

## Doctoral Research Project One-Page Summary

Over the past two decades the Canadian mining industry has largely failed to create value for shareholders. An analysis of mining company performance over the most recent commodity cycle (nominally 2003-2016) shows that, on average, operating mining companies destroyed shareholder value to the tune of -8% while the TSX composite index returned +7%. This poor performance was not driven solely by commodity price performance – over three quarters of miners failed to outperform the physical commodities they were producing. For example, Goldcorp generated an annualized return of 1% over this period while a direct investment in gold returned 9%. This poor performance threatens the future of the industry as investors and debt providers look to other industries and sectors for adequate returns. These capital outflows put the jobs of over half a million Canadians and the livelihoods of many communities at risk.

My preliminary research has discovered that asset write-downs (impairments) are the largest factor in the destruction of shareholder wealth in the Canadian mining industry. These write-downs stem from mining projects that were recommended by company executive and approved by company boards of directors. Despite years of analysis, forecasting and planning, these projects subsequently failed to meet the financial expectations on which the approval was based. They required more capital than was forecast, generated higher costs during operation and/or failed to meet revenue projections. Ultimately these failures are a symptom of poor governance of capital allocation and insufficient risk management when evaluating major capital projects.

The existing literature identifies several corporate governance risk factors which may contribute to the economic failure of major projects at the forecasting and approval stage.<sup>1</sup> First, overall technical project risk can be underestimated because there are often many large but very unlikely risks which are not aggregated in an appropriate way. Second, several forms of psychological bias (e.g. anchoring, planning fallacy) drive overly optimistic assumptions and often fail to consider future variability. Third, organizational-political incentives can result in “strategic misrepresentation.” For example, a consulting firm may produce an overly optimistic project cost estimate in the hopes of securing the engineering design and construction management contract. All these risk factors must be properly understood and managed through corporate governance structures to prevent the value destruction that has been observed over the past two decades in the Canadian mining industry.

My research will investigate these corporate governance risk factors in the Canadian mining industry. The outcome of the research will be recommendations to industry stakeholders that can be used to improve corporate governance structures surrounding the creation and evaluation of forecasts for major capital projects. Further, I believe the similarity between mining projects and megaprojects from other sectors of the economy will allow these recommendations to be useful well beyond the mining industry.

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<sup>1</sup> References available upon request.