If only rationality pointed to a possible more consistent rise, we would say that the recent speculative movements do not have some degree of reason. However, this is not exactly what we find when we look at the supply and demand balance.

As we quoted at the beginning of this report, the sharp decline in the price of iron ore has caused some smaller mines to operate close to breakeven. That is, the cost to extract the ore has become only slightly lower than the selling price, which discourages shipments to China. Historically, when i.o. starts to test the ~US$80/t barrier, some changes are made (government stimulus, mostly), and the situation is reversed. Situations such as we saw occurring in 2005, 2008 and 2015 are more extreme, and occurred due to specific dynamics, such as mining companies inaugurating large projects concurrently, swamping the supply market. We believe that this is not the reality of the sector today.

Supply: slight but gradual accumulation in ports inventory, shipments stable. According to our monitoring of 35 ports in China, the total amount of iron ore stocks reached 124Mt at the end of May, which represents an increase of +2.6% y/y. We believe that due to the drop in iron ore prices, steel mills have shown (in recent weeks) a greater willingness to buy. As a result, some mills have resumed production and we have seen pig iron volumes increase slightly, which should lead to a further reduction in the level of port warehousing after the turnaround days by replenishing inventories within the mills.

However, as we mentioned in the approach at the beginning of the report on the strategic thinking of investors, the market remains mostly overheated due to data linked to macro indicators from China, which should continue to decrease pig iron volume, further limited by the crude steel production cap. With some mining companies lacking the incentive to send high levels of shipments to China, after costs have gone up (it happened to Vale in 1Q23) and the realized price of mining companies has gone down recently, we believe that iron ore arrivals at Chinese ports should remain stable without large sequential increases. With shipments moving sideways in the last weeks of 2Q23, the trend throughout 3Q23 is for a slight accumulation of iron ore at the ports within a latency period.

Thus, we conclude that the slight increase in port inventories observed at the end of May will be consumed by the momentary appetite of steelmakers, who now have the opportunity to buy iron ore at lower prices. We understand that this movement will be brief, with inventories heading for a smooth and gradual accumulation. For 3Q23, we believe that Australian and Brazilian miners will increase their production, leading to a rise in supply on a q/q basis. In the worst-case scenario, appetite will not be regained, and iron ore inventories will continue to rise and push further the price down. However, we are thinking about the effect that stimulus measures (which are about to be announced) may bring, as a base scenario to be explored during this report.

Demand: Weak PMI continues to support steel price cuts. In May, China's PMI for downstream steel sectors suffered a slight drop of -0.18pt. compared to the previous month, reaching 50.09 (-0.32pt. y/y). However, after seasonal adjustment, the composite index showed a slight increase of +0.71pt. from the previous month, reaching 48.22 (-0.26pt. y/y), still below the 50 mark that separates contraction from expansion. The manufacturing PMI was 48.80, below consensus (vs. 49.38), with 48% of the 21 subsectors within the contraction zone.

Table 1. Downstream China PMI

	may/23	Zone	Δ Monthly	Δ Annual
Downstream **PMI**	**50,09**	**Expansion**	**-0,18**	**-0,32**
Downstream PMI (Adjusted)	48,22	Contraction	0,71	-0,26
Construction Composite Index	50,36	Expansion	0,12	0,34
Machinery Composite Index	49,31	Contraction	0,10	-1,11
Automobile Composite Index	50,6	Expansion	0,48	-0,11
Shipbuilding Composite Index	50,19	Expansion	-0,03	-0,54
Home Appliance Composite Index	50,49	Expansion	0,66	-0,61
Transportation Composite Index	50,13	Expansion	-1,78	-1,21

Source: Genial Investimentos, SMM.

On the positive side, the new orders index registered a slight increase of +0.46pt. m/m to 50.07 (+0.30pt. y/y). Our analysis is that although downstream sectors received an increase in new orders and kept production stable, they remained cautious in their buying behavior. In our assessment, even with the drop in raw material prices, steelmakers have not yet accelerated the pace of production so much.

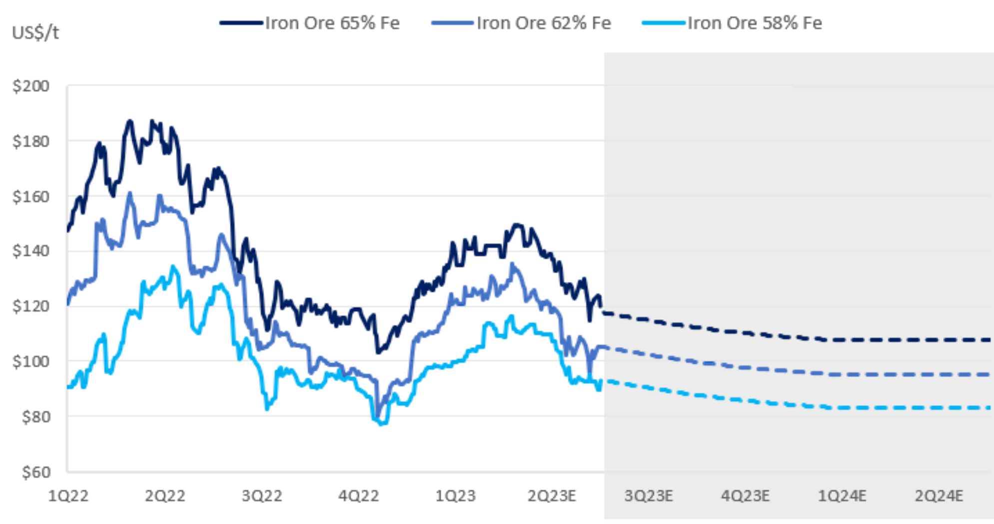
We believe it is highly likely that coke prices will continue to decline. Despite the implementation of the tenth round of coke price cuts last week, inventories at producing companies have continued to decrease. Some producers in Shandong have expressed their intention to reduce production due to financial losses.

On the other hand, while we saw certain types of coal climbing slightly, most coal prices remained stable, and metallurgical coal prices fell. With the steel market showing a moment of weakness, steelmakers have been inclined to reduce prices. With no appetite from their customers, coke producers tend to continue to cut the value of the input to the steel industry in an attempt to save volume from further decline.

Following the lack of appetite, the downstream steel production index marked a drop of -0.84pt. m/m to 50.7 (-0.73pt. y/y). Even though some blast furnaces in Shanxi, which are under maintenance, will resume production in the coming weeks, we believe the pace may be slowed by weakened final demand and falling steel prices. In the penultimate week of May, two more steelmakers announced HRC steel price cuts in China (Baosteel Group and Angang, both reducing ~US$50/t).

Pig iron output will then likely be maintained near the current level in the near term. We believe that low stockpiles of iron ore in steel mills inventory will provide support to i.o. prices (~US$105/t). Conversely, the negative effect on steel demand stemming from China's rainy season may reduce somewhat the quotations of the benchmark 62% Fe curve, with prices ranging in the range of US$105-98/t during 3Q23, which would maintain our projection of the average over the quarter of ~US$100/t.

Graph 1. Iron Ore price curve



Source: Genial Investimentos, Bloomberg.

Housing market PMI improves, but recovery still seems far away. The construction sector posted a +0.12pt. m/m increase, with the PMI reaching the 50.36 mark (+0.24pt. y/y). Although construction activities showed a mild improvement this month, some construction sites in southern China experienced delays due to the rainy season. New orders increased in industrial parks, commercial buildings and interior decoration, but were limited in residential projects.

On average, developers and construction companies held a raw material inventory of 10.23 days, indicating a slight increase of +0.02/day from the previous month. It is important to note that the number of days of raw material inventories serves as a mere reference point, with the sample being subject to instability depending on the period. Still, the indicator is in line with a slow recovery of the construction industry.

Construction companies in China: The "wait and see" feeling. We tried to synthesize some points that we observed from a sample of medium and large sized developers, supported by the SMM (Shanghai Metals Market). Some construction companies were hit by an increase in inventories during May as they started new projects and prepared to fulfill them by buying inputs at lower prices. The focus on interior construction should continue to provide some players with execution relatively unaffected by the adverse weather conditions. While we have seen a delay in recent weeks in external projects in southern China (affected by the rains), we anticipate an increase in internal projects to be started in the next 3 months, through the completion of several projects concentrated in June and October.

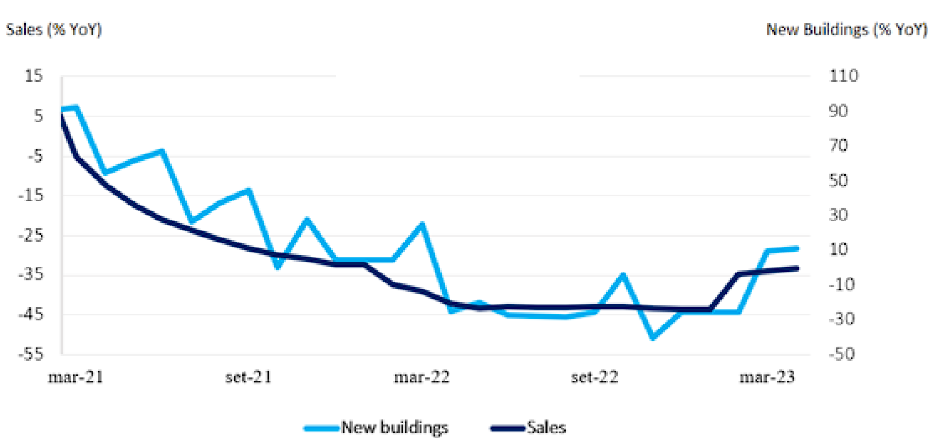
Even though there is a perception of improvement, we believe that a considerable portion of the companies in the sample we had access to is still holding back the launching of new projects, mainly due to the uncertainties regarding the outlook for the second half of the year. Despite lower raw material prices, the sector seems to be being hampered by the wait-and-see attitude and tight cash flow, which has led to a limitation of steel production in the mills.

From what we can see, a considerable number of developers have had to postpone the launching of new real estate projects, originally scheduled for the end of April, during the seasonal peak of construction. In this period, sales disappointed compared to last year, an already weak base, which was suffering from the effects of the crisis of confidence in the sector. Still, we foresee an improvement in sales in June/July for finished properties.

Secondary sales are gradually strengthening, but new construction starts is still sluggish. As we have already commented, sales of completed construction properties will recover first, and then the recovery should follow for construction starts. The data indicate that this trajectory is being maintained. The sales of properties at project launching or under construction depend more on the regaining of buyers' confidence that the developers will deliver the units. And regarding these sales, we see a much slower process ahead.

In April, the number of constructions in progress decelerated again, signaling that the break in the March trend was shorter than anticipated by the market. In addition, **(i)** the indicator for new medium/long term loans, which serves as a proxy for mortgage demand, returned to negative territory for the first time in 12M, signaling a loss of appetite for new housing loans. It is also worth mentioning **(ii)** the rise in the inventory of real estate, measured by space available for sale, which is 43% above the level observed in Nov/21, the period when the drop in residential prices began due to the intensification of the real estate crisis.

Graph 2. New Building and Sales



Source: Genial Investimentos, Bloomberg.

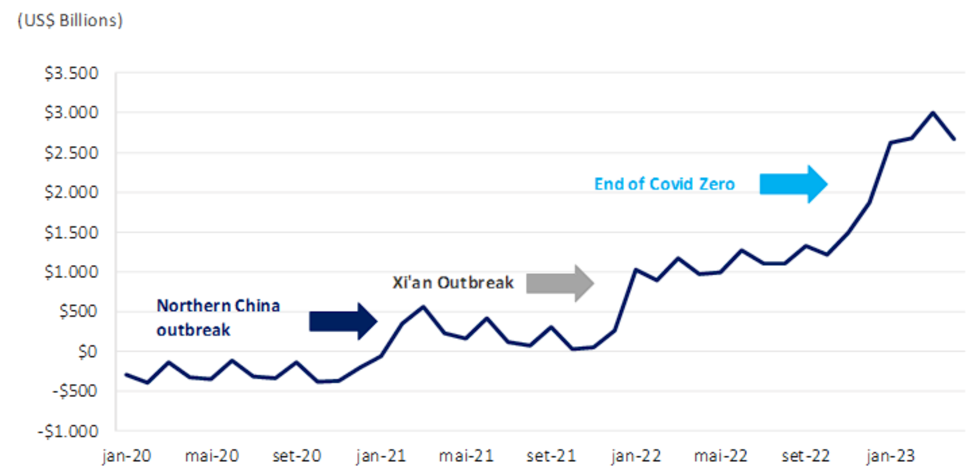
So, as we mentioned above, we believe that most construction companies are in a moment of replenishment of materials, taking advantage of the fall of inputs to increase inventory, and waiting for better signs of stimulus that will rekindle the appetite for real estate loans, especially for first buyers. We believe that this buyer profile ends up looking for a larger offer of properties still on the drawing board or under construction, given that they are (in general) starting the process of financial independence and are looking for bargain prices. We also observed that, in the majority of cases the participation of young people in the sales penetration for first buyers is higher, which also ends up being another obstacle for a better performance of the sector, as we going to explore below.

Despite an overall reduction in unemployment to 5.2%, the youth demographic was at a record high of 20.4% in April. This worrying trend highlights the significant challenges that the economy is currently facing, which persist even in the face of an increase in demand linked to the economic reopening, particularly in the services sector. Our analysis suggests that firms are generally hesitant to hire, especially young people without much experience, due to the prevailing uncertainty regarding the duration and intensity of the economic recovery over 2023.

This seems worrisome to us, since the service sector is usually labor-intensive and often unskilled. In other words, even though the service sector is driven by what has become known as "revenge consumption," youth unemployment is still at record rates in China. We believe that this highlights a distortion between initial market expectations and current confidence indicators, which are at low levels, and remain below historical averages even after the end of the Covid Zero policy. Without good prospects for middle class and young people's consumption, sales in the real estate market of projects in the construction phase should continue to skid and therefore curb the launching of new starts.

With mixed data, what could happen to mark a key turnaround? We are aware that the volume of excess in Chinese savings is at historically high levels, reaching ~US$2.6 trillion by 2022, according to the People's Bank of China (PBoC). During the first quarter, the Chinese behavior was to continue saving resources, reaching approximately US$3 trillion in March, according to our calculations. For 2Q23, we believe that the downward trend in excess savings observed in April (-7.5% m/m) should be maintained, closing the quarter with a softer drop, but enough to bring the excess savings out of the ~17% of GDP 2022 mark and back to 15% zone. Still, 15% is an extremely high number, considering that historically the percentage of excess savings oscillates between 5% or even negative (population spending accumulated reserves).

Graph 3. China Excess Savings



Source: Genial Investimentos, Bloomberg.

Our view is that this decline in excess savings seen in recent months is due to the natural post-economic reopening movement of consumption momentum, linked mainly to the services sector, as we commented earlier. In other words, we believe that even though the population is experiencing a little more propensity to consume, this movement is not mostly tied to the consumption of goods, which justifies the industrial PMI data in the contraction zone and still below consensus, totally in contrast to the services PMI coming in at 57.1 (+0.7pt. m/m), gaining ground within the expansion zone.

As for the consumption of goods, one of the most sensitive factors is credit, both regarding supply and rates. Our assessment is that these will be the first variables for the government to modify, within the context of what we call incentives, which could lead the economy to stop giving mixed signals and increase consumer and business confidence. The April and May indicators confirm our projection, made at the beginning of the year, that the Chinese economy will recover only gradually in 2023, and not voraciously and intensely as the consensus indicated it would. However, we should point out that the outlook remains uncertain.

Given the uncertainties, we believe that we are close to seeing **(i)** the implementation of a -25bps reduction in the compulsory deposit rate, the same reduction seen last year, which would increase the credit supply and **(ii)** cuts in the basic interest rate that would total -25bps, in two steps, reaching a terminal rate of 2.5% by the end of the year (vs. 2.55% of consensus), lowering the cost of credit throughout the year to sustain economic growth. It is worth mentioning that the consensus pointed to the compulsory rate cut already in May, but the government did not move the rate anywhere. Still, given the current challenging circumstances, we believe it is imperative that the government takes measures to ensure the 5% GDP growth target is met, which leads us to estimate that the change should happen soon.

Our expectation is that 2H23 will bring a slightly higher appetite for consumption of goods due to the combined effect of these two measures. Marking a turning point in the market's mood, especially if confirmed via an increase in confidence indicators, both of consumers and businesses, which we expect as of 3Q23. Even so, these measures would occur in order to guarantee the fulfillment of the GDP target, and not to obtain growth above the expectations already priced in (consensus today puts growth at +0.6p.p. above the target, which we do not believe is possible).

Should stimulus be limited only to credit in general or can it be extended to the real estate sector? According to our preliminary understanding, the answer to this question would be: only to credit in general. We did not believe that the government would take measures regarding direct and voluminous injection of resources in the real estate sector beyond what has already been announced.

However, last Friday, June 2nd, it was linked in the news by Bloomberg News, that the Chinese authorities are contemplating the possibility of: **(i)** lowering the down payment required for financing properties in suburban areas; **(ii)** stipulating a lower cap for broker commissions and **(iii)** relaxing purchase restrictions (possibly extending conditions given to first buyers to any buyers). Currently, the government is also said to be deliberating on **(iv)** refining and expanding certain policies outlined in the comprehensive rescue plan, consisting of 16 measures, which was introduced last year.

It is unknown at this point whether the rumor will come true or not. However, even if these incentives occur, in the continued attempt to inject liquidity into the real estate market, we believe that they will not be enough to encourage people to buy more properties in these peripheral regions, especially in non-Tier I cities, where the average property per household reaches the 3 property mark.

As we have quoted in other reports, in order to achieve a sustainable restructuring of consumer spending in China, we think it is mandatory for the government to make it possible to increase the budgets of low-and-middle-income families, starting by addressing more effective policies to decrease youth unemployment. Unfortunately, the middle class in China has become the most vulnerable to the slowdown in real estate investment as families are unable to sell or rent their properties, resulting in an increase in the cost of living and a reduction in disposable income for purchasing goods, reflecting in several subsectors of the manufacturing PMI being in the contraction zone.

While the sectoral data suggests a lack of intensity in industrial activity and steel demand, we are perplexed by the significant decline in the stock prices of miners, particularly Vale. Our next chapters will provide an explanation of this contrast.

1Q23 Key points to remember

After having commented on our sector view, we would like to take a look back on the main dynamics of the 1Q23 results of the two companies under our Brazilian mining coverage, in order to then address our assessment of their next steps.

Vale: With EBITDA down -26% q/q and -43% y/y, we believe this was a poor result, considering the Company's true potential. The combination of seasonally weak production, linked to the natural dynamics of the 1Qs, with logistic problems to ship iron ore in the port of Ponta da Madeira greatly affecting sales, we saw breakeven cost rising +18% q/q. At this early stage, it seems to us that a significant portion of the increase was due to a number of non-recurring items, among them: **(i)** negative premiums, **(ii)** higher C1/t costs observed in this quarter due to the low dilution due to the interruption of shipments at the port of Ponta da Madeira, and **(iii)** higher distribution costs, which should be back to normal in 2Q23.

Even though 1Q23 was weak due to disappointing sales, we reinforce Vale's high cash generation capacity (3.5% of market cap in only 1Q23) and One-off effects. Trading below R$70 (>US$14 ADRs), we see a good entry opportunity, and upgraded our rating to Buy (was Neutral previously) in our last report dedicated to the company. We believe that after the general bad mood of the market, the buyer flow will return to the stocks.

CMIN: (i) In our view, 1Q23 results were mostly positive, as the company managed to grow its EBITDA q/q, even with a **(ii)** weaker production momentum, which also affected its sales due to **(iii)** the logistical barriers that the rains caused on the MRS railroad. Nevertheless, we would like to point out that a large part of the reason for the growth seen is due to the **(iv)** appreciation of the iron ore reference curve, which reached above +US$120/t. Going forward, **(v)** we see that the market lost the big gleam in the eye regarding the Chinese reopening, which should present a shrinkage in the 2Q23 average curve, in which we estimate US$110/t, reaching US$95/t by year-end.

Looking ahead...

As we commented, in the next chapters we will explore some more specific points of each of the theses, with a focus on what we believe is next for Vale and CMIN.

Vale

If the indicators are mixed, why was the stock drop irrational?

Effects on cost structure due to Ponta da Madeira dynamics. We observed last quarter severe impacts of heavy rains on Vale's numbers. The Company did not perform badly in production (taking into consideration natural seasonality), reaching 66.7Mt for fines, a mark above what we expected (+4.2% vs. Genial Est.). Sales, on the other hand were very weak, clocking in at 45.8Mt (-13.7% vs. Genial Est.), which surprised the market negatively, since the most common thing (by historical data) is the rains hindering production and not sales directly.

We know that the situation that occurred in Ponta da Madeira (port located in Maranhão, which are made the shipments of i.o. coming from the northern system), although unlikely, was never impossible. There is a pocket rule for not shipping ore that is overloaded with moisture. That is, for safety measures, there is a global policy that imposes a TML (moisture per ton of iron ore) limit in an attempt to avoid the liquefaction process inside the ship, which could lead the vessel to lose leveling and tip over.

In addition to a more humid iron ore, the propagation of the precipitation occurred differently, with more frequent lightning strikes in the port region. When this happens, by risk management the operation needs to be stopped, inhibiting damage to equipment and staff.

As side effects, besides the significantly lower volume of shipments, it was notorious the **(i)** depreciation of quality in the mix sold, since the northern system has a percentage of iron content above the reference curve, close to 65% Fe, which would have caused a decrease in the price realized in relation to Vale's true potential. The premium even became negative, at -US$1.4/t. Still, another effect that worsened the performance of the quarter's numbers was the **(ii)** low dilution power of fixed costs, considering that the monitoring is done based on sales volume and not production. In other words, even though Vale produced a satisfactory volume for 1Qs, **(iii)** the C1/t was negatively affected by the low volume of shipments, reaching US$26.6/t, 26% above guidance, generating a perception of increased costs and lower premium, with a worse quality mix.

What is temporary? Among the dynamics brought about in 1Q23, we list some points that we believe are temporary and address how important indicators should behave in the coming quarters.

- **Premiums:** Premiums for fine wines should return to more reasonable levels in 2Q23, considering the caveat that regardless of the effects of the shipping restrictions at Ponta da Madeira seen last quarter, premiums are below the historical average since the end of 2021. Still, we believe that the trend is for product mix to improve and premium to increase by +US$2.9/t nominally, reaching US$1.5/t in 2Q23 (vs. -US$1.4/t 1Q23).

- **C1:** Vale likes to keep higher number of maintenance work concentrated in the rainy periods, which raises costs, but frees mines to produce closer to exhaustion in the seasonally better quarters (3Qs and 4Qs). We believe that 2Q23 may show some improvement, but if investors were expecting that without the one-off effects C1/t would show a significant reduction, we inform that this will probably not going to happen, due to sales with inventory lag, which carry higher costs from last quarter. It is also important to mention that historically 2Qs are always the most inefficient at Vale, precisely because of this effect. So, even if last quarter was so bad that 2Q23 will still come with a cooler C1/t (US$24.4/t Genial Est. vs. US$26.6/t 1Q23), going against historical dynamics, it will still be above guidance of US$20-21/t.

- **Sales:** We expect the gap between production and sales of pellets to narrow by 57% in 2Q23, returning to normality of ~9 Mt, considering that part of this gap exists due to a volume that is accounted for in the production of pellets, where sales generally exceed production, contrary to the dynamics of fines. The reversal of inventory, accumulated by shipments not made during 1Q23, should only happen during 2H23, since the rains in the Northern System usually start in December and last until mind May.

- **All-in Cost:** A weighted pellet and fines premium of US$8/t is implied for the achievement of the all-in cost guidance of US$47/t. However, in 1Q23 the implied premium was US$2.1/t, almost 4x below the annual target. Therefore, to achieve the guidance there is a dependence on market performance, which in our view is still paying a low premium for high grade iron ore. We believe that the lack of appetite should continue to cause pellet premiums to contract in 2Q23, only increasing slightly over 2H23, given the stimulus we have commented about in credit market, which should revive a little the demand for goods, and consequently, for steel and iron ore. On this aspect, we consider that an important way to monitor the demand for high grade i.o. is the number of launches of new real estate projects, which for now have been insufficient to heat up premiums even during the seasonal peak at the end of April, a period in which the numbers of launches were below consensus expectations.

Vale is at the top on the list of largest tax waivers. With the tax reform coming on the way, are there risks of Vale being affected? To complete the negative news flow, the combined effect of weaker-than-expected economic indicators by the overall market for China's post-covid growth, along with the problems faced in 1Q23 in light of the situation at the Ponta da Madeira port, was further catalyzed by the release, issued by the Receita Federal (IRS, in Brazil) in the last week of May, of an initial set of data about companies that have obtained tax benefits and waivers from the Federal Government. The report for calendar year 2021 revealed the amount of approximately R$51bn went uncollected through tax waivers given to certain companies. Vale was the main beneficiary of the tax break initiative implemented by the government, receiving more than R$20bn in exemptions.

We believe that the circulation in some news websites of this list, as well as the prospect that in the tax reform to be presented by the Lula administration there will be a reduction or total inhibition of incentives previously given, have further contributed to the creation of a more volatile environment for Vale's shares. Some investors we talked to showed concern about possible changes in the tax benefits that the company currently has, especially in face of actions such as the MP.1.152, which aims to increase the rate of exporters, showing that the commodities sector is potentially in the crosshairs of tax reform.

In April, we had talks with Bernard Appy, the extraordinary secretary for tax reform, and according to the guidelines that were discussed, we expected tax benefits for the automobile industry (which has recently materialized), possible taxation for car rental companies, sporting bets gambling, and cross border commerce, mainly retail. In the case of Vale, we do not expect any significant impact, given the **(i)** low probability of changing the Kandir Law, which deals with the ICMS exemption for exports, considering that for this, the government would probably have to extend the changes to agribusiness as well, which would make it basically unfeasible from a practical point of view.

Another important benefit for Vale is **(ii)** SUDAN, which grants tax exemptions to companies that operate in the Amazon region, conditioned to investments in the region that has some of the worst social indicators in Brazil. We believe that, although recently it has been considered to replace SUDAN by an EMPRAPA focused on biodiversity, the chances are low that the exclusion of incentives in the region will occur, even for the Zona Franca de Manaus (free trade zone). What we believe to be more likely is the modification of some plans and reallocation of resources to help foster the region and generate resources to control deforestation, an important agenda for this government.

On **(iii)** royalties, we observed a discussion in the past that there was inertia from the government to change the rate, which went to 3.5% only in 2017 vs. 2% previously. Comparatively, for Australian mining companies the rate is at the 7.5% level, leading some investors to think that there would be some room for the government to further increase. However, it is important to consider that the taxation system in Brazil is more complex than in other countries, and when all taxes are added up, for example the TFRM, Brazil miners end up with a very similar level of grant payment for exploitation of the natural resource compared Australia, Brazil's main reference point in mining.

In addition, the impact is greater for other smaller mining companies than Vale, since they have a compact scale, and tax changes could impact the amount of job creation in places dependent on mining. We believe that the oil and gas sector was (and continues to be) more targeted for import taxation or any other form of fiscal policies compared to mining, due to the fact that it has a more direct impact on the inflationary processes, through the incentives granted between last year and the beginning of this year aiming to lower the IPCA, as well as the reduction in the ICMS tax on diesel oil.

Keeping up with growth agenda. As Vale being a company with more than R$300bn of market cap (even considering the fall), founded in 1942 and privatized in 1997, it could not be categorized as a Growth investment thesis, unlike CMIN, which has its IPO in 2021. Therefore, lower growth is already expected. However, the strategy that has been adopted by management in recent years has been to focus on the gradual increase in production of high-grade iron ore, through the exploration of the Northern System, which has a large competitive differential to other majors in the sector (Australian peers).

The Company's strategic planning is directed towards the Northern System, where the current upscale design is reaching 230Mtpa, with an optionality to increase the logistic capacity up to 240Mtpa, which would be the maximum that the North System could produce. The Company is developing a larger mine reserve capacity, so that in case of an eventuality that hits production, the volume to be transported to the port will still be close to the extraction potential. The big bottleneck that can occur in a large mining company is logistics, so making an investment plan in this department seems to make a lot of sense to us. The Northern System is composed of the Serra Norte and S11D mines.

- **Serra Norte:** There are restrictions are linked to licensing, as we have commented on in previous reports. Vale's production is being greatly affected, but there is still some marginal progress in the licensing processes with the relevant agencies, so much so that 1Q23 production was a positive surprise for us. Still, we believe that there is sluggishness and that a more effective ramp-up should not be on the radar for the near term, so we expect production to stay at ~100Mtpa. We believe that should the permitting system gain more speed, there is an upside that is not in the market's account today.

- **S11D:** Designed for a capacity of 90Mtpa, there are two projects to add extra capacity, one of a magnitude of +10Mtpa and another of +20Mtpa, so it could reach 120Mtpa in total. However, the geological body of S11D does not facilitate its performance, since a larger volume of jaspilite was found, an iron ore with higher hardness. That makes the linear processing of the iron ore body difficult, considering the operation is truckless, since it is necessary to cross this harder layer than the conventional one, thus losing productivity. In the short term, trying to overcome difficulties, Vale has recently installed new crushers that enhance the asset, in addition to taking some mobile equipment to operate in the fronts where it finds this type of material, in order to improve productivity. Last year the mine clocked in at with a production of 69Mt, in recent conversations we had with the Company it was commented the possibility of reaching ~80Mt still this year, although our projections are currently aligned with a more modest value of y/y growth (74Mt Genial Est.). In 2025 there would be the entry of the +20Mtpa project, which would still have to go through a 1–2-year ramp-up, and in 2026/2027 would reach the final design. If Vale can put out this ramp-up, it would jump from 69Mt production to 120Mt in ~4 years, extracting a high-grade ore (65% Fe).

In other words, we believe that Vale's focus is to increase production of high-grade iron ore, which would create some level of hedge against fluctuations inherent to bearish cycles in the commodity. Our view is that in a bearish scenario, the market ends up paying lower premiums to the high-grade curve, but it would still help to add value to the realized price that peers would potentially not have. In addition to this point, there seems to be no point in investing in low quality volume to make up even narrower margins.

We believe then that the Northern System has some notorious challenges for production until it reaches the full capacity of 230-240Mt. But considering the gain that high grade ore can bring, especially in the bullish cycle (and it will come, eventually), the two assets (Serra Norte and S11D) seem to us the holy grail of mining.

Samarco's Judicial Recovery. In receivership since 2021, Samarco (JV between Vale and BHP), announced last week that it has reached an agreement with its creditors to restructure its debts. Under the terms, Samarco is to complete the receivership with a lean capital structure, paying its creditors according to its own cash flow generation, limited to US$1bn between 2024 and 2030, but with additional contributions depending on excess cash flow generated. In addition, the remaining balance of the remediation is to be divided equally between Vale and BHP.

In recent conversations with Vale, we questioned the Company about the application of the provisioning guidance for Mariana in the amount of US$1.9bn for 2023, in a sense of almost derisory amount was carried forward from the 1Q23 P&L regarding this topic. Our concern was that the low volume transacted in the last quarter could lead to a disproportionate increase for the following quarters, seeking to achieve what was disclosed in the guidance still until the end of the year. However, the Company's explanation was that Samarco had been helping with its own cash position, causing Vale and BHP to need to disburse less.

However, we believe that Vale will not escape having to sequentially raise its Mariana related provision line, for two main reasons: **(i)** our preliminary view is that the approved receivership plan should limit Samarco's ability to pay out of its cash on Mariana reparations, thus weighing more heavily on Vale and BHP's balance sheets; and **(ii)** as we have commented in past reports, we were already considering an incremental Vale provisioning effect from the Mariana situation, in a more pessimistic approach than market average on this matter, leading a total provision of US$2.3bn (+21% vs. guidance) for 2023, given the delay in the announcement of the agreement.

Our Take on Vale

Why is Vale discounted? Having said all that, now it is time to answer why we believe the 24% cumulative drop in Vale's stock since the beginning of the year is an irrational move, based on an exaggerated pessimism about the Company.

Running a sensitivity analysis using as base the 62% Fe iron ore curve for the end of 2023E and removing -US$5/t each year, in order to maintain a downward price curve over the years, we see that the current price trades at a discount to its fair value, in case the future curve follows our already conservative estimates. With a high sensitivity to the price at the end of 2023E, we see that the entire future curve moves in the same direction in our test, perpetuating this spread, and therefore causing a large variation in prices for the different scenarios

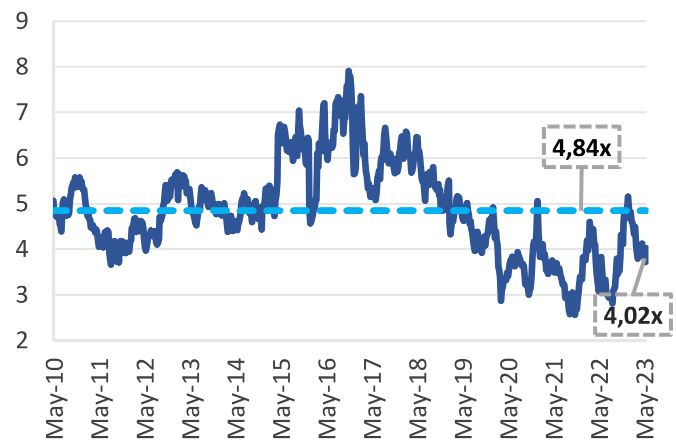
Table 2. Vale Stress Test – Sensitivity Analysis

		Iron Ore 62% Fe 2023E (US$/t)				
		105,0	100,0	95,0	90,0	85,0
	5,35	135,9	112,8	89,6	66,1	43,0
	5,15	130,8	108,5	86,2	63,7	41,4
FX Rate (R$/US$)	4,95	125,8	104,3	**82,9**	61,2	39,7
	4,75	120,7	100,1	79,5	58,7	38,1
	4,55	115,6	95,9	76,2	56,2	36,5

		Iron Ore 62% Fe Flat (US$/t)				
		85,0	80,0	75,0	70,0	65,0
	5,35	123,4	100,3	76,8	53,1	30,0
	5,15	118,8	96,5	74,0	51,1	28,9
FX Rate (R$/US$)	4,95	114,2	92,8	**71,1**	49,1	27,8
	4,75	109,6	89,0	68,2	47,1	26,6
	4,55	105,0	85,3	65,3	45,2	25,5

Source: Genial Investimentos

Graph 4. Vale – 12M Forward EV/EBITDA



Source: Genial Investimentos, Bloomberg

We found out that to reach the price level Vale is currently trading at, the dollar would have to remain always below BRL/USD 5.00 mark and iron ore reach US$90/t by the end of 2023 (we are in the middle of the year, and it is still at ~US$105/t). And keep going down at -US$5/t pace every year until reaching the long-term curve at US$65/t by the end of 2028. It should also be noted that basically all market analysts are looking at the long-term curve between US$75-80/t, so nobody is actually pricing in models something around US$65/t.

Additionally, this stress test dynamic is already considering an approach that is: **(i)** targeting the lower end of the production guidance, every year until 2026 and slightly below the indicated until 2030; **(ii)** premiums for fines in ranges below the historical average until 2025 (max. of US$3/t); and yet **(iii)** without any kind of additional trigger for base metal units. We believe that **these are three situations whose chances of occurring in isolation are very low and, concomitantly, basically impossible.**

In a more simplified stress test approach, we applied a flat price until perpetuity, in an attempt to understand what scenario would be priced for the current market value if the iron ore prices were to remain stationary. In our calculations, even with a stable iron ore price of US$75/t, which represents only the last year of our valuation in base scenario, there would still be a potential upside vs. the current stock trading price, even after the significant Fx rate drop.

It is important to point out that our scenario is also being considered, regarding the Mariana (MG) agreement, provisions that exceed in more +20% of what is indicated in the guidance, which is already more pessimistic in relation to the market average. Also, we are pricing in the difficulties to reach the C1/t cost target this year. Both situations are being taking into account as base scenario in our model without the stress test of variables that we indicated above, and they keep dragging down the Company's valuation. We understand that this affects the target price, and **naturally the market would react badly to an increase both in provisions and costs**. **But in any angle we can look at**, using assumptions even with crazy numbers just to make a point and without any commitment to reality because they are so pessimistic, **Vale's current trading value still continues with upside** in our model.

Another sign that it is indeed discounted is that the Company is **trading below its historical EV/EBITDA multiple for the next 12 months**, (4.02x vs. an average of 4.84x). Our analysis points to a historical behavior of commodity companies walking on the wrong foot, usually marking up bearish cycles with a low multiple, while the up leg usually happens with a more stretched multiple.

We find it impressive how quickly the market has redirected the bias related to the Company. We understand that the market is pricing in Vale a catastrophic scenario, even when compared to our conservative projections for the iron ore price (US$95/t at year-end and US$75/t in the long term). Therefore, in a counter-cyclical way, it seems to us a **good opportunity to buy at a low valuation level** even considering all the difficulties the Company is going through. Our call direction is to take advantage of gains through normalization of multiples ahead.

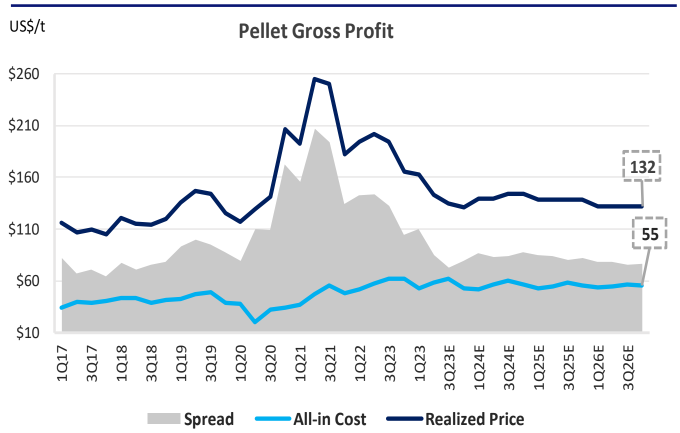
Moreover, given the strong penalty the market has been giving to some slowdown signals already expected by us before, we believe that the trigger to a buyer flow throwback to Vale's shares is a scenario of Chinese economy recovery with less asymmetry of opinions. It seems to us that even in slower steps, and growing less than it did pre-pandemic, the recovery should still occur (hardly any other G20 economy will grow ~5% GDP in the next years, but China probably will). Investors should acknowledge that China will probably not keep growing high single digit as it did years ago. Things change, and its still fine…

Also taking a bonus. Just focusing on the iron ore dynamics, we would already believe that the market has discounted Vale beyond the fair point, but we were not even putting on the table the discussions about the Base Metals unit. We believe that the unit has a great potential to be unlocked through the sale of a 10% stake to a strategic partner (operation is close to happen), which should then help Vale in the ramp-up of its assets related to energy transition. This unit has been taking away basically for free at Vale's price. With trading below the R$70 line (>$14 ADRs), we believe the market is paying almost nothing for the growth of the Base Metals unit and is taking a bonus on a business that has the potential in the opposite direction of iron ore. As we project the i.o. to fall to US$75/t in the long run, Ferrous division EBITDA's margin should make a compression to ~35% by 2028. The Base Metals unit is in the opposite direction, with prices trending upwards in the long-term, EBITDA margin is already at ~35% currently, and can gain a much higher margin in coming years.

Good dividends payer. Even in a downward curve for iron ore, we believe Vale remains well positioned to bring strong cash flow generation to its shareholders (**Free Cash Flow Yield** of **16.4% 23E** and **12.5% 24E**), mainly due to the privileged location in the Northern System mines, which as we explored throughout the report, favors higher quality i.o. and provides a Cash COGS at lower levels than the average of Australian peers. Our estimate for the coming years (2024 onwards) is that the Company will maintain a still robust spread between its realized price and its All-in cost (COGS + SG&A), even with further price falls, which should favor the continuity of cash generation, which together with the disciplined positioning in capital allocation, provides an attractive level of dividends. We project a **Divided Yield** of **13.1% 23E** and **11.3% 24E**.

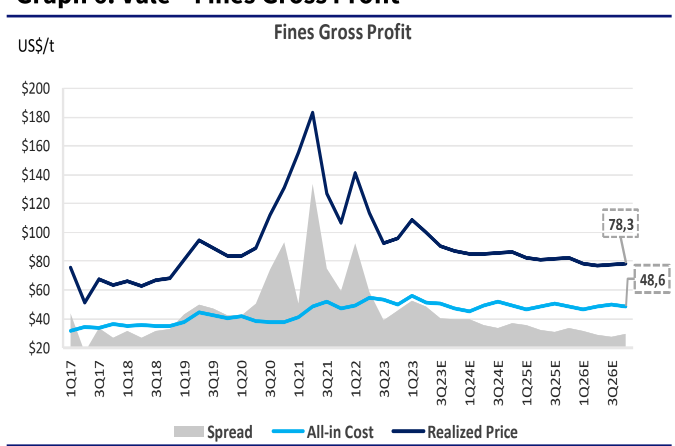
Growth scenario. In addition, new capacity sum-ups end up increasing company's premium to the benchmark curve, and a guidance for a considerable expansion in its pellet production, estimated to multiplied 3x in the long term (~33Mt in 2022 vs. ~100Mt in 2030E), should reflect in an operational efficiency gain and margin widening. Essentially when comparing to fines, we see **(i)** a slightly higher production cost, but **(ii)** premiums derived from curves at higher levels in the future, although in the short term we are still pessimistic with the premium sizes (they surpass the historical average only in 2025 in our model).

Graph 5. Vale – Pellet Gross Profit



Source: Genial Investimentos

Graph 6. Vale – Fines Gross Profit



Source: Genial Investimentos, Bloomberg

Buy the dip. Given ample arguments, we believe Vale is discounted, but above all, we use the variable stress test to define that the price at which Vale currently trades is irrational, and is biased by a sense of disappointment with China's growth, combined with bad dynamics brought by an atypical 1Q23 situation. We understand that the wounds of 1Q23 will leave somewhat more serious short-term marks but should be contained and remain restricted in 2023.

Among them, our base case scenario for 2023 is the **(i)** failure to meet C1/t guidance, with US$22.3/t Genial Est. vs. US$21/t (already in the upper band), as well as **(ii)** above +20% increase in the provisioning mechanism for Mariana accident remediation expenses, and **(iii)** an ore curve falling from the current ~US$105/t level to US$95/t by year-end. None of these three points are favorable for Vale, on the contrary, they only make the valuation actually fall, however, still remaining at a fair price much higher than what the market is currently pricing in the shares (a 24% fall YTD).

However, it is important to point out that after the recent conversations we had with the Company, we made some adjustments to the assumptions in our model. Mainly motivated by a **lack of visibility on the fulfillment of C1's guidance**, as quoted in the paragraph above, we arrived at a **Target Price cut to US$16.75** on **NYSE ADRs** (vs. US$17.30 in our previous recommendation), which would lead to a **Target Price** of **R$83.00** for **VALE3-B3** (vs. R$87.50 in our previous recommendation). Even with the cut, there is still an **attractive upside** of **+23.18%**.

Trading at **EV/EBITDA multiple 3.6x 23E** (below historical), it seems to us a good opportunity to **buy the dip in a quality asset**, considering cash generation with dividends payments, and which should suffer an upward repricing multiple, although we know that **investors may have to be patient in the very short term** until tables can be turned. **We reiterate our BUY rating**.

CMIN

More reliability in production increase

CMIN's stock price scenario is better than Vale's, in such extent that even considering the bad mood that attacked all mining companies worldwide between March and the 1Q23 earnings season, CMIN managed to rally in the days following its release. If Vale fell 24% YTD, CMIN accumulated a +17% rise in the same period.

Our point of view is that CMIN was affected almost exclusively by the macro indicators from China, without any kind of combination of factors that would have brought an even greater selling flow to the stocks. Faced with a mostly positive 1Q23 result, indicating good prospects for production this year, contrary to the guidance revisions seen in the recent past, CMIN seeks to gain ground and regain the confidence of institutional investors.

Logistics problems in 1Q23. Despite delivering strong production + third party purchases of 8.94Mt in 1Q23 (-4.3% q/q and +38.2% y/y), CMIN was impacted by the heavy rainfall typical of the beginning of the year. Due to landslides on the MRS lines, the Company had to choose another rail route, which not only made logistics more difficult and inefficient, but also brought higher costs. With a negative highlight for COGS/t, which reached R$229/t, up by +39.7% t/t and +23.1% vs. Genial Est.

Difficulties at MRS fully resolved. With the blocking of the railway line, CMIN was not able to ship all its iron ore produced during the quarter, opening a gap of about 1Mt between production and sales in 1Q23. We recently talked to the company, and they assured us that the problem has been fully solved and will not impact the 2Q23 numbers. We believe that CMIN is trying to leave behind the impression of "good in making promises but not a deliver", given that in May the Company broke records by producing the highest monthly volume in its history, demonstrating and reflecting in figures the confirmation of the end of the logistical problems caused by the rains as well as the gain in confidence to achieve (or even exceed) guidance.

Production guidance can be exceeded. Therefore, we see that 2023 guidance of 39-41Mt should be achieved with ease. Although it is still a bit premature to give a more convinced opinion, we believe that CMIN is on track and will have full capacity to deliver a higher number as the continuous ramp-up take place, and may exceed the 41Mt target for 2023.

Hedge helped price control. In addition, after setting up a hedge position in iron ore when observing an opportunistic market condition during 1Q23, already seeing (as we also did) that the curve would not be sustainable above +US$110/t, CMIN set up a healthy operation to protect itself from the commodity sharp fall. Our conversation with the Company indicates that there is no intention to hedge further at current price levels, with a future curve that may test the US$80/t level. Since if the pessimistic scenario is confirmed, some mining companies with less competitive advantages and higher costs should start to reduce production, taking supply out of the market. As we commented at the beginning of the report, we are already seeing a lack of incentive from smaller mining companies to send shipments to China as prices start to approach the breakeven barrier.

Life is not a bed of roses. Even so, our expectation is that some costs that were not recognized in 1Q23 will end up permeating the 2Q23 result, as inventories are carried away with a bit of last quarter's structure, a dynamic close to what happened with Vale, but with less intensity. We expect some pressure on COGS in next quarter, nevertheless it should still suffer a sequential reduction, since it reached the R$229/t mark in 1Q23. We are working with a deceleration in the range of 5-7% q/q in our model at this point.

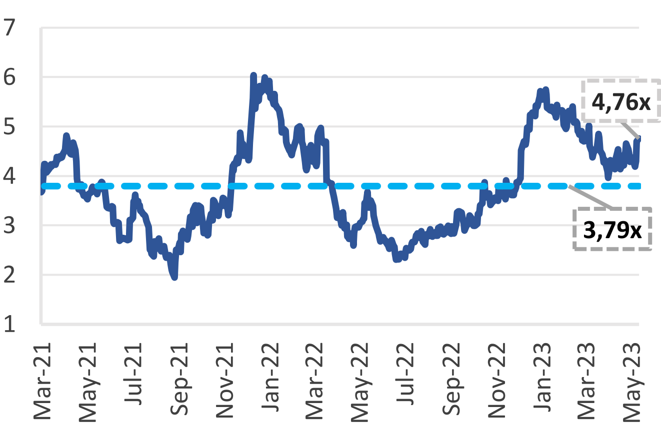
Our Take on CMIN

Reinforcing its footprint as a growth case, CMIN has been able to grow production with the ramp-up of some projects such as the Central Plant, which by the way, was largely responsible for a production below its guidance in last year, letting to be hit by seasonality of the beginning of the year that have strongly impacted its project, mainly due to the concentration of a large amount of rainfall in a just few days.

Still, the projects that really creates value and bring returns to investors are only in preliminary stages, with the ramp-up of P15 Itabirito planned for 4Q25, if the current schedule is maintained. The turbulent scenario for the ferrous commodity and for the Brazilian economy ends up further hindering the economic viability of CMIN's projects, which have already been postponed twice since its IPO in 2021. It is precisely about these revisions that we hit the nail on the head about the Company's stance of having to make up for lost time and regain the confidence of investors.

Despite the logistical difficulties with MRS, we mainly like the results reported by CMIN in the last quarter, in which we maintain a good expectation for 2Q23, even with the drop observed for the 62% Fe iron ore reference since then, we believe that production will come fortified and the Company should offset the potential realized price drop by delivering increased volume, at the end of the seasonal rainy season for the ferrous quadrangle in Minas Gerais (MG).

Graph 7. CMIN – 12M Forward EV/EBITDA



Source: Genial Investimentos, Bloomberg

Trading at an **EV/EBITDA 23E of 4.76x (above historical average)**, we prefer (for now) to be cautious on CMIN, even though we see good momentum for its numbers. We believe an upward re-rating may be in the offing, but we need to watch the consolidation of the fertile ground we see to make some adjustments to assumptions that involve even lower levels of execution risk on ramp-up projects. Therefore, **we reiterate our Neutral recommendation**, with a **Target Price 23E** of **R$5.50**, which implies an **upside of +16.27%**.

Appendix: Vale

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

Income Statement	2023E	2024E	2025E	2026E	2027E	2028E
Net Revenue	**42.081**	**42.155**	**43.584**	**44.967**	**45.547**	**46.723**
(-) COGS	(24.349)	(26.693)	(28.577)	(30.839)	(32.535)	(34.234)
Gross profit	**17.732**	**15.462**	**15.007**	**14.128**	**13.012**	**12.489**
(-) Expenses	(4.446)	(3.616)	(2.497)	(2.573)	(2.098)	**-2.025**
Adjusted EBITDA	**13.286**	**11.846**	**12.511**	**11.555**	**10.914**	**10.465**
(-) D&A	(3.409)	(3.566)	(3.709)	(3.850)	(3.986)	(4.113)
EBIT	**9.877**	**8.280**	**8.802**	**7.704**	**6.928**	**6.352**
(+/-) Financial Result	(690)	(416)	(225)	(4)	41	371
(-) Taxes	(188)	(55)	(49)	(4)	31	37
Net income	**9.000**	**7.808**	**8.527**	**7.696**	**7.000**	**6.760**
Profitability						
Net margin (%)	21,39%	18,52%	19,56%	17,12%	15,37%	14,47%

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

Cash Flow	2023E	2024E	2025E	2026E	2027E	2028E
Net Revenue	**42.081**	**42.155**	**43.584**	**44.967**	**45.547**	**46.723**
(-) COGS	(24.349)	(26.693)	(28.577)	(30.839)	(32.535)	(34.234)
Adjusted EBITDA	**16.695**	**15.412**	**16.220**	**15.405**	**14.899**	**14.578**
EBIT	**13.286**	**11.846**	**12.511**	**11.555**	**10.914**	**10.465**
(-) Taxes	(188)	(55)	(49)	(4)	31	37
(+/-) Provisios and dams	784	(584)	394	(61)	371	197
(+) D&A	3.409	3.566	3.709	3.850	3.986	4.113
(+/-) Δ WK	(626)	(588)	626	(257)	(21)	(46)
(-) Capex	(5.878)	(6.020)	(6.173)	(6.217)	(6.217)	(6.217)
FCFF	**10.788**	**8.166**	**11.017**	**8.867**	**9.064**	**8.549**

Appendix: CMIN

Figure 3. CMIN – Income Statement in R$ Million (Genial Est. 2023-2028)

Income Statement	2023E	2024E	2025E	2026E	2027E	2028E
Net Revenue	**12.367**	**12.320**	**12.434**	**15.622**	**17.487**	**17.514**
(+) Domestic Market	1.309	1.272	1.192	1.175	1.122	1.047
(+) External Market	11.058	11.048	11.242	14.447	16.365	16.467
(-) COGS	(7.929)	(8.029)	(8.488)	(10.173)	(11.446)	(11.944)
Gross Profit	**4.438**	**4.291**	**3.946**	**5.449**	**6.041**	**5.570**
(-) Expenses	(1.067)	(1.062)	(1.072)	(1.348)	(1.510)	(1.512)
EBIT	**3.371**	**3.229**	**2.874**	**4.101**	**4.531**	**4.058**
(+/-) Financial Result	(87)	4	60	(8)	(143)	(221)
EBT	**3.284**	**3.233**	**2.934**	**4.093**	**4.388**	**3.837**
(-) Taxes	(1.054)	(1.037)	(941)	(1.314)	(1.410)	(1.232)
Net Income	**2.230**	**2.196**	**1.993**	**2.779**	**2.978**	**2.605**
Profitability						
Net Margin (%)	18,03%	17,82%	16,03%	17,79%	17,03%	14,87%

Figure 4. CMIN – Cash Flow in R$ Million (Genial Est. 2023-2028)

Cash Flow	2023E	2024E	2025E	2026E	2027E	2028E
Net Revenue	**12.367**	**12.320**	**12.434**	**15.622**	**17.487**	**17.514**
(-) COGS	(7.929)	(8.029)	(8.488)	(10.173)	(11.446)	(11.944)
Adjusted EBITDA	**4.415**	**4.441**	**4.361**	**5.848**	**6.557**	**6.378**
EBIT	**3.371**	**3.229**	**2.874**	**4.101**	**4.531**	**4.058**
(-) Taxes	(1.054)	(1.037)	(941)	(1.314)	(1.410)	(1.232)
(+) D&A	1.362	1.531	1.807	2.099	2.395	2.690
(+/-) Δ WK	97	71	(2)	(175)	(83)	(23)
(-) Capex	(4.150)	(3.075)	(5.190)	(5.173)	(5.236)	(5.303)
FCFF	**(374)**	**719**	**(1.452)**	**(462)**	**197**	**190**

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Buy	Expected total return 10% above the company's sector average	**54%**
Neutral	Expected total return between +10% and -10% the company's sector average	**33%**
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