Complete Guide: How to Invest in Mining Stocks (New 2021)

By CRUX Investor

The junior mining sector is a highly volatile but potentially rewarding investment arena. Many investors have proven that the rewards can outweigh the risks, but there are still many unanswered questions. How exactly did they pick the right stock? How did they know that the junior miner they'd invested in would succeed? How did they avoid the ones that failed? How did they win?

Some would argue it's luck and timing - keeping a wide allocation of stocks in different commodities or investing in companies that fail again and again until one of them succeeds and the loss pays off.

We think there's a better way. This guide will teach you how to do your own due diligence, make smarter investment decisions and become an expert in junior mining stocks.

Sounds too good to be true? Take a look for yourself…

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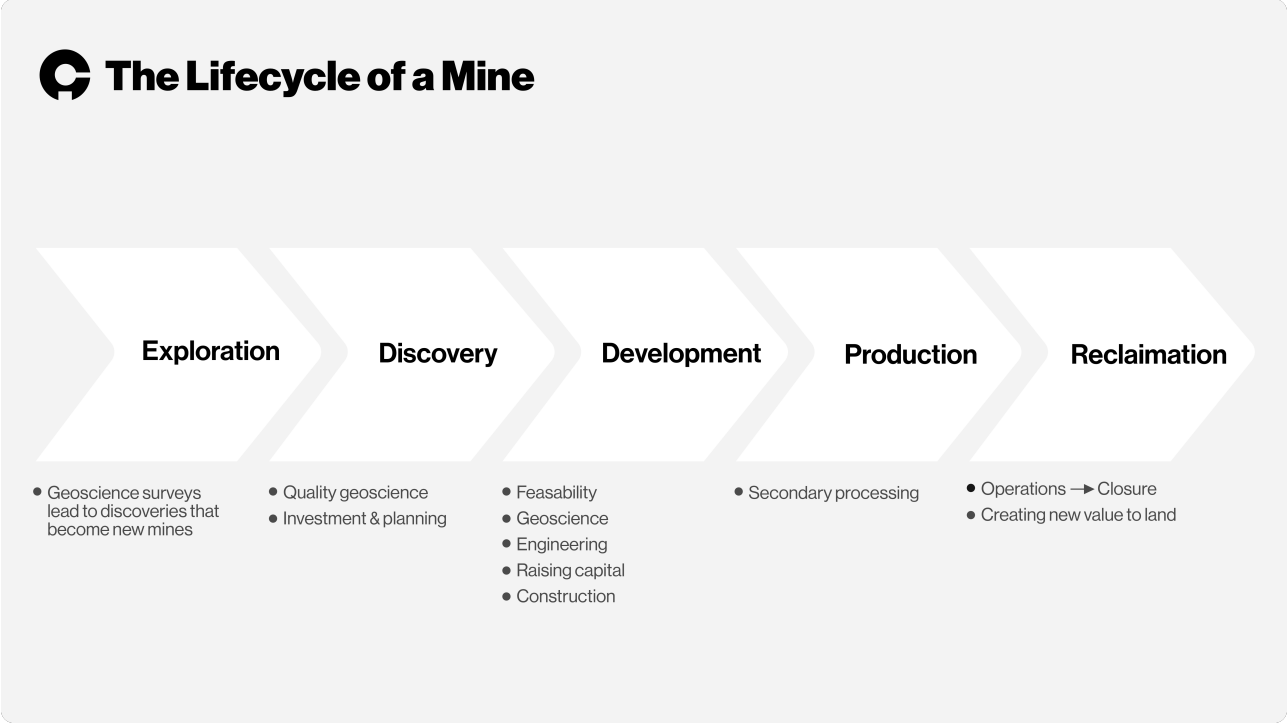
What are junior mining stocks?

Juniors mining stocks are low capital exploration companies searching for new deposits of natural resources. Junior mining companies are involved with exploration, development, getting the mine permitted with the goal of producing up to 300,000 oz/year. Anything over that would be considered a 'mid-tier 'or 'major' company.

Investments related to juniors are high risk as they are new in the market and don't yet have a proven asset base. Juniors may still be in the exploration phase and might not find any resources at all. On the other hand, the potential is there for great reward and huge excitement if the exploration and development is successful.

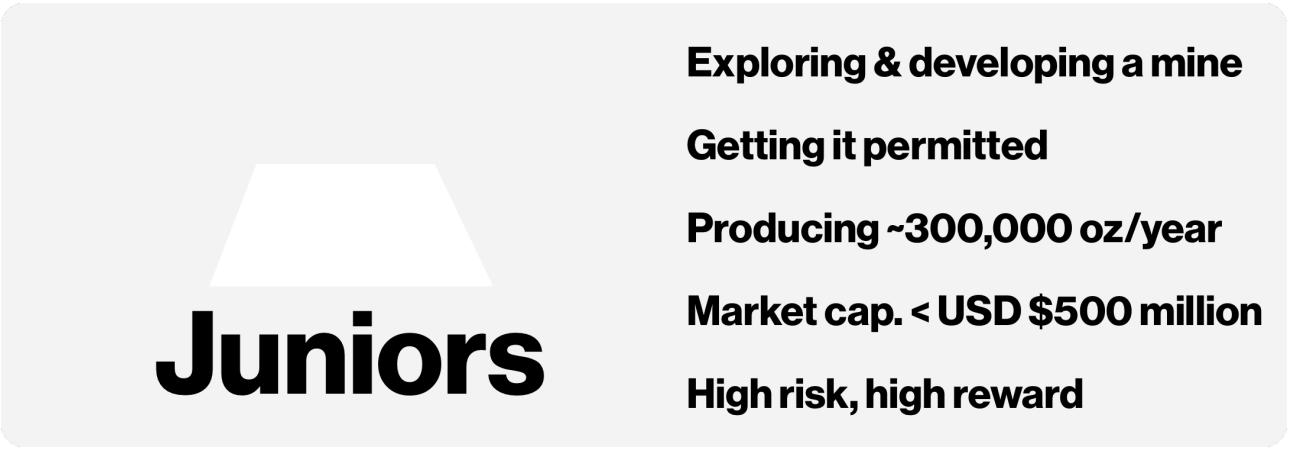


To understand the function of one stage, it is necessary to understand the lifecycle of a mine as a whole. Typically, a successful mining story will start as a junior and progress through to a

major, increasing in value and size along the way. The risk of an investment also tends to decrease, but so do the potential rewards.

There are 3 clear stages of progression:

Exploration-stage: Juniors



All mining companies begin as "Juniors" or exploration companies - the first stage. These companies tend to be small-cap companies (< $500 million market capitalisation). Before a company can produce metals, they must first find them - a task easier said than done.

What defines a Junior Mining company?

- Small companies
- Exploration and development phase
- Small market cap < $500 million
- Production of <300,000oz/year
- High-risk but high-reward if successful
- Looking for funding and/or M&A (mergers and acquisitions) with bigger companies

How many junior mining companies are there?

There are more than 3,000 junior mining companies listed on exchanges globally, with new ones constantly appearing.

Market Capitalisation: how much a company is worth as determined by the stock market. It is defined as the total market value of all outstanding shares. To calculate a company's market cap, multiply the number of outstanding shares by the current market value of one share.

Development-Stage: Mid-tiers

There are two types of development-stage companies: *post-discovery* and *near-term producers.*

What defines a Mid-tier Mining company?

- Annual revenue: between USD $50 million and $500 million
- Market cap: less than USD $1 billion
- Own more than one asset and produce multiple minerals
- Significantly less risk than junior mining companies
- Development and production stage

What are post-discovery companies?

Post-discovery companies have just found a deposit (good drill results), but do not know how much of the resource there is. These companies will carry out modelling studies and resource estimations and produce a NI 43-101 Technical Report. The NI 43-101 technical report estimates the resource deposit size. Further studies will be conducted to see whether the resources can be mined economically.

What is a NI 43-101 Technical Report?

The National Instrument 43-101, or the Standards of Disclosure for Mineral Projects, is a technical reporting standard defined by the Canadian Securities Administrators.

Essentially, it's a set of rules and guidelines companies must follow when reporting information about mining projects. NI 43-101 standards apply only to companies traded on

Canadian exchanges but are used worldwide, as many mining companies are traded in Canada. It was developed as a way to standardise reporting of mineral resource and reserve estimates following the Bre-X Minerals gold mining scandal in 1997.

Bre-X Minerals claimed that their property in Busang, Indonesia was home to a massive gold deposit – however, the deposit turned out to be nonexistent. Bre-X falsified drilling results from Busang by gold from other locations placed in the crushed core samples. NI 43-101 standards are a way to protect investors from similar fraud.

The technical report has become the standard for NI 43-101 reporting, although this format is not strictly required. Technical reports typically contain:

- A property description
- Exploration and drilling procedures and results
- Sample preparation and analysis results
- Mineral resource and reserve estimates
- Market studies and economic analysis
- Conclusions and recommendations

NI 43-101 standards include best practices for mineral exploration, diamond exploration results, and mineral resource and reserve estimates. These standards were defined by the Canadian Institute of Mining and Metallurgy (CIM). The NI 43-101 standards also define terminology commonly used in reports, such as “ore”, “property”, “effective date”, and “mineral project”. All of this is intended to remove uncertainty and ambiguity so investors can understand company disclosures.

The CIM has strict definitions for estimates of the amount of mineral present (mineral resources and reserves). A mineral resource is defined as a concentration of minerals in a form, quantity, and quality that has reasonable prospects for economic extraction. Resources are further divided into inferred, indicated, and measured. Inferred resources are unverified, while measured resources are well-established and can be quantified. Mineral reserves are the economically mineable part of a resource that has been demonstrated by a preliminary economic assessment. Reserves must be demonstrated by a preliminary economic assessment. Indicated resources are classified as probable reserves, while measured resources are proven reserves.

A qualified person must approve a report for it to be NI 43-101 compliant. A qualified person must fulfil all 3 of these requirements:

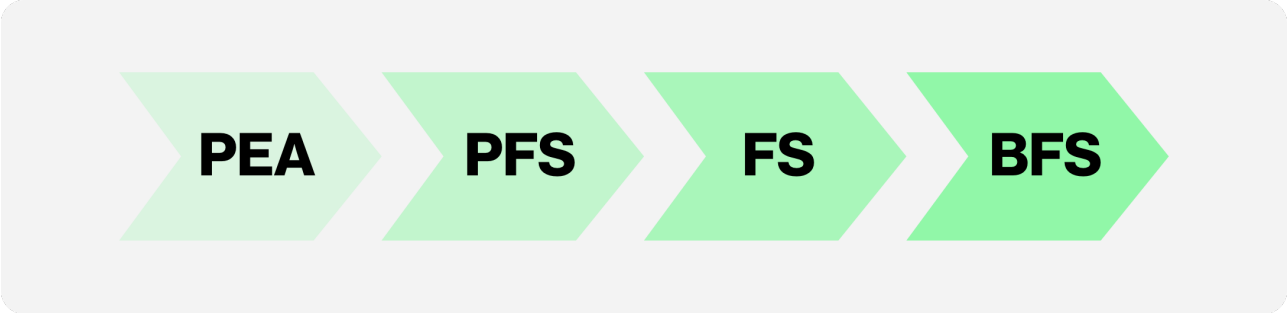
- An engineer or geoscientist with 5 years of experience in mineral exploration
- Experience relevant to the project
- In good standing with a professional association

Mining companies will often hire outside consultants to serve as their qualified person and review the technical report.

By creating an NI 43-101 technical report, companies are providing investors with data that has been collected according to best practices and vetted by a qualified person. These reports contain valuable information, so investors should read them fully and take the time to understand the data presented. Similar to drilling program results, investors must investigate the data and analysis behind the NI 43-101 report results.

What are near-term producers?

Near-term producers are companies that are close to opening their mine. They have completed exploration and testing and have a good idea of the amount of resource present. For companies in the near-term production stage, the next step is to conduct economic assessments and feasibility studies. Each study has increasing levels of confidence in terms of resource estimates and project economics:



Preliminary Economic Assessment (PEA)

A Preliminary Economic Assessment is an economic analysis of the potential viability of a mining project. PEAs include estimates of the capital costs required to bring a project into production, operating cost and cash flow. They also include mine plans and processing and production plans. PEAs are preliminary studies and often based on inferred resource estimates made with limited data. They are not suitable for economic decision making or reserve reporting. However, PEAs are useful for determining if additional exploration and engineering studies are required.

Preliminary Feasibility Studies (PFS)

Preliminary Feasibility Studies are an intermediate step in the technical and economic evaluation process. They include the same geological, engineering, and economic analyses as PEAs, but at a higher level of detail and accuracy. A PFS determines operating cost, potential amounts of commodity production (annual and daily) and average mineral grades. They also include plans to mitigate potential impacts to the project, such as geographic or community obstacles, permitting issues or logistical challenges. After completing a PFS, a company will know if they should move forward with permitting or re-evaluate the project.

Feasibility Studies (FS)

A Feasibility Study is the most comprehensive and accurate study in the evaluation process. It determines whether a mineral resource project is economically feasible – that is, whether or not it can be mined effectively and profitably. By this point, accurate metallurgic testing has been completed, so mineral reserve estimates are realistic and reliable. An FS includes information about technical, economic, legal, and operational challenges that may arise, and the company's plans to mitigate them. Feasibility studies provide critical information for investors about a project's economic viability and the company's progress through the development stage.

Bankable Feasibility Study (BFS) or Definitive Feasibility Study (DFS)

A Bankable Feasibility Study (BFS) is the final piece of the financing puzzle. The results of the study serve as the basis for a final decision whether to proceed with the mine plans. It would be unusual for a company to get finance in place without one.

Companies in the development stage already have a fairly accurate idea of the size, grade and abundance of the resource - meaning that there is more data to analyse and less inherent risk. Economic assessments and feasibility studies are similar to NI 43-101 reports in that they are held to high standards. Investors can be more confident that these companies will move towards the production stage.

Production Stage: Majors

Companies in the production stage have moved through the lifecycle from the exploration stage to the production stage and are now fully established mining majors with reliable reserves. These companies tend to be well-capitalised, with many operations worldwide producing a slow and steady cash flow. At their mines, the life of mine timeline has been established and operations are steadily underway. Majors participate in some exploration activity, but it's more common for them to buy junior or mid-tier companies who have successfully developed a mining project.

What defines a Major Mining company?

Major mining companies are typically diversified, owning and producing several commodities. Thus, new mineral discoveries tend to have minor impacts on their stock. Major miners are distinguished from junior and mid-tier companies according to:

- Revenue: more than $500 million/year
- Market cap: greater than $1 billion
- Diversification: Multi-asset, multi-commodity
- Low risk, stable cash flow
- Financially able to develop a major mine

How many major mining companies are there?

Major mining companies are the top players in the mining industry. Currently, there are less than 50 majors worldwide. Although mining is a global industry and many junior miners are based in Canada, a handful of countries and companies dominate the market.

Glencore, BHP, Rio Tinto, and AngloAmerican are among the top mining companies in terms of revenue and market cap. Glencore is based in Switzerland and the UK, BHP and Rio Tinto are both based in the UK and Australia, and AngloAmerican is based in the UK. Several Chinese companies are among the top majors as well: China MinMetals Corp, Jiangxi Copper, China Shenhua Energy, Zijin Mining, and Yanzhou Coal Mining.

How do juniors choose where in the world to mine?

Choosing a location to explore for ore deposits depends on two factors: is there a resource and is the country friendly towards miners. Both must be present for junior miners to explore.

Countries like China, Russia, Kazakhstan and Venezuela have vast natural resources, but their political climates make it difficult for foreign entities to explore. Mining is completely state controlled in Venezuela and China, and Russia and Kazakhstan are largely closed to foreign investment. Brazil, Argentina, the Democratic Republic of the Congo and South Africa are home to some of the world's largest ore deposits, but each country has its own risks that may deter junior miners: political corruption and permitting issues in Brazil, high taxes and unclear environmental regulations in Argentina, infrastructure problems and high cost of operation in South Africa, and human rights issues in the Democratic Republic of the Congo (DRC).

However, there are countries with prolific mineral resources who welcome mining companies: Canada, Australia and the United States. Canada's resources include uranium, zinc, nickel, copper, gold, silver, lead and platinum. Similarly, Australia is rich in uranium, gold, iron, copper, lithium and nickel. Both countries offer incentives to mining companies. Gold, silver and copper are the main mineral resources in the United States, with growing exploration for battery minerals. It's no surprise that many of the world's junior miners are exploring these three nations.

Where is Gold mined?

In 2019, global gold mine production was reported 3,463.7 tonnes.

China is the most dominant gold producer (383.2t), closely followed by Russia (329.5t) and Australia (325.1t) and the US (200.2t) and Canada (182.9) follow on.

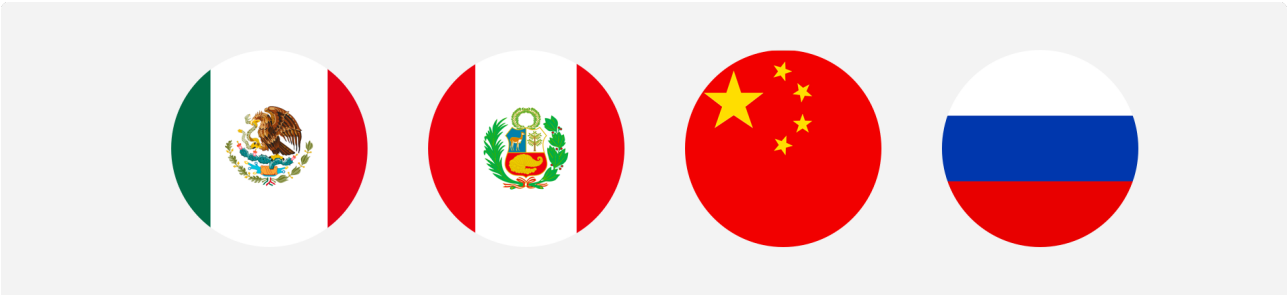
The World's biggest gold mining company, Barrick Gold has five core mines in Nevada, the Dominican Republic, Peru and Argentina. Newmont, with its HQ in the US, is the world's second-largest gold producer and has mines in the US, Canada, Mexico, the Dominican Republic, Australia, Ghana, Argentina, Peru, and Suriname.

Notable junior gold mining companies currently producing gold include Karora Resources in Australia, Freeman Gold in Idaho USA, Serabi Gold in Brazil, and K92 in Papua New Guinea.

There are three major domestic companies mining gold in Russia, Polyus Gold, Polymetal, and Petropavlovsk and only one foreign gold miner, Kinross. The Russian Ministry of Natural Resources is keen to push gold production in the country and is working to relax regulations that limit the number of gold reserves that can be produced without federal government approval to stimulate mining project development.

Where is Silver mined?

Silver deposits are commonly found in primary copper, gold, lead and zinc deposits. Global silver production in 2019 was approximately 27,000 tons. Mexico was the top producer (6,300t), followed by Peru (3,800t), China (3,600t) and Russia (2,100t).



Poland produced a total of 1,700 tons of silver and is home to the world's largest silver operation, the Rudna, Lubin and Polkowice-Sieroszowice mines. These mines are owned by KGHM Polska Miedź and produced 31.2 tons of silver in 2019. Significant silver production also comes from Australia (1,400t in 2019), Chile (1,300t), Argentina (1,200t) and Bolivia (1,200t).

Mining majors have a stake in global silver production. Newmont owns the Penasquito mine in Mexico, which produced 709.4 tons of silver in 2019. The Antamina mine in Peru, which produced 468.8 tons of silver in 2019, is jointly owned by BHP and Glencore. Teck and Mitsubishi have an ownership stake in the Antamina mine as well.

Other companies in the silver mining space include Fresnillo, Pan American Silver, Southern Copper, Buenaventura, CODELCO and Hochschild, who all operate in Latin America.

Polymetal is the largest silver mining company in Russia, and Hindustan Zinc is the dominant silver miner in India.

Junior mining companies currently producing silver include Endeavour Silver in Mexico, Trevali in Peru and Namibia, MAG Silver in Mexico, Minco Silver in China, and Sabina Gold and Silver in Canada.

Where is Uranium mined?

Uranium is commonly mined from the minerals Uraninite (UO_2) and Pitchblende (U_3O_8). The majority of the world's mined uranium is produced by just three countries: Kazakhstan, Canada and Australia. In 2019, Kazakhstan produced 22,808 tons, Canada produced 6,938 tons and Australia produced 6,613 tons. These countries accounted for 67% of the 54,752 tons of uranium mined globally. Namibia (5,476t), Uzbekistan (est. 3,500t), Niger (2,983t), Russia (2,911t) and China (est. 1,885t) also produced significant amounts of uranium. Minor contributions came from Ukraine, South Africa, India, USA, Iran and Pakistan.

Many uranium mines are owned and operated by subsidiaries of state-run nuclear power companies. Examples include Orano in France, Kazatomprom in Kazakhstan and Rosatom (Uranium One) in Russia.

Uranium mining in Kazakhstan is largely nationalised. Five of Kazakhstan's 17 uranium mines are wholly owned by the national company Kazatomprom; the remaining 12 are joint ventures between Kazatomprom and foreign partners. One of these partners is Canadian miner Cameco Corporation.

The Athabasca Basin in northern Saskatchewan, Canada, is a world-class uranium mining region, supplying about 20% of the world's uranium. Current mining activity is predominantly owned and operated by Cameco and Orano. Denison Mines, Idemitsu Canada Resources and TEPCO Resources all have partnership stakes in Athabasca uranium mines. The prolific uranium resources in Canada's Athabasca Basin make it a prime location for junior miners. Juniors currently exploring in the area include IsoEnergy, NexGen, Fission Uranium and Forum Energy Metals.

The largest uranium mine in Namibia, the Rossing mine, is a joint partnership between the governments of China, Iran, Namibia and South Africa. The Langer Heinrich mine, owned and operated by Paladin Resources, is currently in a care and maintenance state. Junior miners Bannerman Resources, Deep Yellow, Marencia Energy and Forsys Metals are actively exploring and developing uranium projects in Namibia.

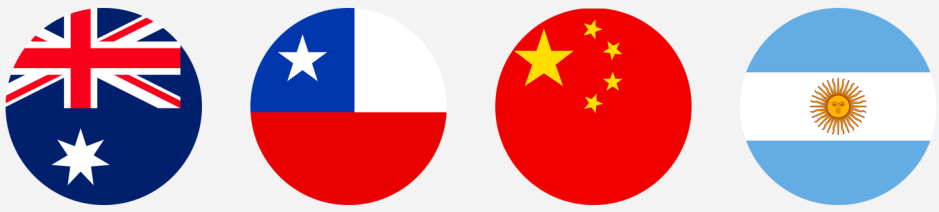
Care and maintenance state: processes and conditions on a closed minesite where there is potential to recommence operations at a later date. During a care and maintenance phase, production is stopped but the site is managed to ensure it remains in a safe and stable condition

Mining majors operate two of the three currently producing uranium mines in Australia. Ranger mine is operated by Energy Resources of Australia (a subsidiary of major Rio Tinto) and the Olympic Dam mine is operated by BHP. The Beverley mine is operated by Heathgate, which is owned by the US-based nuclear company General Atomics. Junior miners exploring and producing in Australia include Vimy Resources.

Where are Battery Metals mined?

As the popularity of electric vehicles rises, so does the demand for battery metals. Lithium, nickel, cobalt, copper, tin, graphite and manganese are all crucial components of rechargeable batteries. Aside from their use in electric vehicles, lithium-ion batteries help power modern life – they are found in most portable electronics like smartphones, laptops and tablets. Vanadium is another important battery metal, used in vanadium redox batteries. These batteries last longer than lithium batteries and are commonly used for storage applications, such as power plants and energy grids.

Four countries provided the bulk of the world's lithium in 2019: Australia (42,000 metric tons), Chile (18,000), China (7,500) and Argentina (6,400). Minor production came from Zimbabwe, Portugal, Brazil and Canada.



There are three types of lithium deposits: brine, clay and hard rock. Brine deposits are accumulations of saline groundwater enriched in lithium carbonate salts. These deposits are common in arid desert regions, such as the Atacama Desert in South America and the

Qaidam Basin in China. Lithium brine deposits in the western United States (California, Utah and Nevada) have become popular regions for exploration in recent years. Brine deposits account for 66% of the world's lithium resources. Hard rock lithium deposits, also known as pegmatites, contain the lithium-rich mineral spodumene.

Australia is home to several hard rock lithium deposits, primarily located in Western Australia. Established lithium mining companies include Mineral Resources, Albermarle, Orocobre, Tianqi Lithium.

Junior lithium miners are largely concentrated on projects in Argentina, Australia and the US. These companies include Millennial Lithium (Argentina), Core Lithium (Australia), Standard Lithium (US), Neo Lithium (Argentina), Frontier Lithium (Canada), Galan Lithium (Argentina), and European Lithium (Austria).

The Democratic Republic of the Congo (DRC) is home to vast cobalt resources, producing 100,000 metric tons in 2019. However, cobalt mining in the DRC has been scrutinised for child labour, so the search for ethical cobalt deposits has ramped up. Cobalt is typically mined as a byproduct of copper and nickel deposits. Russia and Australia produced 6,100 and 5,100 metric tons, respectively, from magmatic nickel-copper sulphide deposits in 2019.

Additional production came from mines in the Philippines, Canada, Cuba, Madagascar and Papua New Guinea.

Mining major Glencore is the largest cobalt producer in the world, producing from mines in the DRC, Australia, Canada and Norway. China Molybdenum and the Jinchuan Group are also top cobalt producers. Junior miners with cobalt projects include Cobalt Blue Holdings (Australia), Jervois Mining (US), Sherritt International (Cuba and Madagascar), Power Metal Resources (DRC, Cameroon), Red Rock Resources (DRC), Horizonte Minerals (Brazil), Namibia Critical Metals (Namibia), First Cobalt (Canada and US), and Fortune Minerals (Canada).

Vanadium is commonly mined as a byproduct of magnetite iron ore deposits. Production is dominated by China, who produced 40,000 metric tons of vanadium in 2019. Significant production also came from Russia (18,000), South Africa (8,000) and Brazil (7,000). Vanadium mining in Russia is largely controlled by EVRAZ KGOK.

Largo Resources is responsible for the majority of Brazil's vanadium production, while Bushveld Minerals is the primary producer in South Africa. Vanadium exploration by junior miners is largely in Canada, Australia and South Africa. Junior Vanadium miners include Vanadium One Iron (Canada), Western Uranium and Vanadium (US), Australian Vanadium (Australia), Vanadium Corp Resource (Canada), First Vanadium (Canada), King River Copper (Australia), TNG Ltd. (Australia), Atlantic Vanadium (Australia) and Vanadium Resources (South Africa).

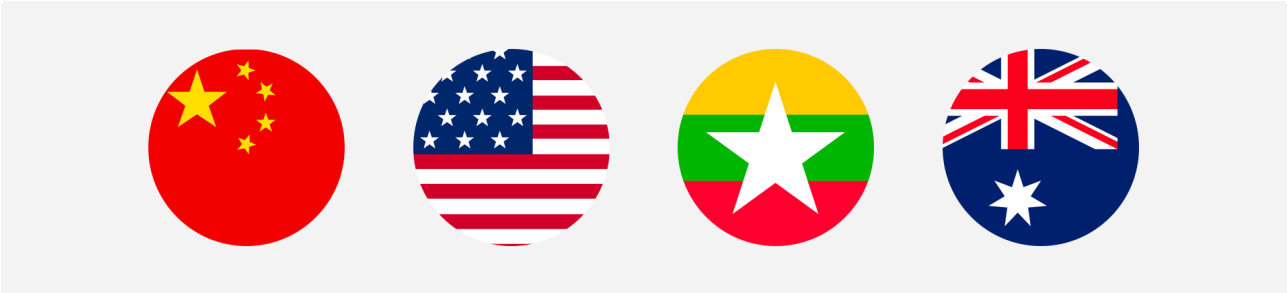
Where are Rare Earths mined?

Rare Earth Elements, also called rare earths or REEs, are a group of 17 metallic elements. This group includes neodymium, cerium, yttrium, lanthanum, samarium and more. REEs are used in rechargeable batteries, catalysts, and the manufacturing of ceramics and glass. Demand for REEs has skyrocketed over the past two decades as electronics with high-quality glass and rechargeable batteries, like mobile phones and laptops, became a part of daily life. REEs are also used in batteries for electric vehicles, further increasing their demand.

What is rare about REEs? The elements themselves are not rare - the amount of REEs like cerium, yttrium, neodymium and lanthanum in the Earth's crust is comparable to the amounts of common metals like nickel, zinc, and lead. However, deposits of REEs are rare. These elements are highly reactive and do not commonly occur in deposit-sized quantities. The majority of REE deposits are found in igneous rocks, like granites, pegmatites, and carbonatites. REE mineralization occurs in the form of bastnaesite, a lanthanide fluoro-carbonate, and monazite, an REE-phosphate.

Other REE deposits include monazite placer deposits (river and beach sands), iron-oxide-copper-gold deposits, and ion-absorption clay deposits.

Global REE production is dominated by one country: China. China is estimated to contain 36% of the world's REE reserves. In 2019, China produced 132,000 tons of REEs, 63% of the world's supply. The US (26,000 tons), Myanmar (22,000 tons) and Australia (21,000 tons) accounted for 32% of global production. Brazil, India, Madagascar, Russia, Thailand, Vietnam and Burundi contributed the remaining 5%.



REE mining in China is dominated by state owned or local private companies. These companies include China Northern Rare Earth Group, China Minmetals Rare Earth, China Rare Earth Holdings, JL Mag Rare Earth, and Xiamen Tungsten.

Outside of China, REE exploration and production is concentrated in the US, Australia, Greeland and Canada. The Mountain Pass Mine in California, owned by privately-held MP Minerals, is the only active REE mine in the US. USA Rare Earth have a project at Round Top, Texas, and Energy Fuels have a project underway to process monazite-bearing sands from the Chemours sand plant in Georgia.

REE exploration in Greenland is underway by Canada-based Greenland Minerals and Energy (Ilimaussaq alkaline complex) and Canada-based Hudons Resources (Sarfartoq). In Canada, Critical Elements are exploring REE deposits in Quebec and Search Minerals are exploring in Labrador.

Australian companies Iluka Resources and Lynas Corporation are actively mining and processing REEs in Western Australia. Additional exploration and development in Western Australia is underway by Hastings Rare Metals.

How do junior mining companies know if there is a sufficient amount of ore?

Geologists will conduct drill programs, producing drill results that provide the company (and investors) an idea of whether it is worth drilling there.

Understanding drill results

Drilling is a critical part of a junior miner's exploration process. Good drill assay results can sharply increase the share price, whilst one set of bad drill results could topple a company

until they find a new mine location. A savvy investor should know how to understand a junior company's drill results to make the best investment decisions.

Assay: a chemical test performed on a sample of ores or minerals to determine the amount of valuable metals contained.

Companies complete drilling programs to help prove the existence and quality of an ore deposit. In the exploration phase, companies drill many holes in close proximity to each other across a potential deposit. Drill holes are angled to intersect the mineralised zones of an underground deposit. Drilling methods include diamond drilling, reverse circulation (RC), and percussion rotary air blast (RAB).

Diamond drilling

Diamond drilling is the best – and most expensive – method. Diamond drill bits are used to produce solid, cylindrical pieces of rock, called core. Core provides valuable information about the structure and mineralogy of a potential ore deposit.

Geologists examine the core and take note of any missing pieces. Samples from the mineralised zone are sent to a laboratory for assay analysis. Cross-contamination between geologic zones is rare with diamond drilling, making it the most accurate method. The drawbacks of diamond drilling are the time (several months) and cost required.

Geologist: studies the solid, liquid, and gaseous matter of the Earth as well as the processes that shape them. A mining geologist is responsible for mapping out the locations of valuable minerals and will use aerial photographs, field maps, and geophysical surveys, to determine where valuable materials are and estimate how much of those materials are in that location.

Exploration geologists search for mineral resources and get involved in the planning and expansion of mining operations. They locate and evaluate potential deposits of precious metals, industrial minerals, gemstones, pigments, construction materials or other mineable commodities.

Reverse circulation drilling

Reverse circulation (RC) drilling is a quicker and cheaper, although less accurate, alternative to diamond drilling. RC drilling can cover more than 100m per day. This method involves blasting air down a pipe drilled into the ground. An air-driven hammer is driven into the pipe and pounds the round, breaking it into small chips and pieces. The rock cuttings are carried by air back to the surface, where they are sorted by size. Cuttings are bagged and a portion is sent to a laboratory for assay analysis.

For assay analysis, three consecutive samples are combined to form a three-metre composite sample. This method is less accurate, but cheaper. RC drilling comes with the risk of sample cross-contamination, which occurs when cuttings from adjacent zones mix as they are pumped back to the surface.

Percussion rotary air blast drilling

Percussion rotary air blast drilling (RAB) is the fastest and cheapest drilling method, ideal for drilling a large number of shallow holes across a deposit. This technique uses an air-powered hammer to drive a heavy drill bit into rock, breaking the rock into fine dust and chips. The cuttings are driven back to the surface by air, where they are sorted and bagged for assay analysis. Like RC drilling, RAB drilling comes with the risk of sample cross-contamination. Another drawback of RAB is that the drill hole will clog with mud when groundwater is encountered while drilling.

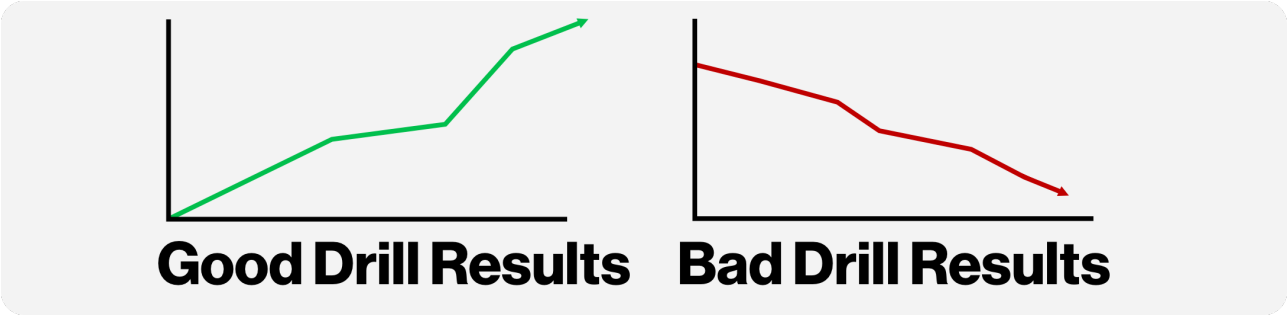
Assay results

For all drilling methods, samples are sent to a lab for assay measurements. Assay results are the amount of mineral per unit of rock – for example, 2.1g/t (grams per ton) of gold or 0.55% copper. Geologists plot assay results on cross-sections so that the ore deposit can be visualised in 3D. Drill holes are often drilled at an angle, so data from the drill survey is used to capture the actual path of the drill hole through the subsurface. The drill path provides critical information about the thickness of an ore body and the mineralised zone.

When a company notes that their drill results are in “true width”, they have corrected their data to account for the angle of the drill hole. Consider an oval-shaped orebody that is 10m tall and 50m long. A vertical drill hole, a horizontal drill hole, and an angled drilled hole will all show different thicknesses of the orebody, hence the need for correction. True width data is an accurate representation of the ore body’s mineralization. Data that is not reported as true width is less trustworthy and is likely an overrepresentation of the amount of mineralization present.

Context is crucial when it comes to interpreting drill results. Data quality varies depending on the drilling method, and drill results can be reported in misleading ways. Companies will often report the drill result highlights–the very best results.

Consider an assay result of 6g/t Au: promising, but not outstanding if this mineralization is only present over a 1-metre interval while the rest of the drill results are 1g/t. Understanding drill results is a critical component to an investment decision, so take care to fully understand the data.



How do drill results affect a company?

Canada Nickel Company is a prime example of how good drill results can cause a company's stock to skyrocket. In July 2020, CNC reported initial results from infill drilling at their Crawford nickel-cobalt project in Ontario. The results showed a nickel grade one-third higher than their initial drill results reported: 0.42% Ni compared to original high-grade average estimates of 0.30% Ni. CNC's stock price nearly tripled, rising from USD$0.76 to USD$2.60.

How do junior companies obtain funding?

Most junior companies need to obtain funding or be bought out by a larger mid-tier or major company. Issuing shares of the company is one of the ways to do this. Junior companies can offer shares through an Initial Public Offering (IPO) on a public stock exchange. In Canada, where the majority of junior miners are traded, institutional investments and retail investments only make up a small portion of junior mining equity. The bulk of funding comes from private placements, particularly from specialist mining investment firms.

IPO: An initial public offering (IPO) refers to the process of offering shares of a private corporation to the public in a new stock issuance. Public share issuance allows a company to raise capital from public investors.

If junior miners fail to secure funding through traditional methods, other options are available. Some of these options include debt instruments or production-based financing. Juniors who need cash to continue developing their projects may also partner with other companies, farm out the project, or sell the project to another company.

What happens when all of the mineral has been mined?

It is often unlikely that a junior mining company would mine a feasible deposit until the end.

Instead, many opt to sell the deposit or their company to a larger mid-tier or major mining company and continue to explore to discover a new deposit in a new location. Canadian junior miner Rio2 has had success with this strategy in South America.

Rio2 was formed from Rio Alto Mining, who had two gold projects in Peru: the La Arena gold mine and the Shahuindo gold project. Rio Alto was acquired by Tahoe Resources in 2015 and the Rio Alto management team formed a new company, Rio2. The team capitalised on their success at the La Arena mine to develop the 5Moz (million ounce) Fenix gold project in Chile. Production at the Fenix gold mine is scheduled to begin in 2022. Rio2 has plans for further exploration and development in Chile, with a long-term goal of merger and acquisition activity.

Why should I invest in junior mining stocks?

Junior mining companies often form an exploration pipeline that feeds into the majors. The investment risks are undoubtedly higher, and juniors are famously speculative. So why would you invest your money here?

With big risk comes big rewards - many juniors fail, but this means the demand for those that succeed is high.

The pros of investing in mining

1. Mining provides a resource that humans can't live without

Think of all the other possible industries you can invest in: Bitcoin, Technology, Real Estate, Healthcare, Cannabis... the list is endless.

The one thing that connects all of those industries is natural resources.

Bitcoin could not be possible without the battery metals that build the computer its mined on, houses could not be built without steel, healthcare would struggle to function without the antiseptic properties of silver and cannabis could not be grown without the fertilising properties of potash.

Natural resources are the backbone of all industries on earth, and the demand is only increasing as supply becomes scarce. There is a clear longevity to investing in mining: we are using resources today that we were using 3,000 years ago, just in a different way.

We can predict that gold will always be desirable, steel will always be necessary and there will always be some level of demand for oil and gas. However, with the need for a more sustainable future, comes the progression of Electric Vehicles using battery metals (Nickel, Cobalt, Lithium, Graphite, Copper) and the rise of carbon neutral energy from Uranium.

2. Well-established industry

Mining is one of the most established industries in the world, dating back 40,000 years to the first known records of coal mining - with industrial mining originating 10,000 years ago.

This means that the industry has developed well-established trends and patterns, that can be forecast and predicted (major economic crises aside). This allows juniors to predict the potential profits of an orebody before they go into production, giving investors and the company confidence to move forward.

3. Dwindling supply = increased profit

Demand for natural resources is exponentially increasing as a consequence of the increase in world population: more people = more demand.

As economies grow and evolve, consumption of natural resources per capita increases. The average individual in the US uses 8x more natural resources in their day-to-day life than the average individual in India - but India is catching up.

However, with all resources that are mined underground, there is a finite supply (until we learn to artificially recreate them or recycle them). Increased demand and finite supplies often lead to one thing: increased prices.

Palladium has recently become the most desired of the 4 precious metals (gold, silver, platinum) due to its acute supply and increased demand. Palladium is 30x rarer than Gold and also surpassed the price of gold in 2019 for the first time since 2001. As the demand for diesel cars (which uses platinum) decreases, the demand for petroleum-powered (palladium) cars increased. With 85% of total palladium consumption used in catalytic converters, helping to turn harmful pollutants into carbon-dioxide and water.

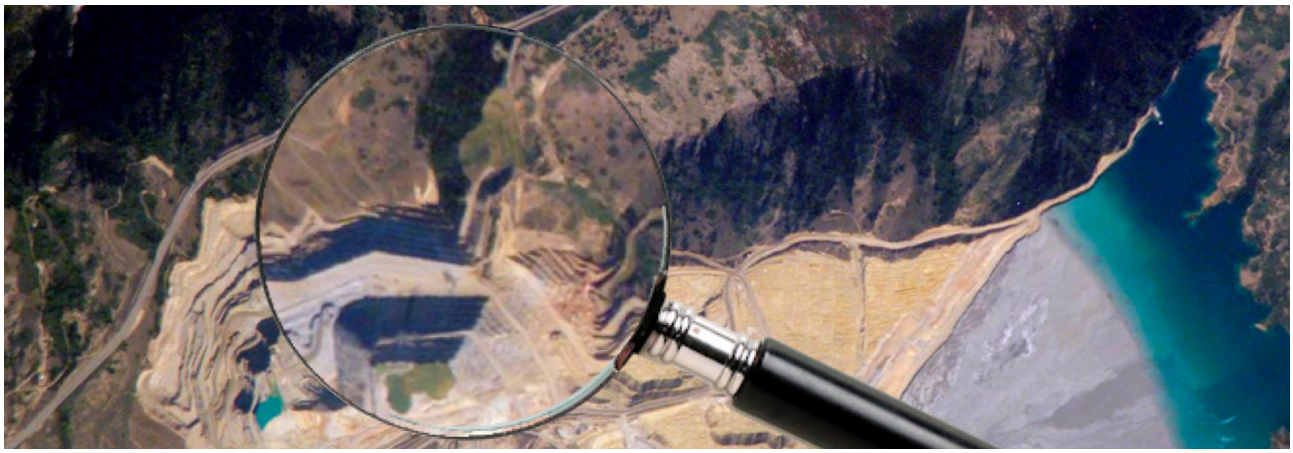
And it looks like the demand for palladium is going to increase in the near-term, with experts saying that the electrification of the majority of the world's automotive fleet is years into the future.

4. Simple process to understand... if you do your research

Although complicated at first, the mining industry is relatively easy to understand and invest in. All mining companies generally follow the same lifecycle from the exploration stage through to production. Once you have a clear understanding of the process, it is easy to apply that knowledge to different companies.

For example, all companies must complete feasibility studies to determine the size of the orebody and associated economics of mining it - so, if you can understand the variables that affect a mining companies ability to get into production economically, you have a very good chance of making a return on your investment.

There are also many different sources you can use to understand mining terminology or spot the things you should be looking at when analysing a company: red flags and green lights.



The cons of investing in mining

1. The mining process can be complicated

The mining industry is full of complicated jargon that can feel very daunting at first, especially when trying to understand PFS vs DFS, downdip, updip NI-43 101 reports...

Don't let this put you off though - with a bit of time and focus, you'll be able to understand enough to do your own due diligence.

2. Lack of information available to retail investors

Retail investors often do not have access to the types of company reports that are paid for by institutional investors, costing up to $100,000. Research companies and brokers are restricted by regulators in regard to sharing that information with retail investors, which puts retail investors at an immediate disadvantage.

Less information available = worse investment decisions.

We are looking to change this by providing unbiased, unpaid for company research specifically and exclusively for retail investors - closing the gap between institutions and individuals.

You can find company reports already in The Club, with new additions and updates monthly.

3. Many opportunities to be 'caught out'

Don't be fooled by brokers

The investing industry is comprised of many different types of investors, from hedge funds to accredited investors to insurance companies (collectively institutional investors) all the way down to retail investors at the very bottom of the investing food chain.

Retail/individual investors are thought to be less knowledgeable, less disciplined and less skilful than institutional investors (fewer sources available) so they are often presented with more risky investment opportunities.

Another fear for retail investors is that their naivety is preyed upon by larger brokerage firms who often tend to practice The Greater Fool Theory.

The Greater Fool Theory

The idea that, regardless of the value of the stock, it will always sell as there will always be someone (a greater fool) who is willing to pay a higher price.

In this case, the greater fool tends to be the retail investors who don't know any better. Brokers can trick new/naive investors into buying stocks that the broker *needs to sell*, for a very high over-inflated price.

Take the emotion out of investing. You're here to make money.

Don't be fooled by promotional language

A growing concern for both the industry and investors is the type of promotional language used by companies when trying to persuade people to invest in their company.

It's all in the interpretation: *Tier One; world-class; spectacular results; ore; Capex…* different companies are choosing to report these in different ways using different metrics, creating an imbalance in reporting.

This imbalance is only heightened by companies increased desperation to survive: there are more companies needing financing than there is money being invested. Some companies tend to exaggerate their positions in a bid to 'win' the investors and their cash.

There's a lot of white noise in the industry: companies with different quality assess and different likelihood of success all say the same thing, making it extremely difficult to decide where to invest your money.

Take the emotion out of investing. You're here to make money.

Don't be fooled by confirmation bias

Confirmation bias kills profit - don't fool yourself. There's a lot of biased information online, paid for by the company that is intentionally skewing the facts of the company its promoting.

Make sure to look at a writer's position in a company before reading the information, and discount all or most of what has been written. Whilst an article written by the company you're invested in can be very useful, don't give-in to confirmation bias (the process of reading and absorbing information that positively affirms your investment decision.)

For example, if I am invested in X company and read reports/information only endorsed by that same company - how do I know that information is accurate?

Instead, focus on un-biased and in-depth analysis from multiple sources and validate all facts independently. Do your homework and seek honest answers to the right questions, because many fall into the confirmation bias trap and you're just kidding yourself out of profits.

Take the emotion out of investing. You're here to make money.

4. Extreme volatility

There are more than 3,000 junior mining companies listed on exchanges globally, with new ones constantly appearing - some good, some bad. So how can all of them survive and make money? They can't and they won't.

Worldwide there are less than 50 major mining companies, so clearly not all juniors can progress to this stage - some must fail, some will be bought up and most will wander aimlessly or reincarnate themselves.

Between 2010 and 2011, out of 500 Uranium exploration companies, only 2 got into production.

Juniors require substantial capital to get into production and can take 10-20 years to do so, during which time a lot of things can go wrong…

Brownfield exploration: Also known as near-mine exploration, refers to areas where mineral deposits were previously discovered or close to other successful mining areas. In brownfield exploration, geologists look for deposits near or adjacent to an already operating mine. As geologists are able to use existing data, the risk in brownfield exploration is lower than in greenfield exploration.

Greenfield exploration: Occurs in uncharted territory where mineral deposits are not already known to exist. Greenfield exploration relies on the predictive power of ore genesis models to find mineral deposits in previously unexplored areas or in areas where they are not already known to exist. Grassroot exploration projects spend a lot of time finding new deposits and these are the riskiest projects in the mining business.

Why do so many juniors fail?

There are 8 key reasons why a junior mining company may fail:

1. Choice of jurisdiction

Pure-exploration junior mines in new unexplored areas are exciting, but more likely to fail than juniors in areas with geology that is similar to that of nearby producing mines. Some statistics indicate that only 1 in 5,000 to 1 in 10,000 grassroot exploration projects ever reach the production stage.

Important considerations:

- State, province, municipality
- Infrastructure
- Accessibility
- Federal state and provincial government policy
- Tax and royalty structures
- Local communities
- Environmental and Social Governance (ESG)

Failure to acknowledge and address any one of these issues could seriously impact a projects ability to ever get into production.

2. Poor exploration drilling results

Exploration drilling and sampling provides information to estimate ore quantity and grade, and should be a priority of a junior as some investors and funders will wait for drill results to decide if the company is worth investing in.

Mineral exploration and drilling is required to estimate potential orebodies and is ultimately where investors hope to see the majority of their money spent. A well-funded and robust drill program allows the company to produce a maiden resource estimate.

This maiden resource is usually associated with an initial scoping study called a Preliminary Economic Assessment (PEA) and after further scoping work, drilling and interpretation, the company will produce a Preliminary Feasibility Study (PFS) to confirm the robustness of the economic assumptions made in the PEA. It is unusual for a company to be funded at this stage, but it does lend more comfort to the market as the chance of success.

Moving ahead on a PFS is always a risky proposition although some companies can get away with it if:

- The work has been particularly thorough
- The CapEx is particularly low (Capital Expenditure)
- The deposits in the area are particularly well-known

If this is not the case, failure to complete further studies can negatively impact the company and its shareholders: as demonstrated by TMAC Resources.

If the deposit continues to show attractive economics the company will start to firm up on the capital costs required to develop the asset through a Feasibility Study (FS). At this point the company has a much better understanding of what's happening underground and what's happening above ground in terms of financing costs.

However to make sure the lenders of the money are comfortable, the company will be required to produce a final scoping study called a Definitive Feasibility Study (DFS) with rigorous detail, exacting technological analysis and final costings at prevailing market prices.

3. Technical limitations of the orebody

Technical issues are many, and arise from a number of sources when it comes to understanding an orebody. Some miners feel comfortable mining lower-grade ore on a much larger scale, because the amount of contained metals can be economically mined eg: Equinox processing ore of less 0.5g/t in California.

Headline grabbing high-grade narrow veins can also be mined economically despite the volume of overburden that needs to be removed under the tight conditions. However, even

these scenarios struggle if is the metallurgy does not allow effective recovery rates, or indeed

Metallurgy: The art of working metals, especially extracting them from their ores.

if the price of the commodity is lower than the all-in cost of mining it.

Issues can arise when miners seek out smaller scale, lower-grade ore that is far more difficult to reach and extract as it is often hidden so far underground. For example, Discovery Metals attempted to transform the economics of their large low-grade deposit by drilling out high grade structures. A strategy that is often questioned.

Location of the orebody comes into play too. If it is inaccessible due to rain or ice for months of the year, making it technically hard to access, the economics are affected. If it is deep underground and is technically hard to access, then the economics will be affected.

So it is important to remember that high-grade doesn't always equal a high-margin project. It's about the volume of recoverable metals at a price that is sustainable and profitable.

4. Mining permits not granted

Mine permits and licences at all stages of the companies life are required for the exploration, development, extraction and processing of minerals to name but a few. Permits are aimed at controlling prospecting and mining.

Permit considerations:

- Health and safety
- Environmental and social management
- The responsible extraction of minerals

There are many stories of companies that have been unable to begin exploration projects as they have failed to gain the necessary permits from the relevant authorities to develop, construct production facilities or mine. Investors money is spent instead on the overheads of salaries whilst they wait for permissions that may never come.

5. Running out of cash

Junior mines need to be well-financed at all stages. If money needs to be raised in the equity markets ie: issuing new shares, management will aim to do so at a higher price than the last

raise. This is the ideal scenario, but is not always the case. As an investor, one must always have a view on the cost of the money and a belief that the money will be spent in a way that will increase the value of the company for you as a shareholder.

Exploration and development is expensive, and if companies fail to raise enough cash during these phases then they will not be able to make it to production and will have to seek alternative strategies like bringing in a partner, merging, farming the project out to another company or selling the asset or company.

6. Change in commodity price

Current commodity market price significantly affects share prices for near-term producers and mining companies in production. The lower the cost of producing and the higher the commodity price, the more money the company makes. The cash generated gives the company optionality to do different things, such as issue dividends to shareholders, make accretive acquisitions, pay down debt, buy equipment to increase productivity or hire better people.

Mining companies must maintain operational mines even during downturns in commodity prices. The commodity price falls and the mine becomes unsustainable, the company may choose to put the mine into care & maintenance.

7. Social and environmental conflict

Mining can be a politically vulnerable business, so exploration assets in difficult areas or politically unstable countries can be problematic. Whilst mining companies bring jobs and boost the economy to rural areas, they can be the source of social and environmental conflict.

In September 2020, Chile's environmental court confirmed definitive closure of Canadian company Barrick Gold's Pascua Lama mining project which had been on hold since 2013 over environmental concerns and also imposed a C$9 million fine on the company.

Local groups protested and started a legal battle to halt its construction, citing concerns over the threat of damage to waterways from the massive open-pit mining project, one of the largest in the world. The court dismissed a legal challenge from the company and confirmed a 2018 environmental authority ruling, ordering the "total and definitive closure" of the mine project.

8. Poor management decisions

This is the core risk for any investor as it's ultimately the management of these companies who are responsible for its success or failure. Look for management teams with relevant experience for that stage of the company's development. There is no point in investing in a company where the management team is telling you that they will get into production, if they are prospectors or explorers and have never built a mine before.

What to look for in Management teams:

1. A business plan and the ability to articulate it clearly to investors.
2. The ability to solve the technical geological problems for their stage of development.
3. The ability to talk to the financial markets and raise capital.
4. They must be able to manage and spend their money prudently and effectively.
5. To promote their story consistently and regularly.

So, does this increase the rewards for those that succeed?

Yes. The early stage of a mining lifecycle is a particularly risky time to invest in a junior company. At this stage, there is plenty that can go wrong with securing funding, permits, and asset viability. Companies are a long way from proving a deposit and earning profit. Despite all of this, the biggest rewards come to those who invest early – if the company succeeds.

Junior vs Major: which should I choose?

Investors need to evaluate which they are better suited to. Are you a...

Thrill seeker: Junior mining companies offer high leveraged returns on investment when investing at the exploration stage, but only a small percentage will succeed through to the development or production phase.

Investment in explorers and developers require more research and due diligence as many variables are yet to be proven. You need to be able to answer questions honestly before investing.

Play it safe: Major mining companies offer a more stable and steady investment, with smaller returns but the possibility of earning dividends (a distribution of profits by a corporation to its shareholders).

Can't decide? Some investors choose to split their investments between the two, offering both risk and stability. With a blended risk approach to their portfolio.

Why is it good to have a diverse portfolio?

It's important to reiterate here that investing, even outside the mining sector, is inherently risky. A general investing guideline is to have a diverse portfolio: invest in different sectors and in companies with different market caps. Further, diversify within each sector. Junior, mid-tier, and major mining companies all offer different risks and rewards and a combination of three can be a healthy, diversified portfolio. While it can be tempting to go all-in on junior miners, the reality is that most juniors fail.

If your junior mining investment pays off, consider investing the money in one of the mining ETFs, instead of reinvesting in another junior. Invest in juniors who are exploring for different commodities, as commodity prices fluctuate based on a variety of factors. Company location can have a huge influence on stock too, as geopolitical and community issues at mines can arise seemingly out of nowhere. Choose companies who are at different stages in the development process, as the risks are different at each phase. Follow the companies you've invested in, read their technical reports, and track their development progress. This will preserve your money in the long run and still allows the chance of junior mining investments paying off.

ETF: Exchange Traded Fund, is an open-ended investment that is traded in the exchange or more commonly known as the stock market.

What is risk capital and how does it relate to Junior mining stocks?

Juniors offer the potential for a lot of appreciation, making them the ideal investment to fill your risk capital quota. Risk capital refers to the portion of an investment portfolio allocated to speculative or high-risk, high-reward investments. These investments typically have above-average returns if they succeed. Risk capital is part of a diversified portfolio and junior mining stocks can fit into this category. Junior mining stocks are speculative and are often penny stocks. Despite the promise of high returns, junior mining stocks often don't pay off. Make sure you understand and are comfortable with putting risk capital into junior miners, and remember to diversify.

Appreciation: an increase in the value of an asset over time.

Penny stock: the stock of a small company that trades for less than $5 per share.

Are junior mining stocks a good investment?

If you do the right research and keep an eye on your portfolio, junior mining stocks can prove to be good investments. The early stages are the riskiest when it comes to investing in junior miners. However, many of the junior miners who are traded on public exchanges have already reached the development or production phase. This inherently lowers the risk, as the resources at these mines have been proven and the companies are on their way to becoming profitable. Read about junior miners' leadership, strategy, drill results, and reserve estimates. Invest in a diverse group of junior miners, so that the highest gainers will offset the poor-performing stocks.

Key things to consider before investing in junior mining stocks:

- The business model of junior mining companies is based on the amount of resource in their asset. There is no way to know how much resource is actually there until it has been mined.
- Investing in individual junior mining companies is risky. There are a multitude of factors that can cause juniors to fail: geopolitical issues, community issues, permitting issues, or simply not having any resources.
- Drill test and feasibility study results can make or break a junior. Stocks can rise sharply on positive results and plummet on negative results.
- Junior stocks are more commonly held by individual investors, instead of institutional investors. Individual investors often make emotional decisions, causing volatility in junior stocks.
- Junior stocks correlate with the overall stock market.

Junior mining stocks success stories

When junior companies succeed, the rewards can be well worth the risk. Kaminak Resources is a recent example of a TSX-V listed junior who made it big. The company discovered the Coffee Gold Deposit in the White Gold District, Yukon Territory, Canada. Exploration began in 2009 when Kaminak acquired land in the White Gold District. Kaminak followed the steps of mining development, starting with chip sample analysis and diamond drilling programs. Drilling programs indicated high-grade gold deposits and Kaminak shares shot up in 2011 after these announcements. They continued exploring and proving the deposit, despite the gold price crash of 2012-2014.

In 2016, Goldcorp (now part of Newmont) acquired Kaminak and the Coffee Gold Project for $520 million. The project has measured and indicated reserves of 2.17 million ounces and an

estimated life of mine of 10 years as of December 2019. The original Kaminak team is still in the junior mining business, having used the proceeds from their sale to form a new company called Tectonic Metals. They are currently exploring for gold in Alaska, just over the border from the Yukon Territory.

How to get started with investing in junior mining stocks

1. Decide if you want to invest in mining.
2. Be clear about your own investment strategy and stick to it, write it down.
3. Work out what your risk appetite is.
4. Study the markets and see which commodity you think shows the most potential. Where in the cycle is the commodity?
5. Identify a handful of companies to study and follow.
6. Take your time - there are always more deals looking for your money.
7. Decide your method of analysis.
8. Research that company until you've got a thorough understanding.
9. Listen to the companies explanation of the business plan, does it make sense to you? Has the company continually done what they promised to do?
10. Invest a little initially, and see if you're comfortable and add more over time.
11. Remember the way you make money is by selling shares at a profit. They are spending your money, they report to you and the ONLY way you make money is if you sell your shares at a profit. You're not investing in a friend, company or the individual.

What to look for when investing in junior mining stocks

If you've decided to invest in junior mining stocks, use the following criteria to evaluate companies.

How to read a mining report

Mining company reports are so full of technical information it may feel like you need to be an expert to understand them. Ultimately, the information in the report will help you understand if the deposit is economic or not. Pay attention to the following when reading a mining report:

Drill Results

To know if drill results are good, you need to know what the company is looking for. Learn about the project's deposit and mineralization style. Remember that the type of drilling can affect the drill test results. Research other mines in the area to see what the average grades are. How do the drill results compare? Companies should publish locations of their drill tests and the trajectories of the drill holes. Be cautious if this information isn't in the report, as the company may be trying to hide something.

Assay Results

Assay testing determines the composition of a drill test sample and the quantity of each element present. Quantities of both the economic mineral and any impurities are measured in assay testing. Results are expressed as mineral grade, typically in grams/tonnes for gold and silver, or percentage for other minerals. These results can indicate the potential value of an ore deposit. Good assay results and a high-grade ore are good news for a mining project, while poor assay test results can stop the project before it starts.

How to analyse a company: Identifying green lights

Company management's relevant experience

Companies management with a proven track record and experience in the mining cycle are more likely to succeed, highlighting the importance of looking at the background and experience of the management and technical team.

It is important for the management team to have relevant experience for the project they're about to undertake, just as management teams with exploration experience are unsuited to build and operate a mine, likewise it is unlikely that executives from a major company will be used to the rigours and budget limitations of junior companies.

Whatever stage of project the team is working on, they must advance them in a timely manner, control share structure and complete financings at progressively higher share prices.

Research the company's founders and leadership team before investing. Junior miners typically have small teams, so it's important to make sure the group is skilled and trustworthy.

Look for companies whose founders have extensive experience in the mining industry and a proven track record. The budgetary, technical, and logistical challenges faced by mining companies vary widely depending on location, commodity, and deposit type. Management experienced with similar projects will know how to address any logistical or engineering problems that arise.

Attractiveness of the geology and economics

Geology is fundamental to the success of a mine. Simply put, if there's not enough resource in the ground, the mine will not be successful. Companies who have a thorough understanding of the geology of their deposit can make more accurate estimations of mineral resources and reserves. The more certain resource estimates are, the less risky the project is. Resource estimates determine how long the mine will be able to produce from the deposit before it runs out. Pay attention to the predicted longevity of a mining project and make sure it is comparable to similar successful projects.

As previously mentioned, there are two types of mineral exploration: brownfield and greenfield. Greenfield projects are far riskier than brownfield projects, given the lack of existing data and modelling uncertainty. They also require more time and start-up capital for exploration, licensing, permitting and construction. Only a fraction of greenfield projects actually make it to production. However, when the risks are higher, so too are the rewards–discovering a brand new mining district can be worth the risk.

Financing available

The success of a mining company depends upon multiple variables including exploration results, jurisdiction and corporate structure.

Securing finance is a representation of the market's trust in the ability of the management team to deliver what they say they can.

Ultimately though the risk is amplified by the fact that they are trying to find something that is buried deep underground. If the management team is lucky enough for all of the data to indicate a high likelihood of success underground, they will be able to secure financing.

As the management team continues to de-risk their business plan, the likelihood of money becoming available to them increases. Typically in the exploration/development stage (pre-revenue), this is done through the issuance of shares in the company.

Once a company gets into a near-term revenue or revenue-generating position, it's able to reduce the dilution of issuing shares and instead use debt instruments as a means of financing the development, Capex and Opex of their operation.

Capex: Capital expenditures are the investments incurred by a mining company in their fixed assets to increase the value of that asset

Opex: The operational expenditures are those recurring costs for operating the mine.

It is preferable to have a strong balance sheet, low debt and a positive cash flow, especially when commodity prices are low.

The permitting and licensing process

Obtaining permits and licenses for mining can be an onerous process. Licenses and permits are required at every stage of the lifecycle of a mine, from exploration to ore processing. Before a company can begin exploration, it must secure proper permits from the local government. Permits are intended to avoid and mitigate any potential environmental risk from mining activities. They are required for mineral exploration activities, infrastructure, land access, and construction.

To receive permits, mining companies must submit environmental impact assessments and pre-feasibility studies to the local regulatory agencies. Permit requirements and timeframes vary significantly by country and state/province. In the US, it can take multiple years for companies to receive exploration permits. Multiple agencies are involved and companies must resubmit permit applications if they make any changes to the mine design or processes. The process speeds up significantly once development is underway, but it can take 7-10 years total.

Permitting is faster and more efficient in Australia and Canada and is usually complete within two years. In countries with unstable governments, the permitting process can be difficult. Corruption and unfair permitting policies can delay projects or prevent them from progressing.

Before investing in a junior miner, check to see if they have the required permits. Research the permitting process and policies for their jurisdiction so you can understand where the company is in the permitting process. Investing in a company without permits can turn out to be a costly waiting game.

RED FLAGS

Potential mergers and acquisitions

The goal of most junior miners is to be acquired by a larger company. It's become increasingly common for major and mid-tier mining companies to dedicate their extra cash to acquiring junior miners, rather than exploring for new deposits. M&A is the best way for junior miners to survive. The costs of building and operating a mine are so high that only mid-tiers and majors can sustain them. Keep this in mind when evaluating junior mining companies. Good juniors will complete all the technical and logistical work required to get the mine into production, positioning themselves for acquisition. Look for juniors who are transparent about their data and financial status, and are open to working with partners.

Jurisdictional risk

Finding a project with excellent deposit geology doesn't guarantee that it will be a success. Jurisdictional problems can prevent projects from moving forward or even shutter them altogether. These risks include political instability, lack of infrastructure, lack of skilled workers, unfriendly economic policies towards foreign companies, and community problems. When evaluating a junior mining company, do some research on the mining climate in the country where they plan to operate. Traditionally, Canada, Australia, and the United States are welcoming to mining companies. Policies and ease of permitting vary by state/province in these countries. Finland and Ireland have recently emerged as mining-friendly countries.

Some South and Central American countries, like the Dominican Republic, Guatemala, Nicaragua and Venezuela, are particularly difficult for mining activities, due to political instability and economic policies. In Africa, Tanzania, Zambia, the Democratic Republic of the Congo, and Mali have their own political and humanitarian issues. Tanzania recently changed its mining rules to keep more of the mining profits in the country and the Democratic Republic of the Congo is dealing with child labour issues.

When evaluating junior mining stocks, look for politically stable countries with a history of successful mining projects with foreign companies. Review the country's current mining licensing and permitting policies and their economic policies when working with foreign companies. Pay attention to the exact location of the mine, as different states/provinces have different policies and localised community issues. Make sure the country has access to infrastructure, construction, and a skilled workforce to develop the mine.

How to analyse a company: Identifying red flags

Read the financial statements and technical reports of any junior mining company you're considering investing in. Be wary if any of these red flags pop up:

- The CEO has been with the company for years but has no accomplishments to show
- The board is made of the CEO's friends and family
- The CEO and management team own very little company stock
- There are no institutional investors
- The company is run by a corporate promoter who takes fees
- The company frequently releases newsletters, even when there's nothing new to report
- The company's geologists are overly excited about the asset, but can't provide a detailed explanation of why
- The company does not release negative drill hole results
- The company re-drills historical drill holes, releasing old information to generate excitement
- The company is exploring in a politically unstable company or one where bribery is common
- Team members have excessive salaries and expenses
- The company spends heavily on investor relations and marketing
- The company switches focus to the current hot commodity

Should commodity prices affect my decision?

Like all commodities, mineral prices fluctuate. These fluctuations are driven by several factors, including supply/demand, market conditions, and the global economic situation. Mineral prices will decrease if the market is oversaturated, or increase if demand outweighs supply. Commodity prices also account for predictions of future supply and demand. Overall market conditions and global geopolitical situations also influence commodity prices.

Pay attention to market analysis and commodity demand. For example, demand for battery metals and uranium is projected to increase as the world seeks out clean energy sources.

Commodity prices have the greatest impact on companies who are currently producing or near-production. Operational costs are relatively fixed for mines in production and are not

affected by commodity price. Thus, if commodity prices increase, the company will earn a greater profit on the ore. If the commodity price decreases, the company will earn less. However, mining operations are not easily shut down if commodity prices decrease. Active mines continue to operate during commodity downturns until the operation costs become unsustainable. If this happens, the mine will go into care and maintenance mode, potentially reopening once commodity prices recover. Changes in commodity price also influence stock prices, although this effect is not as significant for junior miners.

Investment decisions should not be solely based on commodity prices. Look for a company with effective cost management strategies. Companies whose all-in cost of mining is less than the cost of the mineral being mined are well-positioned. It can take years for mines to reach the production stage and commodity prices will likely change over that time period. Operationally efficient companies are positioned to stand up to commodity fluctuations over time, making them a good investment.

How can I invest in junior mining stocks?

Do retail investors have the same opportunities as institutional investors?

Institutional investors are those who invest money on behalf of other people–pension funds, mutual funds, investment banks and some private equity investors, for example. They trade securities in huge quantities, which can have a significant impact on the market. Retail investors are individuals who buy and sell securities through a brokerage firm for personal goals, like retirement or education savings.

Institutional investors are at an advantage compared to retail investors. They can negotiate lower trading fees and aren't subject to the same regulations as retail investors. Since institutional investors have a higher purchasing power, they have access to investment opportunities with large minimum buy-ins. Market regulators consider retail investors to be less sophisticated and educated than institutional investors. They charge higher fees and commissions to retail investors and prohibit them from making certain complex investments. While retail investors simply can't compete with the big firms, there are plenty of options for individuals to get in on the junior mining stock action.

What are the different methods of investing in junior mining stocks?

Retail investors have two options for investing in junior mining stocks: buying individual stocks or an ETF.

- Buy Canadian stocks. The vast majority of junior mining companies are based in Canada and traded on the Toronto Stock Exchange (TSX) or the TSX Venture (TSX-V).

- Buy individual junior mining stocks. Build your own portfolio of junior mining stocks – this is a great place to use your risk capital. Work with a professional advisor who is experienced in the mining sector and can research individual companies.

- Buy an ETF – with a caveat. The most well-known junior mining ETF is the VanEck Vectors Junior Gold Miners ETF (GDXJ). Although the GDXJ is advertised as a junior miner ETF, it has very few true juniors.

What is an ETF?

An ETF, or an Exchange Traded Fund, is a collection of securities that tracks an underlying market index. These securities can be stocks, bonds, or commodities. ETFs are traded on an exchange and differ from mutual funds in that they are traded throughout the day. There is a variety of ETFs in the mining sector, including ETFs that focus on gold, copper, lithium and batteries, and juniors.

What are flow-through funds?

Junior mining companies issue flow-through shares as a way to raise funds for exploration and development. Flow-through shares are issued at a higher price than normal, providing companies with the extra cash they need for mineral exploration. Investors are incentivised to pay the higher price because they can claim deductions on these shares and lower their Canadian taxes. Resource companies in Canada receive tax benefits from exploration and development expenses, called CEE (Canadian Exploration Expense) and CDE (Canadian Development Expense). Companies at the exploration stage often have no net income and therefore no way to claim these deductions. With a flow-through funding structure, a company issuing flow-through shares forgoes these benefits and passes them on to the investor. This practice is unique to the Canadian resource industry.

While the flow-through shares structure is a tax shelter for investors, there are a few things to be cautious about:

- The allure of the tax benefits could convince you to make a risky investment you wouldn't make otherwise.
- Companies issuing flow-through shares typically have very little income and are short on financing.

- If you purchase flow-through shares through a partnership, a portion of the shares are set aside for the fund's brokers and managers.
- Fund managers might make hasty decisions to get money to the company and tax benefits back to investors quickly. Hasty decisions aren't always the best decisions.
- Additionally, flow-through shares are illiquid and must be held for 18-24 months to get the full benefits.

Liquid shares: The market for a stock is said to be liquid if the shares can be rapidly sold and the act of selling has little impact on the stock's price.

Illiquid shares: Illiquid refers to the state of a stock, bond, or other assets that cannot easily and readily be sold or exchanged for cash without a substantial loss in value.

Before purchasing flow-through shares, research the company the same way you would any other junior mining stock. Weigh the tax benefits against the possible drawbacks, and make sure you are comfortable with this type of investment.

Can I invest in the juniors by buying GDXJ?

The GDXJ is a junior gold miners ETF that tracks a market-cap-weighted index of global gold and silver mining companies. It is made up of 91 small and mid-cap mining companies who generate more than 50% of their revenue from gold or silver mining. It was created to allow investors to invest in a diversified group of junior mining companies.

However, there are very few true junior companies on the GDXJ. The majority of junior mining stocks are traded on Canadian exchanges, and Canadian securities laws prohibit a single entity from purchasing 20% of a company's stock. The laws define this as a takeover, in which case the investor must offer to buy the shares of all of the company's stockholders.

Junior companies are so small that listing them on an ETF would trigger a takeover. In 2017, the VanEck changed the index to include larger companies and avoid violating securities laws. This means GDXJ is no longer truly dedicated to junior gold miners, despite being advertised as the world's largest junior ETF.

If you want to invest in true junior miners, avoid the GDXJ and develop your own portfolio of juniors.

Toronto Stock Exchange	**TSX**
Toronto Stock Exchange Venture	**TSX-V**
Australian Stock Exchange	**ASX**
New York Stock Exchange	**NYSE**
London Stock Exchange	**LSE**

Which stock markets are most junior companies listed on?

Most junior mining stocks are listed on the Toronto Stock Exchange (TSX) or the TSX Venture Exchange (TSX-V).

TSX: the largest stock exchange in Canada and the 9th largest exchange in the world based on market cap. It has more mining and natural resources stocks than any exchange in the world.

TSX-V: an exchange for small-cap and emerging companies, particularly in the natural resources sector. More than 50% of the companies listed on the TSX-V are in the mining sector and the exchange is the world's largest home to micro-cap start-up mines.

Similar to Canada, Australia has massive mineral resources and is home to mining companies of all sizes. Some of the world's largest mining companies, like BHP and Rio Tinto, are listed on the Australian Stock Exchange (ASX). Over 500 small-cap mining companies are listed on the ASX, including juniors like Jervois Mining, Alacer Gold, and Volt Resources.

Junior mining stocks are also traded outside of traditional stock exchanges. Companies who do not meet the requirements for standard market exchanges – like the TSX, ASX, or NYSE – can be traded on over-the-counter markets (OTCMKTS). Over-the-counter (OTC) trading is done through a broker-dealer network. Broker-dealers negotiate directly with one another using listings from the OTC Bulletin Board or OTC Pink Sheet.

Can I invest in companies on the TSX if I don't live in Canada?

Investors living outside of Canada have several options for buying stocks on the TSX and TSX.V exchanges.

- ETFs or mutual funds: these are made of stocks from a variety of exchanges. Purchasing shares of an ETF or mutual fund is one of the easier ways to purchase shares for a foreign exchange.

- Brokerage firms: purchasing foreign shares is easily done through brokerage firms and online trading platforms, like E-Trade and TD Ameritrade in the US, IG in the UK, and CMC in Australia.

- Interlisted stocks: another option to purchase TSX shares is to purchase shares that are interlisted on other exchanges. Many TSX stocks are also listed on the LSE and ASX.

How much money should I invest?

Like many other factors in investing, the amount of money you put into junior mining stocks is up to personal preference. Think of this money the same way you think of risk capital: it's not where you want to put your retirement or long-term savings. Decide what percentage of your money you're comfortable investing in a speculative, risky stock.

You may choose to invest different amounts in different companies, which is good too. Consider everything we've mentioned already: do you trust the company to move the project forward? Is there enough resource there and can it be mined economically? Does the company have low operating expenses? Will the shares appreciate or be diluted? All of these factors should influence your decision. The more confidence you have in the company, the more you can invest.

What to do once you have invested in junior mining stocks

You've done your research and chosen some promising junior miners to invest in – now what? Junior stocks are not a long-term buy and hold stock. They tend to be volatile, so investors who want to make a profit need to keep a close eye on them, make sure they have an exit plan in place for junior mining stocks.

While you're holding the company stock, there are several things to monitor. Pay attention to the company's press releases. They will contain information about management changes and updates on financing, exploration, testing, and permitting activities. It's also important to consider the overall movement of the stock. Information about insider trading, management issuing stock options, share dilution, and timing of previous share issuances are all available online.

How do I know when to sell my shares?

Knowing when to sell any stock, much less a volatile junior mining stock, is a tricky business. The ideal time to sell varies for each stock and each investor. Remember that a junior miner's stock price is affected by the overall market and commodity prices. The company's activities and stage in the lifecycle also determine if it's a good time to sell the stock.

Junior mining stock prices are cyclical. During the exploration phase, particularly for greenfield projects, the stock price is dormant. As the company secures financing and progresses through the exploration phase, the stock price gradually increases. The price of junior mining stocks can skyrocket in the days after a company makes positive announcements. These

announcements include milestones like promising drill test results, JV partnerships, and resource estimates.

The best time to sell is at the peak of the stock price increase. Stock prices will settle and eventually decrease if the discovery does not pan out. It's hard to know exactly when the peak is occurring, but it is typically within a few days of the announcement that caused the price to increase. Before selling, consider the company's history and how it got to this point. If the company is in the early stages of mine development, prices could continue to increase with future positive announcements. However, projects in the early stages can face future challenges, like permitting and construction problems.

Despite all of the volatility, some investors choose to hang onto their junior mining shares for longer time periods. This strategy can pay off big if a junior miner's discovery comes to fruition and they sell the project to a mid-tier or major. Ultimately, it's up to each investor to decide when to sell.

Looking at press releases

Company press releases contain a wealth of information: management changes, exploration results, drill test and assay results, construction and permitting updates, and financing announcements. All of these events can affect a junior's stock price, so it's important to keep up with press releases. You can find them directly on the company's website and mining news websites. Press releases often show the company in a positive light, so do your research and read between the lines if you have to.

Analysing quarterly announcements

Similar to press releases, quarterly announcements contain valuable information about a company's status. Quarterly announcements focus on the company's finances: how much money they earned or lost during the quarter, and why. Net adjusted income and loss data will give you a good idea of how the company performed. The report's tables and charts provide a detailed financial breakdown of expenses, earnings, and debt levels. Pay attention to where the company is spending money–exploration, development, construction, operations – and make sure it's in line with where they are in the lifecycle of their mine. If the company is at the production stage, the report should contain production numbers.

Take all of this information into account with current commodity prices and market status. A mine's all-in sustaining cost (AISC) should not exceed commodity price. Most importantly, read the entire report. The best news is often at the beginning, with less favourable news at the end.

Watch out for changes in the management team

A strong, experienced management team is vital to the success of a junior mining company. Companies will announce any management changes in a press release. If a company announces management changes, pay attention to which roles are changing. Is it the entire management team or the CEO? If so, that could be a sign the company wasn't performing well. A junior miner's management team should be well-rounded, with experience in exploration, raising capital, and opening a mine. Make sure any changes to the management team are complementary to the existing team members.

Keep an eye on the stock as a whole for any threatening drops or increases

Monitor the stock prices of the individual junior mining companies you've invested in. When you see sudden changes in their stock price, read recent press releases and quarterly announcements to see what caused the change. If a company released excellent drill test results, a sharp increase in stock price is expected. But some stock prices can rise to unsustainable highs because of investor hype. Read the reports carefully and make sure the data backs up any changes to a stock price.

Similarly, look for downward trends and sudden decreases in stock price. They could be reactions to unsustainably high stock prices, commodity prices, or overall market actions. Positive exploration results often cause a stock price to increase, but investors can react in unpredictable ways. Stocks can decrease after positive results if the results weren't as good as investors were expecting. Research the company's recent actions before making any decisions about buying or selling in reaction to sudden increases in stock price.

Conclusion

After reading this guide, you should feel confident in your decision to invest in junior mining stocks. Follow these guidelines from the moment you buy to the moment you sell:

Pick the right company: research companies before you invest. First, is there enough ore in the ground and can it be extracted economically? Look for management teams experienced in exploration and development. Choose a company with a proven track record of opening and operating a mine. Make sure operational costs are low so the mine will be profitable.

Build a portfolio: instead of investing in a few junior mining companies, build your own portfolio of companies in the sector. Choose a variety of companies who are at different stages in the mining life cycle and extracting different commodities. Many will fail and few will succeed, and a well-rounded mix of companies will protect your capital investment.

Monitor the stocks: once you've invested, keep an eye on your stocks. Stay up to date with company announcements and press releases. Keep track of their exploration and development progress, drill test results, and finances. Watch out for any sudden increases or decreases in their stock price.

Have an exit plan: as soon as you invest, have a plan for when you're going to sell. Junior mining stocks are highly speculative and subject to investor mania. An exit plan will help you look past the hype to the crux of the matter.

Where to go next

As discussed in this report, the junior mining industry is full of many opportunities to get caught out. Whether it's misleading language in company press releases, the persuasion techniques of brokers or the minefield of information available online, it's becoming harder and harder to determine what's the truth.

We are focused on providing unbiased, in-depth market insights specifically for retail investors. For more detailed analysis and opinions like this, click HERE to join the waitlist to our private investor platform. Here's what you can expect:

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- **Community:** Online/mobile social network. The most generous, sensible and respectful group you'll be proud to be a part of.
- **Company Reports:** Career miners & financiers condense weeks of research into simple Red Flags & Green Lights®. Bonus, access full backlog.
- **Behind The Screens:** The 30% of companies that could make you money, identified. 3-mins or less. Candid summary. Bonus, access full archive.
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