

# Nevada Gold Mines – Mining Economics

Welcome to the NGM Mining Economics Case Competition. The mining industry is crucial to global economic and sustainable development and is at the heart of the green energy transition. When making business decisions regarding the construction and commencement of production of a mining project there are a vast number of factors and inputs that must be considered, from the geology of the ore body, to the environmental landscape of the project. This case competition is designed to introduce you to this array of factors and challenges you to balance economic success with other environmental, social and governance considerations.

The description for this competition is: making mining investment decisions using financial evaluation methods.

## Case Competition

1. You form part of the Business Development group for a mid-tier gold mining company with operations in Nevada, USA. The Head of Business Development has asked you to review two hypothetical acquisition opportunities (Projects Romeo and Juliet) and to present an indicative investment recommendation to the group at your weekly meeting. Using the accompanying information (analyst reports, financial models, and Appendix 1) compare and contrast between the two projects. With reference to key financial and technical metrics assess the two projects with the goal of providing an investment recommendation, with supporting evidence.
  - a. You must assume the company only has sufficient liquidity to invest in one opportunity.
  - b. You should include sensitivity analysis of the key variables, and reference to the accompanying information. You are encouraged to include tables, graphs, and images both from the provided documents and your own research.
  - c. All reference to 'tonnes', 'g/t', '\$/t', 'Mt' refer to metric tonnes.
  - d. All reference to 'ounces', '\$/oz', 'oz', 'ozs' refer to troy ounces.
  - e. *The projects and information provided for this task are fictional and do not represent any real-world operations or actuals.*
2. Students will prepare a video presentation (minimum 12 minutes to maximum 15 minutes) of their team's investment recommendation to be uploaded to YouTube.
  - a. This video must be **unlisted**.
  - b. Assistance from the UNLV video department is permitted.
  - c. Teams may practice their presentations with live audiences but must not seek technical feedback or assistance from faculty or other professionals.

# Appendix 1

## a. Gold and silver five-year price graphs

5 Year Gold Price in USD/oz

Last Close: 2030.96

High: 2079.53 Low: 1269.30 ▲747.75 58.27%



Tuesday, January 9, 2024

5 Year Silver Price in USD/oz

Last Close: 23.13

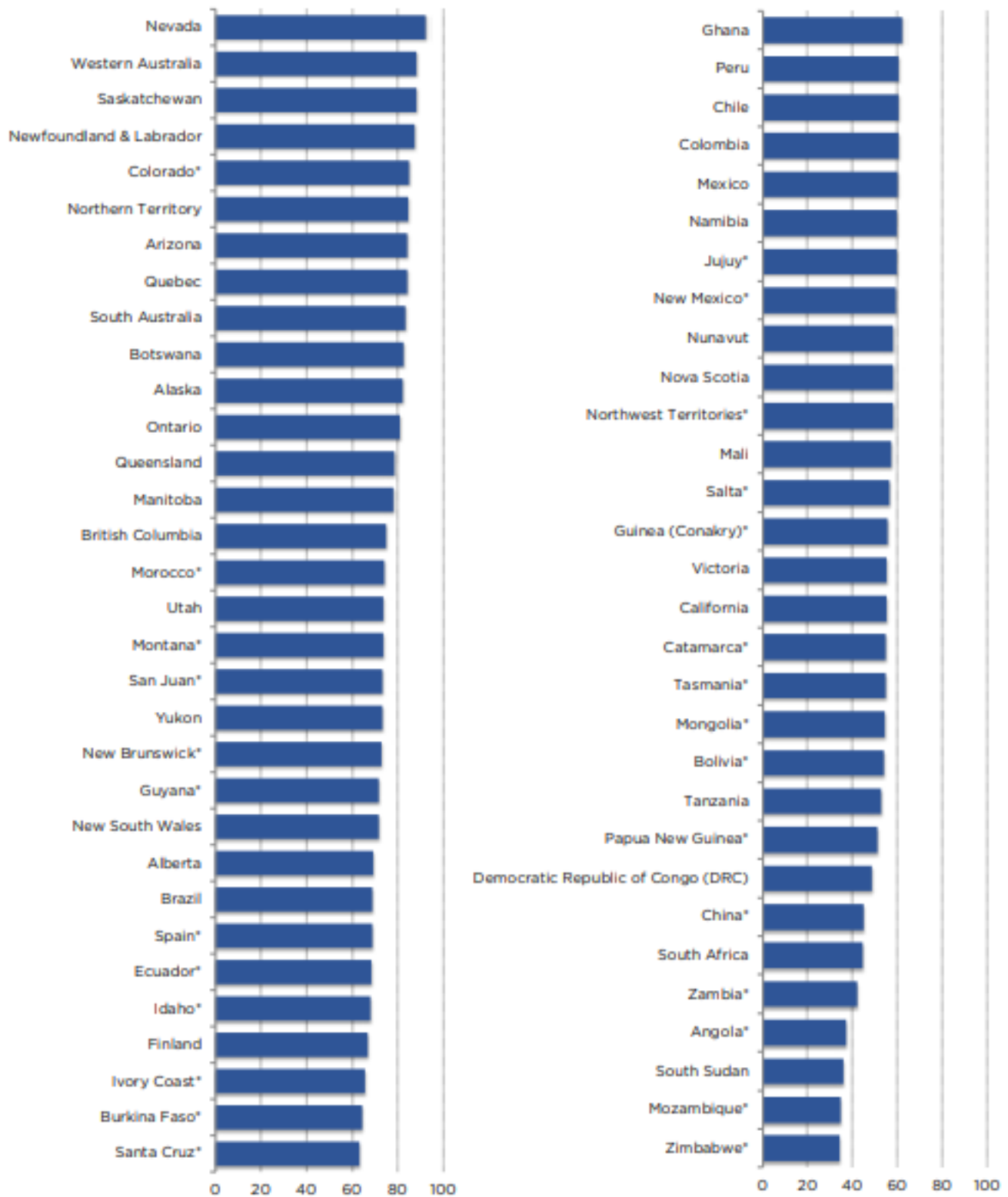
High: 29.37 Low: 11.74 ▲7.50 48.00%



Tuesday, January 9, 2024

b. Fraser Institute Jurisdiction Rankings

Figure 3: Investment Attractiveness Index



\* Between 5 and 9 responses

### c. Glossary of Terms

Term	Definition
<b>Ag</b>	Silver
<b>Au</b>	Gold
<b>Book value</b>	The value of total capital invested less depreciation; this value is carried into the next financial period.
<b>Capital expenditure</b>	Investment in equipment and infrastructure that has a benefit beyond the current year
<b>Depreciation</b>	An accounting practice used to spread the cost of a tangible asset over its useful life - in the mining industry, this is done relative to annual metal production and the expected total production over the life of mine.
<b>Discount rate</b>	The rate used to discount future cash flows back to their present value; this usually considers the risk-free rate of return of an investment, as well as the expected return of a company's investors.
<b>Free cash flow</b>	Operating cash flow less capital spend in the financial period.
<b>G&amp;A</b>	General and administrative costs - includes some labour and office costs, and other operating costs that are not elsewhere included.
<b>G/t</b>	Grams per tonne
<b>Income tax</b>	Tax paid on taxable income
<b>Internal rate of return</b>	The discount rate that would lead to the NPV of an investment to equal zero.
<b>Metal grade</b>	Measure of the concentration of metal found in the economic material (ore)
<b>Metal recovery</b>	The assumed metallurgical recovery of the precious metal during processing in the plant
<b>Metallurgy</b>	the science of metals and their concentration and production
<b>Mining cost</b>	The operating cost of the mining operation, applied to every tonne mined.
<b>Net present value</b>	The sum of all future cash flows accounting for the time value of money; used to compare investments.
<b>Operating cash flow</b>	The cash flow generated by normal business operations, calculated by adding depreciation back to after-tax income as depreciation is not an actual cash expense.
<b>Operating cost</b>	Costs incurred during the mining cycle - this benefit is limited to the current year.
<b>Processing cost</b>	The operating cost of the processing plant, applied to every tonne processed.
<b>Realisation costs</b>	The charge applied to the gold produced by a mine by the refinery for transport, insurance, and metal refining.
<b>Reclamation spend</b>	This is the ongoing cost of reclaiming the land on which a mining operation exists. This value is bonded prior to the commencement of construction and is spread across the life of mine, with the bulk of the spend able to occur after the completion of mining
<b>Revenue</b>	The income generated from saleable products.
<b>Tonne processed</b>	Material bearing precious metals that is input to the processing plant, can be seen as total ore.
<b>Tonnes mined</b>	Total material mined - includes both ore (economic) and waste (uneconomic) material