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## BRAZIL & CHILE: MINING GIANTS



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# BRAZIL & CHILE: MINING GIANTS

Located on the opposite side of the globe, South America's Brazil and Chile may be geographically far from Japan, but they are indispensable partners, supplying important mineral resources such as iron ore, copper, and lithium. In this issue's special feature, the former head of JBIC's Representative Office in Rio de Janeiro and staff working on the frontlines to secure mineral resources for Japanese companies explain the latest developments in Brazil and Chile, their economic relations with Japan, and their proactive efforts to decarbonize resource development.

## Working together for Brazil's resource-driven economy and Japan's technology-driven economy

- » Brazil assumed the G20 presidency for the first time in 2024. It aims to highlight its presence as a major Global South nation.
- » Home to a wide variety of mineral resources, representing one of the world's largest reserves. There is also growing momentum behind the development of lithium and other resources that are key to decarbonization.
- » Brazil will host COP30 in 2025 and demonstrate its leadership in climate change response. This new market could provide business opportunities for Japan and its cutting-edge technologies.

### A change of government and a major policy shift in South America's resource-diverse powerhouse

As a leading nation in both South America and the Global South, Brazil is also in the limelight due to its 2024 G20 presidency. With a population of about 215 million and GDP of some USD2 trillion, the country ranks among the world's top 10 economies. Its vast territory boasts a diversity of quality mineral resources, as well as petroleum, and it

is the world's second-largest producer of bioethanol, following the U.S.

In May 2024, Prime Minister KISHIDA visited Brazil—the first time in eight years for a sitting Japanese premier—and had a summit meeting with President Lula. The two leaders reaffirmed the importance of bilateral relations as strategic and global partners.

Over the past few years, the Brazilian economy has faced headwinds such as soaring power costs and crop failures due to a historic drought, and inflated import prices due to depreciation of the

Brazilian real against the U.S. dollar. However, driven mainly by the mining, agriculture, livestock, and service industries, real GDP growth was 4.6 percent in 2021 (lifted by a post-pandemic rebound), 2.9 percent in 2022, and 2.9 percent in 2023, surpassing pre-pandemic growth rates.

Regarding the recent economic situation in Brazil, ISHIKAWA Noriyuki, who headed the JBIC Representative Office in Rio de Janeiro for nearly five years until April 2024, notes that "Recently there has been damage from floods

The Casa de Pedra iron mine quarry, a high-quality iron mine located in central Brazil

and storms caused by extreme weather, and there is still some lack of transparency concerning President Lula's policy direction, but I think we can say that the situation is basically steady."

President Bolsonaro was in power in Brazil when ISHIKAWA took up his post in 2019, but in January 2023, the reins of government were taken over by an administration led by President Lula, who assumed the presidency for the third time. The Bolsonaro administration advocated for small government, was very pro-businesses, moved to privatize state-owned enterprises, and reform social security and reduce government spending in order to cut the budget deficit. The policies of the current administration are a complete change of direction, aiming for a return to big government, halting privatization plans and expanding the role of state-owned companies. In addition, with reducing inequality a top priority, the Lula administration is focusing on initiatives such as reviewing minimum wages,

strengthening social security, and revising spending caps, a sharp policy shift to a willingness to take fiscal stimulus measures. In April 2024, the government also dropped the goal of achieving a primary balance surplus by 2025.

"In his address at COP27 (27th session of the Conference of the Parties to the Framework Convention on Climate Change) in November 2022, immediately prior to his inauguration, President Lula stated that 'Brazil is back' in the international community's fight against climate change. His position of taking the lead in placing importance on environmental measures was welcomed by the leaders of the West and other countries, and this became the international debut for his policy of omnidirectional diplomacy."

### China expanding its presence and soft power through cultural projects

The Lula administration is actively promoting its stance of omnidirectional diplomacy and is strengthening its ties with emerging economies. One notable change is the growing presence of China. China is Brazil's largest trading partner, ranking number one in both imports and exports, and Brazil is China's largest trading partner in Latin America. Adding to this momentum is Brazil's state-owned oil company Petrobras selling some of its interests in offshore oil fields to its Chinese counterpart China National Offshore Oil Corporation (CNOOC), and announcing a partnership with China Petrochemical Corp. (Sinopec) in areas including oil exploration and research. ISHIKAWA points out that although there were not that many Chinese expats in the past, their numbers have increased in recent years.

"In the past, Asians were rare on the streets of Rio de Janeiro, but recently we have been seeing more Chinese. There is also a large number of Chinese companies such as state-owned oil company and state-owned bank in the building where the JBIC representative office is located. I have the impression that organizations that used to send just a few representatives have expanded their staff to 20 to 30 people. At international conferences held in Brazil, there has been an increase in occasions where simultaneous interpretation is provided in Chinese, in addition to English and Portuguese."

China is also growing more prominent in culture and the arts. For example, the logos of Chinese companies now regularly appear as exhibition sponsors at museums in Rio de Janeiro. And there are an increasing number of music concerts sponsored by Chinese companies

held at the municipal theater and a naval fort, both of which are historical buildings. "Such concerts are a little unusual in that, after bossa nova or Brazilian pop, Chinese performers play Chinese music on traditional instruments such as the erhu, or perform Chinese dances in traditional dress."

As Brazil marks the 50th anniversary of diplomatic relations with China in 2024, the leaders of both countries intend to strengthen their strategic partnership as important trading nations. On the other hand, there is a persistent wariness in Brazil around a shift toward China. "That's why China came up with the strategy to improve its image in Brazil using culture and the arts," explains ISHIKAWA.

### A long history that built trust in Japan, and diversification of mineral resource development

Brazil has deep historical ties with Japan, home to the world's largest Japanese diaspora, said to number more than 3 million. After the first emigration ship to Brazil, Kasato Maru, crossed the Pacific in 1908, many Japanese followed, employed as farmers on coffee plantations and other farms. In the 1950s, with the birth of numerous national public-private projects between Japan and Brazil in fields including steelmaking, aluminum production, and agriculture, more Japanese companies began expanding their operations to Brazil. Japan's contributions to Brazil's nation-building are also widely recognized in the country.

"Brazil as a whole is very pro-Japanese, to the point that there is even a Portuguese phrase, 'Japonês garantido' ('Japanese guaranteed,' which expresses a high level of trust in Japanese products and Japanese people). Respect for Japan



Joined the then Bank of Tokyo-Mitsubishi in 1999. After studying and working in Brazil, he joined JBIC in 2007 where he was engaged in sovereign finance, equity finance and other facilities at the International Finance Department III, the Americas Finance Department, and the Equity Investment Department. From August 2019 to April 2024, he was the Chief Representative of the JBIC Representative Office in Rio de Janeiro.



is very high, even now,” says ISHIKAWA. In September 2023, Japan granted Brazilian citizens visa exemptions for short-term stays. And Brazil’s visa waiver for Japanese citizens is also being continued, which is expected to promote visits between the countries and boost cultural and economic exchanges.

Since the 1950s, JBIC has been supporting large projects not only in the resources and energy sector, including iron ore, deep-sea oil field development, aluminum, and pulp and paper, but also in the infrastructure sector, such as the construction of freight railways, subways, and expressways. Support has also been provided for exports and investments by Japanese companies developing business in Brazil in sectors including manufacturing and service industries.

“In terms of mineral resources, as long as the steel industry continues to be a pillar of Japan’s economy, Brazil will remain a vital supplier of raw materials for the sector. In recent years, decarbonization of the steelmaking process in Japan has become an urgent issue, further increasing Brazil’s importance as a supplier of high quality and rare, low-carbon raw materials for steel that contribute to the reduction of carbon emissions,” says ISHIKAWA.

For many years, the image of Brazil’s mineral resource development was that its core strategy was a focus on iron ore, but it is now diversifying with initiatives including active exploration of lithium deposits, centered on the thriving mining industry in the southeastern state of Minas Gerais. For Japan, as well, Brazil’s importance is growing from the perspective of strengthening supply

Huge dump truck with a payload capacity of 240 tons, which is used in the mine



chain resilience by diversifying supply sources of critical minerals.

#### Utilizing Japanese technology in the environmental sector and the obstacle of “Custo Brasil”

Nevertheless, the number of Japanese companies in Brazil has been hovering at about 700 over the past decade, with sluggish growth in new market entries. ISHIKAWA points out that there are several factors behind this: “First, the deep-rooted issue of so-called ‘Custo Brasil,’ the costs and inefficiencies of doing business in Brazil, which include the complicated tax system, underdeveloped infrastructure, and labor costs. It is a high-inflation country, with a policy interest rate of over 10 percent at the moment, as well as volatile exchange rate fluctuations. Japanese companies have not fully mapped out strategies on how to position Brazil in their supply chains. My impression is that there are still many companies that regard Brazil

as just a source of natural resources and agricultural products.”

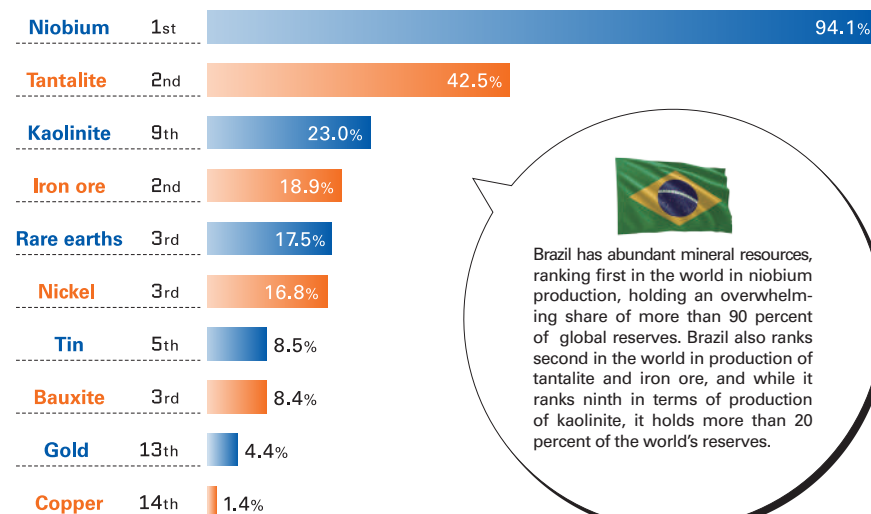
Of course, Brazil’s government has not been sitting idly by. From around the start of OECD accession talks in 2022, it has been working hard on tax and administrative reforms, amending the constitution in December 2023 to simplify the tax system and lighten tax burdens on corporate activities. As this amendment had been discussed repeatedly without progress since the 1990s, it was lauded in industrial circles as a game-changer. This tax reform also led the S&P Global Ratings agency to upgrade its credit score on Brazil’s long-term sovereign debt from “BB-” to “BB.”

There are great business opportunities for Japanese companies in the areas of climate change countermeasures and renewable energy, which the Lula administration is focusing on, according to ISHIKAWA.

“How serious President Lula is about this can be seen in his role in the Belém Declaration of August 2023, which was adopted by the eight countries of the Amazon region as a common framework to protect the Amazon rainforest and halt its destruction.” COP30, which is scheduled to be hosted by Brazil in November 2025, will also be held in Belém, the capital of the northern state of Pará, where the declaration was signed. When Prime Minister KISHIDA visited Brazil, there was a focus on promotion of cooperation between Japan and Brazil for comprehensive carbon neutrality as it relates to the environment, climate change, and sustainable development, as part of the lead-up to COP30.

Brazil has a history of producing bioethanol from sugarcane as a national policy that dates back to the 1970s. In recent years, production technology for second-generation bioethanol made from the sugarcane bagasse waste product has also been established. With

#### Brazil's ranking in global mineral resource production and share of reserves (2022)



applications developed for its use in sustainable aviation fuel (SAF), which does not use fossil fuels, business opportunities are being pursued for its use in decarbonizing the aviation industry. A pilot project has also been launched for the production of green hydrogen, a next-generation energy source, utilizing Brazil’s abundant renewable energies. Centering on Western companies that are closely watching this region as a base for exports to European market, there are moves underway to accelerate alliances with local companies.

Brazil also has high potential in terms of carbon credit (carbon emission rights). Carbon credits generated by forest conservation and afforestation projects are already actively traded on the voluntary carbon market (where companies and individuals voluntarily purchase carbon credits to achieve carbon neutrality), making commercialization of forest and environmental conservation possible. Deliberations on a bill to regulate the carbon credit market are also underway, and new business opportunities will emerge in the runup to COP30 next year.

ISHIKAWA also strongly senses that Japanese companies are gearing up to embark on new activities in this field.

“As we already have an idea of what we need to do, we are now in the process of discussing the specifics by involving local partners. Japan and Brazil have a relationship of trust that has been nurtured for over half a century. How should Japan’s cutting-edge, innovative technologies be deployed to tackle social issues and the decarbonization shift in Brazil? JBIC also wishes to take the lead in providing active support here.”



## New JBIC support connects Brazil's Vale and Japanese companies for greener steelmaking

JBIC has a cooperative relationship with Brazilian metals and mining giant Vale that goes back nearly half a century. A loan to Vale was the first after the April 2023 amendment to the JBIC Act expanded eligibility to include cases of resource procurement by overseas subsidiaries of Japanese companies.



Pellets are spheres with a diameter of 1 to 3 centimeters made from processed iron ore.

#### Close relations with a world-leading resource supplier support raw materials for greener steel to help reduce emissions

Vale S.A. is one of the biggest mining companies based in Brazil and a world-leading supplier of mineral resources. Through initiatives including collaboration since the 1980s centering on iron ore, JBIC has been building a close relationship with the company for nearly half a century. A large-scale loan agreement for USD480 million was signed in March 2024. TAMIYA Shintaro and HATA Hitomi of Division 2, Mining and Metals Finance Department, who were in charge of this agreement, both say, “It was a major project that kept us on our toes for six months once full negotiations were underway.”

Vale’s ground and processed iron ore, known as pellet feed, and the pellets made from it, are essential not only for the conventional blast furnace steelmaking process, but also for electric furnace and direct hydrogen reduction steelmaking, which can reduce carbon emissions during production. The loan seeks to ensure a stable supply of these materials from Vale to Japanese companies.

#### Structuring an unprecedented new scheme and tough but fruitful negotiations

Vale expressed interest in JBIC financing but at that time, it fell outside the scope of the JBIC Act, which limited loans for resources that were directly imported to

Japan. However, all that changed with the April 2023 amendment of the act, which made procurement of resources by Japanese overseas subsidiaries eligible for loans. “Vale approached us before the amendment, but it was only after the amendment that actual progress was made in our talks,” explains HATA. “Being the first case after the amendment of the law, there was no precedent to guide us, so we proceeded to examine potential schemes while conferring with relevant departments within the bank.”

While the bank considered this first import loan project after the legal reform, it was also necessary to carefully explain the background and purpose of the amendment to Vale to receive their full understanding of JBIC’s requirements. In addition to online meetings, TAMIYA even traveled to Brazil twice for tough negotiations. “The time difference between Japan and Brazil means our lives are on completely different schedules, limiting the chances for discussions.

Since we were aiming to conclude the agreement by March 2024, we were under pressure to work things out quickly and not waste any time. But Vale took careful note of our opinions and thanks to their understanding and close cooperation, we were able to successfully sign the agreement. It was a great pleasure to hear thoughtful words of appreciation from Vale when we had a meeting in Japan after signing the loan agreement.”

An unprecedented first project, the time difference, and tough negotiations with a world-leading company—the agreement was concluded by overcoming numerous obstacles and through teamwork, at times with TAMIYA in Brazil and HATA in Japan. This was a valuable project that not only contributes to the stable supply of mineral resources that are crucial for Japan’s steel industry and its decarbonization, but helps strengthen relations with Vale, which also holds an important place in Japan’s resource strategy.



(From left)  
**TAMIYA Shintaro**  
Deputy Director, Division 1 and 2  
**HATA Hitomi**  
Division 2  
JBIC’s Mining and Metals Finance Department, Energy and Natural Resources Finance Group



Press release on this project >>>



## An eco-friendly mine development in Chile, the world's largest copper producer

- » Chile is a “copper powerhouse,” accounting for over 20 percent of the world’s reserves and production. It is also Japan’s largest copper supplier.
- » Importance is placed on environmental and social considerations in mine development, with several hundred permits necessary.
- » In addition to copper, which is indispensable for electrification, development of new resources associated with decarbonization, such as lithium and hydrogen, is also underway. JBIC is supporting development of these resources in partnership with the government of Chile.



The ore beneficiation plant which crushes ore from the Centinela copper mine in northern Chile, and separates and recovers copper.

Copper is used in a wide range of applications, including power transmission and wiring, electric vehicles, renewable energy systems, and semiconductors. Demand is expected to increase even more due to its use in AI and data centers. KATAYAMA Hiroki, SASAKI Kota, and MORISAKI Momoko of JBIC’s Mining and Metals Finance Department, Division 1, explain the importance of Chile from the aspect of mineral resources, and the initiatives taken for environmental and social considerations in mine development.

**Q What is the relationship between Japan and Chile in terms of copper resources?**

**MORISAKI:** When people hear “Chile,” wine and foods such as salmon that are a part of our daily lives might generally come to mind, but from the perspective of mineral resources, Chile is the world’s leading “copper powerhouse,” holding more than 20 percent of the world’s reserves and production. It is also Japan’s

largest copper supplier, and so in terms of the Japanese government’s resource diplomacy, it is positioned alongside Middle East oil-producing countries as a traditional stable resource supplier. Japan imports all of its copper concentrate, the raw material used to make copper, meaning a long-term, stable supply is vital; Chile fulfills that crucial role.

**Q What are the key points in developing business there?**

**KATAYAMA:** Mine developments are long-term developments requiring a large amount of investment, and so a country’s risk profile is extremely important. In this respect, Chile is an OECD member regarded as a “developed country in South America” that is politically and economically stable. Another very important advantage is the country’s emphasis on attracting foreign investment to drive economic growth and its track record of maintaining a business-friendly environment. Even in the process of formulating the New

Mining Royalty Law, enacted in 2023 to implement a special mining tax, the government held talks with the mining industry and other stakeholders, reaching an acceptable consensus.

**SASAKI:** Similar to Brazil and other Latin American countries, there is an issue with the time difference since it is located on the opposite side of the world from Japan. Flying to Chile is also work in itself since it takes about 30 hours including transit. However, public safety is good, and depending on the place, you can basically go out at night without fear. The people of Chile are very diligent and appear to have a strong affinity with Japanese work styles compared to other Latin American countries.

**Q What environmental and social initiatives are taken in copper mine development?**

**MORISAKI:** One notable feature of Chile is how thorough it is regarding environmental and social stewardship in mine development, with the government

requiring a wide range of permits. I was able to get a real sense of this when I visited the country in 2023 for an environmental survey of a new project. Several hundred permits and approvals related to the mine development were required. In addition to permits for the mine development itself, an environmental impact assessment report for the entire project had to be approved, and a range of measures were required to meet the necessary conditions and commitments.

One example is the protection of vegetation in the developed area. Plants that can be transplanted are transplanted, but this is not possible for some species. In such cases, seedlings are planted, sometimes as many as 10 times the original number of plants in the planned area. If the habitats of certain species of reptiles or mammals are confirmed, their nests will also need to be moved to another location. There are also times when archaeologically significant sites are unearthed after mine excavation begins, in which case the plans for the mine development area itself may be changed.

In search of new copper deposits, mine developments are taking place on higher ground and farther into the backwoods. Lenders need to determine whether the economic feasibility of a project can be secured while conducting “responsible production,” including construction safety and environmental impact.

**KATAYAMA:** Securing water resources is a perennial issue in Chile, and notably, there are many copper mines in the desert area in the north of the country, which has severe water shortages. Copper mines require large amounts of water, raising concerns that diverting from rivers and groundwater will disrupt the supply for local residents and negatively impact the ecosystem. To avoid this, measures have also been taken in recent years to use seawater desalination plants to draw water from the sea to inland mine sites. Consideration for local communities is paramount for developments.

**SASAKI:** The current Boric administration is particularly conscious about giving back to the people through resource development, but Chile is a country that has long emphasized environmental and social stewardship. When doing business in Chile, it is important to keep in mind that even higher levels of environmental and societal consideration may be required in the future. Meanwhile, at the copper mines, they are trying to build sustainable production systems that take into account the environment and safety. These include switching to renewable energy sources, recycling water, and automating and remotely operating dump trucks. We will be keeping a close eye on future developments.

**Q Are there any other resources besides copper that we should be paying attention to?**

**KATAYAMA:** In the mineral sector, that would be lithium. Demand is increasing, especially for use in EVs, and many countries are focused on its acquisition. Chile ranks among the top three countries in the world for both lithium reserves and production. Under the National Lithium Strategy, Chile’s government is implementing a state-led initiative to develop it as a strategic commodity. It has signaled its intention to promote its development by partnering with overseas companies with technologies for direct lithium extraction, which has a lower environmental impact and is more efficient than the conventional lithium brine extraction method. This presents opportunities for Japanese companies. In November 2023, JBIC signed a Memorandum of Understanding (MOU) with Corporación Nacional del Cobre de Chile (CODELCO), which plays an important role in the National Lithium Strategy, with the objective of promoting collaboration between CODELCO and Japanese companies in the sectors of critical minerals, such as copper and lithium, and decarbonization, and to accelerate the structuring of projects.

**SASAKI:** From the perspective of



Chile, which consists of a long and narrow strip of land stretching from north to south, has natural conditions in each part of the country that are optimal for renewable energy. Wind and solar power generation facilities line the Atacama Desert in the north.

decarbonization, hydrogen is another area where business opportunities for Japanese companies will probably expand. Chile has abundant renewable energy sources, with solar power in the north and wind power in the south, and its competitiveness ranks among the top in the world. To make green hydrogen, which is produced using these renewables and has been set as the state’s next driver of growth, the government of Chile released its National Green Hydrogen Strategy in November 2020. It aims to establish a production system for the world’s most affordable green hydrogen by 2030, and become one of the world’s leading hydrogen exporters by 2040.

In response to such trends, JBIC signed an MOU with Chile’s Ministry of Energy in August 2023 to promote the development of green hydrogen and ammonia. I hope that the relationship JBIC has cultivated with Chile will be strengthened in these new areas as well, so that we can further support Japanese companies in developing their business.



(From right)  
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**SASAKI Kota**



JBIC engages in various projects around the world. Senior JBIC staff on the front line share their thoughts and stories behind their projects.

Support for Chile's Quebrada Blanca copper mine development, including improving hygiene

## Boldly taking on the challenge of supporting a massive project to secure a long-term, stable supply of copper resources for Japanese industry

JBIC provided additional financing for the development of a world-leading Chilean copper mine in which Japanese companies have equity stakes. MATSUNOKI Hayato, who led the structuring of the deal, shares his story.

### Located at an elevation of 4,400 meters, the pandemic necessitated additional funds for mine site safety

The Quebrada Blanca copper mine in northern Chile takes more than a full two days to reach from Japan. At the mine's lodgings, located at 4,400 meters above sea level, oxygen tanks sit next to the beds. MATSUNOKI Hayato of Division 1, Mining and Metals Finance Department, recalls, "We were told to put on a mask when we go to sleep if we felt unwell." But this apparently grueling environment piqued the curiosity of MATSUNOKI, who is "the kind of person who can enjoy anything." He explains, "It was a world that could only be seen through work. I was very emotionally invested in this project because it was my first since joining the bank."

Japanese companies have a combined 30 percent stake in the mine development, and JBIC has made loans totaling USD2.09 billion for the project, including project financing of USD900 million in 2019.

While the construction of the project

was underway, the COVID-19 outbreak required the development of a more hygienic environment, including infection control measures. Delays caused by the isolation of infected construction workers and the resulting lost productivity increased costs and thus the required additional investment. Subsequently, the Japanese companies with equity stakes in the project requested support from JBIC.

Placed in charge of this additional financing, MATSUNOKI structured a loan agreement totaling USD450 million, which was signed in March 2023. As the project's backers were aiming for the mine's timely completion and the start of production, this loan was provided in the form of back-financing to the two Japanese companies with equity stakes. Since back-financing depends on the creditworthiness of the financed companies, it has the advantage of shortening the time needed for the loan agreement to be signed.

JBIC has a history of providing support for copper mine development projects in Chile. But the Quebrada

Blanca, with a mine life of some 27 years as of 2023 and minable ore reserves of about 7 million tons, stands out as a long-term, large-scale project for what will be one of the world's largest copper mines when it goes into full operation. Did MATSUNOKI feel pressure being a part of this as his first project? "Because of the size of the loan, there were many points that needed to be sorted out. Changes in the global situation also frequently affected the project. However, thanks to advice from my manager and other senior colleagues who have extensive business experience, I was able to do a job that was very rewarding."

### A flurry of internal briefings and coordination to quickly structure a major deal

As the Quebrada Blanca copper mine was a project under construction, a wide range of matters needed to be finalized. But because the tight copper supply made providing funds for the mine's construction very urgent, MATSUNOKI took the lead and put the financing together for this large-scale project in

Division 1  
Mining and Metals Finance Department  
Energy and Natural Resources Finance Group

### MATSUNOKI Hayato

Joined the bank in 2022. Engages in base metal and battery metal projects in the Americas and Africa. Is in charge of Peru and the Pacific Island countries. Graduated from Waseda University, School of Political Science and Economics.

just five months. Looking back, he says, "Keeping the project's completion in mind, I reviewed every detail, and also focused on conducting internal briefings and coordination." The project was then successfully completed, and the first shipment of copper concentrate arrived in Japan in May 2024.

With its social stability and public safety, Chile is a strategic partner of Japan and a nation for which copper production is an extremely important industry. Changes in the global situation can easily lead to large fluctuations in copper prices, and even slight changes will likely have a significant impact on a project's revenues. But despite this, Japanese companies have been playing a large role in the development and operation of copper mines in Chile. JBIC's support as a Japanese policy-based financial institution will continue to be needed to secure a long-term, stable supply of mineral resources.

JBIC's backing of Japanese companies investing in projects to facilitate their continued operation—even under unprecedented circumstances such

as COVID-19—is extremely significant in helping Japan secure and maintain valuable interests. According to MATSUNOKI, "I believe that this is unique to JBIC, which is capable of taking such a proactive approach to supporting its clients, undaunted even by the difficulties posed by the pandemic."

### Facing the toughest of challenges, able to do both structuring and management of projects

When it was decided that MATSUNOKI would handle this project, a senior colleague who had joined JBIC from a Japanese megabank made a comment that had an immediate effect on him. "The project you have been put in charge of is of a scale that you might experience only once, or never in another company." This brought home to him the significance of being able to undertake such an important task.

"At JBIC, you are expected to be an asset to your department from your first year. Other financial institutions often separate finance structuring and management, but at JBIC you can be



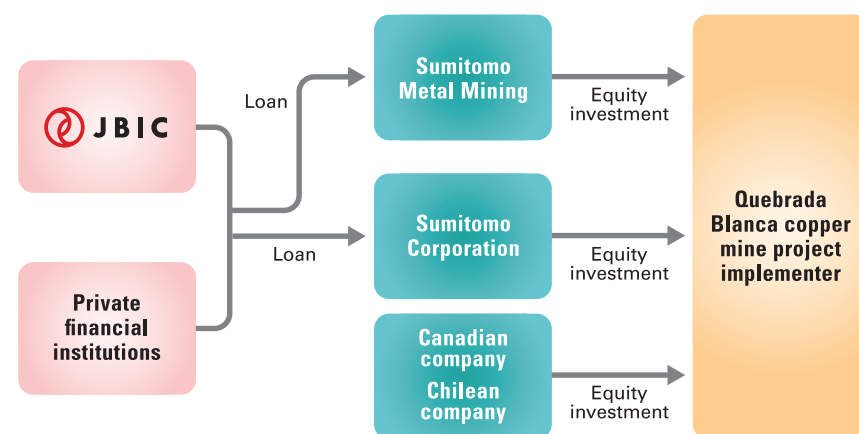
Electric vehicles require four times more copper than gasoline-powered vehicles.

assigned to both new and ongoing projects. The best part of this is being able to be continuously involved in a project."

Since his assignment to the department, MATSUNOKI has been clear about his ambition to take on "highly challenging and complex jobs that have a lot of tough situations." Leveraging the experience from this project, he is eagerly looking forward to getting involved not only in loans but also in equity investments and guarantees, as well as research on markets, and political and economic trends. With such grand aspirations, MATSUNOKI will no doubt reach even greater heights.



Quebrada Blanca mining site and ore processing facility



### Project Summary

In March 2023, loan agreements were signed with Sumitomo Metal Mining Co., Ltd. and Sumitomo Corporation for amounts up to USD625 million (JBIC portion: USD375 million) and USD125 million (JBIC portion: USD75 million), respectively, for development of the Quebrada Blanca copper mine in the Republic of Chile. Co-financed with private financial institutions, these provided the funds needed to build a hygienic environment and implement other measures that became necessary during the construction period due to the COVID-19 pandemic.



Press release on this project >>>





Representative Director & CEO  
Hiroshima Aluminum Industry  
Co., Ltd.

**KOMATSU Rio**

After graduating from a university in the U.S. and working at a bank where his assignments included building an internet banking network, he joined the company in 2007. In 2023, he became the representative director & CEO, succeeding his uncle who was the third-generation head of the company.

**Hiroshima Aluminum Industry Co., Ltd.**

**Local factory to key Mazda supplier to Mexico:  
an aluminum casting maker still taking on new challenges**

The frontier spirit that has driven the company since its foundation gave birth to a sophisticated, versatile casting technology. The company aims to further evolve both in Japan and abroad in line with shifts in the automotive industry.

**The foresight of a century-old company,  
from cookware to auto parts**

Manufacturing is changing, and so is the foundry industry, which is now entering a phase of utilizing IT. In his April 2023 inaugural address as the fourth-generation head of Hiroshima Aluminum Industry, Representative Director & CEO KOMATSU Rio announced a policy of focusing on the development of “light blue personnel,” a combination of the blue-collar workers at the production sites and white-collar workers who leverage IT. It is said that casting, in which products are made by pouring molten metal into molds, is a form of metalworking that dates back to Before Common Era. The company’s stance of always looking to the future has been passed down from generation to generation since its establishment.

Founded in 1921 as a store that sold hardware and daily utensils, the company expanded into the casting business after realizing the lightweight and durable properties of aluminum, which was still rare at that time. Using aluminum

casting, the company began manufacturing *hagama*, a cooking pot for rice with a broad brim that makes it easier to place on the cooking stove.

But when Hiroshima, the company’s birthplace, was devastated by the atomic bomb in 1945, everything was lost, including the life of the founder and the plant. Still, the company maintained its innovative spirit. As gas stoves spread, the second president and eldest son of the founder utilized the company’s aluminum casting knowhow to create the Musui®, a cooking pot which does not require water and remains popular today.

Hiroshima Aluminum was capable of handling all kinds of casting, including the die-casting method, in which molten aluminum is injected into a mold and instantly molded, and sand mold casting, in which the aluminum is poured into a mold made of sand. The company’s technological prowess came to the attention of major automaker Mazda, which is also based in Hiroshima. Given the progress in motorization and the trend for lighter weight vehicles, Mazda was searching for

a partner that could manufacture aluminum parts. “Our company was hoping to enter the market for automobile parts, so you could say that it was lucky timing. Improving technical capabilities and getting business opportunities go hand in hand. I heard that the company worked to meet demands by further raising the level of its technological prowess,” says KOMATSU, recalling the challenger spirit that has been with the company since the beginning.

**Early establishment of the Vietnam plant  
and expansion to Mexico with an eye  
on the North American market**

The third president of the company, who took over in 1995, expanded operations further, and broadened its market beyond Mazda. The company also began to handle large die-casting; it now manufactures several thousand aluminum parts.

While establishing itself as a Mazda partner manufacturer of aluminum casting parts for automobiles, the president at the time also quickly turned his eyes overseas. Amid increasing globalization,



The plant in Mexico (photo), which was established as a North American operations base, mainly manufactures large aluminum casting parts. To handle an increase in demand, a second plant was opened in 2015.

in 2002, the company was ahead of its industry peers in establishing a die-casting production base in Vietnam. While steadily building up expertise in overseas business development, it then expanded operations to Mexico in 2010, anticipating robust North American automobile demand.

At that time, KOMATSU was in charge of the department procuring raw materials, and he made numerous trips to Mexico in preparation for the launch of the plant there. Though it seemed difficult at first, when he got to Mexico, he learned that Japanese competitors were already operating there. This fired up his challenger spirit, and he thought, “We can do it, too.” That experience is fueling his actions now: “It made me keenly aware of the importance of going



Utilizing the aluminum casting technology developed since the company’s founding, it manufactures many parts that are vital to the automobile industry. It is striving to reduce the defect rate and boost production efficiency through the use of IT at its eight domestic plants and five overseas subsidiaries.

and getting firsthand information, and seeing the situation with my own eyes. As countries radically differ in their way of doing things and national character, it is important to carefully assess the situation in each country.”

In Mexico, Hiroshima Aluminum has established another production base through a group company, and made use of financing from JBIC to further grow its business in the country. The company is also expanding operations to China and Thailand, and KOMATSU says that he “senses potential” when he sees how young employees have matured through their assignment overseas.

**Amoeba Management and  
technological innovation  
overcome times of change**

“Casting is an old technology and so old ways remain common in the industry. Since you couldn’t actually see what was happening when molten metal was poured into a mold, the high defect rate of finished products (compared to other industries) was widely accepted. But now, with the use of sensors and simulations, that can be improved. We need to take a broad perspective and change what we have considered to be normal, updating our thinking.”

KOMATSU is also focusing on changing the mindset of each individual employee. With the goal of having them think and act like management through their own initiative, in 1996, the company introduced “Amoeba Management.” This is a management method created by Kyocera’s INAMORI Kazuo, wherein a large organization is divided into small autonomous groups and everyone pools their strengths to achieve goals.



2015 CX3\_See through 1.5L DE Technology CGI

**Loan Summary**

In November 2023, a loan agreement was signed with Hiroshima Aluminum Industries’ subsidiary in Mexico, HAL Aluminum Mexico, S.A. de C.V., for a loan up to USD12.6 million (JBIC portion), co-financed with MUFG Bank. Through support for the manufacture and sales of aluminum automobile parts in Mexico, this loan contributes toward maintaining and improving the international competitiveness of Japanese industry.

KOMATSU also values dialogue with his employees. On his regular visits to the production sites, he makes it a point to speak with staff on the shop floor instead of the plant executives. “When I went to a production site the other day, I was pretty happy when my employees spoke about what their goals are,” he admits a little shyly.

The automotive industry is now entering a period of change with the shift to electric vehicles. As the need intensifies for lighter automotive parts, and aluminum materials are being replaced by plastic, Hiroshima Aluminum is also focusing on processing plastic products and is continuously technologically innovating. “Our accumulated past experience is what shows us the future. Since we can’t just leap into the future, I believe we have to keep our feet firmly planted on the ground, and look ahead, which will point out the direction to take.”

While maintaining a challenging spirit but also humility, he will steadily navigate the turbulent currents of the times.



**Hiroshima Aluminum Industry Co., Ltd.**

1921	Founded
1945	Plant destroyed by the atomic bomb
1973	First company certified by Toyo Kogyo (now Mazda) for quality assurance
1996	Amoeba Management introduced
2002	HAL Vietnam Co., Ltd. established
2010	HAL Aluminum Mexico, S.A. de C.V. established
2011	Hiroshima Aluminum Industry (Nantong) Co., Ltd. established
2013	HAL Aluminum (Thailand) Co., Ltd. established

2008

## A new organization met an unprecedented global financial crisis head-on with special emergency measures

The financial crisis of 2008—which originated in the United States—sparked a global recession. The Japan Bank for International Cooperation (JBIC), which had become the international arm of the Japan Finance Corporation (JFC), committed itself to dealing with the international financial turmoil.



When the subprime mortgage crisis brought down major U.S. investment bank Lehman Brothers, shockwaves reverberated around the world.

Photo: Getty Images

### Problems in the U.S. housing market triggered a global recession

There was a sharp rise during the early 2000s in the U.S. in approvals for subprime mortgages, those given to borrowers with the lowest credit ratings. The subprime mortgage sector was also plagued with issues such as lax risk assessment. These problems came to the fore in the latter half of 2006 as mortgage defaults increased and subprime lenders collapsed one after another. Subprime problems took Bear Stearns to the brink in 2008, followed by Lehman Brothers' bankruptcy in September that year.

Being the largest corporate failure in U.S. history, this sent shockwaves through global markets. Real GDP (adjusted for inflation) in the U.S. contracted 2.5 percent in 2009, with a 0.1 percent fall globally, and a drop of 5.4 percent in Japan. The financial crisis, on the heels of a prolonged recession, and the subsequent appreciation of the yen, which led to a decline in exports and the selling of Japanese stocks by foreign investors, dealt further blows to the domestic economy. Europe was also hit hard, with Greece's debt crisis spreading to Spain and other countries, causing a crisis in the eurozone.

Around that time, in October 2008, the Japan Finance Corporation (JFC) was established through the merger of JBIC and three domestic public finance

corporations. "JBIC" remained the name of the corporation's international operations arm, and the new organization launched its emergency response to the global financial crisis, known as the "Lehman shock" in Japan.

### Special measure fully utilized for both developed and developing countries

To address the crisis, in December 2008, the Government of Japan decided on Immediate Policy Package to Safeguard People's Daily Lives at the Ministerial Meeting on Economic Measures. Based on this policy and the public notice by the Ministry of Finance, JBIC provided credit for exporting companies and loans through Japanese companies for their operations in developing countries, as an exceptional temporary measure.

In addition, the Cabinet approved the "Order for Amendment of Part of the Enforcement Order of the Japan Finance Corporation Act." This allowed general overseas investment loans to be made for a limited period of time to Japanese companies and their overseas subsidiaries and affiliates operating in developed countries, mainly in the U.S. and Europe, in industries where the fallout from the financial crisis could significantly impact Japan's international competitiveness.

Furthermore, JBIC implemented the Leading Investment to Future Environment (LIFE) Initiative to consider

supporting environmental investments by the governments and private sectors of developing countries, centered on Asia, to the tune of USD5 billion over two years. JBIC also agreed to provide financial support by guaranteeing Samurai bonds (yen-denominated foreign bonds) issued by the Indonesian government. Through such contributions to the expansion of investment opportunities both within and outside Japan, and revitalization of markets, JBIC devoted its efforts to responding to disruptions in the international financial order.

### The global financial crisis and JBIC's transformation

2008	September	<b>Collapse of Lehman Brothers and the ensuing global financial crisis.</b>
	October	<b>JBIC and three domestic public financial corporations merge, establishing the Japan Finance Corporation (JFC).</b>
	December	"Immediate Policy Package to Safeguard People's Daily Lives" decided at the Ministerial Meeting on Economic Measures.
2009	October	Start of Greece's debt crisis.
2011	March	Great East Japan Earthquake strikes.
2012	April	<b>JBIC established as a separate and independent entity from JFC.</b>

