

Project calculates the cost of social conflict

April 19 2016, by Madison Condon, Earth Institute, Columbia University



Sign protesting the development of the Tia Maria mine in the south of Peru. Thousands of protesters have marched against the mine's approval, with police clashes leading to several deaths over the years. Credit: Madison Condon

One of the significant water-related risks to investment in the mining

industry, particularly in non-OECD countries, comes from social conflict and political uncertainty.

The Columbia Water Center is undertaking a three-year project to quantitatively assess mining-related water and environmental risks and their financial implications. This [research](#) is generously supported by Norges Bank Investment Management.

In Peru, for example, [protests](#) over potentially endangered water supplies have regularly brought operations at the Yanacocha mine to a halt for weeks at a time. Accounting for this uncertainty in a financial model is a challenging endeavor. There is a growing body of literature that has attempted to quantify the cost of [conflict](#) to the industry using various approaches.

[The Munden Project](#) uses the case study approach, analyzing 108 cases of conflict around mining sites from 29 different countries. These cases are drawn from conflict databases produced by international non-governmental organizations, news websites and academic reports. Each conflict is categorized based on the primary driver of the conflict and which phase of the project lifecycle it occurred in.

The Munden Project's initial conclusion is that most conflict that is significant enough to have a financial impact on the project occurs in the operation phase of the mine, and the most common cause of conflict is unhappiness of local communities over environmental degradation.

A limitation to the Munden Project's approach is that the cases are gleaned from several sources and they often do not include exact financial loss data. But the project was able to conclude that 76 percent of the conflicts analyzed contained situations where property and equipment was damaged or destroyed, interruptions lasted five days or more, and fines cost above \$500,000. One finding of note is that the

presence of indigenous peoples was a significant factor in many of the disputes.

Davis and Franks also took a case study approach, but assembled data from different sources than the Munden Project. They conducted more than 40 interviews with extractive industry executives, insurers, industry associations and others on the [financial impact](#) of social conflict. From these interviews they developed a "typology of costs," with categories of Issues in Dispute, Manifestations of Conflict, Types of Costs to Company, and Company Responses to Conflict, further broken down into sub and sub-sub categories.

They found that the most frequent issue in dispute was pollution and that the greatest cost was lost productivity due to delay. From these interviews the authors concluded that a large-scale mining project suffers approximately \$20 million per week in losses resulting from delay.

In [a 2014 paper](#), "Spinning Gold," researchers from The Wharton School attempted to calculate the impact of company-stakeholder conflict on the market valuation of publicly traded mining firms. For 26 gold mines owned by 19 publicly traded firms over the period 1993–2008, 50,000 stakeholder events involving each firm recorded in the media were read and manually coded, identifying the actor (subject), the action being performed (the verb), and the entity being acted upon (object). The degree of conflict or cooperation of the event was coded from most cooperative (+10) to extremely conflictual (-10), based on the vocabulary used in the news article.

These stakeholder events at each mine were then aggregated to the company level. The study also took into account "country-level policy uncertainty" by using the Political Constraint Index, which measures how many internal checks and balances exist in a political system. The

authors theorized that a country with more political constraints would have stronger commitment mechanisms in place with regard to their relationships with mining investments.

The results show that investors are willing to pay significantly more when it is unlikely that a mine will encounter development obstacles due to lack of stakeholder cooperation or uncertain political support.

While all three studies take different approaches, they all reach the conclusion that maintaining a social license to operate is crucial to the success of a mine and its parent company. The Wharton authors quote a mining executive's anecdotal observations that two mines could have the same amount of gold, same cost of extraction, and same market price of gold, and yet have a market valuation that differs "by an order of magnitude" because "one has local support and the other doesn't."

The Munden Project reports that conflict over social license to operate, which they term, "tenure risk," is on the rise. It is clear that any robust model of mine-level risk must account for socio-political support, or lack thereof.

More information: Witold J. Henisz et al. Spinning gold: The financial returns to stakeholder engagement, *Strategic Management Journal* (2014). [DOI: 10.1002/smj.2180](https://doi.org/10.1002/smj.2180)

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