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## Incorporating economic variability into a strategic planning framework

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### ABSTRACT

The existence of systematic macroeconomic variability in the broader economy presents a complex consideration in evaluating any single static scenario for any mining asset. Effectively incorporating this source of uncertainty into a strategic planning framework whilst simultaneously recognising pertinent macroeconomic and microeconomic relationships, and also adhering to best practice in pit and schedule optimisation, is the next level of complexity.

The approach outlined in this paper considers price and cost uncertainty and risk respectively, quantifies and incorporates the associated statistically significant relationships, and then assesses the resulting impacts on the outcomes of key strategic decisions by utilising a modified strategic planning framework.

The results of the analyses are then considered from a range of viewpoints so as to focus on the associated decisions to be made at specific sections within the strategic planning framework. Approaches used include probabilistic assessments of the impacts within the block model, a range analysis on the resultant financial metrics including an assessment of the value at risk as a function of a probability adjusted price scenario, and the current industry standard net present value.

Such an approach provides another perspective on how to optimise and analyse the strategic options available subject to sources of inherent variability. It also provides an alternative method by which to quantify, distil, and then present outcomes inclusive of uncertainty or risk.

Whilst the analyses as presented in this paper have focussed on sources of variability of an economic and financial nature, the approaches described could be used to incorporate input variability from a range of sources provided a defensible basis for the variability could be derived.

Finally a case study is included to demonstrate how such an approach can be used to support strategic decision making, as well as providing a basis for key strategic and design-based decisions during the planning process.