

Jinchuan Group International Resources (2362 HK)

High quality and high grade copper cobalt, the leader of international mining enterprises: Initiation

Investment Focus

Initiate with **OUTPERFORM**

Rating	OUTPERFORM
Current Price	HK\$0.40
Target Price	HK\$0.64
HTI ESG	5.0-5.0-5.0
MSCI ESG Rating	B
<i>Source: MSCI ESG Research LLC. Reproduced by permission; no further distribution</i>	
Market cap	HK\$5.00bn / US\$0.64bn
Daily traded value (3mth)	US\$1.99mn
Shares outstanding	12,502mn
Free float (%)	39%
1 yr high - low	HK\$1.04-HK\$0.40

Note: Current Price HK\$0.40 is the close price on 29 Jun 2023



Source: Factset

	1mth	3mth	12mth
Absolute	-8.7%	-35.2%	-57.7%
Absolute USD	-8.6%	-35.0%	-57.6%
Relative to MSCI China	23.3%	-1.8%	-15.9%

(US\$ mn)	Dec-22A	Dec-23E	Dec-24E	Dec-25E
Revenue	882	1,216	1,317	1,429
(+/-)	6%	38%	8%	8%
Net profit	1	148	170	196
(+/-)	-99%	14257%	15%	15%
EPS(US\$)	0.00	0.01	0.01	0.02
GPM	15.4%	26.3%	27.1%	28.3%
ROE	0.1%	12.8%	12.9%	12.9%
P/E	715.2	4.5	3.9	3.4

Source: Company data, HTI

(This note is the English translation of a note that was originally written in Chinese and published on 30 Jun 2023. The original version should prevail.)

- The high-quality copper and cobalt grades provided strong support for the steady growth of performance.** The company's largest shareholder, Jinchuan Group, is the fourth largest copper producer in China and the fourth largest cobalt producer in the world. The Kinsenda Mine is one of the highest-grade copper deposits in the world, with an average copper grade of 5.8%. Cobalt prices fell significantly on average in 2022, down 12% to USD35.790k/t from USD40.738k/t in 2021, but cobalt sales at the Ruashi mine increased by 72% from 2.617kt in 2021 to 4.496kt in 2022, offsetting the risks posed by lower cobalt prices, resulting in a 51% YoY increase in cobalt revenue from mining operations. In 2022, the Ruashi mine produced 30.4kt of copper and 3.961kt of cobalt, realizing revenue of USD448mn (+24% YoY). In 2022, the Kinsenda mine produced 29.1kt (+3% YoY) of copper concentrate, resulting in revenue of USD199mn.
- The Musonoi Project is gaining momentum and will become a new profit growth driver.** Musonoi is mined underground to produce electrolytic copper and cobalt hydroxide. The Project is undertaking an overall resource evaluation drilling program, tenders for beneficiation works have been completed, all major contracts have been authorized and commenced, and the single vehicle commissioning is expected to commence by end-2023. Musonoi has copper resources of 1.084Mt (million tons), cobalt resources of 363kt, copper reserves of 606kt and cobalt reserves of 174kt. Among them, cobalt grades are as high as 0.9%
- Earnings forecast and ratings.** We expect the company's EPS in 2023-2025 to be USD0.01/ 0.01/ 0.02, respectively. According to the exchange rate of USD to HKD of 7.84 on June 5, 2023, the EPS for 2023-2025 is HKD0.08/ 0.08/ 0.16, respectively. Based on EPS of Jinchuan Group International Resources (Jinchuan Int'l) of 2023, and with reference to the valuation level of comparable companies, giving the company with a PE valuation of 8x in 2023, and the target price of HKD0.64, and initiate with rating of "Outperform".
- Risks.** 1) Metal price fluctuations; 2) Project progress was not as expected, etc.

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I. Investment highlights

Jinchuan Group International Resources (Jinchuan Int'l), a holding subsidiary of Jinchuan Group, is the flagship platform for the development of overseas foreign-funded enterprise sources of the Group and is listed on the main board of Hong Kong. As a mature copper and cobalt mining enterprise that is extremely scarce in the Hong Kong market, it has a considerable output of copper and cobalt in previous years, and has high-quality copper and cobalt resources, with a copper grade over 5.8%, copper reserves of 1.126Mt and copper resources of 4.557Mt. The cobalt grade is up to 0.9%, the cobalt reserves are 206kt, and the cobalt resources volume is 437kt.

As a high grade copper and cobalt mine, Musonoi is the company's key project in the short term. The copper resources are 1.084Mt, and the copper reserves are 606kt. The cobalt resources are 366kt and the cobalt reserves are 174kt, with a grade up to 0.9%, making it one of the highest-grade cobalt mine in the world. The mine is expected to start single-vehicle commissioning at the end of 2023, which will become a new profit growth driver for Jinchuan Int'l. After the Musonoi Project is put into operation, it will further increase copper and cobalt production and consolidate the Group's leading position among global cobalt producers.

We expect the company's EPS in 2023-2025 to be USD0.01/ 0.01/ 0.02, respectively. According to the exchange rate of USD to HKD of 7.84 on June 5, 2023, the EPS for 2023-2025 is HKD0.08/ 0.08/ 0.16, respectively. Based on Jinchuan Group International Resources (Jinchuan Int'l) 2023 EPS, with reference to the valuation level of comparable companies, giving the company with a PE valuation of 8x in 2023, and the target price of HKD0.64, and initiate with rating of "Outperform".

II. Company Introduction

Jinchuan Group International Resources Co. Ltd, a holding subsidiary of Jinchuan Group, is the flagship platform for the development of overseas foreign-funded enterprise sources of the Group and is listed on the main board of Hong Kong. The company's main business is the development and management of overseas mineral resource projects, as well as the trade of nickel, copper, cobalt, and other non-ferrous metal raw materials and products.

In November 2010, Jinchuan Group completed the subscription of new shares of Macau Investment and became the controlling shareholder of Macau Investment. Macau Investment then changed its name to Jinchuan Group International Resources Co. Ltd (Jinchuan Int'l as in below).

In September 2013, the shareholders of the company approved Jinchuan Int'l to acquire 5 mine assets in southern Africa from Jinchuan Group with 1,595,880,000 consideration shares (conversion price at HKD1 per share) and 8,466,120,000 PSCS shares (conversion price at HKD1 per share).

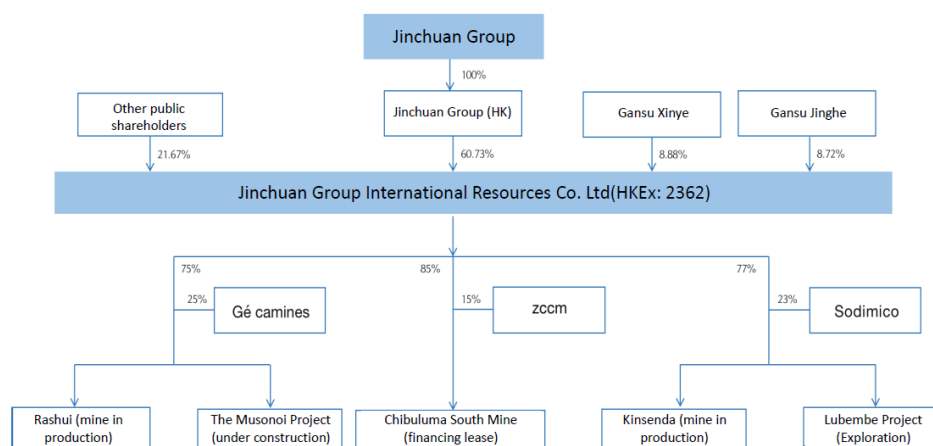
In March 2017, Jinchuan Int'l further issued 483,000,000 new shares and introduced Shandong Hi-Speed as a strategic shareholder.

In June 2018, Jinchuan Group transferred part of its PSCS and performed capital conversion, and Jinchuan Int'l successfully introduced nine investors, including Gansu Xinye, Gansu Economic Cooperation, and HTI.

In September 2021, it was transferred to the list of Hong Kong Stock Connect stocks under the Shenzhen-Hong Kong Stock Connect, and also became a constituent stock of the Hang Seng Composite Index.

On March 13, 2023, it was included in the list of the first batch of newly added Hong Kong Stock Connect Stocks under Shanghai-Hong Kong Stock Connect.

Figure 1 Shareholding structure of Jinchuan Int'l



Source: Company Announcement, HTI

The company's largest shareholder, Jinchuan Group, has strong strength and is the fourth largest copper producer in China and the fourth largest cobalt producer in the world. Relying on the strong support of Jinchuan Group, Jinchuan Int'l has vigorously established a multinational mining development and operation business. The company has large-scale high grade copper and cobalt metal resources mines in Africa, and is engaged in the mining and trading of basic metal resources.

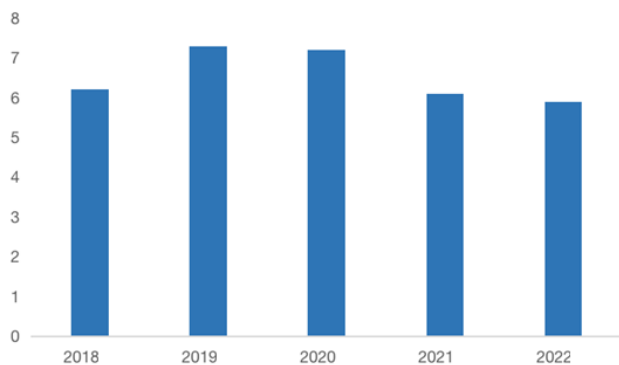
III. Operating Business

1. Overview of the company's main business

Jinchuan Int'l and its subsidiaries are principally engaged in the mining of metals, mainly copper and cobalt, in the DRC and Zambia; and trading of mineral and metal products in Hong Kong.

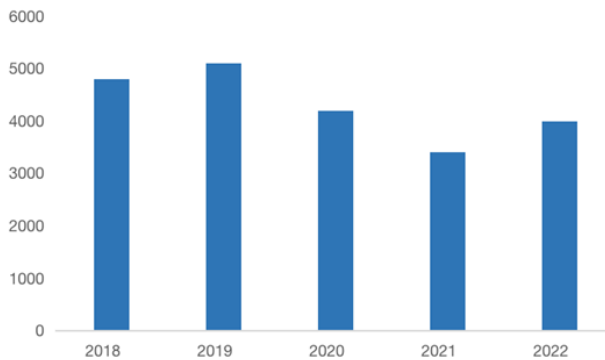
In 2022, copper production was 59.44kt (-3% YoY), with a copper sales volume of 64.739kt (+13.6% YoY), bringing revenue of USD696mn. Cobalt production was 3.961kt (+17% YoY), with a cobalt sales volume of 4.496kt (+41.8% YoY), bringing revenue of USD296mn.

Figure 2 Mine copper output (10kt)



Source: Company Announcement, HTI

Figure 3 Mine cobalt output (ton)

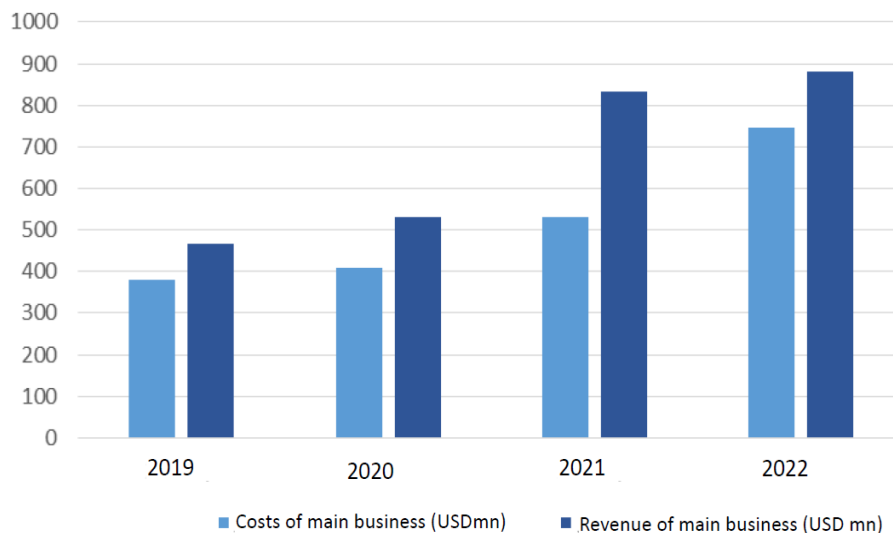


Source: Company Announcement, HTI

In 2022, the trading segment of minerals and metal products generated a turnover of USD232.8mn through the trading of copper solution, copper ice and cobalt hydroxide, an increase of 10% YoY. Relying on DRC and China's business, the company obtains the source of mineral and metal products and sell them to Chinese customers.

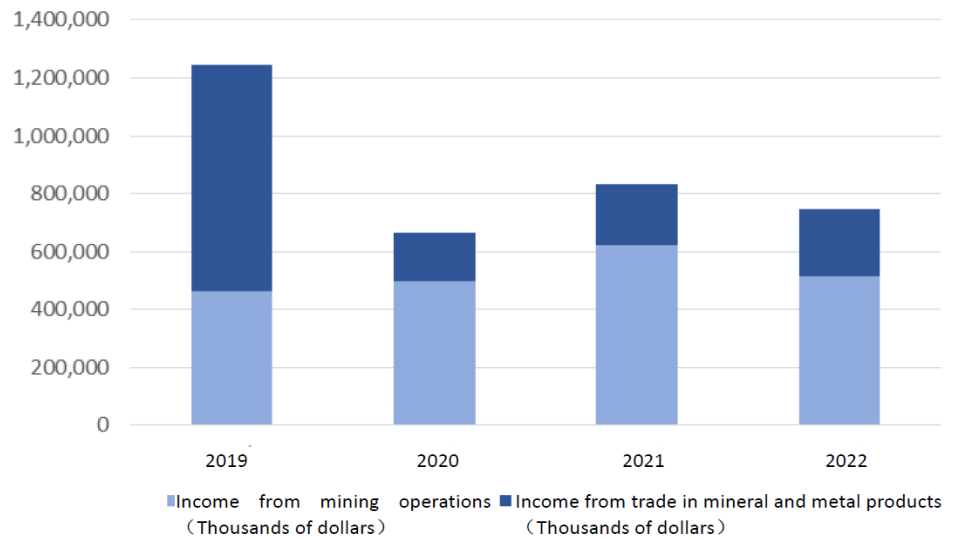
In 2022, the company's performance grow steadily, and revenue from the main business was USD882mn (+6% YoY).

Figure 4 Revenue of each business



Source: Company Annual Report, HTI

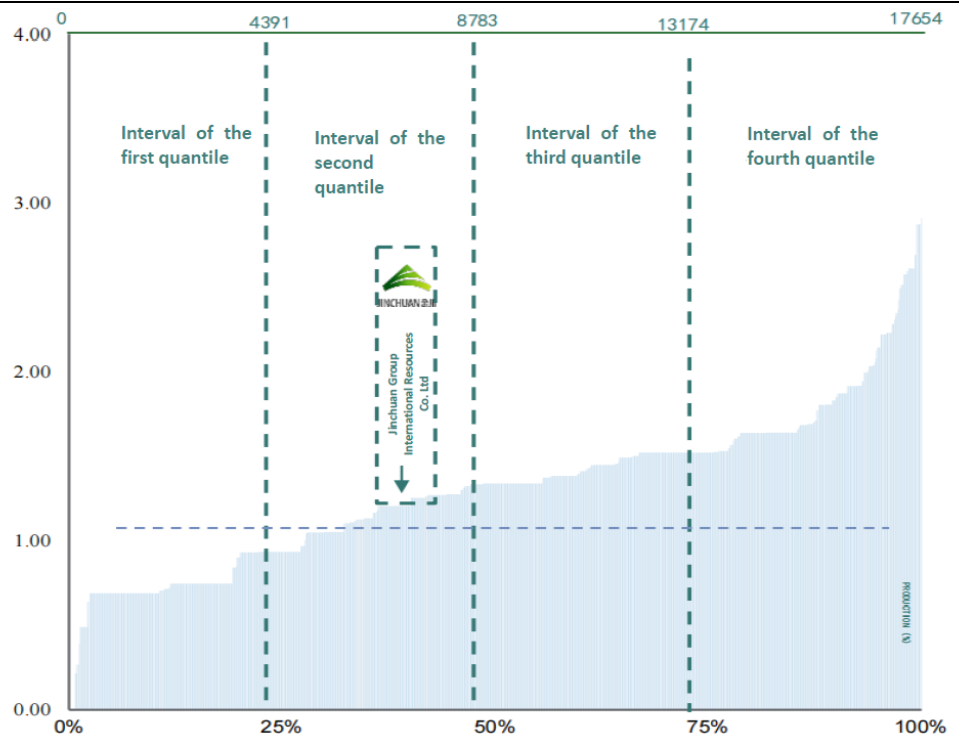
Figure 5 Revenue and Cost of Main Business in 2019-2022



Source: Company Annual Report, HTI

The cash cost is very competitive. According to the Company Annual Report, Jinchuan Int'l is located in the second range of C1 cost (USD/lb copper, considering by-product revenue) of global copper mining enterprises, and is in the top 25%-50% of the industry.

Figure 6 Estimated C1 cash cost curve of global copper mining enterprises in 2020 (USD/lb copper, considering by-product revenue)



Source: Company Annual Report, HTI

2. Top copper and cobalt grades, rich resources and reserves.

The Group has majority control over two operating mines in Africa, namely the Ruashi Mine, a copper and cobalt mine in Lubumbashi, DRC, and the Kinsenda Mine, a copper mine in Haut Katanga Province, DRC. It also holds an interest in a copper mine in Zambia, namely the Chibuluma South Mine including the Chifupu deposit, which has been leased out by way of a finance lease.

Figure 7 Introduction of Jinchuan Int'l mineral resources

Operation of mines	Ruashi (75% ownership)	Located in the DRC, the open pit mine has been producing electrolytic copper and cobaltous hydroxide since 2009. Electrolytic copper and cobaltous hydroxide were sold to global commodity traders. Produced 30,353 tons of copper and 3,961 tons of cobalt in 2022 respectively.
	Kinsenda (77% ownership)	Located in the DRC, it is an underground mine that produces high grade copper concentrate and crude copper. Kinsenda is one of the highest-grade copper deposits in the world, with an average ore grade of 5.8% of copper reserves. The Kinsenda Mine produced 2.91 tons of copper in 2022.
Development project	Musonoi (75% ownership)	The high grade copper-cobalt deposit located in the DRC is under construction and will be mined underground to produce electrolytic copper and cobaltous hydroxide. According to the Feasibility Study, the mine life of Musonoi is 19 years in total, and the construction of the Project was progressing well in 2022.
Exploration project	Lubembe (77% ownership)	Located in DRC, 30 kilometers south of Kinsenda. Further metallurgical exploration and testing work was carried out in 2021 to optimize the smelting process and the copper recovery rate during the mining period of the mine. The resource model has been updated in December 2021, and the demonstrated and controlled resources have been significantly increased.
Lease of mines	Chibuluma South Mine (85% ownership)	Located in Zambia. In December 2020, Chibuluma entered into a lease agreement with a third party to lease mining assets including the Chifupu deposit in order to realize the residual value of Chibuluma's mining assets. The lease period is 5 years, the total fixed rent is USD6.48mn, and the premium can be collected according to the sales price of copper. In 2022, the Group reported approximately USD2.71mn in royalty revenue under finance lease arrangements

Source: Company Announcement, HTI

Figure 8 Summary of Jinchuan Int'l reserves and resources

	Ore (Mt)	Grade %	Grade %	Metal content (10kt)	Metal content (10kt)
Summary of copper and cobalt		Copper	Cobalt	Copper	Cobalt
Proved reserves	11.5	3.1	0.9	35.7	10
Probable reserves	23.2	2.4	0.5	54.8	10.6
Reserves of copper and cobalt	34.7	2.6	0.6	90.5	20.6
Demonstrated resources	17.9	2.8	0.8	49.3	15
Controlled resources	40.0	2.2	0.5	86.7	18
Inferred resources	15.6	2.2	0.7	33.8	10.7
Total resources of copper and cobalt	73.5	2.3	0.6	169.8	43.7
Summary of copper only					
Proved reserves	0	5.4	-	0.1	-
Probable reserves	3.8	5.8	-	22	-
Reserves of copper only	3.8	5.8	-	22.1	-
Demonstrated resources	4.2	1.7	-	7.3	-
Controlled resources	83.8	2.4	-	109.2	-
Inferred resources	27.4	2.9	-	80.4	-
Resources of copper only	115.4	2.5	-	285.9	-
Summary of Jinchuan Int'l					
Total reserves	38.5			112.6	20.6
Total resources	188.9			455.7	43.7

Source: Company Announcement, HTI

(1) Ruashi Mine: located in Lubumbashi, the capital of Katanga Province in the DRC. Jinchuan Int'l owns 75% ownership of it. The mine is an open pit copper oxide cobalt mine with potential sulfides in the deep part. The smelting method is SX-EW leaching and processing. The products are electrolytic copper and cobaltous hydroxide, which are sold to international trading companies through an offtake agreement. Ruashi has built a 600kt flotation and magnetic separation plant to treat low-grade oxide and sulfide materials through magnetic separation. The flotation and magnetic isolation plant will further improve the life of the Ruashi Mine. It was put into operation at the end of 2021 and processed 530kt of low-grade oxide ore through the flotation mill in 2022, produced a total of 132.383kt of oxide concentrate for further processing by the SX-EW system. In 2022, most of the incoming ore came from Ruashi's mines, inventory ore piles, and flotation mills. At the same time, Ruashi smelted 104.8kt of high-grade cobalt content of outsourced ore. In 2022, a total of 2.4801Mt (+21% YoY) of ore were mined. In 2023, mining activity will maintain a high position. Ruashi's resources are 614kt of copper and 74kt of cobalt, and its reserves are 299kt of copper and 32kt of cobalt. In 2022, the copper output was 30.4kt and the cobalt output was 3.961kt, and the annual revenue was about USD362mn and the revenue was USD448mn (+24% YoY), with outstanding performance.

Figure 9 Summary of Ruashi mineral reserves and resources

	Category	Ore (Mt)	Copper grade %	Cobalt grade %	Copper metal content (10kt)	Cobalt metal content (10kt)
Resources	Demonstrated	0.4	2.3	0.4	0.9	0.1
	Controlled	25.7	2.1	0.2	55.1	6.4
	Inferred	2.6	1.9	0.3	5	0.9
	Total	28.7	2.1	0.3	61.4	7.4
Reserves	Proved	-	3.1	0.1	-	-
	Probable	14.5	2.1	0.2	29.9	3.2
	Total	14.5	2.1	0.2	29.9	3.2

Source: Company Announcement, HTI

(2) Kinsenda Mine: Kinsenda Mine is one of the highest-grade copper deposits in the world, with an average grade of copper reserves of 5.8%. Located in Katanga Province of the DRC. Jinchuan Int'l has a 77% ownership of it. The mine is an underground copper mine, and its products are copper concentrate and crude copper. The life of the existing mine is 12 years, and it contains a large number of new ore resources, which can extend the life of the mine to 20 years and above. In 2015, the commissioning of the concentrator plant was completed. Mining production started in 2016. In 2017, the first concentrate began to be exported for sale. In 2020-1H21, part of the copper concentrate was processed into crude copper for sale. In 2H21, exports of copper concentrate resumed in order to accelerate sales. Construction of a second decline was completed and mining was commenced at the eastern ore body. In 2022, copper production was 29.087kt, achieving revenue of USD199mn.

Figure 10 Summary of Kinsenda Mineral Reserves and Resources

	Category	Ore (Mt)	Copper grade %	Metal content of copper 10kt
Resources	Demonstrated	0.7	4.4	2.9
	Controlled	10.0	5.1	51.3
	Inferred	9.9	4.1	40.8
	Total	20.6	4.6	95
Reserves	Proved	0.0	5.4	0.1
	Probable	3.8	5.8	22
	Total	3.8	5.8	22.1

Source: Company Announcement, HTI

(3) Musonoi project: Musonoi is a high-grade copper-cobalt mine currently under construction, located in the north of Kolwezi Town, Lualaba Province, DRC. Jinchuan Int'l owns 75% ownership of it. The mining period of the mine is 19 years. The main underground works include a main decline, a multi-purpose vertical shaft and three ventilation shafts. At present, the construction work of multi-purpose vertical shafts has been completed, with a total depth of 685 meters. In March 2023, the excavation of the main ramp project has been completed, and a total of more than 5,000 meters of passages have been built. Overcoming the groundwater complexities, the constructed ramps have been successfully connected to vertical shafts, marking a major milestone for the Musonoi project. At present, the 80m level, 140m level, 380m level and 400m level stratified boring works are progressing as planned. Musonoi is mined underground to produce electrolytic copper and cobalt hydroxide. The project is undertaking an overall resource evaluation

drilling program, tenders for beneficiation works have been completed, all major contracts have been authorized and commenced, and single vehicle commissioning is expected to commence in late 2023. Musonoi has copper resources of 1.084Mt, cobalt resources of 363.kt, copper reserves of 606kt and cobalt reserves of 174kt. Among them, cobalt grades are as high as 0.9%.

Figure 11 Summary of Musonoi Mineral Reserves and Resources

Category		Ore (Mt)	Grade %	Grade %	Metal content (10kt)	Metal content (10kt)
Oxide			Copper	Cobalt	Copper	Cobalt
Resources	Demonstrated	4.7	3.1	1.0	14.4	4.8
	Controlled	1.2	1.9	0.8	2.2	0.9
	Inferred	1.4	2.0	0.7	2.9	1.0
	Total	7.3	2.7	0.9	19.5	6.8
Reserves	Proved	2.7	3.4	1.0	9.1	2.8
	Probable	0.5	3.3	0.8	1.6	0.4
	Total	3.2	3.3	1.0	10.7	3.2
Category		Ore (Mt)	Grade %	Grade %	Metal content (10kt)	Metal content (10kt)
Mixed Minerals + Sulfur			Copper	Cobalt	Copper	Cobalt
Resources	Demonstrated	12.8	2.7	0.8	33.9	10.0
	Controlled	13.1	2.2	0.8	29.2	10.7
	Inferred	11.6	2.2	0.8	25.8	8.8
	Total	37.5	2.4	0.8	88.9	29.5
Reserves	Proved	8.8	3.0	0.8	26.6	7.2
	Probable	8.2	2.8	0.9	23.3	7.0
	Total	17.0	2.9	0.8	49.9	14.2

Source: Company Announcement, HTI

(4) Lubembe Project: as an exploration project, it has synergistic effects with the Kinsenda Mine and is located in Haut-Katanga Province of the Congo (DRC)(30 kilometers south of the Kinsenda Mine). Jinchuan Int'l has a 77% control over it. The project has a copper grade of 1.9% and a resource of up to 1.9 million tons of copper. It has a mixed deposit with huge resources and can economically mine oxide ore and sulphide ore together. In December 2021, most of the mineral resources were successfully upgraded from the inferred level to the controlled level, and now they are entering the feasibility study stage. The project carried out hydrogeological and engineering geological studies to enhance the geological understanding of Lubembe. After the project is developed, it will greatly increase the copper output of Jinchuan Int'l.

Figure 12 Summary of Lubembe Mineral Resources Figure

	Category	Ore (Mt)	Grade (%)	Metal content (10kt)
	Oxides and Sulfides		Copper	Copper
	Demonstrated	3.5	1.2	4.4
Rosebel mining area	Controlled	73.8	2.0	146.9
	Inferred	17.4	2.3	39.6
	Total	94.8	2.0	190.9

Source: Company Announcement, HTI

(5) Chibuluma South Mine: in December 2020, in order to realize the residual value of the mining assets, the Chibuluma South Mine (including the Chifupu deposit) and the processing plant were leased to an independent third party for a term of five years. In addition to the lease payments, Jinchuan Int'l is entitled to receive a monthly royalty based on the volume of copper sold at the Chifupu Deposit and at the prevailing market price of copper. In 2022, the lessee produced and sold a total of 3.737kt of copper, (+22% YoY). Under the financial lease agreement, Jinchuan Int'l received royalty income of USD2.7mn.

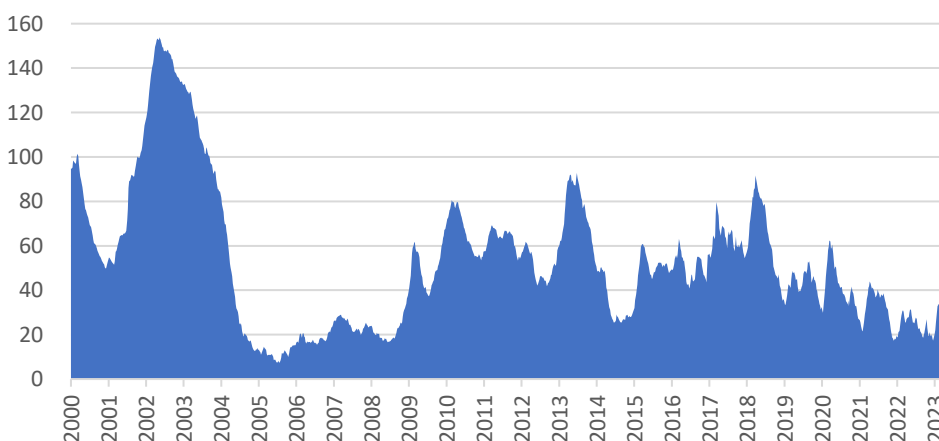
IV. Status of Industry

1. Copper

1.1 Copper inventories: low and tight supply helped copper prices to rise

In 2022, the global copper supply is in a tight state, due to government interference, ongoing labor problems, community conflicts and other issues, resulting in delayed shipments of copper concentrate at major shipping ports in South America, and copper inventories in the three regions have continued to be low for a long time.

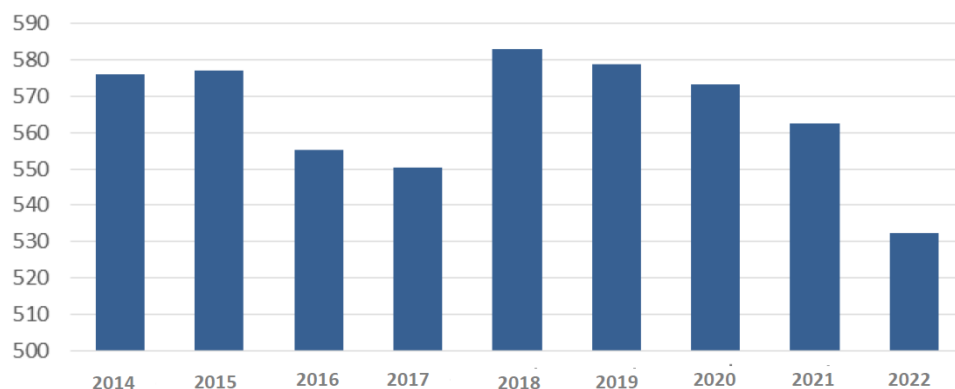
Figure 13 LME+COMEX+SHFE copper inventory (10kt)



Source: Wind, HTI

In 2022, Chile, the world's largest copper supplier, experienced a significant decline in production due to aging mines, labor strikes, drought and water shortages. Peru, the world's second largest copper supplier, saw copper production drop by 300kt vs. 2021, down 5% YoY, due to ongoing impacts such as political turmoil and mine protests.

Figure 14 Annual production of copper mines in Chile (10kt)



Source: the Chilean Copper Commission, HTI

On May 17, 2023, Chile, the world's largest copper producer, had its House of Representatives approve a revised mining royalty bill. The bill mainly sets out the future taxes that Chilean copper mine operators will need to pay, and companies operating in the country will need to pay more taxes and royalties to the government. Chile's mining tax reform will lead to an increase in the production costs of copper mining enterprises, which will put some pressure on the future copper supply.

2.2 Copper demand: Growing rapidly, short of supply

With the domestic COVID-19 pandemic under control and the foreign economy gradually recovering, the fundamentals of copper remain strong. As an important commodity for construction and infrastructure, the economic recovery after the COVID-19 pandemic will inevitably increase the demand for copper.

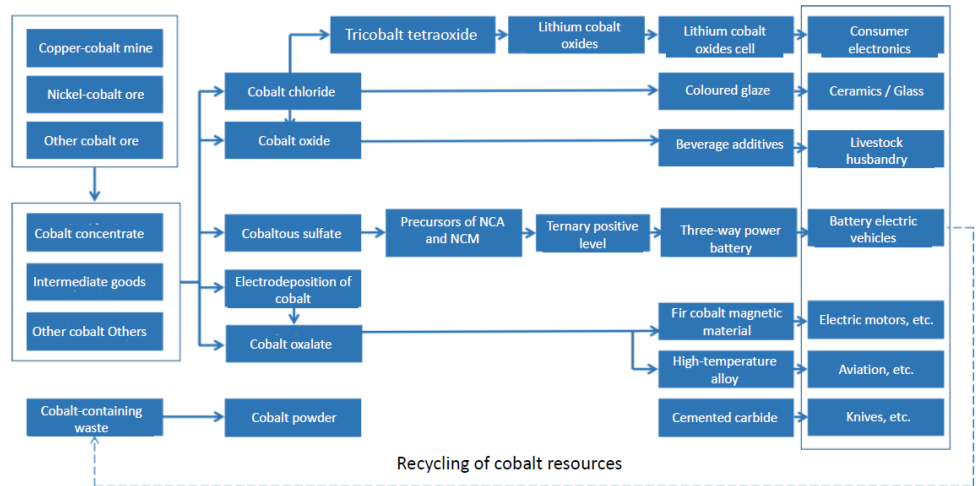
In the era of carbon neutrality, copper, as the most common conductor material, will be further used in solar power generation, wind power generation, energy storage, new energy and power distribution grid fields, and the demand for copper will be increased. S&P Global forecasts that to achieve carbon neutrality by 2050, long-term demand for copper will more than double its current level, to 53Mt per year. The long-term demand for copper will be boosted by the rapid growth of green technology, which requires the use of copper in energy storage, battery electric vehicles, battery electric vehicles charging infrastructure, wind power and solar power. Economic recovery and new energy transformation have boosted copper demand and boosted copper price.

2. Cobalt

2.1 Demand for cobalt: Lithium cell is the largest end-consumer of cobalt products

Cobalt has high hardness, high melting point, high temperature resistance, corrosion resistance, strong magnetic properties, and low thermal conductivity and electrical conductivity. Cobalt is widely used in cemented carbide, super alloy, catalyst, cell and other industries. Different cobalt products are used in different fields.

Figure 15 Schematic diagram of cobalt industry chain



Source: huaon.com, HTI

The upstream of the cobalt industry chain is dominated by the mining and primary smelting of cobalt ore, including copper-cobalt ore, nickel-cobalt ore and Others cobalt ore, from which cobalt concentrate, cobalt intermediate products and Others cobalt-containing products can be obtained. Meanwhile, cobalt-containing waste is also one of the sources of cobalt. The midstream of the cobalt industry is smelting, including various cobalt powders, electrolytic cobalt and cobalt compounds, among which cobalt compounds mainly include cobalt oxide, cobalt hydroxide, cobalt sulfate and other products. Cobalt has a wide range of downstream applications, mainly involving lithium cell, alloy industry, and also used as magnetic materials, catalysts and other fields. At present, the demand for cobalt is mainly concentrated in the field of consumer cell and power battery, which are used for the production of lithium cobalt oxide and ternary anode material.

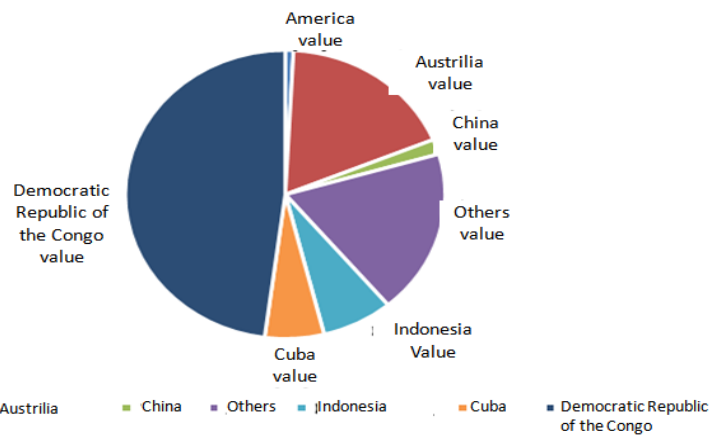
Lithium cell is the largest end-consumer segment of cobalt products. Cobalt is mainly used in the production of lithium cobalt oxide precursors for cell materials - cobalt tetraoxide and ternary anode material precursor. Among them, cobalt tetraoxide-lithium cobaltate is mainly used in the production of 3C lithium cell, and ternary materials are mainly used in the production of power battery, etc. In 2022, China consumed about 125kt of cobalt metal.

In addition to lithium cell, cobalt powder (electrolytic cobalt, electrocobalt) is also used in the production of cemented carbide, magnetic materials, cobalt compounds, catalysts, etc. In 2022, China's cemented carbide production was about 49kt, and the consumption of cobalt powder was about 5kt. In 2022, China's output of samarium cobalt magnets was about 3kt, and its consumption of cobalt powder was about 1.5kt. In addition, China will export about 4,000 gold tons of cobalt products in 2022. Therefore, the domestic consumption of cobalt products in 2022 was about 141kt of metal.

2.2 Cobalt price: rebounded slightly, and the bottom gradually appeared

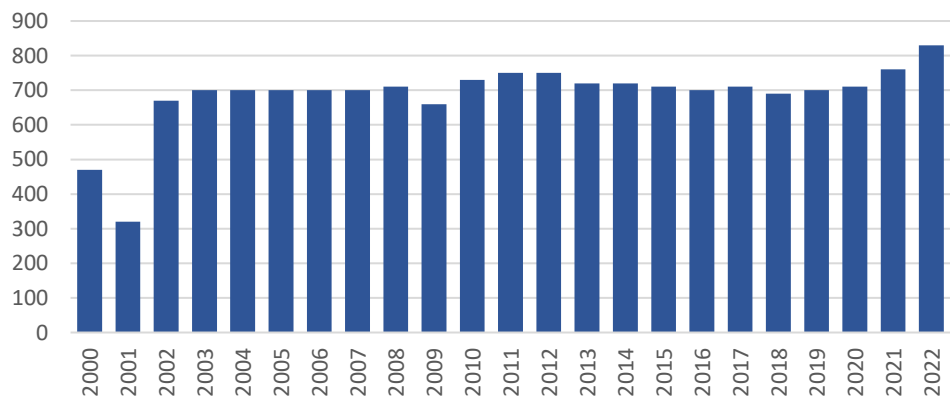
In terms of reserves, according to USGS statistics, the world's total reserves of cobalt in 2022 were 8.3 million tons, a YoY increase of 9.2%. The distribution of cobalt resources and reserves in the world is highly concentrated. The total reserves of DRC, Australia, Cuba and Indonesia account for about 80% of the world's total reserves, of which DRC accounts for 48.19%

Figure 16 Global cobalt reserves distribution in 2022



Source: USGS, HTI

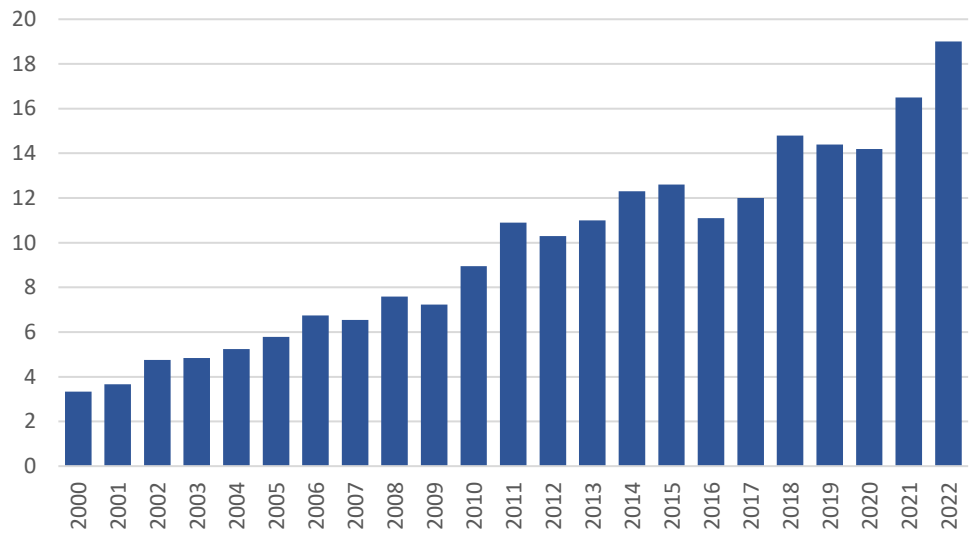
Figure 17 Global Cobalt Ore Reserves in 2022 (10kt)



Source: Wind, HTI

In terms of production, DRC is the world's largest cobalt producer, with a cobalt production of 130kt in 2022, accounting for about 70% of the world's total production. Indonesia's cobalt production increased from 2.7kt in 2021 to 10kt in 2022, making it the world's second largest cobalt producer.

Figure 18 Global production of cobalt ore (10kt)



Source: Wind, HTI

At present, cobalt price has rebounded slightly, and the bottom is gradually emerging. From the perspective of global supply and demand, the company's products represented by copper and cobalt metals are still in a tight balance overall. Due to the decline in mineral resource grade and the impact of global inflation, the mineral price center will rise along with the cost side. Under the influence of factors such as upstream raw material cost support, downstream power battery and 3C digital product demand recovery, cobalt prices have temporarily shown a trend of recovery.

Figure 19 Average cobalt price in China's Yangtze River nonferrous market (RMB10k/ton)



Source: Wind, HTI

IV. Profit Forecast

We expect the company's EPS in 2023-2025 to be USD0.01/ 0.01/ 0.02, respectively. According to the exchange rate of USD to HKD of 7.84 on June 5, 2023, the EPS for 2023-2025 is HKD0.08/ 0.08/ 0.16, respectively. Based on EPS of Jinchuan Int'l of 2023, and with reference to the valuation level of comparable companies, giving the company with a PE valuation of 8x in 2023, and the target price of HKD0.64, and initiate with rating of "Outperform".

Figure 20 Valuations of comparable companies(As of June 7, 2023)

Code	Stock name	EPS(RMB)			PE(X)		
		2022A	2023E	2024E	2022A	2023E	2024E
000878.CH	Yunnan Copper	0.90	1.21	1.35	13.02	9.04	8.09
600362.CH	Jiangxi Copper	1.73	1.85	1.94	10.07	10.16	9.73
601899.CH	Zijin Mining	0.76	0.94	1.13	13.14	12.11	10.07
603799.CH	Huayou Cobalt	2.45	4.64	6.32	22.74	10.25	7.53
	Average value	1.46	2.16	2.69	14.74	10.39	8.86

Remarks: the closing price is the price on June 7, 2023, and the EPS is the consensus expectation of Wind.

Source: Wind, HTI

V. The Risks

Risk of metal price fluctuations. The prices of copper and cobalt metals are affected by multiple factors such as supply and demand, political environment, import and export policies, macroeconomics, and market expectations, and have great uncertainty. If the price of copper and cobalt metal falls sharply in the future, the company will face the risk of loss of inventory price decline and operating performance falling short of expectations, sharp decline or loss.

The risk that the project will not progress as expected. The Musonoi project is in the construction phase, and if the project progresses slowly, the company will face the risk of operating results falling short of expectations.

Financial Statement Analysis and Earnings Forecast(US\$m)

Balance Sheet	2022A	2023E	2024E	2025E	Income statement	2022A	2023E	2024E	2025E
Current assets	312	619		1,223	Revenue	882	1,216	1,317	1,429
Cash	77	381		916	Other revenue	3	3	3	3
Accounts receivable and notes receivable	66	61		64	COGS	746	897	960	1,025
Inventory	121	121		192	Sales expenses	36	0	0	0
Others	49	57		51	G&A expense	10	0	0	0
Non-current assets	1,717	1,680	1,646	1,616	R&D expenses	0	0	0	0
Fixed assets	801	794		782	Finance expenses	7	7	4	1
Intangible assets	684	654		602	Profit before tax	61	307	353	407
Others	232	232		232	Taxation	54	102	117	135
Total assets	2,030	2,299	2,551	2,839	Net profit	7	205	236	272
Current liabilities	266	336		378	Minority interests	6	57	66	76
Short-term debts	76	76		76	NPATs	1	148	170	196
Accounts payable and notes payable	103	112		128					
Others	88	148		174	EBIT	68	314	357	409
Non-current liabilities	597	592		582	EBITDA	157	468	507	556
Long-term debt	127	122		112	EPS(RMB)	0.00	0.01	0.01	0.02
Others	470	470		470					
Total liability	863	928		960					
Ordinary Equity	16	16		16	Key financial ratios	2022A	2023E	2024E	2025E
Reserve	1,009	1,157	1,327	1,523	Growth capacity				
Equity to common shareholders	1,001	1,149	1,319	1,515	Revenue	5.97%	37.96%	8.31%	8.44%
Minority interest	165	222	288	364	NPATs	-99.15%	14256.95%	15.05%	15.40%
Total owners' equity	1,166	1,371	1,607	1,879	Profitability				
Liabilities and owners' equity	2,030	2,299	2,551	2,839	GPM	15.36%	26.25%	27.13%	28.27%
					NPM of sales	0.12%	12.13%	12.89%	13.72%
Statement of Cash Flows	2022A	2023E	2024E	2025E	ROE	0.10%	12.85%	12.88%	12.94%
Operating cash flow	50	443	356	441	ROIC	0.56%	13.36%	13.24%	13.21%
Net profit	1	148	170	196	Solvency				
Minority equity	6	57	66	76	Asset-liability ratio	42.54%	40.37%	37.00%	33.82%
Depreciation and amortization	89	154	151	147	Net debt ratio	10.82%	-13.35%	-25.54%	-38.77%
Change in working capital and others	-46	83	-31	22	Liquidity ratio				
					Quick ratio	1.17	1.01	1.30	1.58
Investment cash flow	-87	-126	-121	-116	Operational capacity				
Capital expenditures	-96	-117	-117	-117	Total asset turnover	0.43	0.56	0.54	0.53
Other investment	10	-9	-4	1	Turnover rate of accounts receivable	15.32	19.14	21.32	22.57
					Turnover rate of accounts payable	10.48	8.35	8.27	8.26
Financing activities cash flows	-85	-13	-13	-12	Indicator (per share, RMB)				
Increase in borrowings	-57	-5	-5	-5	EPS	0.00	0.01	0.01	0.02
Increase in common shares	-11	0	0	0	Operating cash flow per share	0.00	0.04	0.03	0.04
Dividends paid	-3	-753	-832	-912	BVPS	0.08	0.09	0.11	0.12
Others	-15	745	825	904	Valuation ratio				
Net increase in cash	-122	304	222	313	P/E	715.20	4.49	3.90	3.38
					P/B	0.89	0.58	0.50	0.44
					EV/EBITDA	6.51	1.02	0.50	-0.12

Remarks:(1) the closing price date for calculating the valuation indicators in the table is May 31; (2) the above tables are all summary tables

Source: Company Annual Report, HTI

APPENDIX

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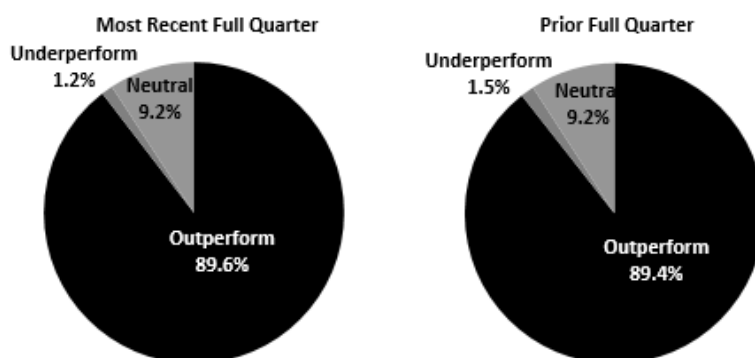
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