Metals & Mining

An X-ray of the exposed fracture in the Chinese real estate market

LatAm Metals & Mining

Main takeaways on China:

(i) Diving into the latest data reported on the Chinese economy, we indicate the direction of the country's growth, and why we believe that the real estate crisis is not likely to be temporary; **(ii)** Strengthening the thesis, we use some of the history of the sector to understand how big developers came to face financial difficulties even though they represent the best possible business in the local economy; **(iii)** We list the signs we saw of the collapse before it became apparent to the consensus, and what the possible remedies are for the nausea that has slowed China's biggest source of growth in recent years; **(iv)** If the problems are increasing on an exponential scale, what has led i.o. to appreciate in recent months? We went into depth to clarify where all the steel produced by Chinese mills is going; **(v)** After adjustments to our forward curve for iron ore, we came up a little less bearish to prices ahead than before.

What is up to Vale?

(i) After obstacles that limited shipments and increased costs in 1H23, what can we expect for the company going forward? **(ii)** Samarco: Potential 2x indemnities and what effect the approval of restructuring plan has on Vale; **(iii)** Deepening the i.o. fines guidance of 360Mt for 2028, we explain where production increase should come from, what the main risks are and the great opportunities behind it; **(iv)** We elaborate on how the company intends to benefit from decarbonization process; **(v)** Once again, we ran our sensitivity analysis, picking up i.o. price implicit in Vale's current market value; **(vi)** New projection curve for i.o., revised destocking assumptions, as well as freight costs, factors that changed our **12M ADR Target Price** to **US$17.00** (vs. US$16.75 previously), reinforcing our **BUY rating,** with an **upside of +20,40%**.

CMIN's gamble on low-grade

(i) Although in 2022 the guidance was revised 2x, we expect 2023 to be a different story. We then adjusted our expectations for ~42Mt on production vs. a guidance upper band of 41Mt; **(ii)** In a market that is currently paying low premiums for higher-grade, CMIN's strategy has been to increase the supply of low-grade, which ends up having undesirable repercussions on its figures; **(iii)** In recent conversations, we have had a feeling that CMIN's acknowledge that i.o. should not survive at this level, so we think the Company will structure hedge positions; **(iv)** We believe that costs should cool down in 2H23; **(v)** With an even greater scenario of low-grade ore sales, suffering discounts in relation to the 62% Fe curve, we opted to reiterate our **NEUTRAL rating**, with a **12M Target Price** of **R$5.00,** and a **upside of +12,11%**.

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Companies

VALE US Equity
Buy

Price: US$ 14.12 (19-Sep-2023)
Target Price 12M: US$17.00 (NYSE)

VALE3 BZ Equity
Target Price 12M: R$83.00 (B3)

CMIN3 BZ Equity
Neutral

Price: R$ 4.46 (19-Sep-2023)
Target Price 12M: R$ 5.00

Summary

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After a challenging quarter for the Chinese real estate, we still see an iron ore price on a very impressive trajectory upwards to ~US$120/t level. In this report, we'll explain why we believe **the price of iron ore hasn't collapsed** (on the contrary, it's risen...) **despite the real estate market having an exposed fracture**. We will dissect the macroeconomic environment in China, analyzing in great depth the reasons for the **balance between demand and supply** of iron ore, and give our opinion on where the price of the commodity will go from here.

Furthermore, we will analyze our two mining companies under coverage in Latam: **Vale** and **CMIN**. We'll comment on what investors can expect from both companies, trying to close any information gaps that have been left open between our 2Q23 earnings reports and today, **pointing out what the main dynamics** of the latest results were for Vale and CMIN and **addressing these points for 2H23**.

Our Take on China

The trade balance between China and foreign countries contracted in August, as reported by recent data. The total trade surplus for the month was US$68.3bn. Our analysis suggests that sluggish global demand for Chinese products and an uncertain economic recovery are negatively impacting consumer spending in the country, which is in line with our previous forecasts made when the post-covid-zero policy came to an end. The value of exports suffered a significant drop of -14.5% m/m, marking the most substantial decline since February 2020, while imports also fell by -12.4%. In both cases, the figures were worse than the consensus expected.

In addition, inflation figures released last week, confirm the slowness of consumers temptation to buy. Despite reversing last month's deflation, CPI had just a marginal rise of 0.1% y/y. Our assessment suggests that the worsening decline in imports signifies weakened domestic demand, which suffered its most severe drop since January. Initially, it was widely expected that China's economic recovery this year would be driven by domestic demand.

However, from the **earliest stages, we opposed this consensus viewpoint**, mainly because **we emphasized that the problems in the real estate market are structural and not cyclical** in nature. We believe that the current situation came about through the gradual accumulation over the years of policies that over-expanded the sector beyond what could be considered healthy. For us, the current situation is just the consequence of these policies becoming more evident. Although the Covid-zero policy played a role in catalyzing this process, exposing pre-existing vulnerabilities when the economy reopened, from our perspective the outcome of this situation seemed to have been predetermined for some time.

The steady decline in imports over the last five months is closely linked to the weakening performance of the real estate market. China relies heavily on imports of significant quantities of construction materials, including iron ore for steel production. After a long period of overbuilding, and unsuccessful projects, the consequences are now being faced. The main real estate conglomerates, such as Evergrande and Country Garden, are suffering financial collapse. In the case of Evergrande, this is the second time that the company has made it into the routine news flow, inaugurating in September 2021 the first sections of the world's economy journals.

As a result, all expectations of a recovery in the Chinese economy are diminishing. Several banks that were more optimistic have ended up revising their projections. For us, as we have been assertive about China's macro so far, we don't need to lower our estimates (for now). We continue with a GDP projection of 4.8% for 2023.

Chinese real estate crisis is structural and not transitory

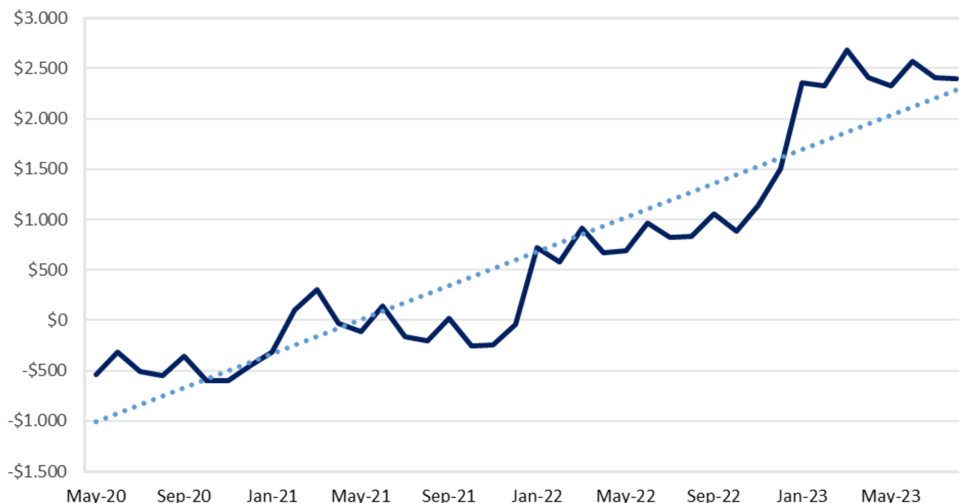
Why have we been saying since November last year that the crisis is structural and not transitory? China drastically transformed its real estate market after the 1978 reforms under Deng Xiaoping administration. Before that, the real estate sector was monopolized by the Chinese government. The main changes, including economic opening and the move towards privatization and commercialization, led to the gradual shift from a flat economy to a market oriented one. Investment in real estate increased from ~6% of fixed capital resources before the reforms to 18.72% between 1978 and 1997. In 1998, China picked up the pace and moved even further towards a pro-market system, leading to a wave of property privatizations.

After what could be considered a slow start in the 80s compared to what the country would experience in the following years, the real estate boom really began at the end of the 90s. After that, despite government attempts to contain the rise in mortgage prices, the market continued to grow rapidly. The People's Bank of China's (PBoC) measures to stabilize prices and restrict lending practices didn't stop the housing market boom from happening. Most of China's savings have been, over the years, increasingly dedicated to real estate, with ~75% of people's patrimony invested in property, compared to ~30% in the US, for example.

In the first decade of the 21st century, the rise in house prices of ~270% exceeded the rise in average wages by almost +130%, which in turn grew by around 146%. In the same timeframe, mortgages in Shanghai rose more than 10x in total value. The development of the Chinese real estate market was accompanied by rapid economic progress, with GDP expanding by an average of 10% a year, while the population made the rural exodus and migrated to urban areas.

The Chinese market has become highly concentrated in the real estate sector, with ~65% of the population investing exclusively in real estate. The movement of China's accumulated excess savings, which exceeded 40% of household income due to the impact of the Covid-zero policy in 2022, began to set a liquidity limiter in the economy. China's urbanization rate rose from 20% in 1980 to 64% in 2021, significantly exceeding the average for developing countries, but the cost of real estate over the years has become a major obstacle to the continuation of this flow, so that today, the migratory movement is significantly lower, considering the heavy cost of living in Tier I cities (Beijing, Shanghai, Guangzhou and Shenzhen).

Graph 1. Chinese savings on a strong upwards trend



Soure: Genial Investimentos, Bloomberg

Rhetoric of "Houses are for living in, not speculating". As investing in the real estate market became very lucrative, the penetration of secondary property purchases (people who already own a property and are buying others) began to rise rapidly, generating an effect on the population's accumulation of wealth, which became almost exclusively tied to just one asset class. In other words, an ever-increasing portion of family wealth became linked to real estate prices. In this way, realizing the exacerbated behavior, the government's discourse on controlling financial speculation and stabilizing house prices became an increasingly difficult dilemma to solve.

We believe that the price dynamics observed after the reformulation of the Chinese real estate model were also a reflection of two factors that will probably not be repeated at the same intensity going forward: **(i)** GDP growing at a rate close to double digits year after year and **(ii)** the rapid urbanization of the population, going from a rate of around 20% in 1980 to 64% in 2021.

Even if we maintain our assumption of GDP growth of 4.8% for 2023, without having to subject the figures to revisions, unlike the consensus has done, due to over-optimism with the reopening and subsequent disappointment with the country's macro data, we believe that some macroeconomic challenges should continue to limit growth in the medium term. Among the factors likely to cause a slowdown in the pace of growth is the reduction in the population that occurred in 2022, marking the first drop since 1961. Although this event confirms the end of the demographic boom with a population turnaround, in our opinion it draws attention to a demographic crisis that could be a key point for the development of the local real estate market.

As for urbanization, with more than 650 million Chinese having migrated to urban areas in the last 40 years, the country has reached 64% of its population living in juxtaposed housing, according to data from China's National Bureau of Statistics (NBS) compared to ~78% in developed countries.

In this way, China is beginning to approach the average urbanization rate observed in developed countries, having already surpassed the average for developing countries, which today is approximately 55%. The urban population, which exceeded the rural population for the first time in 2011, despite having a much higher quality of life than the rural population, currently has some barriers that make it difficult to continue the migration process, with the main one being the price of real estate.

Ghost cities: Understanding the Chinese real estate potential bubble. As the affordability of real estate is low due to the current price barrier, China has several cities with many properties built... but empty. It's difficult to be sure of the exact number, but through cross checking with different sources, we believe there are close to 50 million properties that have been built, sold and never occupied.

We believe that the main reason for the high vacancy rate is buyers' perception of the value of the property as an asset, rather than the need for housing. The decline in the number of first-time buyers in recent years reinforces this thesis. Currently, only 31% of real estate sales are made to buyers who do not yet own a home, compared to 46% in the US. In 2010, in China, this percentage was over 70%, indicating that over the last decade, the sector has grown at an extremely high rate, above what would be healthy just considering the real need for housing.

These figures help demonstrate that a significant portion of the population (more than 65% of sales) has started buying a property for the second time or more, in order to use the price boom as a financial investment for passive income or even for later resale at a higher price, rather than for housing. Because of the magnitude of this process, through the math we did earlier this year, we formed an opinion that the Chinese real estate market had several characteristics correlating with a bubble, since mortgage prices have spent years rising consistently, even in the face of the need for the sector to contract by ~25% in order to balance supply and demand for real estate over the next 10 years.

If the move were rational, the excess supply of unoccupied housing would cause prices to fall. This was not the case... Mortgage prices have only started to fall in the last 3 years, catalyzed by the uncertainties surrounding Covid-19. So, we can consider the fall as a recent movement compared to more than a decade of mismatch between property prices and the supply of homes. It's also important to point out that as prices started to fall during the pandemic, the process seemed to have led the consensus to a misleading conclusion a few months ago, that prices had retreated due to Zero-Covid, and after the end of the policy the appetite for real estate would rise again, boosting the sector as the Chinese accumulated savings, and uncertainties would diminish in the face of the reopening... and that's not what we've seen happen.

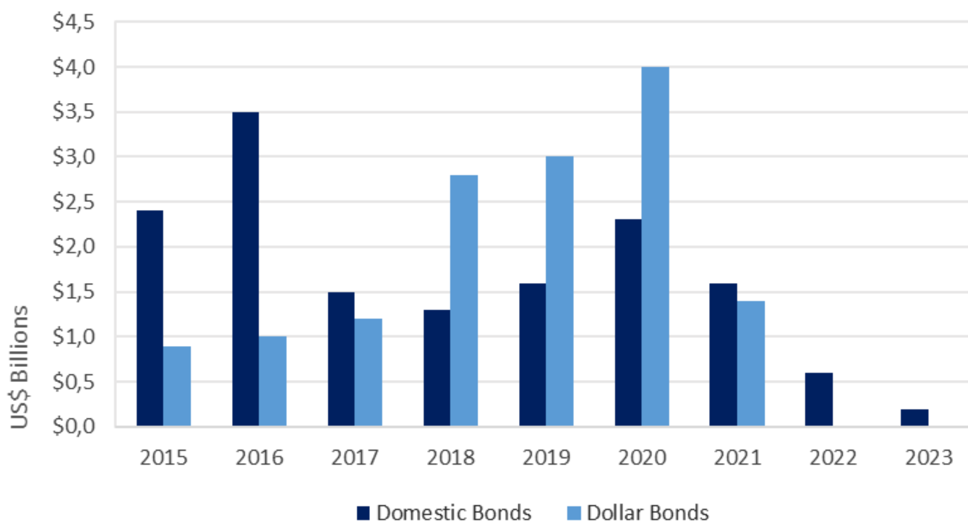
The government's interventions in few years back to prevent a loss of supply ended up allowing the real estate market to become more leveraged than is financially healthy. The Net Debt/Equity multiple of the 5 largest Chinese developers is an average of 140%, while this same indicator for companies considered healthy in the sector, according to our view, could vary between -10% and +30%, depending on whether the developer is high-income or low-income and the country's macro

momentum, which proves that the leverage ratio of real estate companies in China is almost 7x higher than what would be considered a cap in the level of controlled indebtedness.

What were the first signs that the collapse would happen? One example we can quote is the case of real estate developer Evergrande, which despite having recently filed for bankruptcy protection in the US, is not the first time that the real estate developer's name has had widespread repercussions in the market. In September 2021, the case came to global attention after the Company announced a liquidity event, whose offshore debt totaled US$23bn, including defaulted loans and private bonds, in addition to another US$275bn in liabilities.

Although we are opposed to this view, the People's Bank of China (PBoC) in 2021 sought a more appeasing discourse, attributing Evergrande's crisis to its "mismanagement and hasty growth", considering it an isolated incident. Meanwhile, even back then, Country Garden had a Net Debt/Equity ratio of ~70% and cash coverage of ~3x, above healthy parameters. On August 8, two years later, Country Garden admitted it was facing "intermittent liquidity difficulties", but with a slightly better Net Debt/Equity of ~55% and cash coverage of ~2x in 2022, after a news report citing its inability to pay two offshore bond coupons, both due on August 6, totaling US$22.5mn.

Graph 2. Chinese savings on a strong upwards trend



Soure: Genial Investimentos, Bloomberg

Evergrande's liquidity event has since been observed in other developers, on a similar or smaller scale, which has raised the total delinquency (NPL) on real estate loans for private properties in the portfolio of major Chinese banks by ~15% during 2022. The P&L of the Industrial Bank of China (ICBC) showed that the NPL>90 days in the real estate sector stood at 5.47% last year (vs. 1.41% historical average), due to the perception of mortgage payers that the properties would not be delivered, the loan installments began to be deprioritized by the family budget and defaults began to rise... and haven't stopped since....

Defaults on real estate portfolios at China's main banks continue to rise. The scenario for 2023 not only shows no evolution in relation to the defaults seen in 2022, but also an extension of the deterioration in credit quality into 2023. The deepening real estate crisis in China continues to affect local financial institutions, forcing banks to increase their provisions for doubtful accounts (PDA) in real estate loan portfolios, despite being financially stable or even expanding in other portfolio categories. According to data from Bank of East Asia, Hong Kong's largest household lender, the ratio of non-performing loans increased by +0.4p.p. to 3.15% of the total real estate loan portfolio in 1H23.

China Construction Bank (CCB), the first of China's five largest real estate lenders, closed its portfolio in 1H23 with ¥833bn (~US$115bn) in loans to the sector, an increase of +8.1% y/y. However, the amount that went into default grew +18% y/y in 1H23, reaching ¥39.6bn (~US$5.5bn), with NPL>90 days representing 4.8% of the portfolio vs. 4.3% at the end of 2022, an increase similar to that found at Bank of East Asia.

We believe that losses are rising at a rate that should disturb investors. At this point, if the problem with Evergande in 2021 was only momentary and an isolated case, as the government justified at the time, the NPL should already be showing signs of cooling down today as a potential reflection of the improvement in the sector's sense of credibility, considering that the country left the Zero-Covid policy behind almost a year ago, reducing the degree of uncertainty, for example. However, the figures we are seeing from the country's main commercial banks are yet another indication that the situation in the Chinese real estate market is not temporary, but structural.

Beyond real estate, more discouraging news emerged from data published on August 11, indicating a significant drop in new bank loans in China in July. With a sum of ¥345.9bn (~US$48bn) lent, the figure fell -89% y/y and represented the lowest number since the end of 2009. In our view, consumer sentiment is still low, and this is having an impact on loan applications from commercial bank portfolios, which continue to be restrictive in an attempt to reduce real estate defaults but are also suffering from a lack of appetite in other segments of their loan portfolios, even in the face of recent interest rate cuts.

We estimate that credit losses could reach ¥1.8 trillion (~US$255bn) if the average delinquency of the five main banks in the real estate segment continues pace ahead at ~4% rate of NPL>90 days. More than 2/3 of the offshore bonds, totaling US$166bn, launched by Chinese developers have high risks of defaulting on interest payments. Banks would bear ~60% of the losses, trust companies ~25% and insurance companies the rest.

With the end of the refinancing of dollar bonds since 2022, combined with the scarce issuance of onshore bonds by private developers, we see a latency as many banks shrink their real estate portfolios due to credit quality concerns. In a list of the 200 largest developers, both public and private, private developers accounted for 65% of property sales in 2021, and the list represents around 50% of China's real estate market.

The shrinking private sector could affect the supply of new homes, as financial difficulties restrict investment in land and sales launches. The number of projects started in the LTM has always been a gauge of the SoS (Sales over Supply) of new projects over time, historically contributing to the range of 50% to 60% of total sales. In other words, more than half of all home sales in a given quarter come from projects launched in LTM.

Country Garden: the situation is serious, but it was foreseeable. It has also become public knowledge in recent days that among the 2/3 of bonds that are at risk of default due to non-payment of coupons are those issued by Country Garden, one of China's largest developers. Apart from offshore bonds, the news triggered a sell-off of a considerable volume of investors in basically all of the company's bonds, forcing it to briefly suspend trading in 11 of its onshore bonds.

As we've been mentioning since November of last year, when we assumed the coverage of the Metals & Mining sector, changes in **(i)** the accessibility of refinancing for developers following Three Red Lines, as well as **(ii)** decreased demand for investment, with low consumer confidence and less fiscal space for incentives, and especially **(iii)** the inversion of the age pyramid due to the consolidation of demographic challenges, form a whole that leads to a prolonged decline in new housing sales.

What is happening now is no surprise to us, and the tragedy foretold was already showing signs, but at the time we adopted a counter-consensus approach. The market at the beginning of the year was generally believing that China's post-zero-covid reopening would unlock considerable pent-up demand in 2023. Consensus disappointment seemed to us to be the only possible path, as we wrote in an extensive report on the Chinese reopening in January this year.

Country Garden is likely to face a decline in contracted sales, due to a combination of negative elements that could increase its current liquidity crisis in the coming months. The sense of fear regarding its financial capacity to fulfill the execution of developments still under construction will certainly discourage future buyers from investing in its projects from now on, just as it did with Evergrande. In addition, as rumors of the developer's potential bankruptcy begin to spread, we believe there will be an effect on the Company's supply chain, which will be compromised, with restrictions on forward purchases with suppliers as well as an interruption in land acquisitions, which have not occurred since July 2022 until the end of April this year, showing a considerable gap in landbank time in relation to the developer's historical behavior.

Since the beginning of the year, when few were showing real concern about the real estate market, with the consensus believing in China's voracious post-zero-covid recovery, reflected in an expectation of consumption for iron ore that put the commodity at the level of US$120-130/t, we were adopting a more conservative stance, not only with regard to the growth of Chinese economy, but also with the real estate market, because we believed that government was unlikely to interfere directly with comprehensive and expensive stimulus packages, as it used to do. And it looks like we were right...

The tragedy of Oedipus: any strong government intervention at this stage is to sugar-coat. Although the current low level of government stimulus is exacerbating the deterioration in the momentum of new home buyers in small and medium-sized cities in China (low and mid-tier), we believe that the real problem is that the sector has leveraged itself far beyond what was healthy, in order to grow through projects that had no real demand linked to the need for housing. And so, making an analogy with the mythology told in the tragedy of Oedipus (who murdered his own father without knowing it and then investigated the death), when the government tried to find out who was mainly responsible for the crisis in China's real estate sector, it found itself to be the culprit.

Although in theory the government preaches the discourse of "houses are for living in, not speculating", as we have already commented throughout the report, the heavy incentives given previously (~US$130bn per year on average, in the last 5 years before the pandemic) rewarded the developers who took the most risks, a classic moral hazard problem. The premise adopted was that the government would always interfere to maintain the high attractiveness of the sector, so developers then began to ignore the risks, always counting on the government to bear any consequences, offering a bailout to the sector if they needed it.

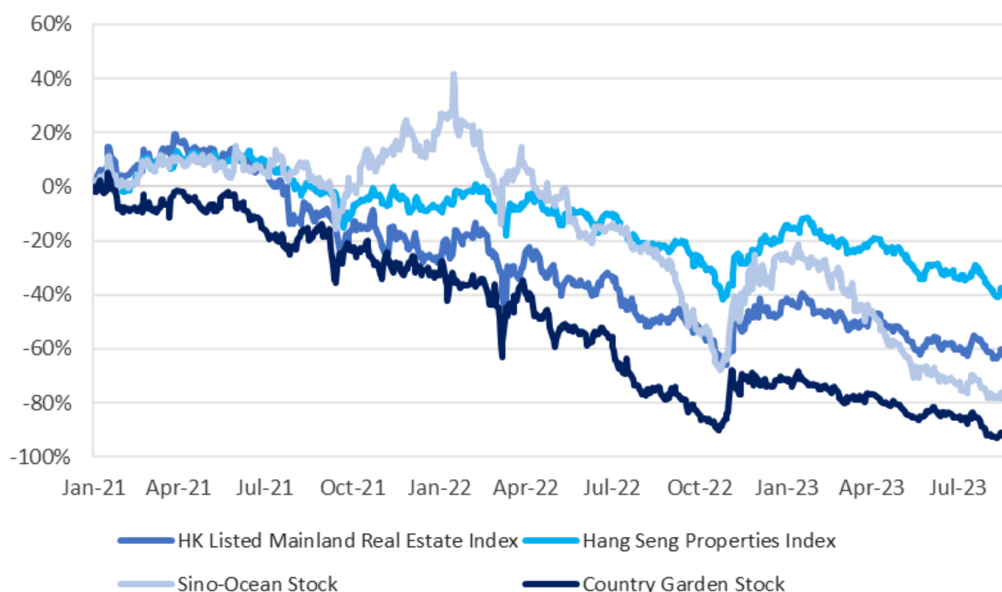
The consequence of this was developers leveraging themselves too much and swelling their balance sheets with projects year after year, promoting, in practice, the culture of real estate speculation and giving the sector various characteristics of a bubble. New direct interventions in the real estate market, if they are made, seem to us to be a way of sugar-coating it, pushing even forward the consequences of a sector that has already been far beyond real demand. In other words, offering another extensive billion-dollar rescue package doesn't seem to us to be the best response to what is happening... not least because it was the indulgent itself that brought the situation to this point.

Caught between a rock and a hard place. In our opinion, the government intervening directly with the aim of cooling down the liquidity problem sends a very bad signal to developers, reinforcing the idea that they can continue to take risks and will always be saved by the state. On the other hand, we also note that the focus of current government policies, which are more lenient, such as the relaxation of restrictions on home purchases for second buyers and better conditions for first buyers, as well as mortgage regulations, end up not directly addressing the liquidity challenges faced by developers, and therefore should not prevent continued low buyer interest in new homes in China.

Growing signs of a widespread debt crisis, exemplified by Sino-Ocean's bond payment problems, as well as liquidity concerns at Wanda and Country Garden, will continue to undermine homebuyer confidence. There are always two sides to every story… the situation appears to be difficult to resolve and we believe that the consequences will be felt, there will be no escape this time.

Any further liquidity problems for Country Garden, which has more than 3k current projects in China, could further damage real estate market sentiment if buyers fear another series of halted housing developments, similar to the Evergrande scenario. Sales of China's top 100 private developers fell by more than -30% in July, both sequentially and y/y.

Graph 3. Chinese Real Estate companies suffering since 2021



Soure: Genial Investimentos, Bloomberg

Age pyramid inversion: a key piece on the puzzle. As we have pointed out in previous reports, we consider last year (2022) as a critical moment for our metal commodities thesis, due to the beginning of the inversion of the age pyramid in China [change from a pyramidal pattern to a bell-shaped pattern, caused by the increase in the elderly population], signifying a process of decrease in the total population, after 60 consecutive years of growth.

We postulate that indicators similar to those in more developed economies, such as declining population rates, are beginning to emerge in China due to the rising cost of living, which encourages families to limit the number of children. We interpret this as an additional challenge for the real estate sector in small and medium-sized cities. We believe that middle-income couples in China's smaller metropolises are gradually realizing that their few children (an average of 1.3 children per couple, with a birth rate of 7.5 children per thousand inhabitants) are likely to inherit 2 to 5 properties from them and their grandparents. In other words, there are far more assets in properties than there are children to inherit and occupy them.

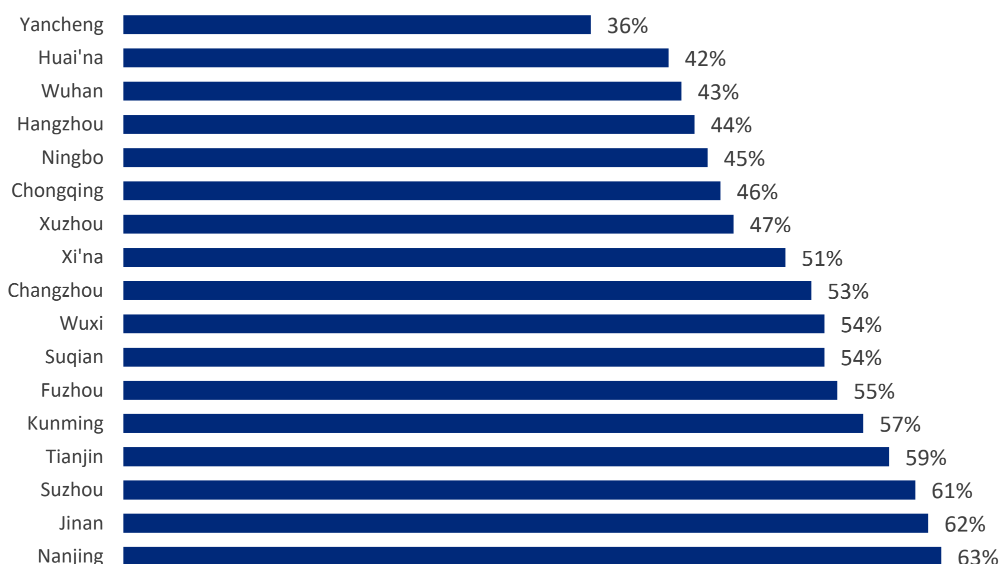
When trying to find third-party occupants or buyers for these properties in an effort to offset the costs of maintaining these assets, families run into difficulties as property prices have risen dramatically in recent decades, increasing the vacancy rate. Although speculative investors continue to focus on properties in the big cities (Tier I), they end up neglecting the small and medium-sized cities (low to mid-tier), which today are in significantly less demand for purchase or even rental. In our opinion, even the continued infusion of liquidity into the real estate market by the government is unlikely to convince these people to invest in more property in these regions. This will unintentionally lead to lower growth going forward than has been reported in the past by the housing construction sector.

Therefore, the all-time low marriage and birth rates seen at current levels in China are likely to hamper any recovery in the medium term, given the decreased demand for initial property purchases and home improvements. Sales forecasts for low tier cities are dismal, while cities such as Shenzhen, Hangzhou and Chengdu (larger cities) can withstand the demographic strain due to a steady influx of residents.

Looking at landbank dispositions and projects under construction, we found that ~80% of Country Garden's potential sales volume is located in small and medium-sized cities, which are suffering the most from the situation. According to the China Real Estate Information Corp (CRIC), sales of new properties in these cities are collapsing, with a drop of -67% y/y in July, preceded by a drop of -54% y/y in June and a drop of -25% y/y during the first five months of 2023.

In addition, the occupancy rate of properties delivered since 2021 remains at a low level, reinforcing the difficulty the real estate market gets itself into.

Graph 4. Occupancy rate of properties delivered since 2021 is quite low



Soure: Genial Investimentos, Bloomberg

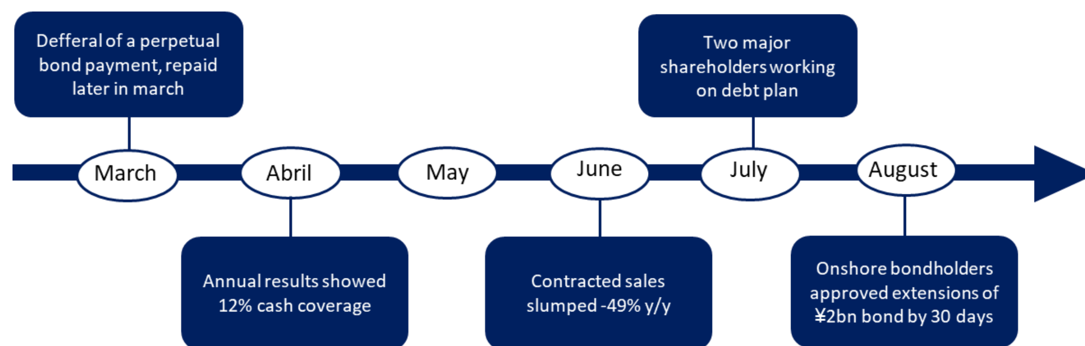
The record youth unemployment rate of 21% in June, coupled with the interrupted further release of this data by the National Bureau of Statistics (NBS) in July, highlights concern about the ability of this demographic group to buy homes in the medium term. Negative elements, such as the deterioration of the economic and employment scenarios, are also holding back the recovery.

Just how big is the crises of confidence? In our view, confidence among buyers in the Chinese real estate market is likely to continue to fall, reaching an all-time low, due to the turmoil experienced by Country Garden, Sino-Ocean, Evergrande and other developers. This also raises doubts about the effectiveness of policy to guide the sector during a slowdown and reduce the incidence of defaults by developers. These factors, together with a forecast of worsening house prices, are likely to suppress demand for investment in property.

Residential property sales account for ~40% of total property investment demand in China. Country Garden's emphasis on landbank indicates that a debt crisis could seriously undermine sentiment in small and medium-sized cities (excluding Tier I). Sentiment is already low due to **(i)** declining prices over the past 3 years; **(ii)** pressure on housing inventory and **(iii)** weak population inflows from a demographic point of view, as we commented above.

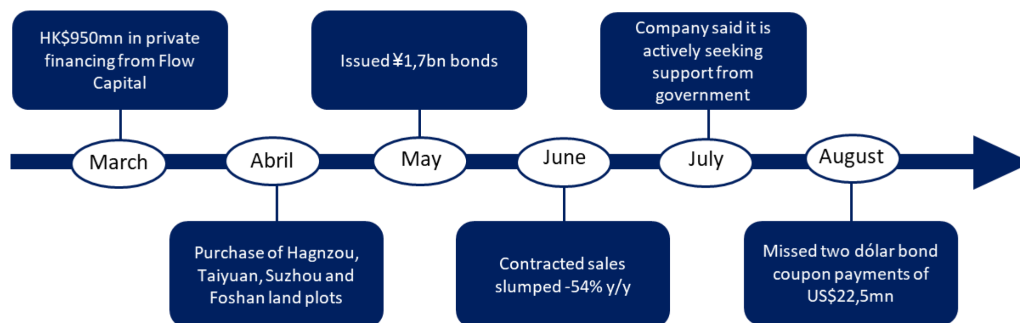
Following the debt crisis that worsened at Country Garden after Sino-Ocean also failed to honor its ¥2bn commitment on August 2. We believe that a second wave of defaults for private developers is highly likely, despite a (softer) rescue package for China's real estate sector. Country Garden, with some regulatory support, was only able to raise +¥5.2bn (~US$720mn) of onshore bonds from 2022, as opposed to a drop in sales of -¥200bn (~US$27.5bn) in the previous year and a further -¥56bn in 1H23. These figures are significantly higher compared to bond sales of ¥1.9bn from Agile and ¥5.9bn from Seazen in the same period.

Graph 5. Sino-Ocean time-line of events



Soure: Genial Investimentos, Bloomberg

Graph 6. Country Garden time-line of events



Soure: Genial Investimentos, Bloomberg

Despite improvements, the manufacturing PMI remained in the contraction zone once again... Although the manufacturing (industrial) PMI measured by Caixin reached a level of expansion, rising to 51 in August from 49.2 in July, indicating the highest reading since February, the official manufacturing PMI, released by the China Bureau of Statistics (NBS), ended up remaining below 50 for the fifth month in a row.

For this reason, we don't believe that the indicator's reading can be categorized as good news. In other words, even with a rise of +0.4pt. m/m to 49.7 in August, the official manufacturing PMI came in within the contraction zone. Even so, the indicator beat both our expectation (+0.3pt. vs. Est. Gen.) and the consensus (49.2). Along these lines, the construction sub-index showed more promising activity in China, rising by +2.6pt. m/m to 53.8 in August. As we said in our sector report for last quarter, new construction projects linked to commercial property interiors, as well as infrastructure, have provided some relief from the seasonal rainfall typical of this stage of the year. However, residential projects continue to show little momentum, in line with the crisis in the sector.

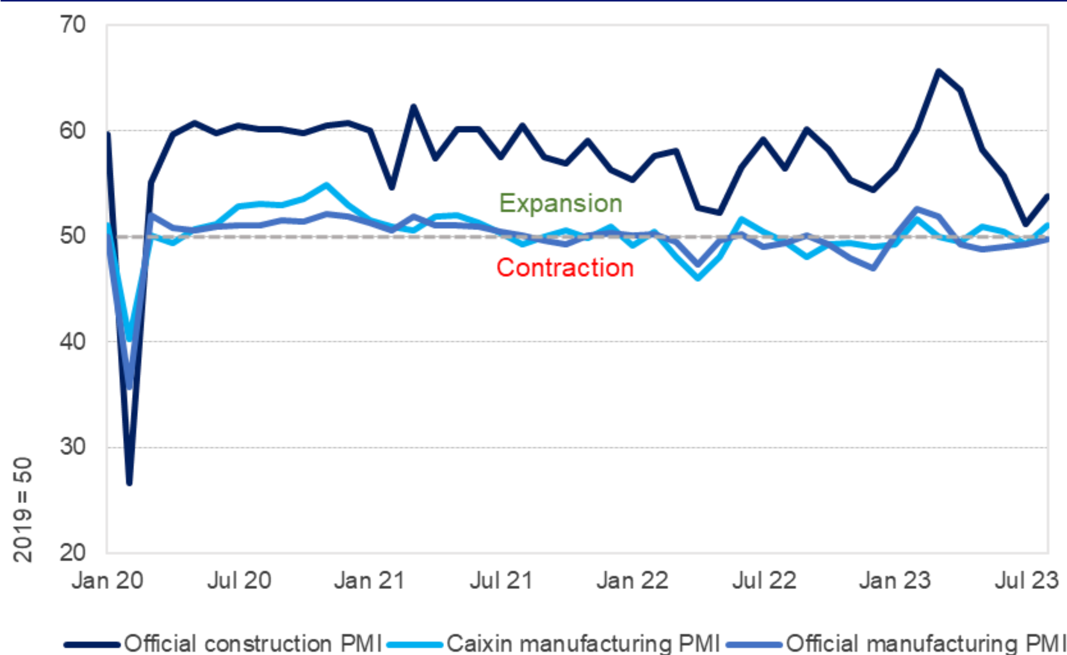
The downstream steel PMI fell by -4.7pt. m/m to 45.2 in August, showing a contraction for the sixth month in a row. After a single month in 2023 close to the expansion zone, the production indicator in August returned to the contraction zone. As China's crude steel production is expected to be cut in 2023, output was reduced at the Jiangsu and Shandong steel mills. On the demand side, different trends were shown in the August indicators, with new orders for domestic consumption suffering a loss of -6.9pt. m/m, reaching 42.9, going in the opposite direction to new export orders, which rose at a rate of +8.3pt. m/m, marking a reading of 60.1 in August, which leads us to believe that a more representative portion of the steel produced in China is being exported to other global markets then historical levels (more on this later).

Table 1. Chinese PMIs are most on contraction zone

	Aug-23	Zone	Δ Monthly	Δ Annual
Official Industrial PMI	**49,7**	**Conctraction**	**-0,7pt.**	**0,3pt.**
Caixin Industrial PMI	51,0	Expansion	1,4pt.	1,5pt.
Downstream Steel PMI	45,2	Conctraction	-0,5pt.	-0,9pt.
New Orders PMI	42,9	Conctraction	-2,2pt.	-0,2pt.
Production PMI	46,1	Conctraction	-0,5pt.	-1,3pt.
Construction Composite Index	53,8	Expansion	-3,7pt.	-2,7pt.
Services PMI	50,5	Expansion	3pt.	-1,4pt.

Soure: Genial Investimentos, Bloomberg

Graph 7. Construction PMI doing well, as the rest are not that good



Soure: Genial Investimentos, Bloomberg

20th Politburo meeting: some measures planned in an attempt to get the economy moving. Since the release of May's macroeconomic indicators, the market's reception has been rather bitter, especially in relation to the industrial PMI data, as we mentioned above. Obviously, the figures have caused confidence to weaken over the last few months, which has led many investors to question whether the government should offer stronger stimulus.

The reinforcements would need to restore confidence in private developers, more effectively enable the implementation of the "16 measures", which were announced in November 2022, and stabilize local government finances. To those who may not remember, 16 measures included:

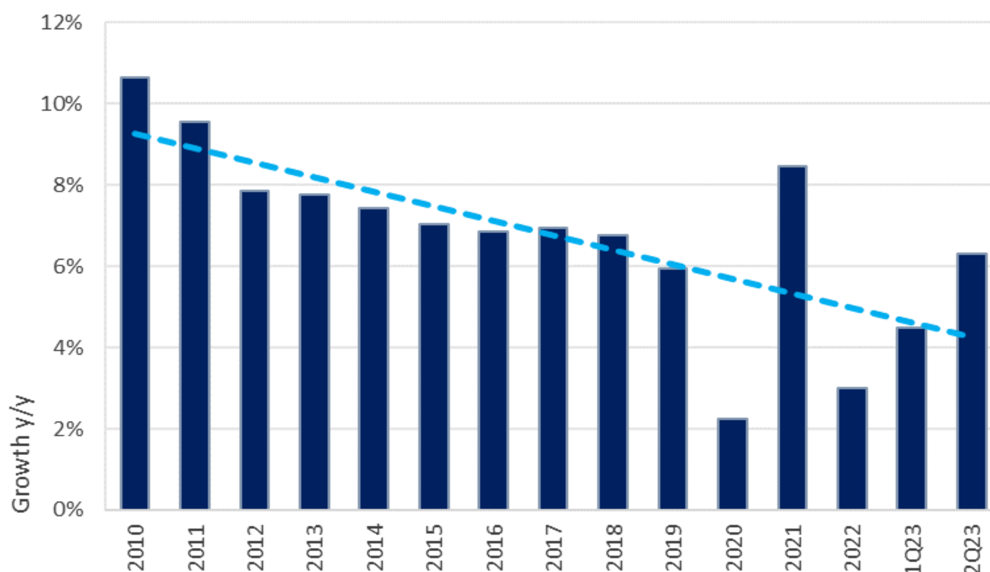
(i) ~US$162bn of credit for companies by state-owned and partner banks; **(ii)** Extension of financing; **(iii)** Raising funds at lower rates; **(iv)** Facilitating the purchase of first properties; **(v)** Issuance of dedicated bonds for the acquisition of construction companies, or for real estate projects; **(vi)** Projects lagging behind in construction will gain additional financial support; **(vii)** Financially stronger developers are encouraged to buy projects from weaker developers.

A year ago, the problem in China's real estate sector was identified as a supply-side imbalance, linked to developers' high leveraged BS and risk-averse banks. However, the "16 Measures" package implemented earlier, with the aim of improving financing for private developers, was not as successful as part of the market had hoped. This has led to the sector's data continuing to contract in 2023, as we detail throughout the report.

We believe that the synergy between the stabilization of the housing situation and the reduction in the perceived risk of the government not delivering GDP by ~5% is substantial for most of the institutional investors we spoke to. The Central Political Committee, commonly known as the Politburo, is made up of approximately 25 members who act as the highest authority in the Chinese Communist Party. This organization has considerable influence over China's administration and is tasked with making crucial decisions in various sectors, including politics, economics and international relations.

As 3Q23 progressed, the Politburo meeting at the end of July focused on expectations of greater support for growth. To us, the tone adopted during the meeting seems to have conveyed that the government recognizes the economic difficulties in the face of insufficient domestic demand and other challenges in important areas, affirming the need for new counter-cyclical policies and better implementation of existing measures.

Graph 8. GDP is decelerating, although is still higher than most economies

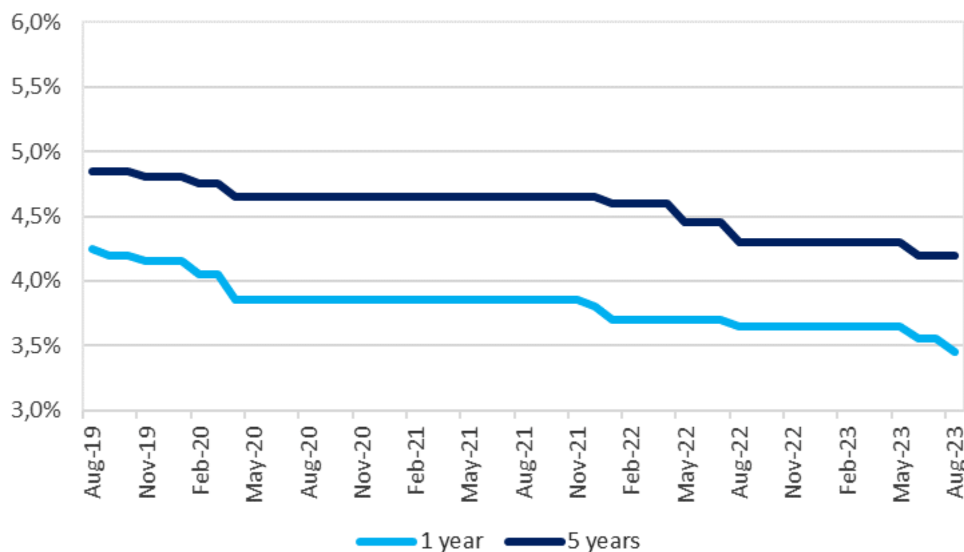


Soure: Genial Investimentos, Bloomberg

And from that moment on, the government's rhetoric on housing policy seems to gravitate more towards changing the dynamics between housing supply and demand and less towards discouraging speculation in order to optimize policies, since we see a reduction in the carry weight of the phrase "houses are for living in, not for speculation" within the Politburo discourse. This further broke into measures to relax conditions for buyers who are purchasing a property for the second time or more, which is not necessarily the best way to address the situation. We must remember: the pill is hard to swallow, but it must be taken...

As for first-time buyers, some measures adopted recently have allowed them to buy homes with lower interest rates and smaller down payments, which we think are healthier for the real estate system in the long run. This is also in line with what we have said in past reports, with the government acting above all by increasing the supply of credit by reducing compulsory deposits and lowering the cost by cutting interest rates, both in the 1-year LPR (basic rate), which fell to 3.34% (-10bps cut) at the end of August, as well as in specific credit lines for the real estate sector. Although it has been cut yet again, we repeat that the government could, in our opinion, be even more aggressive in its monetary policy, considering that the People's Bank of China (PBoC) has kept flat the 5-year LPR at 4.2%.

Graph 9. Chinese interest rate are decreasing



Soure: Genial Investimentos, Bloomberg

Municipalities are adapting to the flexibilization discourse now being uttered by the Chinese central government. Throughout August and September, urban planning departments in city halls and provinces have been announcing measures to promote real estate development, many of which have been interpreted as a relaxation of previous policies, in line with the central government's current discourse following the Politburo meeting. For example, the Housing and Urban-Rural Development Bureau of the city of Ningde, on the northeastern coast of Fujian province, has released measures that include allowing residents without local property to apply for preferential loans to buy their first home and a reduced down payment rate of 20% for applying for a housing provision fund through a commercial bank.

The city of Anqing, located in Anhui in eastern China, has introduced 23 measures to support the local real estate sector. The city government has encouraged the collective purchase of new buildings, supporting entrepreneurship in housing renovations and stimulating consumption through combined promotions of houses, cars, furniture and household appliances. The city has also implemented a housing credit policy that differs from others, supporting the extension of development loans and trust debts.

The city of Qingyuan, belonging to Guangdong province in southeastern China, announced that it would simplify mortgage rules for first-time buyers, allowing family members who are local residents, for example spouses or children of someone who has already applied for a mortgage, but have no property tied to their name, to apply for preferential loans, regardless of their personal credit history. In our view, this particular measure, if applied on a larger scale, could backfire and end up having the side effect of continually increasing the banks' NPLs, which are already above historical levels, as we commented.

In the same path, the Planning and Natural Resources Bureau of the city of Nanjing, capital of the eastern Chinese province of Jiangsu, issued a further optimization of market service management. The notice announced the cancellation of policies that previously, according to the notice's bias, delayed the development of real estate projects, which would make the development process faster, with the aim of increasing the availability and financing of commercial housing.

Will the new measures recover the residential real estate sector? Our opinion is that, although many cities are adopting measures to facilitate access to real estate for first-time buyers, which we see as mostly beneficial and in line with what we believe the sector needs at the moment, the painful truth is that these new measures will probably not be enough to stabilize the real estate market in the short term, mainly because demand in smaller cities is falling, and this is linked more to structural components, such as the pension choices of the Chinese, considering that ~70% of all accumulated families' income resources are invested in real estate, and there is no longer any interest in buying even more houses with the cost of living historically rising, as we have also explored above.

The value of new property sales by China's top 100 developers fell for the most intensity in more than a year in August, according to preliminary data from the China Real Estate Information Corp. The message we've been trying to send across all along in this report is that the situation is rooted in decades of behavior, and that reversing the picture of low credibility will be slow and will cost some "broken hearts and broken bones" along the way...

In 1H23, after the implementation of the "16 measures" in November last year (we've already talked about them above), the volume of new housing projects by private developers accumulated a loss of -24.3% y/y, so everything leads us to believe that we will see the third year in a row of contraction in the sector. The data furthermore capture that the package implemented a few months ago wasn't very effective and didn't change the course of the situation, raising suspicions that the next changes implemented after the Politiburo won't be very effective either.

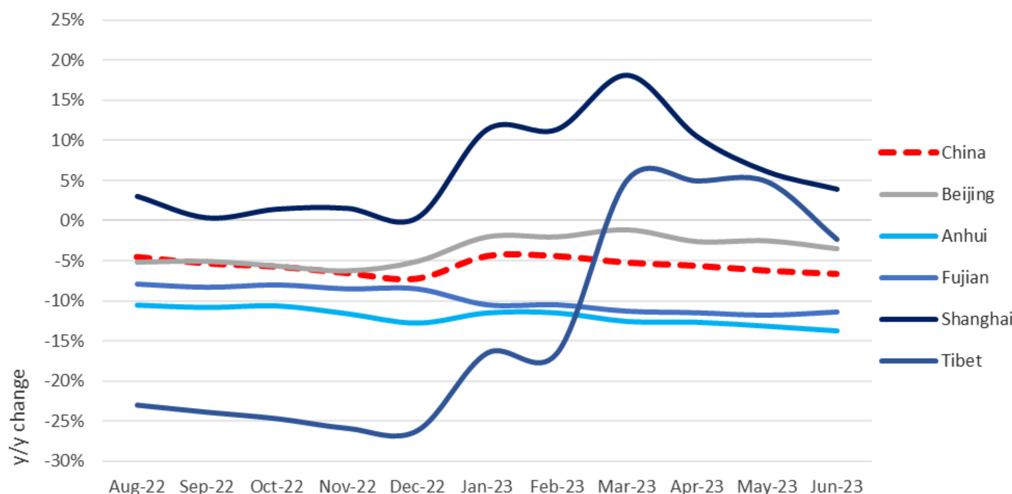
Continuing at this path, sales volumes (SoS) for top 100 developers are also down, falling by -5.3% y/y in 1H23, with pre-sales falling by -8.6% y/y, while sales of new homes in completed projects increased by +10.3% y/y. As we have also mentioned in previous reports, it seems natural to us that sales of completed projects will recover more quickly than projects in the construction phase.

In other words, the dichotomy between pre-sales and sales of homes already built implies a loss of confidence in private developers. From the buyer's point of view, it's much safer to pay for something they can see standing in front of them than to buy an apartment on the drawing board. The crisis in the real estate sector is therefore based on a loss of confidence between buyers, who no longer believe that projects will be completed on time and under the contractual conditions, and developers, who are still highly leveraged and have little oxygen in their payment flow, squeezing working capital, delaying suppliers and salaries and paralyzing construction sites, as has been the case with Country Garden, for example.

There is a marked reversal in the penetration of sales between private and state-owned developers. As the floor area under construction shrank by -6.6% y/y and the amount of credit taken out by private developers slowed by -9.8% y/y in 1H23, the share of sales between private and state-owned developers has changed over the LTM, from a historical ratio in the ~70/30 range to a sharp shift of ~25/75.

These figures show that the penetration of sales by private developers has fallen so much that the ratio has basically reversed, with state-owned developers now occupying 75% of all real estate sales volume. This is because buyers' confidence in private developers has never been lower, while the Chinese government is much more unlikely to go bust or default, which helps to narrow the confidence gap in developments that are coordinated by state-owned companies, especially social housing (low standard housing within projects funded by state resources, similar to Minha Casa, Minha Vida program in Brazil).

Graph 10. Space under construction on China follow downward trends



Soure: Genial Investimentos, Bloomberg

The real estate sector, as an asset class, was affected by the lack of confidence and disruptions in private credit securities, fiduciary products and the stock market in August 2023. Although we find it difficult in the short term, this could be reversed if buyers regain confidence in private developers.

So where is the price of iron ore going?

In this chapter we will evaluate some aspects, mainly trying to find factual evidence to legitimize, even in the face of a very troubled situation for the real estate market and for China's industrial activity, the fundamentals that justify the price of iron ore still remaining in the range of US$110-120/t for the 62% Fe reference, which is not a low level, being today ~30% above the average of the last 10 years. After listing some **(i)** demand and **(ii)** supply factors, we will present our updated iron ore price curve for the next 12M

Demand

If the problem in the real estate market is structural, where will the steel produced by China go? The number of projects under construction that are not related to commercial housing by private developers expanded by +7.3% y/y in 1H23, following growth of +8.4% y/y in 2022. However, there was a contraction of -3.2% y/y in the volume of newly started projects. This means that although projects that have been launched in the past are gaining momentum during the construction phase without major difficulties, the number of recently launched projects has fallen. It is also true that this reduction has been considerably less than that seen in commercial housing projects. So, the crisis as a whole in the construction sector seems to be a little milder than some may be considering.

In addition, China's Ministry of Housing and Urban Development (MOHURD) has announced plans for 3.6 million units of social housing by 2023, a significant increase from 2.4 million in 2022, equivalent to 1/5 of all housing starts by floor area. If we consider that social housing is low-standard, and therefore has a smaller square footage per floor area than medium and high-standard commercial housing, the number of homes in MOHURD's 2023 master plan turns out to be significant enough to occupy 1/5 of the total floor area of residential space under construction in the country.

Following this trend, we believe that a portion of the steel produced by Chinese steel mills is being used to promote social housing, through developers with incentives and state capital, which is outside the risk of private developers going bust. Even so, this figure is hardly disclosed by the market and doesn't receive much attention from the consensus. In fact, the growth of this segment is included in the construction sector, and not in the real estate market data, which means that the growth of housing outside the commercial plan of private developers flies under the radar.

Social housing as an alternative to the demand for steel as the cost-of-living raises. Over the years, the urban population in China has increased from 767 million in 2014 (~55% of the total population) to 921 million in 2022 (~65% of the total population). This means that the urban population has grown by approximately 10% in 8 years, although the average family size has gone in the opposite direction, falling from 3.1 people in 2010 to 2.56 people today.

This proves that the cost of living for the population over the years is rising, as the urbanization cycle carries with it an inflationary component by nature. Life in the cities is more expensive than life in the countryside. And historically, all the statistics point to a reduction in the number of children per couple in urban life compared to rural life. This process is in line with our thesis on the inversion of the age pyramid and is essential to understanding what is happening in China nowadays.

Our opinion is that over the next decade China is unlikely to overlap much more than 5% in urban population penetration, so our analysis points to a cycle of urbanization with signs of deceleration. By way of example, the US urban population is ~80% and we believe that China will stagnate between 70% and 75% over the next two decades. One of the main reasons for this is the cost of housing in larger cities, which has basically become unviable due to the heavy speculation that the sector has undergone. In our view, for the country to continue to increase urban penetration, real estate prices would have to fall at even greater rates than we have seen in the last two years.

This inflection opposes the argument that has been used a lot by the market, that China is a country that has already surpassed 1 billion people and that these people had to live somewhere... In other words, there would be a strong need for housing as the population migrated from rural to urban areas. This argument was true for a few years, but it seems to be losing strength. The population is now shrinking precisely because the cost of living is rising.

So, unless housing prices fall sharply, it doesn't seem rational to us that urban penetration would continue to rise exponentially as it has in the past. In fact, the fall in the number of new commercial housing developments by private developers over the last two and a half years seems to us to be intrinsically linked to oversupply. In other words, there is an inventory of ready or under-construction properties that haven't been sold because the population can't afford them, and this will put the brakes on China's urbanization process for years to come.

Even after the reduction of the housing inventories was prioritized in the supply-side reforms, the indicator was still above 2.4 billion m^2. However, it is true that we have noticed the estimated stock of unsold housing falling recently to 2.3 billion m^2, a big decrease compared to its all-time high of over 2.9 billion m^2 during the industrial recession of 2014-16.

Despite the drop in housing construction over the last two and a half years, the supply of housing may continue to decline due to the partial increase in demand linked to the inventory of ready and unsold properties, which end up being the current preference over properties still on the drawing board. Even if this is the case, we don't believe it would reach a point where it would lead to a shortage, not even for Tier I cities, but it is an interesting parameter to offer a trigger for price increases later on.

We've never denied that sales of ready properties would recover first (we've mentioned this in other reports throughout the year), but at the moment we assume that these sales may end up putting a slight upward pressure on prices because new project launches are falling sharply. On the other hand, if prices rise, the penetration of the urbanization process should have a hard time gaining traction and, later on, bring demand down again. This remains our baseline scenario: weak demand for commercial housing from private developers (medium and high-end), especially in medium and small towns.

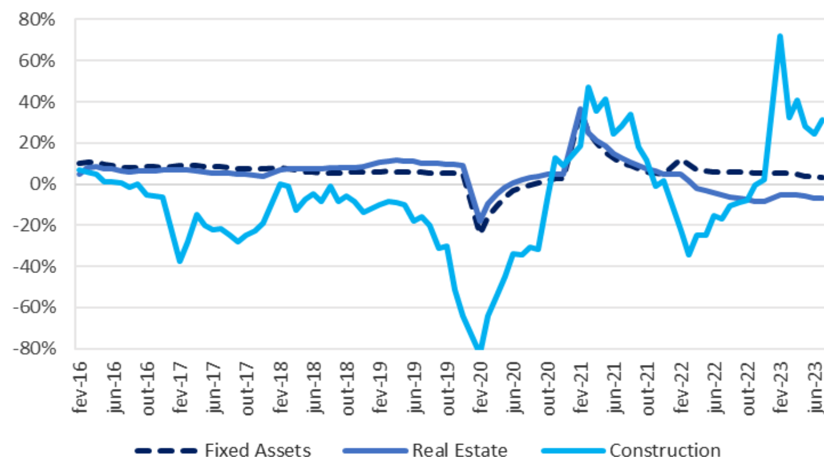
On the other hand, social housing may offer a relief to the Chinese steel industry, as the expansion of the floor area under construction of low-standard housing may promote a viable alternative to the urbanization process, in a way that the average Chinese can afford to live in urban centers. In today's reality, we find it challenging to continue urban sprawl without factoring in lower living costs, which is why we came across as good news the significant increase of +50% y/y in MOHURD's master plan.

This measure, perhaps above all others, is the one that can best provoke a more resilient demand for the country's steel industry in the coming years and does not pose risks related to real estate speculation, since social program properties involve a less commoditized context than the commercial housing category of private developers. In other words, the penetration of first buyers corresponds to 100% of the supply in the case of social housing, while in the case of commercial housing the penetration is only 30%. Given the significant growth in the number of homes in the MOHURD master plan between 2023 vs. 2022, the government is showing signs that it has also understood that this may be a healthier path than injecting money into stimulus packages for private developers keep building commercial housing that almost nobody can afford.

What else is driving demand for Chinese steel? In addition to social housing, infrastructure-related sectors have also been a common destination for Chinese steel in 2023. The energy segment saw robust growth of +27% y/y in 1H23, driven by new capacity addition projects, mostly linked to renewable sources. Despite a weaker comparative base last year due to the Zero-Covid policy, the transportation sector also advanced well this year, growing +11% y/y in 1H23, with works in roads and especially rail segments being responsible for an increase in the segments' steel demand of +3.1% y/y and +20.5% y/y, respectively. Together, the ports and airports segments grew their construction numbers by +25.2% y/y, also boosting steel demand.

China's total fixed asset investment (FAI) rose by +3.8% y/y in 1H23, driven by a +5.1% y/y rise in 1Q23. However, investment weakened in 2Q23 due to a faltering real estate sector and slightly slower FAI growth in the industrial sector. The increase in infrastructure investment was supported by the significant advance in the FAI of energy and public services, such as transportation, that we mentioned. However, total FAI linked to private companies fell for the first time since 2020 due to sluggish investment in property. Although the growth of FAI linked to the private manufacturing industry slowed down, it still reached the +8.4% y/y mark (vs. +15.6% y/y in 2022).

Graph 11. Chinese fixed assets investment y/y



Soure: Genial Investimentos, NBS

It's important to note that while the **construction sector is not doing badly**, performing above the historical average even, since **it includes infrastructure works and social housing**, on the other hand the real estate sector, which includes commercial housing projects by private developers, is still not showing any signs of recovery.

Steel output getting higher, with +18.6% q/q growth. **Meanwhile Infrastructure** Investments and **automotive** segments gaining ground, **both above double digits**. On the Other hand, **sales of properties** (commercial housing) **facing a meltdown** of -53.4% q/q.

Table 2. Chinese steel downstream sectors demand

Aug/23	Main Indicator	Δ Accumulated on year (2023/2022)	Δ Quarter (2Q23/1Q23)	Δ Monthly (August/July)
Supply	Crude Steel Production	-1,1%	18,6%	8,9%
Demand				
Real Estate	Space under construction	-34,9%	-3,4%	-22,5%
	Sale of properties	-13,4%	-53,4%	22,1%
Infraestructure	Infrastructure investments	37,9%	-15,0%	-0,7%
Automotive	Vehicle sales	16,9%	36,4%	-9,0%
Machinery	Cement production	-4,5%	-57,7%	29,3%
	Escavator sales	0,5%	0,0%	9,5%

Soure: Genial Investimentos, Bloomberg, NBS

Despite a certain degree of uncertainty in external demand and the stagnation in the recovery of domestic consumption, private companies have persevered with their investments in critical high-tech sectors. This includes sectors such as electrical machinery, equipment and the automotive industry. There was a consolidation in the investments made in heavy industry manufacturing capacity, in fields such as non-ferrous smelting, electrical machinery and equipment production (corresponding to ~12% of total heavy industry investment) and automobile manufacturing (corresponding to ~5% of total heavy industry investment), all growing at double-digit rates in their respective categories compared to investments made last year.

Giving a little more emphasis to automobile production, until August, China saw an expansion of +16.9% y/y in the segment, with the return of demand for commercial and heavy vehicles after the end of the Zero-Covid policy, as well as an increase of +9.2% y/y in the production of light vehicles and growth of +42.4% y/y in the production of non-motorized electric vehicles, both with a considerable portion destined for export.

Soure: Genial Investimentos, Bloomberg

As for domestic consumption, we see the machinery and equipment category with a slight increase of +1.5% y/y in 1H23, with the transportation and agricultural machinery sectors recovering and excavator sales getting an upward tend to +9,5% m/m, despite moving sideways in accumulated year. Production of consumer goods and electronics grew by +2.5% y/y due to strong demand for home appliances (+16.8% y/y), but export pressures resulted in a drop in semiconductors (-14.4% y/y).

However, ferrous metal smelting stood out negatively as it is subject to strict regulatory scrutiny. We've been talking about the crude steel production cap for some time now. After steel production peaked at 1.05bn tons in 2020, there has been an annual reduction in production y/y since then, mainly linked to the need for decarbonization (we'll talk more about this in the chapter on Vale). Although data suggests that part of this investment in infrastructure (railroads, energy, ports) and in the productive capacity of these industry segments (automotive, home appliance goods, machinery) is linked to a pent-up demand for steel, compared to the compromised industrial activity observed in 2022 with the Zero-Covid policy, even so, since the beginning of the year our forecast was that crude steel production in 2023 would be just under 1bn tons (990Mt Genial Est.). In other words, with a slight cut compared to 2022. Given the pace of consolidation, we still maintain our projection, and data shows that our estimates are aligned, considering that the output is down by -1.1% y/y until now.

As we have already mentioned in various reports throughout the year, we believe that the return of the post-lockdown economy is intrinsically linked more to the consumption of services, and less to the consumption of goods. In short, Chinese data suggests a shift from consumption centered on products to consumption based on experiences, including an increase in travel for the tourism segment labeled "revenge travel". By mid-2023, spending by Chinese international tourists was approximately 70% of 2018 levels (Pre-pandemic), indicating signs of a comeback in this sector.

With a higher percentage of household income going towards the consumption of services, domestic demand for goods tends to support lower growth rates. As a result, we believe that industry will lean on more towards exports, as we are seeing happening with cars and the steel industry itself. Putting this idea into the spotlight, we think a greater share of what Chinese steel mills are producing is also being exported, as industrial activity has been tepid, given the 5 consecutive manufacturing PMIs within the contraction zone.

China is exporting more steel to other global economies. Due to the ongoing economic slowdown in the country, Chinese steelmakers are increasingly forced to distribute their products in large quantities in different regions. As a result, Chinese steel is becoming highly competitive on world markets, considering the extremely low profit margins that these steel mills operated on until 1H23. We can see this in our coverage of the Brazilian steel market. This dynamic has led to the development of a premium for domestic products in Brazil of ~10% for long steel and 20-22% for flat steel. This implies difficulties in implementing price adjustments without a considerable loss of market share for steelmakers, an effect that has happened not only in Brazil, but in other countries that are strong consumers of steel in the world.

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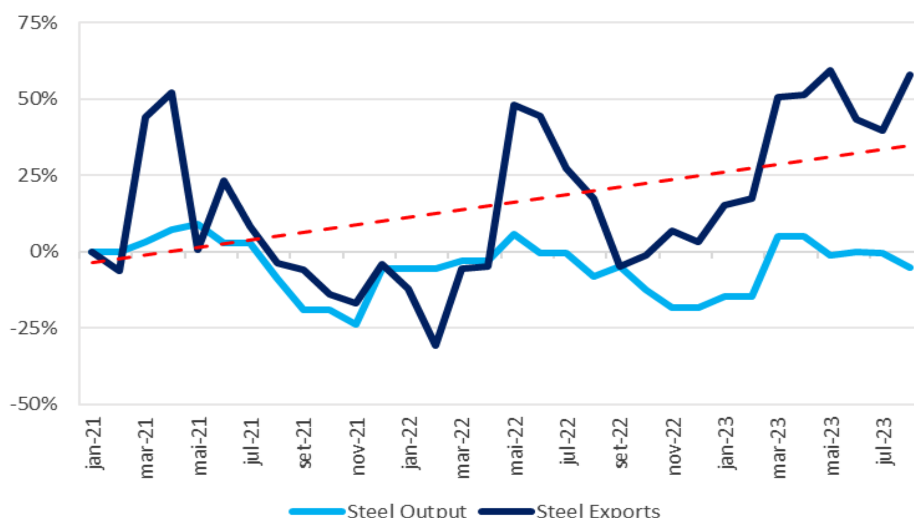
Graph 12. China steel exports are growing while production is at the same levels



Soure: Genial Investimentos, Bloomberg

Blast furnace utilization rate is up, and steel mill profitability is starting to improve. We believe that several steel mills in China are opting to devote a greater share of their production to sections, tubes and other items, in addition to their five main finished steel products. These efforts are aimed at preserving profitability, as it helps to keep the metal spread at a slightly healthier level than was seen in the first half of the year. The five main steel products mentioned include rebar, wire rod, hot-rolled coil, cold-rolled coil and medium slabs.

The capacity utilization rate of the blast furnaces in a list of 247 Chinese steel mills that we follow registered a drop after a two-week increase between September 8 and 15, falling -0.11p.p w/w to 92.65%. We believe that the level is still quite high, and the small decline from one week to the next is credited to the temporary shutdown of some blast furnaces at mills in northern China. From what we have been able to monitor, four more furnaces in the city of Tangshan were suspended for repairs during the inspection period, which rules out the possibility that the drop was linked to a lack of demand.

Steel production at resilient levels indicates that iron ore prices are likely to remain firm in the short term. In addition, setbacks with domestic coal equipment, together with a decrease in international deliveries, should keep coke prices stable for the time being.

The **(i)** interest rate cuts, as well as **(ii)** relaxation of restrictions on real estate purchases, **(iii)** significant increase of +50% y/y in MOHURD's master plan for low-standard social housing, **(iv)** investments in infrastructure, mainly in railroads, and **(v)** improved performance of the Chinese automobile and electrical machinery industry, have ended up partially raising the optimism of the market, which had been very skeptical in recent months. However, the combined impact of these measures should not be seen immediately. Macro measures always take a while to make their way into the real economy. Considering the underlying conditions, there may be short-term fluctuations in HRC prices, which today stand at ~US$540/t. We believe that in the short-term steel prices should move sideways, rising gently in 1H24, with the measures taking more effect within the real economy, in line with our forecast that we commented on in last quarter's steel sector report, which is attached (Metals & Mining: A sigh of relief for steel industry).

Supply

What storyline does the supply data tell us? After three weeks of consecutive falls, stocks of imported iron ore at China's 45 main ports, according to a Mysteel survey, reversed and reached 120.5Mt at the end of August. The increase in ore carrier arrivals outstripped the increase in unloading volumes at these ports, leading to this positive change.

Iron ore arrivals at these ports witnessed a significant jump of +70.3% or 13.1Mt from August 7 to 13, reaching a record high since May 2020. This increase in i.o. arrivals is a result of the full restoration of port operations along the Yangtze River region following the passage of Doksuri and Khanun storms during the rainy months.

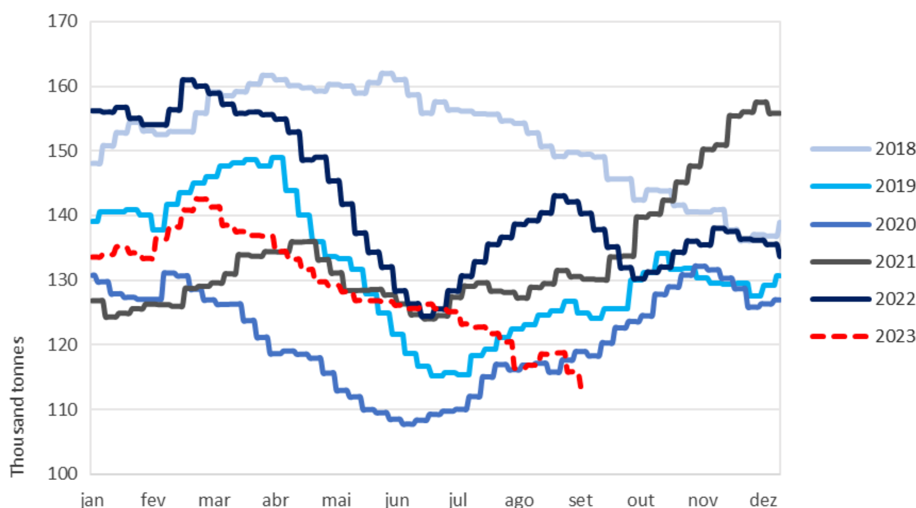
The daily volume of i.o. unloaded at these same ports showed a second consecutive weekly increase, with an average of 3.3Mt/day during the three quarters of August. This represents an increase of +3.1% m/m or an increase of more than +98.7Kt/day. During August, Australia and Brazil, which accounted for 46% and 38% of the total volume respectively, recorded gains in their port stocks. Australian inventory rose by +1.5% m/m, reaching 53.9Mt in the middle of the month after three weeks of decline. Brazilian inventory rose by +0.5% m/m to 44.2Mt.

However, as early as September, shipments of iron ore from Australia and Brazil to various global destinations, dispatched by 19 ports and 16 mining companies, started to fall significantly, putting an end to the increase of four weeks in a row. There was a drop of -8.8% w/w, equivalent to 2.4Mt, bringing the total to 25.2Mt for the week of September 4-10. This reduction was seen in both countries' shipment volumes. In the survey period, the amount of Brazilian iron ore transported globally from 9 ports fell for two consecutive weeks, with a reduction of -2Mt (-22.3% w/w), totaling 6.8Mt. Included in these figures, there was also a substantial decrease of -674Kt in the amount shipped by Vale.

Along these lines, iron ore inventory at the same 45 Chinese ports tracked then decreased to 118.7Mt by mid-September (vs. ~120Mt end-August), representing the lowest level recorded since September 25, 2020. This significant weekly drop since the beginning of the month by -2.6Mt, or -2.1% in 15 days, stems mainly from the pronounced decline in fine ore cargo arrivals and an increase in daily discharge rates at these ports. From August 28 to September 15, these ports reported receiving 22.8Mt of iron ore shipments, marking a sharp reduction of -5.1Mt, or -20.4% compared to the previous survey period (August 14 to 25). In addition, ore carrier arrivals at southern Chinese ports have been halted, and this should continue to stabilize iron ore prices around the ~US$118/t level for a few days.

The decrease in inventory at Chinese ports indicates an increase in unloading volumes and greater congestion at the ports during the period, which has probably inhibited the volume of iron ore arriving from different locations over the last two weeks. As far as we're concerned, the miners knew that if they sent more cargo, their vessels could get stuck in port congestion. Possibly, this will impact on higher demurrage costs for the companies under our coverage in 3Q23.

Graph 11. Iron Ore inventories on Chinese ports are getting lower



Soure: Genial Investimentos, Bloomberg

Looking at the total nominal volume of inventories, 74.8Mt belonged to traders, registering a slight increase after four consecutive weeks of decline between the end of July and the middle of August. Inventories held by trading companies then accounted for 61.8% of the total, down -0.2 p.p. w/w when looking at the relative proportion. This level is close to the historical average (~58.5%), indicating that there is currently no excessive speculative position, which usually happens when this level rises well above the historical average, as was observed between November last year and April this year, a period which we identified in our reports as the iron ore rally following China's economic reopening.

In other words, it seems to us that the support for iron ore prices between US$110-120/t has been linked in recent weeks to an appetite in the real economy, supported by resilient steel consumption and blast furnace utilization rates above 92%. Along these lines, daily consumption of imported fine iron ore increased to an average of 555Kt/day among China's 65 largest steel mills during the period from September 7 to 13. This represents an increase of 11.3Kt/day (+2.1% w/w), driven by these companies' higher production of hot rolled steel (HRC).

Following the end of scheduled maintenance shutdowns in Shanxi, which had been affecting production until the end of 1H23, a growing number of steel mills resumed operation of their blast furnaces in August. As a result, Mysteel's latest survey of 247 Chinese steel mills using blast furnaces revealed a further increase in daily HRC production, averaging 2.5Mt/t per day from September 1 to 7.

Price

Reflections on iron ore prices. In general, government spending on infrastructure and social housing may help maintain a basic level of demand for steel; however, we believe that sales of commercial real estate by private developers will continue to decline in the long run due to demographic changes and a slower migration from rural areas to cities. In addition, the global slowdown, through Europe, the potential US recession (we believe in a soft landing), Brazil which although interest rates are now falling, steel demand continues to face challenges, South Korea (high interest rates and diminished exports), and others, could lead to slower export growth in China, both of raw steel to global markets and also of products in the downstream steel chain.

Our estimate is that the real estate sector, which represents ~35% of China's steel consumption, and with a weight of ~60% of total construction, will see its demand for steel decrease by -22% this year, which is equivalent to ~250Mt. Although the expected growth in infrastructure will potentially offset some of this (as we have already covered), we believe that global steel demand will decrease by -5% y/y in 2023, to ~1,740Mt.

Graph 12. Forecasts for Iron Ore price still on downward trend, but higher than old estimates

Soure: Genial Investimentos, Bloomberg

Along these lines, we believe that the iron ore curve will show signs of slowing down between the end of 2023 and 2024, but we still find some supports that help the slowdown not to be as intense as we were previously projecting.

- **What hinders the appreciation of iron ore: (i)** weak demand for new commercial housing from private developers (medium and high standard), especially in cities excluding Tier I; **(ii)** inversion of China's demographic pyramid; **(iii)** natural increase in iron ore supply between 3Q23 and 4Q23 due to the seasonally more favorable timing of Brazilian mining companies compared to the beginning of the year; **(iv)** delay in the response between recent initiatives, especially in the interest rate cuts in China, to take effect within the real economy; **(v)** greater appetite currently for low grade iron ore, precisely India's specialty, which recorded annual production growth of +12% y/y in the first 7M of 2023, increasing the supply of this type of ore in the seabourne system.

- **What supports iron ore appreciation: (i)** cut in interest rates, **(ii)** relaxation of the limitations imposed on the purchase of real estate in China, **(iii)** a notable increase of more than +50% y/y in MOHURD's strategic plan for social housing, **(iv)** infrastructure spending in China, mainly directed towards railroads; **(v)** high productivity in the Chinese automobile and electrical machinery sectors; **(vi)** population growth in India still at accelerated rates (16 births per thousand inhabitants vs. 7.5 in China), in a country that lacks investment in infrastructure and housing, which could demand a greater volume of better quality iron ore for local steel mills, thus putting pressure on the supply of seaborne in the long term; **(vii)** large-scale construction projects in the Middle East, both in the real estate market and in infrastructure, also pushing up the premium for pellets and the demand for high quality ore, with a reduced carbon footprint, products that Vale has been investing more in (we'll cover this topic in Vale's chapter).

Our new estimate: According to the fundamentals listed above, we still believe that the opposing forces will outweigh the points in favor of appreciation, but we are revising our curve to soften the slowdown a little. For the 62% Fe benchmark, our assumptions now indicate US$100/t (vs. US$95/t previously) for the 4Q23 average and for the end of 2024, we have adjusted our curve projection to US$95/t (vs. US$92/t previously). We still have the same curve level for the long term (2028), at US$75/t. Simply put, no matter how bad the situation is in the Chinese real estate market, iron ore prices tend to mirror themselves elsewhere to reflect a little more resilience than we initially thought, and this turns out to be good news for the mining sector.

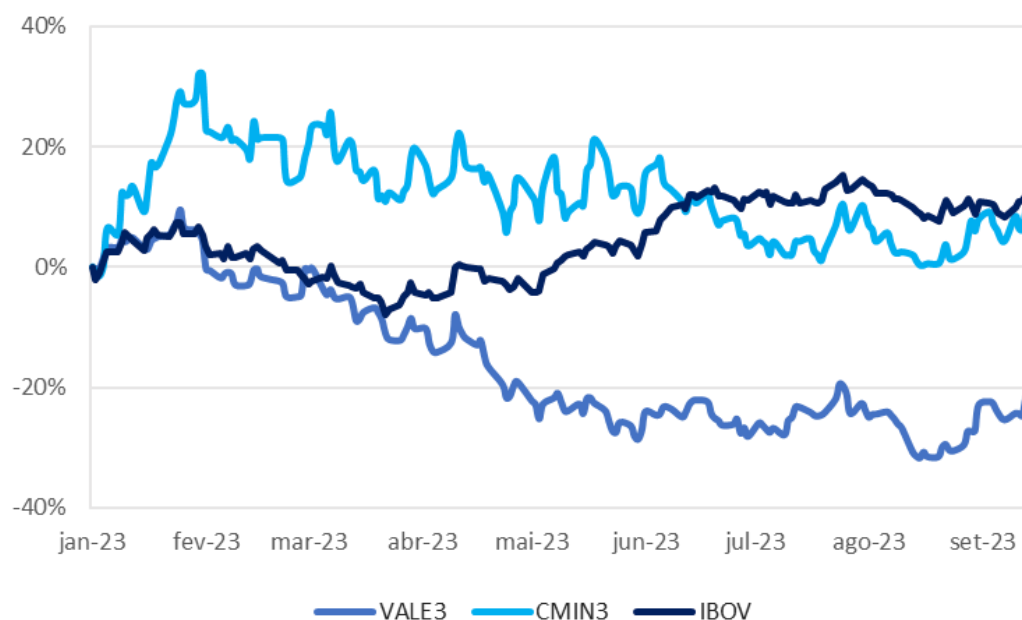
2Q23 Key points to remember

After presenting our outlook for the sector, we will briefly analyze the main factors that influenced the performance in 2Q23 of the two companies that are part of our coverage of the Latin American mining market. We will then present our assessment of the future trends we expect for each of the companies.

Vale: Net profit was negatively affected by non-recurring effects, giving us the impression of **(i)** results with a neutral bias. **(ii)** Vale revised its C1 guidance to US$21.5-22.5/t (vs. US$21/t previously), raising the cost target, in line with what we had already expected. **(iii)** The realized price for fine ore was US$98.5/t (vs. -3.4% Genial Est.), and C1 was +26% above the previous guidance, at US$26.5/t. **(iv)** Freight costs fell to US$17.6/t (vs. -15% y/y), even with the rise in SSY (Tubarão-Qingdao), considering that Vale operates with its own fleet and doesn't feel the oscillations as much, which partially offset the higher C1, compared to our estimates.

CMIN: Growth thesis seems to be gaining momentum, with the Company **(i)** potentially exceeding its volume guidance of 39-41Mt for 2023. However, it's important to remember that the current orientation corresponds to the initial estimate provided for 2022 without the adjustments that came in over the past year. **(ii)** With the fall in the reference curve for iron ore between the average of 1Q23 and the average of 2Q23, CMIN's realized prices fell back sharply, and revenue contracted -11.1% q/q. **(iv)** We saw COGS/t of R$211/t (+1.0% vs. Genial Est.) with a slight improvement q/q, but still at high levels, also burdened by higher purchases from third parties. **(v)** EBITDA fell by half, -45.6% q/q, but above our projection (+3.6% vs. Genial Est.). **(vi)** Net income was stable q/q, with a non-recurring effect having a positive impact.

Graph 13. Performance of mining stocks



Soure: Genial Investimentos, Bloomberg

Looking ahead...

As we have commented, in this chapter 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

What's new?

Between Vale's 2Q23 results and the date of publication of this report, two relevant facts came out that we believe are important to comment on a little more.

Vale is jointly and severally liable in the British court case against BHP. At the beginning of last month, on August 7, the British courts made a decision to include Vale as a joint tortfeasor at the request of BHP in a British court case about the 2015 Mariana (MG) accident. We should remember that the accident occurred at the Fundão dam, operated by Samarco, which in turn is a joint venture controlled by Vale and BHP.

As an Anglo-Australian mining company, BHP has registered offices in both England and Australia. Apparently, there would be a pretext for opening the case against BHP in London. The lawsuit itself is not new and has been ongoing since 2018. Vale had already been joined by BHP in the lawsuit with a request for legal solidarity in December 2022, and at the time the Company had appealed. So, this recent decision in August was announced after Vale lost at first instance.

With the decision, Vale exposes itself to a 50% stake in a potential US$46bn litigation, according to our estimates. We emphasize that the lawsuit does not yet have a defined value but is being supported by more than 720k Brazilians who have signed in favor of reparations via the British courts. In recent conversations we have had with Vale, the company commented that for the time being, it will not be making any additional provisions related to this decision, on the grounds that there are still further appeals to be made.

We agree with Vale that the case doesn't seem to make much sense, since the reparation process is already underway in the Brazilian courts, where Samarco is the defendant, and Vale and Renova are jointly liable for the costs through the Renova Foundation, which was created exactly for this purpose. In terms of assumptions for our Vale model, we follow this approach and have not added any provisions or cash outflows related to this British court case. As the appeals are exhausted, we can reinstate our assumptions. In other words, we feel it is too hasty to draw up an alternative scenario at this time.

However, we would like to make clear our concern about the possibility of a decision in favor of including Vale in another jurisdiction, since this could set a dangerous precedent, not only for the Company, but also for other miners, which end up involved in the natural risks of an extractive activity. By facing two lawsuits on the same subject, compensation could end up being doubled, given the reparations already taking place and an agreement being stitched together in Brazil, involving different fronts, such as the governments of the states of Minas Gerais (MG) and Espírito Santo (ES), the Federal Government, the Public Prosecutor's Office (MP), the State Audit Court (TCE), law firms and environmental inspection bodies, such as IBAMA.

Samarco's Judicial Recovery plan approved, removing some uncertainties. In addition to the issues surrounding the British court case, Samarco had its Judicial Recovery plan in Brazil approved by the creditors and authorized by the competent judge on August 1, thus enabling: **(i)** the restructuring of leverage to much more flexible parameters, by changing the amount of debt that was previously higher and shorter, and now falls to US$3.7bn (vs. US$4.8bn), with a long maturity and no financial guarantee (discount of 23% vs. the previous debt). In addition, we believe that the Judicial Recovery plan will **(ii)** allow the disbursement for the Mariana accident to continue, maintaining the remedies and compensations at the pace that they were already being made, and in turn will **(iii)** ensure the continuity of Samarco's operations.

However, as we have already pointed out, the Judicial Recovery plan includes a cash spending limit of US$1bn between 2024 and 2030, which may lead Vale and BHP to make a larger volume of direct contributions, since we know that Vale has already used Samarco's existing cash position on a few occasions to contribute to the Renova foundation. In other words, from now on, this card up Vale's sleeve to reduce the weight on its balance sheet should be used less often.

Even so, we believe that the US$1bn cash spending lock-up was a bargaining chip used by Vale and BHP to get the plan approved. There would have been no point in fighting for it not to be included in the plan and the creditors not feeling comfortable approving other important measures, such as the debt discount. This makes us think that despite the fact that the lock-up represents a greater potential for spending on provisions directly on Vale's balance sheet in relation to the Mariana accident from now on, the situation could be worse. It's better for Samarco to help with some level of cash outlay than not to help at all, and that's what would happen if the company was dissolved in bankruptcy after the plan wasn't approved.

In addition, as we were already more pessimistic about the need for provisioning than the guidance indicated by Vale at last year's Investor Day, once again the decision ended up having no impact on our model. Just to serve as a reminder, since April we have been considering in our model the execution of an agreement for R$112bn (~US$23bn), which would be an increase of ~20% vs. Vale's guidance for the payment flow from 2023 to 2028.

What to expect going forward?

Inventory created in 1H23 is unlikely to be fully reversed in 2H23. Even after the normalization of shipments at the Ponta da Madeira (MA) terminal, the gap formed at an unnatural level between production and sales for fines (25% vs. 18% historical average) should not be fully reversed in 2023. In our last conversation with the Company, it was made clear that Vale should opt to reinforce its inventories, which have been depleted in recent years.

Our estimate is that, depending on the price and other market conditions, Vale may start to burn some of this inventory in 3Q23 (36Mt), but we no longer expect a total reversal during 2H23. As a result, we changed our assumptions for a smoother destocking process, which in turn led to a reduction in the Target Price by -US$0.25, as shown in the table below.

Table 3. Vale's destocking process (New Genial Est vs. Old)

	Reported		New Estimate		Old Estimate	
Iron ore fines	**1Q23A**	**2Q23A**	**3Q23E**	**4Q23E**	**3Q23E**	**4Q23E**
Shipment/production (%)	68,7%	80,4%	79,2%	101,8%	81,4%	104,0%
Shipments (Mt)	45.861	63.329	72.854	83.545	74.877	85.350
Target Price Variation			**-US$0,25**		**US$16,75**	

Soure: Genial Investimentos

Costs on a downward trend compared to early stages of the year. Due to the seasonal effect typical of the second half of the year, which occurs due to lower rainfall levels, we expect an increase in iron ore production in 3Q23 and 4Q23, mainly in the Northern System, which should bring: **(i)** a greater capacity to dilute fixed costs, lowering C1 to US$21.7/t Genial Est. in 3Q23 (vs. US$26.5/t in 2Q23) and **(ii)** the normalization of costs in the Northern System in the face of an expected increase in production to 50Mt Genial Est. in 3Q23 (+27% vs. 2Q23), with no hindrance to shipments between the next quarter and 4Q23.

Even so, due to some additional costs such as **(a)** geological inflation, **(b)** new ways of operating, even with the withdrawal of some one-off expense lines, we expect costs not to return to the levels seen in the past in the short term. The reality of mining seems to be moving towards higher C1 costs.

On the freight side, our projection is that the slight reduction in SSY during the course of 3Q23 should also have almost none effect on Vale, which has its own fleet of vessels. We believe that freight will be US$17.9/t in 3Q23 (vs. US$17.5/t in 2Q23), slightly altering our assumptions for a lower front-end cost, since the company surprised us positively last quarter.

Table 4. Vale's freight cost (New Genial Est vs. Old)

	Reported		New Estimate		Old Estimate	
Freight cost	**1Q23A**	**2Q23A**	**3Q23E**	**4Q23E**	**3Q23E**	**4Q23E**
Cost per tonne	17,8	17,5	17,9	18,3	18,5	18,9
Target Price Variation			**+US$0,20**		**US$16,75**	

Soure: Genial Investimentos

As we commented in our last report (Vale 2Q23: Touching a sore point...), we were already using a more pessimistic assumptions for 2023 in relation to C1, so guidance's revision to US$21.5-22.5/t came to be in line with our expectation that Vale would not be able to reach the cost sizing given by the previous guidance. This means that, even though the market had a negative reaction due to this news, for us there was a low modeling impact.

On this topic, we continue with the assumptions we were using before, which mean that C1 is projected at US$23.4/t Genial Est. in 2023. It is important to remember that this figure includes third-party purchases, and the guidance that Vale publishes excludes them. If the exclusion is made, our estimate is very close to the top of the guidance's upper band (US$22.5/t), so after the adjustment, we believe that the numbers delivered from now on should help reduce C1 until it reaches the new figure.

The briquettes give us hope for better days. In addition, the event left us optimistic about new agglomerated products, especially briquettes, which can be used in an electric arc furnace, diluted with scrap, or a coal-fired blast furnace, but with fewer CO_2 emissions. We believe that demand for briquettes is likely to be higher from now on, considering that China has CO_2 restrictions in place due to the signing of the Paris agreement and is therefore placing a cap on crude steel production, as we commented at the beginning of the report.

With the increased penetration of briquettes, in addition to the added premium (which could rise from the current US$4/t to +US$12/t in the long run), Vale should keep demand at a higher level of resilience, since steel mills may look for more briquettes to produce additional steel without emitting as much CO_2. Even though demand in China is not very hot due to the real estate market, we see car production for flat steel and steel exports to other global markets as fronts for potentially maintaining blast furnace utilization rates at good levels.

Although this represents a major upside for the future, in the short-term Vale has already started testing its first green briquette plant, at the Tubarão terminal unit, which is being sent directly for industrial checks and customer validation. After years of development, the official start-up of the first plant is scheduled for the end of 2023, and of the second for the beginning of 2024, thus adding an additional capacity of +6Mtpy, which is already considered in the guidance released by the company previously.

Northern system in the spotlight. Responsible for most of the expected increase in production of fine ores, S11D is designed with a capacity of 120Mtpy (vs. 70Mtpy in 2022), with the ramp-up of the expansion scheduled for 2026, and which is already making 51% physical progress. In addition, another relevant part of the capacity addition could come from Vargem Grande, with the expansion of the Horizontes and Tamanduá mines. We believe that the ROM capacity for the operation of the VGR1 plant will be increased, with both expected to begin in 2024, adding +17Mtpy to current capacity, which should then reach a total of ~50Mtpy. We highlight that the expansion still depends on environmental licenses.

Last but not least, the Capanema project increases the flexibility of the Southeast System, producing 18Mtpy of fine ores through a natural humidity process. Currently at 52% physical progress, the project is expected to be delivered in 1H25.

Although we have no news on the figures, since all the projects are already included in the guidance updated at the end of last year, we see a good margin of safety, considering the effects of depletion, licensing delays and other factors that could act in the opposite direction to the increase to 360Mt in 2026.

Therefore, with the start-up and ramp-up of projects that should bring the mix to average quality at 64% by 2030+ vs. 62.4% currently, we believe that higher premiums are to come, reinforced by the need for global decarbonization, since better quality ore together with ingenious solutions for briquettes end up reducing the i.o. processing steps and emitting less carbon dioxide for steel production.

Sale of Basic Metals unit stake could boost dividends. Following the announcement of approval of a 13% minority stake sell in the unit for the energy transition, acquired by the JV between PIF and Ma'aden, management commented that of the total of US$3.4bn, only US$1bn should go to the basic metals balance sheet, with the remaining US$2.4bn remaining in the Vale holding company. As such, we see a great possibility for this amount to be distributed to its shareholders, either in the form of dividends or share buybacks.

With the closing of the transaction expected for the beginning of 2024, we believe that the operation will help even more in the capacity to execute the projects in base metals, even though we are conservative in relation to the respective guidances of +300Ktpy in nickel, and ~900Ktpy in copper. As we have mentioned in past reports, we would have liked to have seen a greater share of the stake that was sold going to an operator in the energy transition chain business, rather than to an investment fund, which is a financial player.

However, we still believe that the unit was sold at a good price (EV/EBITDA 24E of 7.3x), and the US$2.4bn retained can be returned to the shareholder, representing an extraordinary yield of around ~4% today, bringing our **24E dividend yield** estimate to **14.8%** vs. 10.7% previously.

Brazilian cave laws: How do they impact Vale? Brazilian legislation distinguishes four levels of importance for natural caves: maximum, high, medium and low. Caves of maximum importance are protected from irreversible negative impacts and are therefore restricted from a series of operations, such as mining, infrastructure, highways, tunnels, etc.

At the beginning of 2022, former president Jair Bolsonaro signed a decree allowing construction activities inside these caves classified as being of maximum importance. However, Ricardo Lewandowski, a recently retired justice of the Federal Supreme Court (STF), suspended this decree within a month of signing it and the status of the permission to explore activities in the caves returned to the previous level. As a result, Lewandowski's temporary suspension is being analyzed by the STF, since it was a non-collegiate decision, with an initial approval rate of 3 to 0.

Regardless of the STF's collegiate decision (with no date yet), we believe that there is a possibility that the current government will re-evaluate and modify the cave law (perhaps with different specifics to those approved in the first decree). This is mainly due to the fact that it not only prevents Vale from expanding its mining operations, but also creates several obstacles for various infrastructure projects scheduled to be launched in Brazil. Obviously, if the law is made more flexible in relation to the parameters we have today, this generates a positive optionality that we believe is not contained by consensus.

On our side, we also think it's prudent not to include the effects of this flexibility in our model, not least because, as far as is currently known, it would be very difficult to price them correctly. But they would certainly generate an interesting value, especially for Vale's Northern System.

Our Take on Vale

We know that Vale's shares were hit hard YTD (-23.13%), due to the discussion about the macro scenario in China, combined with the non-recurring effect of Ponta da Madeira. However, we've listed some triggers, both short-term and long-term for the stock to rise.

Short term: Despite the market's bad mood since the beginning of the year with Vale, we believe that the company's price is attractive, considering the short-term microeconomic issues for the coming months, involving internal execution for the reversion to the mean, counting on **(i)** an improvement in C1 costs during 2H23, from the normalization of shipments from the Northern System, coupled with a **(ii)** slight destocking process, which even though it has recalibrated to softer assumptions than the previous ones, still unlocks value at the current share price level and **(iii)** an expectation of extraordinary dividends of US$2.4bn (or ~R$11.7bn), leaving the shares at an entry point that we find interesting.

Long term: Looking at the long run, we also like the new capacity addition projects, especially raising the mix's quality. After Vale's presentation at the analyst event earlier this month, we became more optimistic about the company's future. In conversations we had with some institutional investors after the presentation, we also received positive feedback from them about Vale's plans for the future, especially with the start-up of the Torto dam in the company's figures for 2024 and with the briquette's Tubarão plant, which is due to come on stream by the end of 2023, followed by a second plant in early 2024. This will add an additional capacity of +6Mtpy.

We believe that briquettes should have a very good acceptance for the steel market, and assist in a long-term increase in premium realization, reaching US$12/t (vs. ~US$4/t today) in 2026, by adding something around +US$5/t Genial Est. in iron ore glomerates. In our view, this favors Vale's demand even considering a declining market in China, making the customer base more resilient due to lower CO2 emissions from briquettes. C02 emissions are one of the reasons behind the reduction in crude steel output by Chinese steel mills. Now, if briquettes help steelmakers to produce the same amount of steel with less C02, it is possible that the cuts in production forecast for the coming years will become smaller, and Vale is well placed to catch this decarbonization trend.

The other +US$3/t Genial Est. to close the account and reach US$12/t should come from efficiency gains in the pelletizing process through the Torto dam and better market conditions in the near future, mainly due to an increasing appetite from the Arab Emirates, as we have already commented in this report in the price analysis chapter of the iron ore curve.

So, if China continues to slow down, will Vale still grow? Trying to be as objective as possible: we believe so. For us, the inversion of the age pyramid in China is a watershed for the thesis of growing demand for metal commodities and the country's real estate market shows signs that the crisis is linked to structural components and not momentary ones. However, China will continue to be a major consumer of iron ore, even if it grows less from now on.

Social housing plans by China's Ministry of Housing and Urban Development (MOHURD) are expected to grow by +50% y/y in 2023 and occupy 1/5 of China's entire housing construction area, and this expansion seems to be going unnoticed by much of the market. Among other reasons (such as investments in infrastructure), we believe that social housing should continue to support iron ore prices at very attractive levels, offering an interesting viability solution for middle-class Chinese citizens to live in urban centers.

And even though the market for commercial property owned by private developers is in decline, as car production in China continues to gain momentum and steel exports also become an alternative to steel mills, we believe that the utilization rates of blast furnaces, which currently stand at ~92%, will continue to be at high levels. In addition, there is every reason for long-term growth, with briquettes and other agglomerates adding a premium and helping to offset a potential drop in the realized price of fines.

Adding exogenous factors to the company's account, we see iron ore currently at a level of ~US$120/t even in a scenario where the market has been hammering away at a pessimistic tone for Chinese growth. We agree that China's current situation is showing a weaker industrial growth than it has been in the past, but throughout the report we have tried to find grounds to justify the curve at the current level, and we see some sense in the curve not having slowed down so much even with the macro data showing all this bad humor.

Although we believe that the iron ore curve is still descending, we have revisited our assumptions for a slightly softer fall, which has also led to a change in our Target Price of +US$0.30. After updating our 2023E curve to US$110/t in 3Q23 and US$100/t in 4Q23, we saw EBITDA rise slightly. That leaves Vale trading at a **23E EV/EBITDA** of **3.8x** and **24E** at **4.2x**, by our calculation (vs. a historical average of 4.3x), which suggests that the stock price is discounted.

Table 5. Impact of i.o. curve in our Vale's model (New Genial Est vs. Old)

	Reported		New Estimate		Old Estimate	
Iron Ore 62%	**1Q23A**	**2Q23A**	**3Q23E**	**4Q23E**	**3Q23E**	**4Q23E**
Projection Curve	126	111	110	100	100	95
Target Price Variation			**+US$0,25**		**US$16,75**	

Soure: Genial Investimentos

Sensitivity analysis: how irrational is Vale's current price? When we analyze the current trading price of the Company's shares, and stress test it from the perspective of the 62% Fe iron ore curve at the end of 2023 at US$100/t, assuming a reduction of -US$5/t per year until 2028, we see that our curve results in a 12M Target Price of R$82.8 (~R$83,00), but which gains an even broader upside as it approaches the current level at which the commodity trades (US$110-120/t).

In addition, another metric we consider important is a **linear analysis**, showing the iron ore price implied by Vale's current market value. With the current value at ~R$70 per share, **we see an implied iron ore price of US$75/t, a figure well below the 62% Fe spot curve, at -37.5% discount**. This means that Vale's current market price has a very elastic safety margin, which seems irrational to us. We've been pointing this out for a long time. In our sector report for last quarter, we ran the same sensitivities. Since then, the price of iron ore has risen, but Vale's price hasn't moved much, once again indicating irrationality and highlighting the opportunity to enter in a long position.

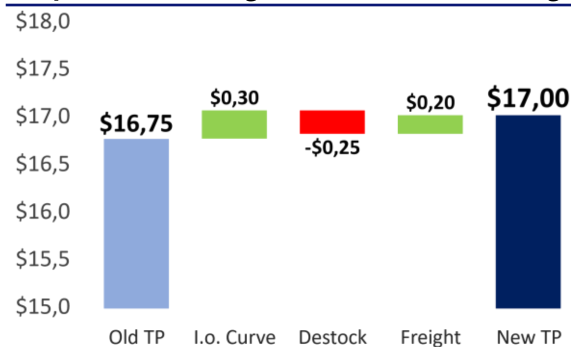
Table 6. Vale's stress test

		Iron Ore 62% Fe 2023E (US$/t)				
		90,0	95,0	100,0	105,0	110,0
Exchange Rate (R$/US$)	4,67	42,0	60,7	79,4	98,1	116,8
	4,77	42,9	62,0	81,1	100,2	119,3
	4,87	43,8	63,3	**82,8**	102,3	121,8
	4,97	44,7	64,6	84,5	104,4	124,3
	5,07	45,6	65,9	86,2	106,5	126,8

		Iron Ore 62% Fe Linear (US$/t)				
		65,0	70,0	75,0	80,0	85,0
Exchange Rate (R$/US$)	4,67	30,4	49,0	68,2	86,9	105,5
	4,77	31,0	50,1	69,6	88,7	107,8
	4,87	31,7	51,1	**71,1**	90,6	110,1
	4,97	32,3	52,2	72,6	92,4	112,3
	5,07	33,0	53,2	74,0	94,3	114,6

Soure: Genial Investimentos

Graph 15. Vale's Target Price – What has changed?



Soure: Genial Investimentos

Graph 14. Vale – 12M Forward EV/EBITDA

Soure: Genial Investimentos, Bloomberg

We therefore reiterate our **BUY rating** for Vale, with a **12M Target Price** for **VALE3-B3** at **R$83.00** and **VALE-NYSE ADRs** at **US$17.00 (vs. US$16.75 previously)** , which implies an **upside** of **+20.40%** at the last market close. It is important to mention that the changes in assumptions that we quoted throughout the report, such as **(i)** the new projected iron ore curve, with a less intense drop in 2023 and 2024 and **(ii)** the cooling down of freight costs, both came together to created an **increase in the Target Price** that more than offset the effect of the reduction in the Target Price related to **(iii)** the slower pace of destocking than we had initially anticipated.

CMIN

What to expect going forward?

Production outlook remains strong, we have adjusted assumptions to slightly exceed guidance. After a record-breaking month for production, our expectation is that CMIN will maintain a good operational momentum, possibly bringing even better numbers in 2H23, mainly due to a re-establishment of the climatic seasonality, in which the absence of rain should help the Company exceed its guidance of 39-41Mt for 2023, with our projection updated to ~42Mt Genial Est.

Despite this, the strategy of increasing the share of third-party ores in its sales, buying around ~3Mt per quarter (vs. ~2Mt habitually), ends up consolidating a lower margin, since profitability is close to only ~US$5/t, negatively impacting the product mix of its own production, which has a more elastic margin.

Low-grade supply affects the realized price. With the global situation for the ferrous commodities market, CMIN is giving preference to low-grade iron ore, both in its own production and in purchases from third parties, as demand remains interested in this type of lower-quality compound, with less room for higher-quality products in the short term. Interestingly, this actually seems to be true for Vale as well and helps explain why current premiums for fines are so shriveled compared to the not-too-distant past (with a considerable discount of almost 6x compared to the historical average).

Therefore, with CMIN delivering ore with a lower iron concentration, the realized price ends up having a significant impact, especially in relation to the 62% Fe curve. We currently have a projection of US$69/t Genial Est. for 3Q23 (vs. a curve of US$110/t 62% Fe, offering a discount of -37.3%).

Possibility of new hedges after a potential exhaustion of iron ore price endurance. On the other hand, in a move that we see as positive for CMIN, especially given the good timing of the commodity's recent price performance, which stands at US$120/t (vs. US$105/t four months ago), the possibility of hedging positions to lock in the realized price with the current curve. Our view is that, in addition to providing greater predictability in the short term, hedging can eliminate some of the risks regarding the durability of this iron ore price level (which, in our opinion, is very high).

As we've commented throughout the report, we don't believe that the price of iron ore will remain the same, and we have an updated curve for the end of the year of US$100/t (which implies a drop of -16.7% from a price perspective, which has already shown considerable resilience even in a challenging scenario so far. We believe it will be difficult for this resilience to continue as Brazilian mining companies enter the period of positive seasonality and more i.o. supply is added to the seaborne system.

It is also important to note that, unlike Vale, which does not choose to lock in prices through hedging mechanisms, CMIN seems to have more flexibility to adjust in this regard than its bigger brother. This is a point that we think is favorable for the Company, especially when we spoke to them recently and were given the impression that the days of iron ore prices at this level were numbered. This means that the company seems to be reading the market more rationally and adapting to price dynamics in a more opportunistic way, something that Vale is too locked into its policies to be able to do.

Costs should continue to improve. Opening the year with difficulties in terms of costs, with setbacks on MRS's rail lines due to a landslide, which resulted in the payment of higher fees for upgrading third-party lines and for adjustments to route extensions, the outlook is that in 2H23 the figures should continue to improve. With this situation at MRS having been completely resolved last quarter, but with the figures suffering from the effect of stock in transit due to the natural delay in passing on costs through the P&L, our thesis is essentially based on **(i)** the greater capacity for cost dilution that more favorable seasonal production brings, which should grow to 12.2Mt Genial Est. in 3Q23 (+9% vs. 2Q23) and **(ii)** a slightly lower volume of purchases from third parties than last quarter (although still at high levels), which should, in combination, help to improving C1 cost dynamics, of which we have a projection of US$20/t Genial Est. for 3Q23 (vs. US$22/t in 2Q23).

As for freight, unlike Vale, which operates with its own fleet, CMIN is more dependent on the spot curve. The SSY reference (Tubarão-Qingdao) has been moving towards an average of US$20/t in 3Q23 (vs. US$21/t in 2Q23). This should reflect in a slightly lower cost for CMIN next quarter, as it suffered from the increase in this cost line in the past result.

Our take on CMIN

Starting to develop the "growth" footprint that thesis has, CMIN is bringing in figures for its production that are beginning to show the reason for the great expectation for its future, especially after a turbulent year in which projects and appropriate guidances were postponed and downgraded.

Nonetheless, in order to strengthen the relationship with potential customers for what is to be produced in, the company recently announced an agreement with Itochu Corporation to supply 6Mtpy of iron ore from the Casa de Pedra mine, through pre-financing for the development of the P15 project, strengthening reliability for the new start-up and ramp-up deadlines that were given at the end of last year.

Although in a challenging environment for the future, the short term is proving to be promising, in which we believe that CMIN should take advantage of hedge positions to lock in high prices. At the same time, we don't think that the long term will have as many great opportunities for prices as we are seeing today, which makes life difficult for the Company and places great macroeconomic uncertainties on the dates when CMIN is expected to reap the rewards of various projects capable of generating value and leveraging its growth.

We expect that, despite the moment being favorable for low grade, CMIN will end up unlocking greater production of higher quality iron ore to compensate for a potential drop in price through more robust premiums, a strategy that Vale is adopting and we believe is the future of mining. Until we see signs of quality penetration in the volume sold by CMIN, we believe that the realized price will be a deflector of better results.

Trading at an **EV/EBITDA 23E** of **4.7x** and **24E** of **5.9x** (vs. a historical average of 3.8x), we reiterate our **NEUTRAL rating**, with a **12M Target Price** of **R$5.00**, which implies an **upside** of **+11.85%** at the last close trading section.

Graph 16. Vale – 12M Forward EV/EBITDA

Soure: Genial Investimentos, Bloomberg

Appendix: Vale

Figure 1. Vale – Income Statment in USD Millions (Genial Est. 2023-2028)

Income Statement	2023E	2024E	2025E	2026E	2027E	2028E
Net Revenue	**41.819**	**40.281**	**41.690**	**43.093**	**43.562**	**44.055**
(-) COGS	(23.125)	(24.156)	(25.525)	(27.190)	(28.418)	(29.596)
Gross Profit	**18.694**	**16.125**	**16.166**	**15.902**	**15.144**	**14.459**
(-) Expenses	(3.720)	(4.141)	(3.050)	(3.166)	(2.711)	(2.635)
Adjusted EBITDA	**14.974**	**11.984**	**13.115**	**12.737**	**12.433**	**11.824**
(-) D&A	(3.153)	(3.326)	(3.471)	(3.614)	(3.752)	(3.883)
EBIT	**11.821**	**8.658**	**9.644**	**9.122**	**8.681**	**7.942**
(+/-) Financial Result	(1.722)	(1.655)	(1.651)	(1.552)	(1.683)	(1.494)
(-) Taxes	(2.594)	(1.175)	(1.308)	(1.274)	(1.221)	(1.170)
Net income	**7.504**	**5.828**	**6.686**	**6.296**	**5.778**	**5.278**
Profitability						
Net margin (%)	17,94%	14,47%	16,04%	14,61%	13,26%	11,98%

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

Cash Flow (FCFF)	2023E	2024E	2025E	2026E	2027E	2028E
Net Revenue	**41.819**	**40.281**	**41.690**	**43.093**	**43.562**	**44.055**
(-) COGS	(23.125)	(24.156)	(25.525)	(27.190)	(28.418)	(29.596)
Adjusted EBITDA	**19.936**	**15.144**	**16.371**	**16.159**	**15.981**	**15.498**
Adjusted EBIT	**16.782**	**11.817**	**12.899**	**12.545**	**12.229**	**11.616**
(-) Taxes	(2.594)	(1.175)	(1.308)	(1.274)	(1.221)	(1.170)
(+) D&A	3.153	3.326	3.471	3.614	3.752	3.883
(+/-) Δ WK	(1.813)	(426)	680	(214)	5	(56)
(-) Capex	(5.928)	(6.137)	(6.284)	(6.321)	(6.354)	(6.302)
FCFF	**9.601**	**7.406**	**9.459**	**8.350**	**8.411**	**7.971**

Appendix: CMIN

Figure 1. CMIN – Income Statment in BRL Millions (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 2. CMIN – Cash Flow in BRL 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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