genial | Equity Research

Metals & Mining

Has China's economic model completely run out of steam?

LatAm Metals & Mining

Main takeaways on China:

(i) The situation is not as bad as it seems for iron ore, and the V-shaped recovery in 2H23 proves that even though the effects of the economic slowdown are already being felt, the price of the commodity has risen by +38% in 4M last year; **(ii)** But what about the fall in 2024? Today, at ~US$110/t, even though there has been a sharp downward trend of -20% YTD, the 62% Fe reference price remains +20% above the historical average; **(iii)** Will the real estate market continue to be a problem? Our opinion is that even the continued infusion of liquidity into the real estate market by the government is unlikely to convince the population to buy more property; **(iv)** Wouldn't the social housing program help? Investors have to remember that this program is designed to take place over the next 4-5 years, so it won't move the demand needle too much in the short term; **(v)** What are the main thoughts of investors about the fate of the Chinese economy? We had several rounds of **conversations with different fund managers** and in this report**, we have compiled the main concerns, beliefs, and different points of view on China's economic slowdown**; **(vi)** In our well-established chapter "**So, where is the iron ore price heading?**", we follow up on the balance between **supply** and **demand** for the commodity and give a projection of our new curve. Acting as a spoiler, our projection becomes **more conservative**. Even so, the **average price for 2024E and 2025E** remains **above US$100/t**, which we think is an **attractive price**.

Vale: too discounted to ignore

(i) Lower price realization value in iron ore, due to the 62% Fe benchmark reduction we now estimate vs. previous curve; **(ii**) Reduction of the Enterprise Value (EV) in our model, due to **adding the NPV of the negative cash flow** with the **payments of the adjustments** charged by the Brazilian government, through the Ministry of Transport, **on the concession of the EFVM** (Vitória-Minas Railroad) and **EFC** (Carajás Railroad); **(iii)** Slight hardening of assumptions related to payment terms of the **Mariana settlement** vs. previous estimates; **(iv) All-in premium** projected at **US$2.7/t 24E**, below guidance of US$3-4/t; **(v) C1 cost ex**. **purchase from third parties** projected at **US$22.9/t 24E**, in line with the upper guidance band of US$21.5-23/t; **(vi) Iron ore production** estimated at **315Mt 24E**, in line with the intermediate guidance band of 310-320Mt, even though Vale's performance is giving indications that it may reach the upper band; **(vii)** Modification to our discount rate, as we cut our projection of China's long-term GDP (2030) to 3.8%, which infers a **reduction in our** perpetuity growth **rate by -4p. p** vs. the rate used previously; **(viii)** Due to the changes in assumptions, the **12M Target Price** was **cut to R$72.30** vs. R$82.50 previously for **VALE3-B3**. For the **NYSE ADRs**, the **12M Target Price** is now **US$14.50** vs. US$16.75 previously. However, we reiterate our **BUY rating,** as the level of valuation hits historical lows.

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Companies

VALE US Equity
Buy

Price: US$ 12.11 (01-Apr-2024)
Target Price 12M: US$ 14.50 (NYSE)

VALE3 BZ Equity
Target Price 12M: R$ 72.30 (B3)

CMIN3 BZ Equity
Buy

Price: R$ 5.31 (01-Apr-2023)
Target Price 12M: R$ 6.20

CMIN: market is underestimating the company's potential

(i) Lower price realization value in iron ore, due to the 62% Fe benchmark reduction that we now estimate vs. the previous projection; **(ii)** Maintenance of the same production level in our model as the previous report on 4Q23 review, with **43Mt 24E** vs. 42-43.5Mt in the guidance; **(iii)** Expectation of a **better balance between own production vs. third-party purchases**, with an increase of +2.5Mt vs. 2023 in own production and a reduction of -2.5Mt in purchases from third parties; **(iv)** This situation should **increase CMIN's margins**, and as the movement follows is **independent path from price of iron ore**, we still believe that the **prospects for the company are good in the short term** and that the **market is underestimating the company's potential** in relation to the reduction in purchases from third parties. The proof of this was precisely the **strong 4Q23 result**. We believe there is more to come; **(v)** As a result of the changes in assumptions, the **12M Target Price** to **R$6.20** vs. R$7.00 previously. Even so, we also reiterate our **BUY rating**.

Summary

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Introduction

We believe that stocks across the Metals & Mining sector under our coverage have been largely influenced by two situations: **(i)** news flow, in the specific case of **Vale**, through the overhangs that the company has been going through and **(ii)** uncertainties about China. There is no denying, there is a strong correlation between the macro environment and the shares of commodities trading companies, we believe that the questions raised by the market in relation to China are acting as a moderator of the buyer flow in **Vale and CMIN** shares **in an intense way**. On the other side of the spectrum, although it is not the focus of this specific report, the shares of Brazilian steelmakers (**Gerdau, CSN and Usiminas)** have also suffered greatly from the slowdown in the Chinese economic environment, through the increase in crude steel exports from China and, consequently, the greater penetration of Chinese steel imports in Brazil.

We highlight that we are not optimistic about China's situation, it just seems to us that the worst-case scenarios are being priced in and don't always occur. We don't see China on its best days, but the situation may not be as bad as some investors think, mainly for mining companies. Even though we understand that the situation in the real estate market is structural (and not just cyclical), having already published several reports on the subject, the latest of which is attached (Metals & Mining: A deep dive into the Chinese government's upcoming stimulus), it still seems to us that some investors are carrying too much pessimism in their biases.

What is this report about? In the first part of the report, we will address the topic we mentioned above, through different points: **(i)** what we are hearing from investors on the subject of China's growth, **(ii)** how the market is reacting to this subject within assets linked to the Chinese economy and **(iii)** what our outlook is **going forward**, opening up the topics on which we agree with the consensus and which we differ, reviewing our iron ore curve, once again, in our well-established chapter "**So, where is the iron ore price heading?"**.

We conclude the general reasoning of our thesis on China's macroeconomic environment in the chapter **"Our take**", focusing on what investors can expect with regard to the consumption of metal commodities over the next few years. In addition, we will expand on the effects of our new iron ore price curve projection on the valuations of **Vale and CMIN**, as well as other changes that would cause an impact in the cost of capital, and therefore the discount rate used in our models for companies in the mining sector.

In the specific case of **Vale**, we will publish another report in the next few days, pondering what could be affecting the shares more: whether it's the macro situation in China through the slowdown in iron ore or the overhangs. In this next report to be published, we will open up our assumptions on the agreement regarding the Mariana (MG) accident, on the railroads (EFVM and EFC) and on the impact of iron ore. Although we already have all the calculations ready, and the **changes** in **Vale** 's **12M Target Price** described in this report already allude to these issues, we postulate that it would be better to devote an **exclusive space** to commenting on Vale's **microeconomic aspects,** since the **focus of this report is to go deeper into China's macroeconomic aspect**. If we had chosen to describe both subjects in a descriptive manner, the extensive length of the report could, in a way, discourage investors from reading the full report.

China: the great doubt has been priced as a certainty...

Genial Est. vs. consensus. To put it in perspective, we warned about everything that is happening now early ahead. Our view, at the beginning of the process of China's reopening in 2023, consolidated a bearish sentiment about macro indicators going forward. So, at that early stage, our opinion was against consensus. Between November 2022 and April 2023, a significant portion of the market believed that there was a considerable level of repressed consumption, due to the high accumulation of savings and subsequent spending to be unlocked with China's exit from the severe lockdown system (which became known as Covid-zero). As a result, the country's economy could experience strong economic growth in 2023. As we now know, that didn't happen, and we were assertive in our view from the beginning to the end of last year.

In other words, some investors still expected today's China to behave in the same way as in the last decade. This was true both for **(i)** the reopening process, which began at the end of 2022, with the consensus believing in a strong industrial recovery in 2023 after the end of the Covid-zero policy, as well as **(ii)** better sales in the real estate market after the end of the post-pandemic uncertainties, and **(iii)** incentive packages to rescue sectors, when the first two points ended up not happening.

Despite the countless times that the news reported that stimulus packages would be delivered to the Chinese economy for much of 2023, until then, we were adopting a tone of conservatism in relation to the intensity of these resources that the government could offer, especially specific to the real estate sector. Even with macro data indicating the imminence of aid packages, if the government maintained the more interventionist stance seen in the past, with manufacturing PMIs in most months of 2023 being released in the contraction zone (below 50pts), we still saw little chance of direct stimulus from the government, as was done in the pre-pandemic years.

So, there was no stimulus in 2023? Our view was that the government would try to boost economic activity by mainly changing macro policy, by reducing interest rates and cutting compulsory rates, as well as some one-off measures in the real estate market. Nothing much more than that. We believe that for most part of last year, the government's stance was less interventionist. This is especially true if we compare these rate adjustments with the direct injection of capital seen in the last five years, before the pandemic (2013 to 2018), through extensive stimulus packages. The amount totaled an average of ~US$130bn per year during this period, considering only resources redirected for growth and aid to the real estate market.

The situation is not as bad as it seems for iron ore. The market seems to like extremes when it comes to China. In a timeframe of just a few months, the mood of investors changed dramatically along 2023, from bullish sentiment in January/February to skepticism in April/May, further downgrading for a strong pessimism from the middle of the year onwards. In other words, in a matter of a few months, consensus expectations went from heaven to hell.

China ended up developing less than most had expected at the beginning of last year, stumbling and generating uncertainty about whether it would meet its 5% GDP growth target, which had already been announced below market expectations at that time, besides coming up in line with our projections. After a few months, investors became so bearish that they irrationally discounted, in our opinion, some important assets that had a strong correlation with China's economy.

Despite the disappointment with China's macro data, which fell short of the explosion of economic activity that the consensus had "dreamed" of, and which caused the price of iron ore to contract (hitting the bottom of US$102/t in August vs. US$135/t in March), the commodity experienced moments of strong growth from September until the end of the year, rising +38% in just 4M, to reach ~US$140/t in the last days of December. So, if we look at the price of iron ore over the course of 2023, the curve more closely resembles the shape of a "v". In other words, it has shown a voracious and rapid recovery in price, even with the economy already shrouded in pessimism.

Graph 1. Iron ore 62% Fe 2023 price (US$/t)

Source: Genial Investimentos, Bloomberg

Graph 2. Iron ore 62% Fe 2024 YTD price (US$/t)

Source: Genial Investimentos, Bloomberg

But what about the drop in 2024? Our opinion is that the price of iron ore, even with the sharp drop in the first quarter, registering a YTD retraction of -20%, to ~US$110/t vs. ~US$140/t in the beginning of the year for the 62% Fe reference, still presents a curve that is at a very attractive level. We don't understand why mining stocks investors are so terrified, considering that even in the event of this sharp fall, the 10-year historical average for i.o. is ~US$90/t. When the commodity is above US$100/t, we already consider this to be a good level for mining companies.

At ~US$110/t, even though it has slowed down a great amount YTD, the price of the 62% Fe benchmark remains +20% above the historical average. It's true that China is growing less (~5%), but the supply of iron ore is also tighter than it was years ago. In 2016, the benchmark 62% Fe price fell below US$40/t, but China's GDP grew by almost +7% in the same year. The price of the commodity is much higher now, with low GDP. The reason for this is more linked to the production of the majors' players (Vale, BHP and Rio Tinto) than to demand. We believe that many investors put so much emphasis on where the demand is heading but end up overlooking the supply side of the equation.

Will the real estate market continue to be a problem? Much of our counter-consensus approach to China's reduced growth in 2023 before the year start was based on the perception that the real estate market would encounter major difficulties. We believe that the sector's weak situation is structural and not cyclical. So, even if Covid-zero was one of the catalysts in the process that drove potential home buyers away, by increasing uncertainty, sales were going to start falling more emphatically at some point, regardless of the lockdowns of 2021-22.

Government interventions to prevent a loss in the supply of real estate ended up allowing the real estate market to become more leveraged than is financially healthy. The Net Debt/Equity indicator of the top 5 Chinese developers is an average of ~140%, which proves that the leverage ratio of companies in the sector in China is almost 7x higher than what would be considered a controlled debt ceiling. Our view is that even the continued infusion of liquidity into the real estate market by the government is unlikely to convince the population to buy more property, especially in Tier II and Tier III cities. This will unintentionally lead to lower growth going forward compared to what has been reported in the past by the housing construction sector.

What do investors think about the Chinese economy?

Three red lines are turning into green lines. In the last two sector reports published prior to this one, we already indicated this trend. With increasing concern about the real estate market, as sales of new properties and launches of housing projects built by private developers are on a historic downtrend, the government is showing clearer signs of revising its discourse.

On July 21, 2023, China's government discussed increasing the stimulus to real estate construction through community investment. The design of the social housing policy began to emerge at this point, but we'll talk a little more about it later. Following Politburo meetings last year, various measures were introduced to relax the previous guidelines in an attempt to promote greater interest in buying real estate. We believe that the measures at this stage were adjustments to previous restrictions and facilitating the acquisition of loans to buy homes, so there was no direct financial stimulus from the People's Bank of China (PBoC) in the sector. Some of these measures were in opposition to the Three Red Lines, a policy enacted in 2020 by the government in anticipation of the Evergrande crisis to restrict developers from taking on debt. More on this situation can be found in our sector report from September last year, the link to which is attached (Metals & Mining: An X-ray of the exposed fracture in the Chinese real estate market).

Moving forward, the more lenient regulations were also intended to help restructure the debt of real estate developers, potentially preventing the devaluation of their bonds. The restructuring of Sunac's debt (Top 5 among the largest developers), is seen as a reflection of this change in policy. In addition, the PBoC has apparently softened its tone and recommended a new banking mandate to help the sector, which some investors have begun to call the "three green lines", aimed at facilitating unsecured loans. However, it is uncertain whether this alone would revive developers' cash flows in small and medium-sized cities, but we are convinced that it would increase speculation in larger cities.

In the last quarter of 2023 Sunac restructured ~US$10bn in onshore and offshore debt, with the market interpreting the achievement as an important milestone for struggling Chinese real estate companies. As part of the debt resolution plan, Sunac is issuing new convertible notes and bonds to its creditors, refinancing those affected. This is the first time that a local government has helped a private developer with debt write-offs (generating a discount on face value). It was also the first time that the controlling bloc offered personal assets as collateral. The restructuring was important in providing potential benchmark for developers who are also insolvent. However, it also set a precedent for the Chinese government to begin to be more lenient with its previously stricter policies on the consequences of leverage in the sector, stipulated in the three red lines.

Although the market saw it as positive move, our interpretation of this situation is that the government seemed to be more responsible about three years ago, when it implemented the Three Red Lines, than it is now. However, it was noticeable that the slowdown in the sector, caused by the limitation of developers' debt capacity and the absence of direct stimulus, has affected the outlook for GDP targets in the last three years, since capital in China is closely linked to large infrastructure projects and the housing market.

We should point out that ~30% of GDP comes from the construction sector. This high correlation of a more elastic GDP with the construction sector came after the government stimulated real estate development projects far beyond what was the fair point for real economy demand, regarding necessity for homes, at least in the last two to three decades, creating a huge inventory of real estate.

It seems to us that a more lenient tone towards the situation in which developers find themselves today is a potentially retrograde move, giving more green lights and erasing the red ones of the previous policy. However, the situation is at this difficult point for developers precisely because of the lack of responsibility in cash flow management, with the government rewarding companies in the sector that leveraged themselves to deliver more construction sites, from the late 1990s to the mid-2010s. Looking ahead to this year, the Politiburo meeting sessions, which ended a few days ago, have reinforced this thesis that a more flexible approach is underway.

Politiburo meetings in 2024: removal of an important phrase. The slogan "housing is for living in, not speculating" has been removed from Premier Li Qiang's government work report, indicating a possible change in Chinese policy to encourage investment in housing. This is the first removal of the famous phrase uttered by President Xi Jinping in the management of real estate policy since its introduction in 2019. The absence suggests that China's central government may be less concerned about capital expansion and high leverage in the real estate sector, as weak home sales and losses of more than US$100bn from bondholders have added to the pressure on current management.

Several large private developers have defaulted and are restructuring. Many believe that if the government doesn't rescue in some way, further defaults could induce panic among even the most solid state-owned developers. As with Sunac, regulators are now demanding similar debt restructurings for other insolvent real estate companies, with local governments overseeing the debt reorganization. Private developers' owners, shareholders and bond investors must bear the losses of the debt reorganization through debt and equity swaps, while leading banks will be appointed to coordinate the process.

In which way do we disagree from the consensus opinion? We have warned since the last sector report that very flexible debt restructuring can lead to impunity for risk-taking and the criteria should remain a little stricter. Although it's not necessarily the answer the market would like to hear, our view is that developers should face up to the consequences of high leverage and oversupply of real estate. For the sector to return to health environment, local governments would have to encourage significant changes in the habits of developers. The alternative of presuming aid demonstrates a clear moral hazard problem. Encouraging the sector to continue to grow, while there is already a strong houses inventory, roads that connect nothing to nowhere and ghost towns, gives us the idea that solving the problem could take years and will involve an inevitable slowdown in real estate sales and a reduction in the launch of new construction projects, which will imply a lower GDP.

So, from a fundamentalist point of view, growth is likely to be lower from now on. Although the consensus has already taken this into consideration when pricing assets, and it is no longer news to anyone, we know from conversations with investors that the market would still have a positive reading on the return of direct stimulus in the sector, what we call the "old policy". In other words, even with the large stock of unfinished or unoccupied housing, there is still hope that the government will return to the same way of thinking as in years gone by, which would return China to high single digit GDP growth. But at what cost? It seems to us that the situation will always be on the edge of the abyss, addicting the sector to stimulus and building projects without the real need for housing.

Therefore, we diverge from the consensus that stimulus would be positive for the economy at this stage. Our view is that China doesn't need any more stimulus, at least not in the same way as it has over the last decade. What it will need is to reshape its entire economy to focus more on the consumption of services than on manufacturing production. At some point the growth of basic industry will have to slow down. Of course, this would not be good news for the mining sector, given that China commands more than 70% of the demand for iron ore in the seaborne system, and that steel mills account for a large part of China's basic industry. However, the slowdown seems to us to be the natural consequence of expanding capital on the manufacturing capacity, as it has been chosen as the country's economic policy for decades. It is also important to understand that it is not only China's government that has chosen this path...

China on a similar path as Japan did. In rounds of conversations with investors, we have already heard that, apart from a few peculiarities, China is going through a similar situation as Japan. With negative interest rates and a structural pension problem, Japan is experiencing low growth rates and a period of prolonged recession. The point is that today's Japan reality will most likely be tomorrow's China. We agree with this analogy at some point, and the market is already seeing this trend play out. That's why we're bearish about the Chinese economy.

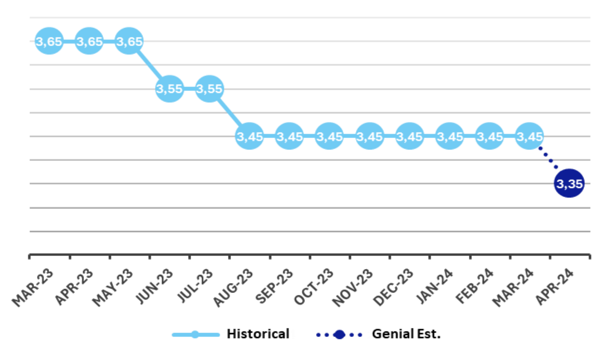
The slowdown in Japan's GDP growth rates to the world's fourth largest economy by 2024, after once being the second largest, is attributed to several factors, including the **(i)** bursting of the real estate bubble in the 1990s, which led to a **(ii)** prolonged recession, and the **(iii)** aging of the country's population. In line with the opinion of a group of investors, we also think that China could get into a situation very similar to Japan. This analogy would be pertinent since China is also going through a real estate crisis and is seeing its population shrink, with 2022 marking the first year of decline in the number of inhabitants. In other words, it's as if Japan is reproducing a piece of the path that China is yet to follow. The trajectory, however, is downwards.

With the devaluation of its currency, Japan is maintaining negative interest rates to stimulate economic activity, while other major global economies have increased theirs, considering that the world is struggling with inflation after the Covid-19 pandemic. In comparison, the RMB/USD exchange rate has also been depreciating, and although the People's Bank of China (PBoC) kept both basic interest rates stable at 3.45% (1-year LPR) and 3.95% (5-year LPR) in last meeting compared to the previous, in February the PBoC had already reduced the 5-year LPR by -25p.p, giving a real interest rate of just 3%.

Interest rate cuts could be more intense. We are projecting a drop of -10p.p Genial Est. in the 1-year LPR for the next PBoC meeting, reaching 3.35% and a maintenance of the 5-year LPR. However, we would point out that our view is based on the process of low inflation and not on the economic bias, since the government insists on limiting economic policy with a tendency to force savings due to the absence of a clear pension system. As a result, part of the market believes that the PBoC will keep interest rates at the current levels for longer, contrary to our opinion of a cut in the 1-year LPR.

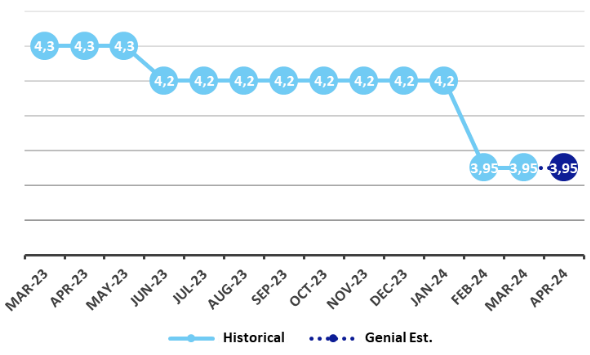
Although the pace of interest rate cuts is below potential, given the number of months in deflation, real interest is still positive and could remain so for some time (i.e. more than a year). However, it should be noted that the figure is declining compared to the recent historical average. Our opinion is that if basic interest rates were cut more quickly, since there is room to do so, real interest would probably be negative, even with low inflation. We believe it is then possible that China will once again demonstrate a similar situation to Japan, but at a previous stage.

Graph 3. LPR 1 Year (%)



Source: Genial Investimentos, Bloomberg

Graph 4. LPR 5 Years (%)



Source: Genial Investimentos, Bloomberg

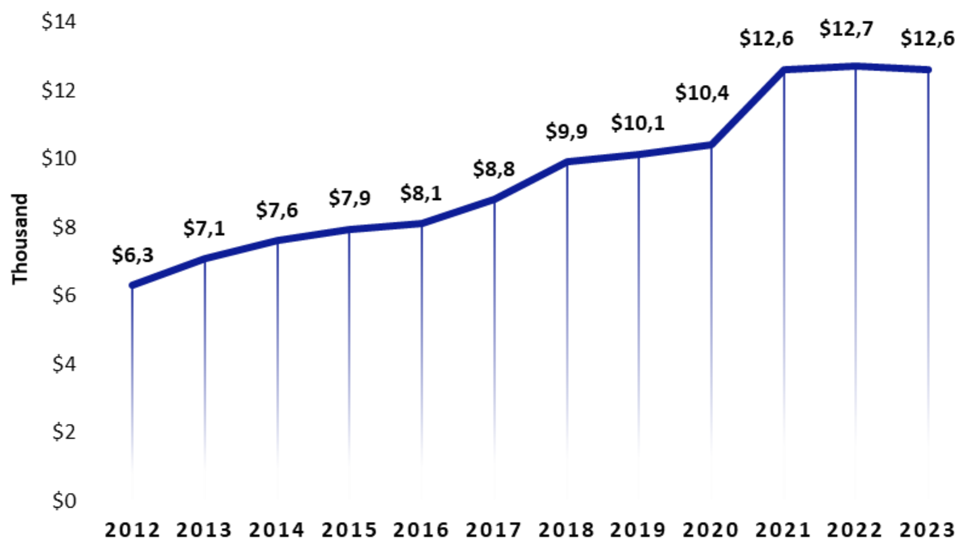
Estimates for the utilization rate of blast furnaces in 2024. The big issue here is that it seems very difficult to reverse a situation of low consumption in China due to the government's cultural bias in relation to concerns about social security (also similar to Japan). It's clear that reducing interest rates is intended to discourage people from saving, which would increase household spending. People buying more durable goods, for example, would generate an upside for domestic steel consumption. However, China's manufacturing PMI readings have failed show signs of improvement in 2024 and the steel-consuming industrial sectors (downstream) are still lacking significant upside demand in relation to domestic consumption. It's important to note that, historically, Chinese people don't tend to spend a lot, and deposit rates as a percentage of GDP are much higher than in the US, for example. This is because China has a considerable pension problem, and now that the population is starting to age, this is only going to get worse.

Blast furnace utilization rates have already dropped to ~88% in the middle of March vs. ~92% in October but are still up +6p.p y/y. The sentiment we've ascertained from investors on this issue (blast furnace utilization) is that the market believes that basically one of two situations will occur: **(i)** The majority believe that 2024 will be similar to 2023, with rates close to 90% and China dumping crude and embedded steel to other global economies, with no increase in domestic consumption. **(ii)** A smaller portion of investors assume that 2024 will be worse than 2023, with lower rates, reaching close to 80%, with a stronger reduction in the domestic market and a slight contraction in exports, resulting in crude steel production that could be cut by between -5% and -10% vs. 2023.

In both alternatives **(i)** and **(ii),** we didn't see investors betting on an improvement in 2024. Initially, our view was precisely that 2024 would see a small reaction in domestic consumption, as we detailed in our previous report, which is attached (link). After talking more emphatically to the market in recent weeks, we have become a little more pessimistic about our previous outlook and are now tending closer to alternative **(i)**.

Investors believe that the Chinese economic model has run out of steam. Xi Jinping's administration seems to have as its main idea an economic model of curtailing domestic consumption in order to basically load all the financial volume into manufacturing capacity and infrastructure. This is a model that works well, but only up to a point. China's per capita income closed last year at ~US$12.6k, and although it has decreased compared to 2022, the figure still shows a very significant progress over the last 10 years, doubling in value. If we take an even longer time frame, around the 1990s, GDP per capita was extremely depreciated. This proves that in recent years the model has lifted a significant part of the population out of poverty and raised it to an average income above of what we can see in several emerging markets.

Graph 5. China´s GDP per capita (US$ thousand)



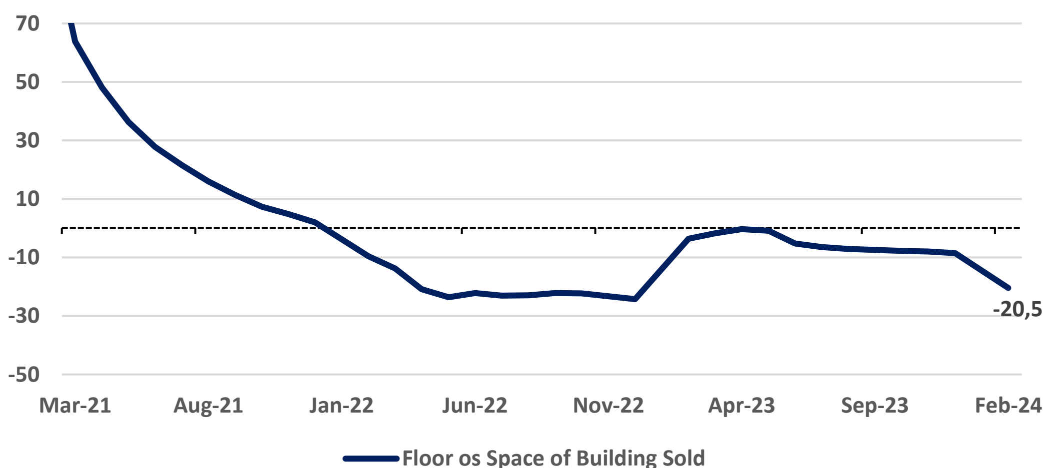
Source: Genial Investimentos, NBS

However, the model has apparently run out of steam, as the yields on infrastructure and manufacturing facilities have been marginally reduced, which has pushed the average Chinese person's savings towards real estate speculation. Today, the market seems to be convinced that there is indeed real estate bubble, which we point to as early as 2022. A significant proportion of the investors we spoke to believe that the government re-stimulated the real estate sector so that there would be no slowdown during the late 2010s. Under normal conditions of supply and demand (without government intervention), the sector would have slowed down sooner than it did. We agree with this opinion.

As we have explained in other reports, the inversion of the age pyramid in China in 2022 means a decrease in the population after 60 consecutive years of growth. This trend is attributed to the rising cost of living over the decades and the fact that families are choosing to have fewer children, with an average of 1.3 children per couple and a birth rate of 7.5 children per thousand inhabitants. The withdrawal of the one-child policy in 2015 was not enough to revive the fertility rate. This poses a challenge for the real estate sector, especially in smaller cities, as fewer children mean fewer potential heirs and tenants.

Demand for real estate in smaller cities (Tier II and III) is low, with the government's monetary policies failing to stimulate more investment in buying new homes, especially for middle-and high-income earners. Demand for real estate in larger cities (Tier I) will probably not slow down as much, precisely because of the speculation factor. Investors who have no intention of living in the homes they are buying (second buyers) will continue to look for larger cities because of the greater prospect of the property appreciating over time. This trend could jeopardize the recovery of the housing construction sector due to lower demand for property purchases in small and medium-sized cities and forecasts of a sharp reduction in the launch of new projects. It should be remembered that Tier II and III cities carry ~70% of China's GDP, and that new home sales have been in free fall since 2021. Our concern for the sector is quite big, and we don't think it's an exaggeration on the market's evaluation, as the situation only gets worse over time.

Graph 6. Property Sales (%YoY)

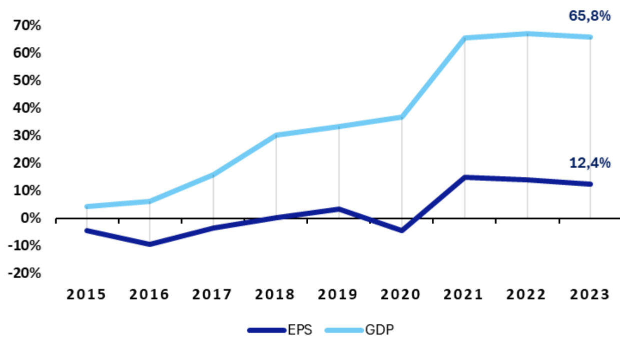


Source: Genial Investimentos, Bloomberg

Mistrust of the official GDP growth rate. We've noticed that the market is still very skeptical about the veracity of some official indicators from the National Bureau of Statistics (NBS), especially GDP. Although the NBS reported that China's economic expansion for 2023 was 5.2%, slightly exceeding its annual target of 5%, we spoke to investors who use back-of-the-envelope approaches, showing a significant variation to the official data. Observations from alternative data sources, such as domestic flight numbers and revenue growth from consumer-facing companies, have confirmed that China's economy has improved with the end of pandemic restrictions, but there is much more controversy and the roots of this discussion run deeper.

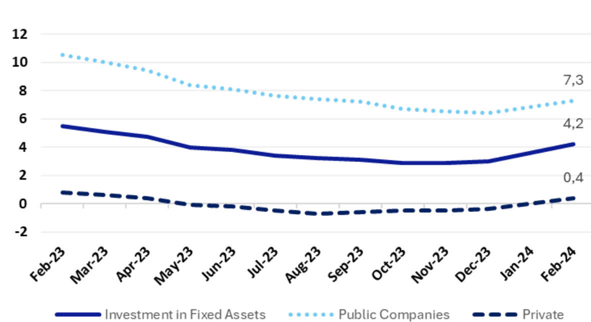
It is necessary to point out that even though revenue has grown, companies' net income have not accelerated much. And this is not new. For several years now, the economy, according to the official indicator, has been growing by +5% y/y or more (in real terms), but the nominal profit of Chinese stocks on average has been growing by around +1% y/y. This supposedly indicates that there is something wrong with one of the two figures, most likely the GDP. Over the last decade, composite GDP has risen by +66%, while the earnings per share (EPS) indicator for companies on the Shanghai stock exchange (SSE Composite Index) has risen by only +12%, growing almost 6x less than official GDP.

Graph 7. EPS vs. GDP (2015-2023)



Source: Genial Investimentos, Bloomberg

Graph 8. Investment in fixed assets (%YoY)



Source: Genial Investimentos, NBS

In favor of this opinion, obstacles such as the decline in real estate construction, the local government's tight finances and the decrease in exports exerted negative pressure. Contrary to official data, which indicates that increased spending on manufacturing and infrastructure has balanced out the economic impact of the real estate sector, there is a portion of the market that believes that overall investment was practically stagnant in 2023, suggesting that the genuine GDP figure was in the range of +1.5% to +3.5% (and not +5.2% as indicated by the NBS).

Doubts about China's investment statistics, which account for spending on housing, factories, and infrastructure, have been intensified by frequent adjustments in recent years. The NBS reported a nominal increase of +3% y/y in Fixed Asset Investment (FAI) in 2023, totaling ¥50.3 trillion (~US$7 trillion). However, the NBS eventually admitted that its data could not be directly compared with the 2022 report due to issues including "problematic data discovered during statistical law enforcement inspections".

As such, the official FAI figure for 2023 implies a reduction from the 2022 figure of -¥7 trillion (~US$980bn), which corresponds to -17% vs. what was initially announced.

We have also heard in conversations that some investors use the Li Keqiang index. However, while this indicator has been popular in the past, our assessment is that the current economic conditions in China have started to be more around services, and less on industrial production, reducing the relevance of the method, and that this should become an increasingly strong trend now, especially if the government chooses not to send direct stimulus packages to the real estate market of private developers and aid to the manufacturing industry. To clarify, the Li Keqiang Index is an economic performance assessment tool made it famous by The Economist publication in 2010. This indicator was designed to verify China's growth through three parameters: **(i)** volume transported on railroads, **(ii)** electricity consumption and **(iii)** commercial banks' credit portfolio.

Another alternative method, which we know is used, is to capture nominal GDP from the official NBS figures (not adjusted for inflation), and continually apply an independent price deflator to arrive at real GDP. With different independent approaches and a strong distrust of the figures, we conclude that the NBS seems to struggle to produce accurate reports due to a lack of authority over officials and increased political pressure. This is also in line with the discontinuation of the official release of the youth unemployment rate, after it reached an all-time high in 2023, reporting 21.3% in June and then stopping being released by the NBS in August. The official response to the interruption was that the method of calculating the statistic "needed to be improved".

Crisis in the payment of developer bonds. Despite the easing measures we mentioned in relation to the real estate market, the economic crisis and high unemployment among young people, who are likely to be first-time buyers, have both undermined confidence in the sector. Even though total housing sales (private + state-owned developers) have shown a partial recovery y/y in January, the level of penetration of first-time buyers is still very low. Many private developers have defaulted due to working capital management difficulties and are causing losses for bondholders.

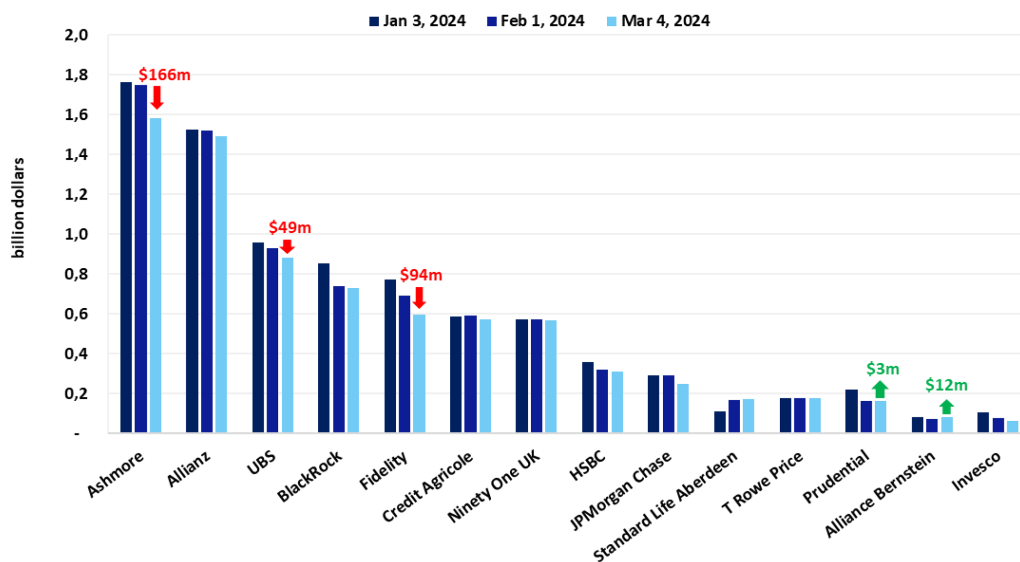
With cash flow badly squeezed, insolvent real estate companies have preferred to pay employees and suppliers and are defaulting on interest or repayments on debt issued. China South City's default adds to these concerns. More than 300 Chinese high-yield bonds (including unrated and withdrawn) amount to US$110bn in losses for holders since 2023. Most of these bonds are currently trading at 6 cents on the dollar or less, decimating their face value, suggesting poor prospects for recovery.

Investors in China's high-yield real estate debt may continue to sell their holdings in light of the deterioration in creditors' hopes of recovery, regardless of political support. This is evidenced by the increase in winding-up petitions filed in Hong Kong courts, in cases very similar what we saw happened with Sunac. Meanwhile, bondholders have made some additions to Vanke's debt (Top 2 among China's largest developers) in the last two months, ignoring the recent fall in bond prices.

When we asked investors what they thought about this situation, we heard responses indicating that the situation in Vanke's case could have bottomed out and that there is a belief among some fund managers that the government would not let the company go bankrupt and would intervene by offering a bailout. As debt securities have fallen sharply, the more risk-takers saw it as an opportunity, thinking that Vanke would be "Too big to fail".

"Too big to fail" vs. "I want my money back": which side is the majority on?
Although some investors have the view that the specific case of Vanke represents a company that is too big to fail, in general, the majority of fund managers seem to believe that the real estate fixed income market in China offers a serious risk, and that developers, apart from one isolated case or another, are beyond salvation and sales are likely to fall further over the next two years, further tightening the companies' cash flow.

Graph 9. Fund managers' exposure to Chinese property debt securities (US$bn)



Source: Genial Investimentos, Bloomberg

We note that Ashmore has disposed of US$166mn worth of bonds, including most of its stake in Evergrande. 8 other major bond holders, such as Allianz, UBS, BlackRock, Fidelity, Credit Agricole, Ninety One and HSBC, also followed suit. Overall, the total cut in exposure of these fund managers amounted to ~US$670mn, reducing their accumulated holdings to ~US$13.5bn, the lowest value since records began in November 2021, already in the crisis period. The highest value in this historical series in relation to the housing crisis was US$39.2bn, so the withdrawals in debt securities exceed the 65% mark of the total amount, measured between the peak nominal value and the current moment. What's more, because the withdrawals have been so emphatic, the bonds have also lost value in the mark-to-market, averaging -92% since the start of 2021. Please note that the exact figures may vary slightly due to different disclosure rules and registration dates in different countries.

Graph 10. Approaching wipeout of bondholders and shareholders

Source: Genial Investimentos, Bloomberg

What securities are investment funds selling? As far as we can tell, investors have mainly sold Evergrande, Country Garden and Shimao bonds. Evergrande faced a winding-up order from a Hong Kong court on January 29. Meanwhile, Country Garden continues to receive winding-up petitions from creditors, and Shimao may face liquidation proceedings from Deutsche Bank in Hong Kong. Small increases were seen in KWG, CIFI and Greenland (Top 30 list of China's largest developers). Specifically, KWG agreed to sell half of its stake in an onshore project for ¥400mn (~US$55.6mn). CIFI secured an extension of its 4.4%-yuan bond payment and agreed to divest 60% of its stake in 16 sites in Sydney for A$66.3mn (~US$43.3mn), in order to ease offshore liquidity pressure. It is not yet known how this capital will be used.

So, where is the iron ore price heading?

In this chapter, we'll evaluate some aspects of demand and supply and discuss whether there are, from a fundamentalist point of view, reasons to justify iron ore's significant -20% YTD drop. From our last sector report on mining to this one, the price of the 62% Fe benchmark has fallen to ~US$110/t vs. ~US$130/t at the beginning of December. However, even with a less elastic margin at the moment, the price is still ~20% above the average of the last 10 years. After listing some **(i)** demand and **(ii)** supply factors, we will present a further update of our projection for the iron ore price curve over the next few years.

Demand

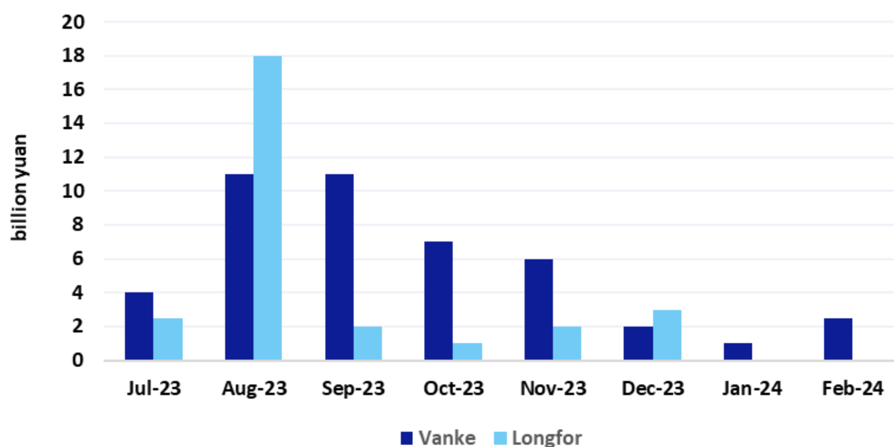
Real estate market

Even in the face of risks, some developers haven't stopped buying land. Looking at the first two months of 2024, in a list of the 100 largest Chinese developers, we saw that the total volume of land purchases rose by +13% y/y, driven mainly by state-owned developers, while home sales fell by -51% y/y. This trend leads to a choking off of free cash flow for leveraged developers who have not zeroed out their purchases. We therefore believe that the increase in land purchases raises questions about future policy support and the ability of private developers to maintain a similar pace to state-owned companies. Among the private companies that are in financial trouble, Vanke bought it the most, despite its tighter cash flow.

Our perception is that the company's management potentially imagines that it will be rewarded with government aid, so it is basically living as if it were risk-free, which leads it to continue increasing its landbank, albeit at a reduced rate. We found that Vanke spent ¥2.4bn (~US$330mn) on land purchases in the first two months of 2024, which represents 7% of its gross contracted sales. Therefore, despite continuing to buy land, we can't help but consider that there is a significant reduction compared to 2023, when spending on landbank additions represented ~20-25% of the company's gross contracted sales.

Longfor has also reduced its land purchases and was not even among the top 100 land buyers in February. We believe that the reduction in spending is due to a -40% drop in home sales over the last 2M. In other words, as the speed of launches slows due to the lack of appetite for sales, land purchases also fall. We believe that the ideal solution to the size of the problem is for purchases to come to zero from developers with insolvency issues. Furthermore, in the case of Vanke, the company is negotiating with creditors to extend the term of its debt securities, and we believe that the government should in fact encourage creditors to reach an agreement.

Graph 11. Land Purchase by Vanke and Longfor



Source: Genial Investimentos, Bloomberg

State-owned developers are still better capitalized than private ones. As we have pointed out in several other sector analysis reports, private real estate developers are much more exposed to the difficulties of leverage and working capital management than state-owned companies. This is because, in the past two decades, private developers were encouraged by the government to increase the pace of projects in a very emphatic way, and to do so, they took on much more debt than the state-owned companies did. Therefore, today, the government-controlled companies are in a healthier financial situation, despite having grown less in the medium term.

Again, adding up the figures for January and February, we see that 90% of the main buyers of land were state-owned developers, half of which have direct links to the central government. The biggest buyer was CR Land, which spent ¥14.7bn (~US$2bn), acquiring plots that accounted for more than 70% of its real estate sales in the same period. 4 of the top 10 buyers were developers belonging to regional governments. Due to liquidity problems, most of the private developers have in fact zeroed out their acquisitions, with exceptions such as Hangzhou Binjiang and Vanke, for example. Looking at the list of LGFVs, the city of Shijiazhuang, located in Hebei province, was one of the biggest land buyers, spending more than ¥5.8bn (~US$800mn).

We haven't yet been able to decipher whether local governments are trying to transfer debt from their balance sheets by asking LGFVs to buy land, but from the values of some cases on the list we evaluated, there are indications that this may be intentional. This land could even be reversed in the social housing policy that is beginning to take effect, in its embryonic stages (our last hope for improvement in the medium term). If you would like to know more about what LGFVs are and how these investment vehicles have a strong impact on public real estate management policy in China, as well as how the social housing system is designed and will take place over the next few years, we strongly recommend that you access the previous sector report, which is attached (link).

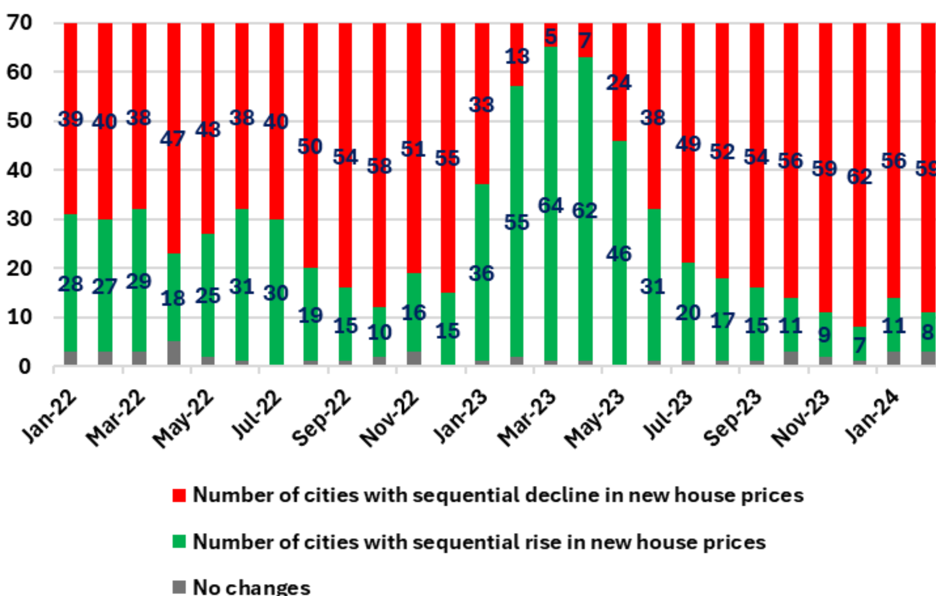
Falling house prices amplify sense of decay in smaller cities. In February, in the list of these top 100 developers, the total value of land purchased amounted to ¥74bn (~US$10.3bn), registering a decline of -11% y/y, after an increase of +51% y/y in January. Demand in Tier I cities (large cities) continues to supposedly heat up, evidenced by the sale of 7 plots of land by the Hangzhou government to private real estate companies in February, with an average premium of +19.1% vs. the bid price. Meanwhile, in Tier II and Tier III cities (small and medium-sized), house prices continue to show strong signs of lack of interest from buyers, compressing double digits on some occasions.

We would point out that while Tier II and Tier III cities are suffering more, with square meter prices slowing down faster, Tier I cities are still more tied to real estate speculation, which is holding prices at higher levels. Despite the difficulty of filtering this data, we believe that the penetration of first buyers in Tier I cities is around 20%, which is far too low and a strong indicator of speculation. Although the average penetration in China is ~32%, which is also very low compared to the US, for example, which has ~47%, this figure gains something close to +12p.p in elevation due to the weight of Tier II and Tier III cities. These two groups add up to almost 3x more floor space than larger cities and have less speculation.

Larger cities still remain less affected, but we estimate that prices will be on a downward trajectory ahead. We postulate that Tier I cities are already showing some slight signs of falling prices, even though they remain attractive mainly to investors in the role of second buyers. Eventually, even if the bubble takes longer to burst in Beijing, Shanghai and Shenzhen, we believe that these cities are likely to experience a slightly more abrupt price slowdown going forward, with contractions only superficially cooler than the Tier II group. Still, we see a proliferation of houses on the secondary market, meaning that the old practice of buying a house and reselling it for financial gain is slowing down too, as a lot of these houses are being put up for sale but find no buyers.

How is the fall in property prices distributed? Vanke's growing liquidity crisis is exacerbating the fall in China's residential property prices and buyer sentiment, with successive lead to a downward in new home prices reported in 59 of the 70 cities we monitor in February vs. 56 cities in January. The default on the Country Garden bonds in August 2023 also deepened the real estate crisis in China, which had already been affected by the collapse of Evergrande. In December, 62 of the 70 cities we monitor experienced a sequential decline in new home prices, up sharply from just 38 in June. We would point out that the cooling of this situation in January does not necessarily indicate a recovery, as this trend was also observed in January 2023 and 2022 due to the fact that developers adjusted their pricing strategies after the December sales.

Graph 10. Sequential changes in the price of new homes in 70 cities



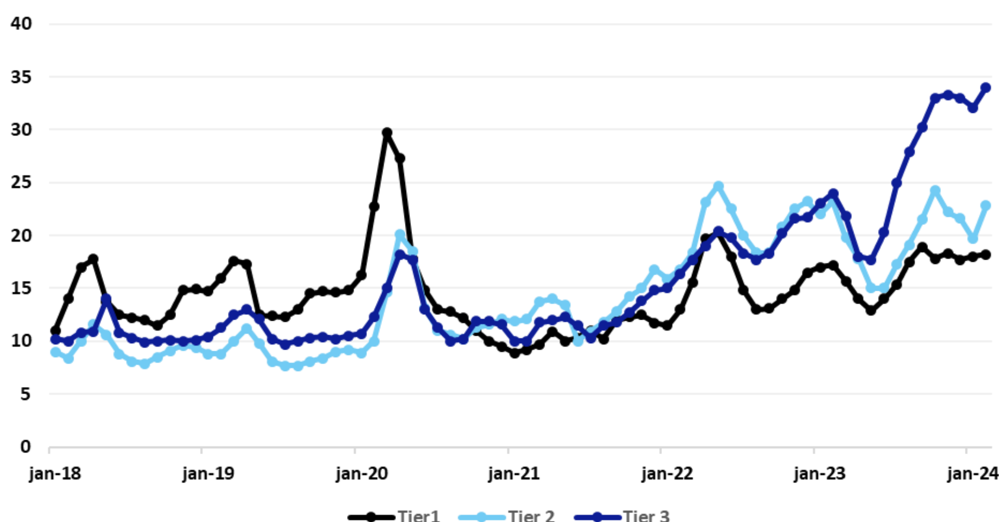
Source: Genial Investimentos, NBS

Steel demand in the real estate market will continue to be very weak and we don't see this scenario changing in the medium term. We believe that Chinese real estate developers, especially middle-and high-income private ones, will face increasing financial pressure and should therefore upsurge the pace of price reductions due to two main factors: **(i)** falling demand from buyers, as well as **(ii)** the growing supply of discounted homes on the secondary market, especially in Tier II and Tier III cities (medium and small). In February, there was a -64% y/y drop in contracted sales at private developers. Real estate developers such as China Overseas Land, Yuexiu and CR Land recorded drops in average selling prices in the first two months of the year in the low double digits vs. 2023. Other developers such as Vanke, Agile, Shimao and Seazen recorded high single-digit price drops vs. larger drops of 21-31% from Sino-Ocean, Sunac and KWG.

However, Country Garden was one of the only major developers to record a price increase, of +23% (between Jan and Feb) due to strong sales of a significant development in Hong Kong. Even so, from a SoS (sales-over-supply ratio) point of view, the situation is far from desirable, both for Country Garden and for the rest of the sector. The new homes inventory in China's smaller cities hit a record 34 months of average sales in January, the highest since the historical series began in 2010, giving a further indication of the pressure on house prices in 2024.

The number of months needed to sell a new home is growing exponentially. With a very high homes inventory, real estate companies are lowering prices time and time again to try to stimulate sales. Even so, this doesn't seem to have much effect on increasing the appetite for sales. According to our data collection from CRIC (China Real Estate Information Corp.), the number of months it takes to absorb this new supply of homes is increasing in a fast pace. For Tier III cities, each new home that enters the supply system takes ~35 months on average to close a deal on selling today (2x more than in March 2023), and the trend is so negative that, even though this figure is already the highest recorded in the last 5 years, it will probably grow even more.

Graph 13. No. of months needed to absorb the supply of new homes



Source: Genial Investimentos, China Real Estate Information Corrp.

Therefore, we believe that a growing oversupply and compressed sales will push the SoS much lower, especially affecting Country Garden, Agile and Seazen, since both their landbanks and the projects already delivered are largely in Tier III cities. Meanwhile, the orderbook in Tier II cities is approaching an 11-year high, with a deficit equivalent to 23 months of sales. Possible surges in housing listings on the secondary market could further increase pressure on the supply side of housing on the primary market. This could occur as some people choose to look for bargains in secondary homes (built, bought, and put up for sale again), affecting both prices and developers' margins.

Falling prices in secondary-market properties further hinder the situation. Chinese developers are likely to struggle to increase contracted sales this year, with demand remaining weak and declining, as potential buyers of new properties delivered by real estate companies are being attracted by falling prices in the secondary property market. This trend is also likely to reduce demand for upgrades, as residents may need time to sell their current homes without having to reduce prices. This situation will eventually further deepen the ongoing slowdown in the number of new residential real estate project launches by private developers.

Graph 14. Construction underway in China (%YoY)

Source: Genial Investimentos, Bloomberg

Graph 15. Construction just started in China (%YoY)

Source: Genial Investimentos, Bloomberg

Our take is that all this compression will continue to wipe out the demand for steel from the middle- and high-income segment of private developers, since it is precisely the newly started constructions that support the demand for steel. If there is less and less formation of construction sites, there is less and less demand for steel in this sector, since steel structures are used up to the first quartile in the execution timeframe of real estate projects.

Industry

Deflation is a by-product of an industry with weak domestic demand. In 2023, China's economy suffered deflation for most of the months, closing the year with a CPI of just +0.2%, due to the fall in prices in the manufacturing sector, with the GDP deflator contracting -0.6%, making up the most significant annual reduction since the late 1990s. In the combined basket of different sectors that make up GDP, the industrial segment suffered a -3.2% y/y drop in product prices.

Our analysis suggests that the higher degree in the GDP deflator was mainly due to the manufacturing sector not having sufficient domestic demand, since a number of durable goods products suffered sharp price cuts. Therefore, the data indicates an excess of supply in some sectors in relation to domestic demand, and steel is one of them. Consequently, this could trigger allegations from countries such as Brazil, the US and Europe that China is investing far beyond domestic demand in some manufacturing sectors. When there is a very large surplus, exports tend to increase. Depending on certain conditions, this ends up harming global competition when prices are more competitive.

Is China exporting deflation to the world? Considering that we live in a globalized economy and that consumers have the right to choose by weighing up criteria of quality vs. price, what we observe in China today is a framework for rewarding industry with very large and efficient capacity, which is expanding the consumer market for its manufactured products to several other countries. It doesn't seem new to us that China is a consumer of commodities and an exporter of finished products. For many years, China exported products that were inferior in quality to those manufactured in the majority of central regions, which had stronger and more traditional industries. This seemed to create some consumer rejection, often being labeled as the country of counterfeits. Today, however, the situation is changing.

After decades of expanding its industrial park and a great deal of capital deployed, which has been added to by state coordination in favor of key manufacturing sectors, such as basic industry (including steel mills), China has now managed to produce products that compete in quality with those produced in Europe and the US, but at lower prices.

China has invested so much in production capacity that, even though it has ~1.4 billion inhabitants, domestic consumption does not generate enough support to absorb the entire supply of durable goods. As long as exports were being made with much lower quality products, China beat domestic competition within other Western countries only when buyers' interest was more skewed around the pricing conditions. However, as the industry has increasingly refined its manufacturing abilities over the last two decades, China's strength in competitiveness with products from other countries, renowned for the management and excellence of their manufacturing facilities. This gradually become more noticeable, to the point where today it has drastically reduced the margin of disparity in the quality durable goods, especially in some key products for the coming years, such as electric vehicles (EV) and home appliances (white goods and electronics).

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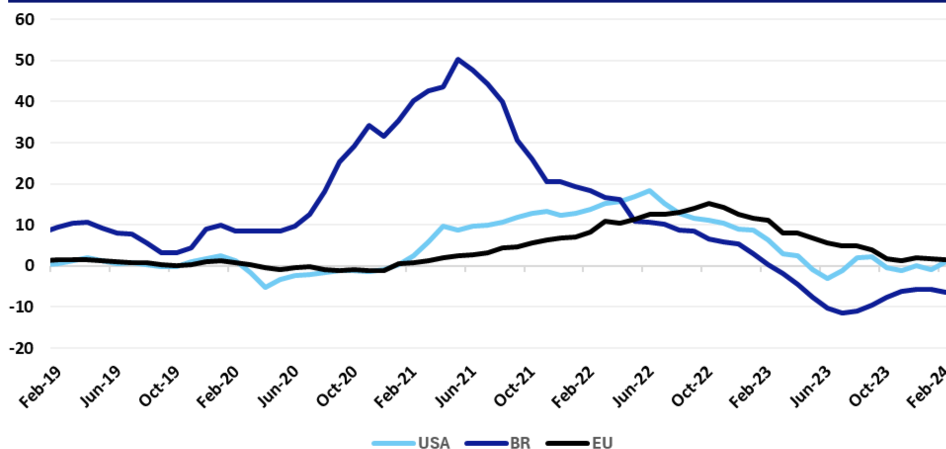
The big issue is that the broad state support, in addition to the strong development of engineering in China, is creating a conjecture conducive to almost unfair competition in several key durable goods in the global economy. From this point of view, we agree that China is exporting deflation to the world, as import penetration rates for Chinese-made products are increasing in several countries. Even though the services inflation component has a greater weight in more mature economies, when it comes to goods inflation, competition with China's manufacturing power is causing domestic industry in many countries, all across different segments, to lose market share or reduce prices. This situation eventually leads to a cut on inflation rate or even deflation for goods.

Graph 16. Construction underway in China (%YoY)



Source: Genial Investimentos, Bloomberg

When the alternative of reducing prices seems unavoidable, the deflationary picture within these countries begins to be printed in the composition of the inflation rate linked to the basket of durable and non-durable goods. Previously, China seemed to be a nuisance to global competition only in non-durable goods with a shorter lifecycle, such as clothing. Today, the situation has escalated to high competitiveness in durable goods with a longer lifecycle and higher added value.

Our view is that China tends to have weaker domestic consumption in the short term, leading the surplus of large installed manufacturing capacity to be redirected to other global markets. Within our Metals & Mining coverage, this is extremely clear with steel itself. For us, the consumption of embedded steel is obvious, i.e. China buys iron ore from countries like Brazil, transforms the commodity into steel, manufactures the electric car and exports the vehicle back to Brazil. However, in addition to embedded steel, China has begun to intensify the export of crude steel to other global economies. As Chinese steelmakers are generally in the top quartile of cost efficiency and still receive government subsidies, they export extremely cheap crude steel, and the penetration of imported steel from China within apparent consumption has been climbing at exponential rates for about two years, with an emphasis on the past year, among countries with low tariff barriers.

We therefore point out that the absence of heated domestic demand in China is leading to a greater outward flow of crude or embedded steel. It is possible that protectionist tariffs will begin to emerge to block the entry of Chinese products.

What are the reasons for the industry's anemic domestic demand? As we have already commented in our preliminary analysis of investors' perspectives on the Chinese economy, we believe that the reasons for domestic demand lacking traction are made up of the combined effects of **(i)** high accumulated rates of investment in productive capacity, surpassing the domestic consumer base by a certain margin, even though it has held the position of the world's most populous country for several years; **(ii)** a marginal decline in the population due to the start of the process of reversing the age pyramid in 2022, thus losing the position of most populous country to India last year.

In addition to these reasons, we would highlight **(iii)** the cultural bias of the current government administration of Xi Jinping and some of his predecessors, which is to recriminate consumption and glorify savings; **(iv)** the absence of a clear and public pension system, which has discouraged consumption and historically, over the last two decades, has intensified the pace of bank deposits and real estate purchases, which make up illiquid assets.

Graph 17. New deposits (12M accumulated in ¥bn)

Source: Genial Investimentos, Bloomberg

Graph 18. Ratio of new loans vs. deposits

Source: Genial Investimentos, Bloomberg

In addition, the **(v)** recent reduction in purchasing power, due to the crisis in the real estate system, considering that ~70% of the savings of the average Chinese was invested in real estate and mortgage prices are plummeting; as well as the **(vi)** gradual transfer from an economy focused on the production of goods, towards an economy that consumes services, mainly guided by the post-pandemic momentum, where the services sector was closed and had pent-up demand released in 2023; and lastly, **(vii)** the historic increase in the cost of living with housing, health and education, an essential package that ended up curbing spending on consumer durables, which are essentially more expensive than non-durable goods.

How long can the low level of demand for goods last in China? The reduction in domestic consumption does have some non-cyclical and structural points, so the slowdown in demand for durable goods, which drive steel consumption, should continue to put pressure on Chinese steelmakers' margins for longer.

There is some fear that, with the potential migration of part of the weight that today seems excessively allocated to industrial GDP (~40%) to services GDP in the coming years, there will be a prolonged slowdown in demand for durable goods. This would therefore drastically affect China's apparent consumption of domestic steel over the next few years.

It is well known that China is the country with the highest concentration of industrial GDP among the world's 10 largest economies. The difference with Germany, in second place, is striking (+10p.p). In other words, we believe that the weight of industry in China's total GDP will fall in the coming years, to bring it more into line with the weight of more mature economies.

The only way to prevent this fate from being tragic for the Chinese industry seems to us to be to continue exporting, at least embedded steel through the sale of durable goods to foreign markets. We believe that from the point of view of fleet electrification (EV), for example, China is already bothering major European and American automakers, and this should intensify. However, the risk for Chinese steelmakers is the implementation of tariff barriers, which could potentially make it impossible to export manufactured products, leaving the mills without many options to allocate steel produced, since we believe that domestic consumption will tend to be lower from now on. The European Union is considering implementing import tariffs on cars later this year. So, it is already happening.

Table 1. Industry weight in GDP

Countries	GDP (US$ Trillion)	Industry
China	**11,2**	**39,43%**
Germany	3,4	29,10%
Japan	4,9	29,01%
India	2,2	25,87%
Canada	1,5	24,16%
Italy	1,8	24,10%
Brazil	1,8	22,20%
United States	18,6	18,44%
United Kingdom	2,6	17,70%
France	2,5	16,78%

Source: Genial Investimentos, Bloomberg

Table 2. PMI February: majority in contraction zone

	feb/24	Zone	Δ Monthly	Δ Annual
Official Manufacturing PMI	**49,1**	**Contraction**	**-0,1pt.**	**-3,5pt.**
Manufacturing Caixin PMI	50,9	Expansion	0,1pt.	-0,7pt.
Steel *Downstream* PMI	46	Contraction	0pt.	-4,1pt.
New Orders OMI	41,4	Contraction	-2,4pt.	-7,5pt.
Production PMI (Output)	45,2	Contraction	1,5pt.	-5,9pt.
Construction Index	53,5	Expansion	-0,4pt.	-6,7pt.
Services PMI	52,5	Expansion	-0,2pt.	-2,5pt.

Source: Genial Investimentos, Bloomberg

Official manufacturing PMI remains in the contraction zone in February. In February, China's Official Manufacturing PMI, measured by the National Bureau of Statistics (NBS), decreased slightly to 49.1pts (vs. 49.2pts in January), but came in marginally above consensus estimates of 49pts. The m/m drop can be attributed to the inactivity of the Lunar New Year holiday, rather than a potential deepening slowdown. Still, the figure remains within the contraction zone (below 50pts.), in the same weakened red area it was in 9 out of 12 months last year. The Services PMI, meanwhile, stood at 52.5pts, which, even with the slight fall of -0.2pts m/m, still remains within the expansion zone (above 50pts), in line with the process of demand migrating from the consumption of goods to the consumption of services.

In the breakdown by sub-sectors, the PMI for the steel sector remained sideways, and for the third month in a row, ran at 46.0pts, indicating that the mills have remained in the contraction zone for the last 12M. After the end of the Lunar New Year holiday, steel production partially recovered, increasing the production sub-index to 45.2pts (+1.5pts. m/m). However, the new orders sub-index reached its lowest value in 9M, dropping to 41.4pts, due to a slow return to work in downstream demand sectors, especially construction. On the other hand, the manufacturing PMI measured by Caixin, which also covers export-oriented companies, rose slightly to 50.9pts. in February vs. 50.8pts. in the previous 2M, beating projections and marking the fourth consecutive month within the expansion zone.

Therefore, considering that one of the main differences between the manufacturing PMI, measured by Caixin, and the official one, measured by the NBS, lies precisely in the export bias, our thesis that domestic consumption in China was weak last year and will remain weak this year is reinforced, with industry growing exports as the domestic market fails to absorb the supply of durable goods. For us, this is precisely the big picture of China for the coming years. As an alternative to combating the increase in imports from China, the domestic industry of other countries alongside government authorities around the world may raise tariff barriers, as we have already described. We believe this is highly likely, but China has another card up its sleeve to use if necessary: the purposeful devaluation of the RMB/USD exchange rate.

Will China purposely devalue its currency? We believe that the structurally negative bias towards domestic consumption of durable goods in China will, at some point, come up against the RMB/USD exchange rate. The government regulates the currency in a way that doesn't seem to clearly reflect the seriousness of the economic circumstances in China. As China's GDP is still heavily linked to the manufacturing industry and the real estate market, both of which are undergoing changes in the decomposition of domestic demand, the economy seems to be going through a period of severe wear and tear, and yet the currency has not devalued proportionally, as the PBoC artificially holds down the exchange rate.

One of the ways in which central banks stabilize the currency when the country is in an adverse situation is by raising interest rates, which can even further harm the level of economic activity. For this reason, this practice usually ends up feeding back on the difficulties faced with the economic slowdown, since Central Banks often have difficulties calibrating the interest rate vs. exchange rate balance. The idea behind this mechanism is that some countries need to attract capital flows in dollars, which could potentially prevent the currency from collapsing in situations of economic tension. With this objective and others in mind, they raise interest rates as a way of attracting foreign investors, who then demand higher returns on their capital in an attempt to compensate for the growing risk of economic disruption. However, the case China is facing seems to us to be different from the situation usually experienced by other countries when they go through crises.

For us, it is necessary to consider that China has a current account surplus, due to the strength of its trade balance. Therefore, our interpretation is that China does not need increasing capital inflows in USD to defend its own currency.

The current economic configuration seems to indicate that the country has almost no need for external intervention to fully supply its local consumption demands. The obstacle faced by Chinese industry today suggests that the real problem is precisely the volume surplus in the production of durable goods, and not the deficit in essential goods that are not produced domestically. Apparently, there is no need to inject a significant level of foreign capital into the domestic economy to compensate for potential outflow.

The truth is that, in terms of the real economy, China doesn't need a lot of foreign investment, so there is less concern about USD running out, although it has already restricted the possibility of account holders sending funds abroad, during the last maxi-devaluation, which took place between 2015 and 2016. However, China now also has an interest in defending the RMB as a strong currency, so that it can somehow compete with the USD for hegemony in the context of international negotiations, as a symbol of the assertiveness of its economic model in the context of foreign policy. So, to make it clear, the attitude seems to us to be more political than economic at this stage.

This means that the PBoC has more freedom in its monetary policy. The reduction in interest rates that has been applied, albeit at a slow pace, seeks to encourage the consumption of durable goods on the domestic scene, and not necessarily to attract foreign capital, since China is basically experiencing a deflationary environment. This in itself would drive the exchange rate down. However, in our view, the RMB/USD exchange rate has not depreciated enough to reflect the macroeconomic challenges facing the country. We believe that the PBoC uses some maneuvers in its exchange rate policy, such as buying and selling foreign currency contracts on an occasional and limited basis, with the aim of containing devaluation movements in the exchange rate, while also regulating compulsory rates.

In 2015, the PBoC changed the way it managed the RMB, allowing the market to play a greater role in the exchange rate (the reason given at the time) and devalued the currency, which shrank. One of the PBoC's objectives was to have the country's currency in the IMF's (International Monetary Fund) reserve currency basket. Coincidentally, the devaluation took place days after macroeconomic data from the trade balance had shown a sharp drop in exports, leading one to believe that the main idea in devaluing the currency was to generate a boost in shipments of goods and accelerate the economy.

From January 2014 to December 2016, the RMB/USD exchange rate fell by around -13%, while China's GDP accelerated by +14%. Today, the exchange rate is at a similar level to that seen at the end of this period, but the economic situation is considerably worse, with a GDP of +5.2% (less than half). On the other hand, even though it is growing much less, since the beginning of 2023 the currency has only fallen by -6%, leaving a gap, according to our understanding, for a possible further depreciation.

To put it more objectively, we believe that the RMB is more highly valued than it should be at this stage of the slowdown in the local economy. Therefore, it seems to us that the PBoC has a safety margin of considerable amplitude in relation to the currency's valuation. If other global economies begin to raise tariff barriers to protect themselves from the flood of Chinese goods, whether in raw or embedded steel, our thesis is that China will purposely eliminate the exchange rate policy devices that are holding back the devaluation of the RMB, causing a convergence towards the fair value of the currency.

Graph 19. FX- RMB/USD

Source: Genial Investimentos, Bloomberg

And why is this important for the Metals & Mining companies? We believe that the move, if it comes to fruition, will be intentional on the part of the Chinese government, as the only way to continue to win out over foreign competition on price in relation to a potential blockade by tariff barriers, in addition to subsidizing, is to devalue its own currency. In this way, even with a higher tariff barrier, China would be able to break through this protectionist strategy and continue to sell its excess capacity (in raw or embedded steel) to other economies. For this reason, we still believe that there is support for blast furnace utilization rates of around 90%, indicating that China will not need to slow down by a great margin the pace of steel production, even with weaker domestic consumption.

This seems to us to be good news for the mining companies (Vale and CMIN), since it would guarantee some level of demand for iron ore, but bad news for the Brazilian steel companies under our coverage (Gerdau, CSN, and Usiminas), which are suffering from the influx of Chinese steel and arguing that competition with China is unfair. Therefore, it is possible that even if a more significant increase in the steel import tariff is granted by the Brazilian authorities (Aço Brasil -IABr plea is 25%), the domestic steel sector in Brazil could still continue to suffer, as China could circumvent the effect of the tariff on price increases by purposely devaluing the RMB FX rate.

Supply

What caused the recovery in "v" shape at the end of last year? As we explained in the opening passages of this report, in addition to the analyses contained in the previous sector report, we believe that the low availability of supply in the seaborne system during 2Q23 led to a compression of iron ore inventory in Chinese ports from September until December. Although domestic demand from the downstream segments was weak, the interlocution of stimulus by the short-term speculative bias, as well as the greater tendency to export crude steel and steel embedded in durable goods by the fundamentalist bias, meant that blast furnace rates in China remained at high levels for much of 2023.

So, the iron ore price component in the 62% Fe reference relied on three situations to cause a strong rise in 2H23, which reached a +38% upward movement in just 4M: **(i)** low inventory levels, as the main reason, followed by **(ii)** higher export volumes of surplus production, and **(iii)** rumors and subsequent confirmation of stimulus for the real estate market, which came indirectly after the Politburo meetings in the middle of last year, as well as directly, with the announcement of the social housing program only at the end of last year.

It is clear that, for the investor who has come this far reading the report, we are not optimistic at all about any level of recovery in the Chinese real estate market, at least from the point of view of an increase in sales of properties categorized as middle and high-income from private developers. On the contrary, we believe that the situation is far from stabilizing and that sales will continue to fall, dredging up the number of projects being launched. The number of new constructions starts should therefore continue to contract and the demand for steel in the real estate segment is highly consistent with this indicator. With the reduction in construction sites by private developers, especially in Tier II and Tier III cities, the demand for steel in this sector is likely to fall further, far from any recovery in the medium term (2024 and 2025, at least).

The social housing program has not yet made a significant contribution to increasing demand. The announcement of the social housing program at the end of 2023 was the only event that made us a little more excited about the real estate sector, since it does not involve middle-and high-income demand for properties, and also relies on funds raised through LGFVs and the restricted use of vouchers, with no option to receive cash, an old practice that generated even more speculation in the past. We believe that the vouchers will probably be directed mainly to selected projects by state-owned developers and exclusively by first buyers, removing the risk of leverage from the balance sheet and also preventing from lower consumer confidence in the possibility of the project not being delivered on time.

In addition to these factors, there is a restriction in the program's regulatory code that avoids the deconstructive scenario in which the buyer flips the house on the secondary market after purchasing it, which is extremely positive and had not been done in previous incentives. In general, the program seemed to us to be well designed, correcting flaws from the past. However, it should be remembered that the social housing program is designed to take place over the next 4-5 years, so it won't move the demand needle too much in the short term. For more details on the stimulus program, see our past report (link).

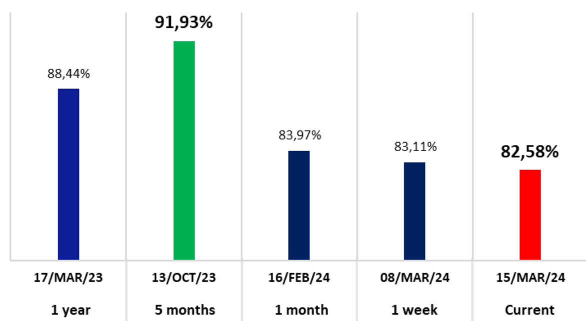
When inventory at the ports started to rise again, the price fell. Just as we commented in the introductory part of this report, 62% Fe iron ore prices have suffered a loss of -US$30/t (-20%) since the beginning of the year (YTD), to ~US$110/t, due to **(i)** oversupply at the ports and **(ii)** weak domestic demand for steel in China. The point made by us in the excerpt above is precisely that the price of iron ore was enjoying a strong recovery until the end of December, basically driven by low supply at the ports.

However, as the price of iron ore rose and became too expensive for apathetic domestic demand, steelmakers quickly reduced the volume of purchases at the ports, and at the beginning of January the commodity's rise lost steam and completely reversed direction, closing almost every trading session this year in decline.

This reversal of direction, from a voracious rise to an intense fall, shows that the dominant short-term factor is supply (which seems to be changing faster) and not demand (which was weak and remains weak). Understanding supply mechanisms from now on will be essential for more accurate pricing of iron ore. Obviously, as Chinese steelmakers' margins are still very tight, given that inputs such as coke and iron ore ended up rising at the end of the year, the price of hot-rolled coil (HRC) in China slowed down even further, to US$525/t last week (vs. US$595/t at the beginning of January), down -11% YTD.

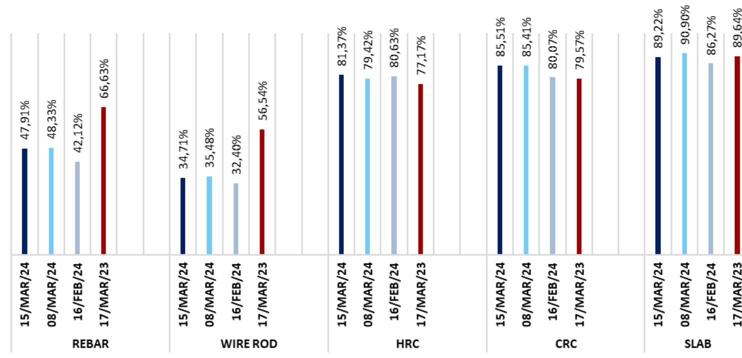
As steelmakers had to further deepen the price cut at the beginning of 2024, even with government subsidies, profitability still didn't compensate for maintaining the blast furnace utilization rates of ~92% seen in October last year. This was because the price of inputs, such as iron ore and coke, was rising sharply. This situation, coupled with stoppages and weakened seasonality due to the Lunar New Year holiday (10 Feb to 25 Feb), were the reasons behind the drop in the average utilization rate of the blast furnaces throughout 2024, which reached ~82% in March (-10p.p in ~5M).

Graph 21. Capacity utilization rate downtrended



Source: Genial Investimentos, My Steel

Graph 22. Capacity utilization by product



Source: Genial Investimentos, My Steel

Because of the drop of utilization rates, iron ore inventories at the ports have returned to a situation of accumulation, since the steel mills have considerably slowed down the rate at which they replenish the input directly to the mill yard. This, in turn, also explains how the diagnosis regarding the potential supply constraint changed so quickly, moving in the direction of oversupply.

How did the volume dispatch look in the meantime? Australian iron ore exports remained below last year's figures due to adverse weather and strikes, with exports falling to 65Mt in February, the lowest since February 2022. Despite the challenging conditions, BHP exported a record 21Mt in February. Rio Tinto's shipments fell more than -5Mt, to 21.3Mt, due to bad weather and tropical cyclone Lincoln affecting the Australian coast. Fortescue recovered from a train derailment and exported 14Mt in February.

For Brazilian mining companies, February was a new monthly record for this time of year, with 29Mt, an increase of +1Mt vs. January and +6.4Mt vs. February 2023. Both Vale and other smaller mining companies, such as CMIN and Samarco, have been performing strongly since the end of last year. We believe that from an operational point of view, Brazilian mining companies are increasingly outperforming themselves, considering the slightly weaker seasonality that is to be expected for the rainy season. Our estimate is that shipments in March will increase to 31.2Mt Genial Est. (+7.6% m/m) due to the start of the process of entering a slightly drier climate and the increase in mining capacity, since Vale seems to be doing an excellent job even with some mines in depletion and CMIN has a ramp-up for this year of +5Mt in relation to its own production.

Since the mining companies were doing well in shipments, the oversupply was reversed. We therefore conclude that demand does not seem to have been responsible, in a fundamentalist way, for the price rise at the end of last year or the price fall at the beginning of this year. In our view, it was supplying dynamics which, combined with stagnant demand, caused the price to move intensely over the last 6M (rose very strongly at the end of last year and fell very quickly at the beginning of this year).

Given that the inventory level at Chinese ports by the end of last year was at its lowest in at least the past 5 years, even with sluggish demand from the residential real estate market, the industry seems to have found a solution to the problem of overcapacity through exports, at least partially. Consequently, demand remained relatively stable (still at a reasonably low level, just not worsening). A very lean inventory level coupled with constant demand led to a voracious increase in commodity prices.

However, the tables were quickly turned. We attribute the 62% Fe YTD drop in iron ore prices to the following points: **(i)** the mining companies recovered in sales in the final months of last year, especially the Brazilian ones, and continued to maintain an impressive pace of dispatches for this time of year in 2024, added to the fact that **(ii)** the Chinese steel mills slowed down production due to the increase in the cost of inputs, which further squeezed their margins, which were already very tight; in addition to **(iii)** the poor seasonality of this period of the year for blast furnace production, with some concentrations of maintenance and capacity reduction in the face of the Lunar New Year holiday.

With the combined effect of these three factors, the result was a reversal of the inventory situation, shifting from a scenario of supply constraint to a surplus of volume. With excess volume at the ports, the price experienced several shocks, regressing very rapidly.

Production will probably remain stable in 2024. In 2023, total iron ore production by the majors (Vale, Rio Tinto, BHP and Fortescue) was 1.12Bt, an increase of +1.7% vs. 2022. Looking ahead to 2024, according to our base case projection, both the Australian mining companies and Vale will keep production basically stable, regressing by -1Mt Genial Est. the total volume of iron ore in the seaborne system in 2024.

On the other hand, there would be an upside of up to +19Mt in our optimistic scenario, if all the majors manage to reach the upper band of their guidances simultaneously. In other words, in the best-case scenario from a production point of view, total volume would rise to 1.31Bt (+17% vs. 2023). Considering a good start to the operating year, ratified by the data we pulled from the Foreign Trade Secretariat (SECEX), it is possible that Vale will be able to reach the upper band of its guidance of 310-320Mt, but this will still depend on whether it will be able to maintain this pace throughout the year (considering seasonality).

Table 3. Companies' guidance 2024E x 2023 (Mt)

	Base Scenario Mid Guidance	Bullish Scenario Guidance Top	Bearish Scenario Guidance Bottom
Vale 2024E	**315**	**320**	**310**
2023	321	321	321
Balance y/y	**-6**	**-1**	**-11**
BHP 2024E	**288**	**294**	**282**
2023	285	285	285
Balance y/y	**3**	**9**	**-3**
Rio Tinto 2024E	**331**	**338**	**323**
2023	332	332	332
Balance y/y	**-1**	**6**	**-9**
Fortescue 2024E	**195**	**197**	**192**
2023	192	192	192
Balance y/y	**3**	**5**	**-**
	2024E Supply (Mt)	**2024E Supply (Mt)**	**2024E Supply (Mt)**
Addition/retraction	-1	19	-23

Source: Vale, BHP, Rio Tinto, Fortescue, Genial Investimentos

Price

How do recent events affect the commodity curve going forward? Given our current base scenario for supply, which is obtained through the combination of performance always tied to the midpoint of the majors' guidance, shipments will remain basically flat in 2024 compared to 2023, possibly even marginally reducing. On the demand side, we believe that the slow and gradual migration of the contribution weight from industrial GDP towards service GDP in China will provide clues of still weak domestic demand throughout the year. Our view is that exports of durable goods with longer cycles, including steel or raw steel itself, are likely to maintain blast furnace utilization rates in China close to the **24E annual average** of **~90% Genial Est.**, like last year. So, China situation is bad, but not that bad...

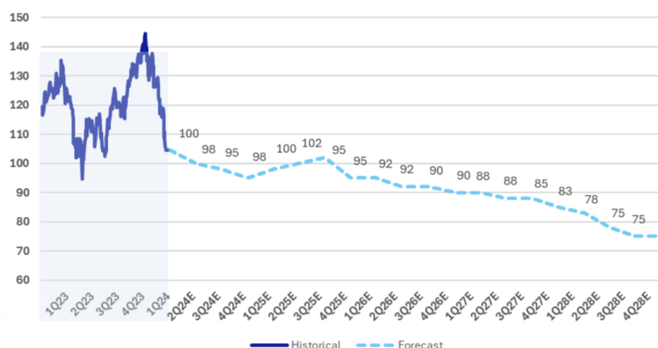
We therefore conclude that, although **demand is likely to be apathetic in China** (both from the domestic industrial sector and the real estate market), not showing much of a reaction in 2024 vs. 2023 (slightly different from what we expected before), the **increase in export volumes could partially compensate for the lack of domestic steel demand**. Everything we've written so far in this report seeks to create a technical support to reinforce the outline we're drawing for 2024 and years going forward. We emphasize that **reading the full report** appears to be the ideal plan for investors to absorb all the fundamentals that justify our projection of the iron ore curve, which follows below.

Our new forecast: Even though the iron ore price has retreated -20% YTD, our current analysis suggests that there will probably be a continuation of this movement, but at a much milder pace, considering that the rebalancing of supply and demand has almost all been re-established by now. The 62% Fe benchmark remains estimated at US$120/t for the 1Q24 average (intact vs. previously), but we have reduced the 2Q24 average projection to US$100/t (vs. US$115/t previously). Today the spot price is ~US$108/t.

As we commented, the drop should deepen gently in 2H24E, to US$98-95/t (vs. US$115-112/t previously). The explanation for this price reduction projected by us during 2H24 is related to the seasonal factor, where mining companies naturally increase production mainly during the 3Qs. It is important to mention that the spot price fell more than we expected YTD in relation to our previous curve. **We are disregarding potential stimulus from the Chinese government throughout 2024**. We highlight that some investors we have spoken with believe that the Chinese government could develop stimulus packages mid-year, primarily aiming to reach the 5% GDP target, which would cause the iron ore curve to rise (rather than fall, as we are estimating).

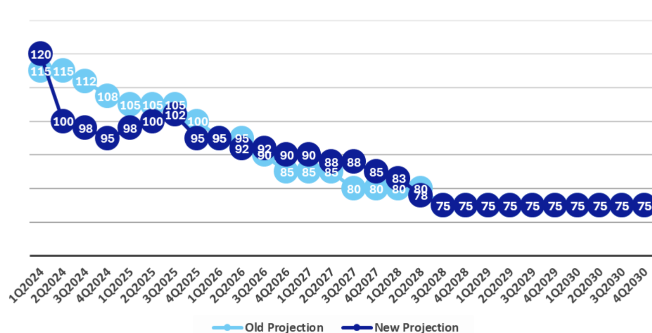
However, from a fundamentalist point of view, we believe that **even if this happens**, **the effects will take time** to enter the **real economy**. It is therefore true that the price of iron ore may have an upside compared to our estimates, since the commodities market in the very short term thrives on rallying moments when there is good news, regardless of whether the increase in demand for steel has already entered the real economy or not. Being a fundamentalist when it comes to estimating commodity prices in the face of so many uncertainties is a difficult task, but somebody's got to do it.

Graph 23. Iron Ore 62% Fe Price US$/t Genial Est.



Source: Genial Investimentos, Bloomberg

Graph 24. Old vs. New Genial Est.



Source: Genial Investimentos

We have adopted a conservative stance. We consider our iron ore projection curve to be conservative, as it is below the estimate of some other analysts and **potentially more bearish than the consensus**. Looking at the full year view in our curve, 2024 now has an average forecast of US$103/t (vs. US$116/t previously). For 2025, the estimated average now stands at US$100/t (vs. US$106 previously). However, the long-term projection (2028) remains constant at US$75/t.

Even with the drop, the price remains attractive. In the short term, even if we adopt a more conservative stance for the **next couple of years (24E-25E)**, the projected average iron ore price of 62% Fe for both years would be around **US$100/t.** This approach gives the commodity some level of implicit pricing power, which would be around **+10% vs. the historical average of the last 10 years**. We conclude that, even if we try to push the curve lower than the consensus, given all the negativity and uncertainty surrounding China, the price will remain (on average) at a level that we consider attractive.

The explanation for this can be found in a few points: **supply dynamics**, structurally more restricted by **(i)** higher mining costs (geological inflation and mine deplatforming) and **(ii)** changes in regulations towards safer forms of mining, especially in Brazil (de-characterization of dams, a ban since 2019 on upstream construction method for dams, which retain more volume than downstream dams, and an increase in the strictness of licensing regarding environmental impact). We will comment about Simandou project in "Our Take" section, by the end of the report.

As for the **dynamics of demand**, **(i)** exports of durable goods (raw or embedded steel) should help to partially offset weak domestic demand from manufacturing industry. However, **(ii)** for the real estate market, as the difficulties are more structural than cyclical, the situation still worries us a lot and probably will remain in bad shape for longer. This volume of demand, stemming from the formation of construction sites for housing projects, most likely cannot be fully offset by stronger exports by manufacturing industry. That's why we emphasize: price support at levels better than the historical average will almost certainly come from restricting supply and not from increasing demand.

Our Take

As described throughout the report, the changes occurring in China appear to be more structural than cyclical. This suggests that those expecting a strong cyclical shift in internal steel consumption in China may be disappointed.

Has China's economic model completely run of steam?

Understanding the "hot hand" fallacy. The "hot hand" theory suggests that past success increases the probability of future success. However, this belief is nothing more than a fallacy, as analyzed in a highly resonant article in the scientific community on psychological behavior linked to probabilistic events, published in 1985 by Thomas Gilovich, Amos Tversky and Robert Vallone. The study, "Hot Hand in Basketball", questioned the hypothesis that previous successful shots increase a basketball player's chances of hitting the next shot.

The same concept applies to a series of failures, known as the "cold hand". This **common-sense belief** assumes that, for better or worse, **what has happened in the past will continue to happen in the future**. Although the mental confidence that an athlete acquires by accumulating several successful shots does have an impact on their state of mind when they make their next shot, the "hot hand" theory has proven to be **a fallacy from the point of view of mathematical probability**.

The difference here is that an athlete would feel more confident already having a track record of several hits, so he wouldn't get "shaky hands" when making the next shot. This makes sense, but it's much more psychological than probabilistic, as the article argues. The mathematical chance of hitting or not hitting the pitch remains unchanged.

To make it even easier to understand the reasons that would prove that mathematical chances are equal regardless of the past, in another example, the same study suggests two biases originating from the pattern of thinking associated with the toss of a coin: **(i)** the gambler's fallacy, in which it is believed that, after a sequence of heads or tails, the probability of the other alternative increases (which is not true); and **(ii)** the rejection of randomness, believing that a sequence is not representative of a random sample.

Despite being a common-sense perception, the phenomenon known as the "hot hand" is predominantly psychological and not mathematical. This becomes a critical factor in games of chance, such as heads or tails, and inevitably, investments.

Although some may be offended by the comparison, here we make it considering that both events (coin tossing or investing in stocks) deal with issues of the future over which the participants do not have full control of the variables, thus configuring uncertainties in both cases.

Let go of the spreadsheet for a minute and remember, economics is a behavioral science. The idea of a "hot hand" within investment-related economic studies, such as make a series of stock calls apparently driven only by momentum, is actually a psychological phenomenon, not a numerical reality. This belief can lead to **(i)** overconfidence and haughtiness, as well as amplifying the **(ii)** confirmation bias, the **(iii)** illusion of control and elucidating the **(iv)** recency bias (giving greater importance to the recent event alone and disregarding other evidence).

Although institutional investors try to surround themselves with as much information as possible and calculate rationally before acting on a call, both gamblers and investors themselves can, sometimes, subconsciously share this belief, which psychologists' points to has its origins in representational heuristics. We are all human and have behavioral biases. That's why, although there are a lot of numbers, calculations, and reason within professional investment environment, in the end, economic actions are based on the human being's psychology.

For example, data shows that the decision whether to buy shares in an investment fund is very much linked to the track record of the fund manager, despite mathematical evidence suggesting that this factor is highly overestimated. This situation is so indisputable that basically all funds, and in any capital market around the world, have the disclaimer "past performance is no guarantee of future results". The warning is in the prospectus, but still, the widely used factor as the paramount to decide whether to invest in the fund of not is precisely past performance, contradicting the warning. This is because our brains are trained to recognize patterns and expect those patterns to repeat themselves. Therefore, we believe it is notorious that investors often make choices based on their conclusions drawn from evaluating the past performance of assets from a micro perspective and the historically made decisions by policymakers from a macroeconomic perspective, which appears to be a behavior attributed to the "hot hand" fallacy.

The economy is not always made up of cycles. We don't deny that a significant portion of economic activity is affected by cyclical interference, which is temporary. Economic cycles can and should be repeated over a period, whether they are bullish or bearish, hawkish or dovish (in relation to monetary policy and commodities, for example). However, in some situations there are deterministic factors that interrupt cyclical movements, precisely because of structural changes.

Cycles are subordinated to conjunctures, not structures. For example, we can assume the phrase "consumption is weak because interest rates are high". In this case, if the interest rate falls, the condition that hindered consumption to take hold is extinguished. However, as structural breaks are rarer, the greater frequency of cyclical movements encourages most people to believe that they will always repeat themselves in a format very similar to the past, which is not always true. Therefore, the phrase "we're in a bearish cycle, so at some point tables will turn and consumption will rise" is not always accurate.

This psychological tendency causes individuals to categorize assets, fund managers, investments, and economic decisions as "hot" or "cold" based on previous results, regardless of their irrelevance to future results. This occurs in the same way that each coin toss event is unaffected by previous attempts. The exact sciences reveal that we shouldn't stick to the past as an unequivocal way of predicting the future, but the behavioral biases of human beings lead them down other paths, where they often ignore the mathematical factor.

China appears to be a case of the "hot hand" fallacy. Returning to the focus of the report, we mentioned this passage about behavioral studies in investment decision-making to argue that, making the stance of “because something happened in the past it will happen again in the future” is a mathematical error, credited to a psychological belief. People often do this with a high level of conviction because investing, as mentioned before, is a behavioral science. On the other hand, mathematics, which is an exact science, is categorical: looking at the past will not always tell you what will happen in the future, but a portion of investors continues to do so, especially with the Chinese economy.

Throughout the report, we have listed several fundamental points to prove that China's domestic steel consumption can (and should) be lower over the next few years. Some investors even believe that China's economic model has run out of steam, and that China will need to reinvent itself over the next decade. As it became clear in the final chapters, this is also our opinion, but it is not necessarily the majority opinion now. There are still investors who look at China today and try to foresee the same triggers that occurred in the past (such as the stimulus), in order to predict what the future of the country's economy will be. As if we were always stuck with a cyclical idea of an economic model, that would be repeated over and over. For us, this is definitely the "hot hand" fallacy.

China is unlikely to grow at the rate it already has, so get used to the idea. Does this mean that the economic model has gone wrong? No. We also infer that throughout the report. It doesn´t mean that the model wasn't successful. It was... it just reached exhaustion, most likely. This is the current stage of the Chinese economy: the Chinese population should gradually gravitate towards the consumption of services rather than the consumption of goods, and China's industrial GDP over the next few years should lose weight in relation to total GDP. This will lead to lower domestic steel consumption, or at least the absence of the robust growth in the durable goods area that we have seen in China in the past couple of decades. This has already happened with other economies that have reached maturity.

Our thesis about the **Chinese economy** is that **there is a break with the historical pattern of past decades**. Basically, what leads us to believe that there is something different going on is **the changes related to demographics**. China stopped growing its population in 2022 after 60 consecutive years, and even with the withdrawal of the one-child policy in 2015, the currently very low rates of marriage and fertility among women indicate that the size of the population will shrink in the coming years, and probably going to be fast. This is very recent, and it seems perfectly understandable to us that not everyone yet understands the weight that this situation has on the consumption of commodities, especially metals.

However, we believe it is too pretentious to ignore the fact that the movement to reduce domestic demand for steel is taking place concurrently with the slowdown in population growth and the subsequent inversion of the age pyramid as a structural (and not cyclical) demographic milestone. For us, there is no way to disassociate what is happening in China today with the breakdown of demographic patterns that have been in place for more than 6 decades. As it is a change in demographic pattern, our perception is that the reduction in consumption is not cyclical and will last.

We cut the long-term GDP projection. Our GDP projection for China in 2024 remains in line with the previous one, at 4.9% Genial Est., with a slight reduction compared to the official release by the National Bureau of Statistics (NBS) of 5.2% GDP growth last year. However, we have changed our long-term GDP projection for 2030 to 3.8% Genial Est. vs. 4.2% previously.

Iron Ore Fundamentals

If the tone of the report was negative for demand, why aren't we so bearish about mining companies? We began the initial section of the report by arguing that we don't see China on its best days, but the situation may not be as bad as some investors think. Despite the mostly negative stance approached by the report in relation to demand, we emphasize that we are talking about domestic consumption and not total apparent steel consumption in China. When we mention that it seems to us that some investors are carrying pessimism beyond a fair point in their biases, we are referring to total consumption, penalizing it equivalently to the expected reduction in domestic environment. But, in our perception, total consumption in China will not be reduced as much as some may imagine today.

Blast furnace rates are expected to remain high in the coming years. China should continue to have a blast furnace utilization rate close to an average of ~90% over the next few years. This is because, even if there is an overcapacity of the Chinese manufacturing park in relation to domestic demand, as the economy turns more towards service activity and reduces the weight concentration in industrial GDP, our analysis still suggests that Chinese industrial companies will further increase the percentage of exports of their products to other global economies. This somewhat expands the notion of overcapacity from a domestic point of view but guarantees satisfactory levels of production and total demand from manufacturing facilities.

LatAm: Why we have Buy rated mining and Neutral rated steel companies? Chinese steel mills are already doing more exports with crude steel (exporting the surplus), bringing the volume of steel exported in 2023 to the highest level in the last 6 years. We have already heard the argument that this surplus is unrepresentative in relation to China's total installed capacity to produce steel, with ~95Mt being exported in 2023 vs. ~1.1Bt produced, which represents a share of ~9% of last year's total production. But for us, it's cruel to compare the percentage magnitude with the devastating effect this has on other economies that have seen an increase in the penetration rate of imported Chinese steel, including Brazil. This is because world steel production is ~1.8Bt, so China's steel production alone accounts for more than 60% of global production.

So, even though China dispatch "only" 9% of its crude steel production to other locations around the world, these locations receive a flood of Chinese steel. This is negatively affecting Gerdau, CSN and Usiminas. Fundamentally, however, this is good for Vale and CMIN.

In addition to imported crude steel, we also believe that the downstream steel industry itself will be redirected to sell products that China's domestic market will not be able to absorb from now on. The domestic production of electric cars in China, for example, is expected to grow significantly on a global scale in a few years, with Chinese cars increasingly expanding their consumer market over the US, Latin America and Europe. We think Mining companies aren't too worried about the fate of iron ore, and also should be the investors.

Whether the industry's steel consumption will be a reflection of the Chinese people increasing their desire to consume durable goods or not, the truth is that this doesn't concern Vale and CMIN's business. For example, if the electric vehicle is produced in China but exported to USA or Europe, some mining company has still sold the iron ore to the mills to produce that steel, and therefore, the vehicle. In this way, **demand for iron ore is still guaranteed** even with weaker domestic consumption of durable goods in China.

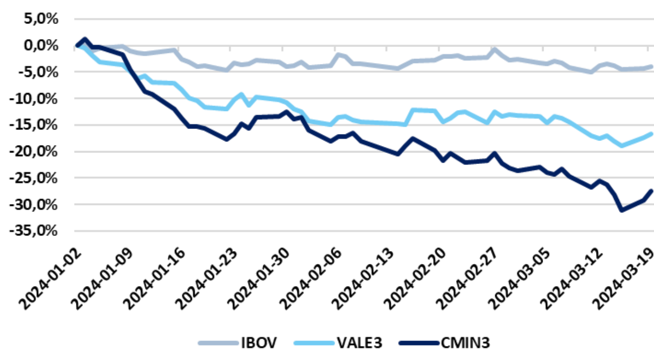
industry shifting towards exports, as **the real estate market is shrinking in China**, and as we have described throughout the report, **this is not a short-term movement**. The reduction will continue for several years. **Nevertheless, blast furnace utilization rates are expected to be maintained at high levels by the manufacturing sector**, which will redirect excess production vis-à-vis domestic consumption towards exports, due to the consistent increase in the quality factor of Chinese durable goods, which are starting to compete with countries with more traditional industries such as the USA, Germany, and Japan, at more equidistant levels compared to a decade ago. But the price is still lower.

Supply restrictions vs. the Simandou project. In addition, we believe that in the coming years there are issues related to greater pressure on the commodity supply system. A tighter supply could lead to upward cycles in the price of iron ore, such as the V-shaped recovery we saw at the end of last year. On the other hand, there is also the **Simandou project**, located in Guinea (West Africa), which contains ~60Mtpa of 66% Fe quality, after its complete ramp-up. Today it is the most important project in terms of adding capacity to the Seaborne iron ore supply system.

Rio Tinto has been granted exploration rights to the project for over 27 years. What once seemed like a distant reality is now truly coming to fruition. Rio Tinto confirmed this year that it expects the first shipment to occur in 2025, with full ramp-up by 2028. The project is ambitious, comprising the construction of 2 mines + 1 railway + 1 port. In total, Rio Tinto's investment is expected to reach ~US$20bn. Even with the turbulence that Guinea has gone through (including 3 coups d'état), some investors believe that China could push to speed up the execution of the project and thus eliminate the risks of supply restrictions as a variant of a rise in the price of iron ore. This seems to be in the interests of the Chinese government.

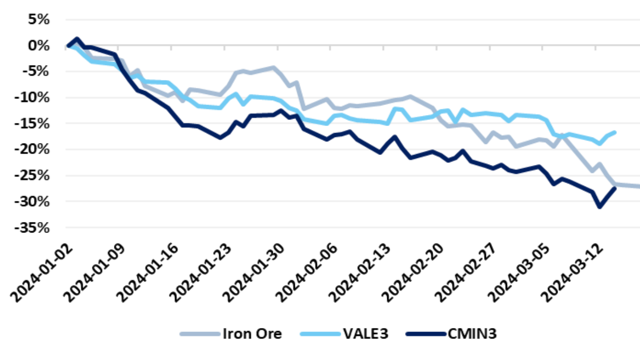
Our view is that the project should be inaugurated between 2025-2026, probably with a one-year delay compared to Rio Tinto's expectation in our base scenario. However, we do not believe that this will change the short-term fundamentals of a situation with tighter supply. This is because we judge that **(i)** geological inflation, **(ii)** greater difficulties for major mining players to overcome the depletion rates, and **(iii)** the slow ramp-up of the Simandou project, together, will support the thesis that **supply will still be a decisive factor** in the short-term price of iron ore, with **projected prices** averaging **~US$100/t Genial Est.** over **2024-2025**.

Graph 25. IBOV vs. VALE3 vs. CMIN3



Source: Genial Investimentos, Bloomberg

Graph 26. Iron Ore 62% Fe vs. VALE3 vs. CMIN3



Source: Genial Investimentos

Vale

As we have already discussed many effects of the macroeconomic plan, looking now at Vale's micro, **the effects on valuation are**:

(i) Lower price realization value in iron ore, due to the 62% Fe benchmark reduction we now estimate vs. previous curve; **(ii**) Reduction of the Enterprise Value (EV) in our model, due to **adding to the account the NPV of the negative cash flow** with the **payments of the adjustments** charged by the Brazilian government, through the Ministry of Transport, **on the concession of the EFVM** (Vitória-Minas Railroad) and **EFC** (Carajás Railroad); **(iii)** Slight hardening of assumptions related to payment terms of the **Mariana settlement** vs. previous estimates; **(iv) All-in premium** projected at **US$2.7/t 24E**, below guidance of US$3-4/t; **(v) C1 cost ex. purchase from third parties** projected at **US$22.9/t 24E**, in line with the upper guidance band of US$21.5-23/t; **(vi) Iron ore production** estimated at **315Mt 24E**, in line with the intermediate guidance band of 310-320Mt, even though Vale is giving indications that it may reach the upper band; **(viii)** Modification to our discount rate, as we cut our projection of China's long-term GDP (2030) to 3.8%, which infers a **reduction in our** perpetuity growth **rate by -4p. p** vs. the rate used previously.

We believe that our choice of assumptions entails a **conservative bias**, particularly given **the lack of bullish sentiment** among **most of the investors** we've spoken to **regarding Vale's name**. Consequently, we opted against selecting assumptions that might appear overly aggressive, aiming instead to reflect more appropriate levels of upside in our valuation. Our objective is to assess the **resilience of our model** under **stressed scenarios** compared to the current trading price of the shares, which is notably low.

It is important to mention that in the case of point **(ii)**, regarding the additional payment for the concession already established for the **EFVM and EFC assets**, the assumption used is 60% of the amount requested in the letter issued by the Ministry of Transportation in January, amounting to R$25.7bn, which would be approximately R$15.5bn (~US$3bn), with 20% of the amount paid upfront and the remainder in equal installments over 26 years (concession time-frame until runs out of contract), discounted to present value by our **Ke rate** of **11.75%**. This results in a **total impact** of **-U$$1.2bn**, deducted directly from the valuation through **FCFE**.

As mentioned at the beginning of the report, **we will be publishing** a **separate piece** in the coming days focusing specifically on the microeconomic aspects of Vale in greater depth, particularly **regarding the overhangs** (Mariana agreement, CEO naming decision, and government pressures). We have chosen to concentrate efforts in this current publication on the macroeconomic aspects of China, which is being read more intensively now. This approach is proposed to **prevent the report from becoming overly lengthy**, which could deter investors from reading the complete content.

The **conclusion** after several modifications to our model to reflect everything described in the report is that the **12M Target Price** has been **cut** to **R$72.30** vs. R$82.50 previously for **VALE3-B3**. Regarding the **ADRs-NYSE**, the **12M Target Price** is now **US$14.50** vs. US$16.75 previously. The shares therefore now have an **upside** of **+18.86%** according to our model, trading at **EV/EBITDA 24E** of **4.3x** (below the historical average of ~5x). We reiterate our **BUY rating**, because we're already forcing **conservative assumptions** into the model, and **the valuation looks too discounted to ignore**.

CMIN

As for CMIN's micro, **the effects on valuation are**:

(i) Lower price realization value in iron ore, due to the 62% Fe benchmark reduction that we now estimate vs. the previous projection; **(ii)** Maintenance of the same production level in our model as the previous report on 4Q23 review, with **43Mt 24E** vs. 42-43.5Mt in the guidance; **(iii)** Expectation of a better balance between own production vs. third-party purchases, with an increase of +2.5Mt vs. 2023 in own production and a reduction of -2.5Mt in purchases from third parties; **(iv)** This situation should **increase CMIN's margins**, and as the movement that follows is **independent path from price of iron ore**, we still believe that the **prospects for the company are good in the short term** and that the **market is underestimating the company's potential** in relation to the reduction in purchases from third parties. The proof of this was precisely the **strong 4Q23 result**. We believe there is more to come.

Despite an interesting micro perspective due to our expectation of margin improvement, we couldn't avoid a **cut** in the **12M Target Price** to **R$6.20** vs. R$7.00 previously, as we **reduced the realized price** due to the estimate of a **lower 62% Fe iron ore curve than before**. Nevertheless, the **upside** in our model remains at **+16.98%**. Trading at an **EV/EBITDA** of **4.1x**, we reiterate our **BUY rating**.

Appendix: Vale

Figure 1. Vale – Income Statment in USD Millions (Genial Est. 2024-2029)

Income Statement	2024E	2025E	2026E	2027E	2028E	2029E
Net Revenue	**36.867**	**41.721**	**42.511**	**44.199**	**45.089**	**48.808**
(-) COGS	(23.902)	(26.361)	(26.466)	(27.643)	(29.119)	(31.523)
Gross Profit	**12.964**	**15.360**	**16.045**	**16.556**	**15.970**	**17.285**
(-) Expenses	(3.417)	(3.342)	(3.179)	(2.782)	(2.428)	(2.573)
Adjusted EBITDA	**12.693**	**15.744**	**16.313**	**17.361**	**17.264**	**18.562**
(-) D&A	(3.192)	(3.356)	(3.512)	(3.661)	(3.802)	(3.936)
EBIT	**9.502**	**12.388**	**12.801**	**13.700**	**13.462**	**14.626**
(+/-) Financial Result	(1.910)	(1.942)	(2.198)	(2.254)	(2.260)	(2.344)
(-) Taxes	(875)	(1.401)	(1.497)	(1.637)	(1.608)	(1.777)
Net income	**6.717**	**9.044**	**9.106**	**9.810**	**9.594**	**10.505**
Profitability						
Net margin (%)	18,22%	21,68%	21,42%	22,19%	21,28%	21,52%

Figure 2. Vale – Cash Flow in USD Million (Genial Est. 2024-2029)

Cash Flow (FCFF)	2024E	2025E	2026E	2027E	2028E	2029E
Net Revenue	**36.867**	**41.721**	**42.511**	**44.199**	**45.089**	**48.808**
(-) COGS	(23.902)	(26.361)	(26.466)	(27.643)	(29.119)	(31.523)
Adjusted EBITDA	**12.693**	**15.744**	**16.313**	**17.361**	**17.264**	**18.562**
Adjusted EBIT	**9.502**	**12.388**	**12.801**	**13.700**	**13.462**	**14.626**
(-) Taxes	(875)	(1.401)	(1.497)	(1.637)	(1.608)	(1.777)
(+) D&A	3.192	3.356	3.512	3.661	3.802	3.936
(+/-) Δ WK	3.405	911	158	(43)	(141)	(61)
(-) Capex	(6.500)	(6.500)	(6.500)	(6.500)	(6.500)	(6.500)
FCFF	**8.723**	**8.754**	**8.475**	**9.181**	**9.015**	**10.224**

Appendix: CMIN

Figure 1. CMIN – Income Statment in BRL Millions (Genial Est. 2023-2028)

Income Statement	2023E	2024E	2025E	2026E	2027E	2028E
Net Revenue	**18.483**	**18.610**	**18.564**	**20.993**	**19.561**	**17.607**
(-) Cash COGS	(8.842)	(9.049)	(9.361)	(10.795)	(10.746)	(10.549)
Gross Profit	**8.623**	**8.081**	**7.456**	**8.169**	**6.500**	**4.458**
(-) Expenses	(2.564)	(2.023)	(1.941)	(2.141)	(1.901)	(1.619)
Adjusted EBITDA	**7.317**	**7.135**	**6.858**	**7.658**	**6.513**	**5.034**
(-) D&A	(1.018)	(1.480)	(1.746)	(2.029)	(2.315)	(2.600)
EBIT	**6.005**	**5.840**	**5.297**	**5.810**	**4.381**	**2.621**
(+/-) Financial Result	(750)	759	1.016	1.217	1.317	1.380
(-) Taxes	(1.598)	(2.125)	(2.033)	(2.263)	(1.835)	(1.289)
Net income	**3.657**	**4.474**	**4.280**	**4.764**	**3.863**	**2.713**
Profitability						
Net margin (%)	19,79%	24,04%	23,06%	22,70%	19,75%	15,41%

Figure 2. CMIN – Cash Flow in BRL Million (Genial Est. 2023-2028)

Cash Flow (FCFF)	2023E	2024E	2025E	2026E	2027E	2028E
Net Revenue	**18.483**	**18.610**	**18.564**	**20.993**	**19.561**	**17.607**
(-) COGS	(8.842)	(9.049)	(9.361)	(10.795)	(10.746)	(10.549)
Adjusted EBITDA	**7.317**	**7.135**	**6.858**	**7.658**	**6.513**	**5.034**
EBIT	**6.005**	**5.840**	**5.297**	**5.810**	**4.381**	**2.621**
(-) Taxes	(1.598)	(2.125)	(2.033)	(2.263)	(1.835)	(1.289)
(+) D&A	1.018	1.480	1.746	2.029	2.315	2.600
(+/-) Δ WK	110	303	(36)	(33)	68	149
(-) Capex	(1.380)	(1.486)	(2.508)	(3.585)	(5.060)	(5.124)
FCFF	**4.155**	**4.012**	**2.466**	**1.958**	**(131)**	**(1.043)**

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