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THE ROLE OF ECONOMICS IN DISPUTES INVOLVING MINING OPERATIONS

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EDITORIAL PARTNER

Charles River Associates

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Founded in 1965, **Charles River Associates** is a leading global consulting firm that offers economic, financial, and business management expertise to major law firms, corporations, accounting firms, and governments around the world. CRA has extensive experience in international arbitration, including both commercial and investment treaty claims, and has been engaged in some of the most complex and high-profile disputes of recent years. The firm provides expert testimony and analytical expertise in a variety of industries, including life sciences, metals and mining, financial services (including banking, finance, and insurance), energy, and telecommunication and other media.

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ONE-ON-ONE-INTERVIEW

THE ROLE OF ECONOMICS IN DISPUTES INVOLVING MINING OPERATIONS

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James C. Burrows is Vice Chairman of Charles River Associates (CRA) and an authority on competition analysis, public policy issues and natural resource economics. He has led valuation efforts and testified to support counsel in litigation involving industries such as: natural resources, futures markets, rail transportation, real estate valuation, financial services, retail trade, music, consumer products and pharmaceuticals. Dr Burrows was President and CEO of CRA from 1995 to 2009 and before that, Director of Consulting Services in Minerals and Metals at CRA for more than 20 years. His consulting work has involved many natural resource-based industries.

CD: Could you explain what makes the analysis in an international arbitration regarding a mining venture different from disputes regarding other types of operations?

Burrows: The main difference is that the economic analysis is typically prospective in nature as disputes often occur well before production starts. Mining projects often span decades from the initial geological work to initiation of production and ultimately a working mine. Mining can be divided into six phases: first, geoscience surveys; second, exploration; third, discovery, which depends on field work, investment and quality geoscience to bring exploration to the development state; fourth, development, which includes pre-feasibility studies, metallurgical testing and evaluation, creation of a block resource model, a feasibility study, detailed engineering, raising capital and site preparation and construction; fifth, production; and, finally, reclamation after the end of commercial mining. A typical time line for the investment process would be three-plus years for exploration, six months for the preliminary economic assessment; 1-2 years for feasibility studies and detailed engineering; and 1-2 years for construction and site preparation. However, some projects can take decades to develop, particularly if there are significant environmental issues, a difficult operating environment or social concerns.

CD: Can you explain the role o f the economist in these kinds of disputes?

Burrows: My involvement is typically needed when there is a dispute over the value of assets. However, unlike most disputes, the valuation analyst in a dispute involving a mineral property will often have little or no information on historical revenues, operating costs or profits. The valuation must be based entirely on an analysis of future investment outlays and revenues, operating costs and profits that will often occur many years in the future. Information on historical costs, revenues and cash flows will often have little bearing on the analysis of the value of the property. The valuation analysis requires

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>
> *Jim Burrows, CRA*

projections of prices, revenues and costs based on intimate factual knowledge about the technology and the industry in question. This analysis requires close cooperation of the economics expert with experts in geology, mining engineering and process engineering to develop a credible time path of future costs and revenues. The calculation of discounted cash flows also requires a careful analysis of the appropriate risk-adjusted cost of capital for the project, as small changes in the cost of capital can result in large changes in the value of the project.

CD: Given the potential sums at stake, it seems a delicate balance. Is that the case?

Burrows: It is. Valuation approaches common to other industries, such as comparability analyses and historical costs, must be used with care in the case of a mining property. Developing a valuation based on other comparable assets is reliable *only* if the assets are reasonably and justifiably similar to the asset being valued and if it is feasible to adjust for the effects on valuation of differences in characteristics among the assets. Mineral properties vary enormously by factors such as the nature of the resource base, including depth, type of mineralisation, hard rock vs. soft rock, and ore, grade and presence of contaminants. Other factors affecting mineral properties include operating costs, stage of development such as early exploration vs. partially-developed projects, amount of proven and probable reserves and measured, indicated and inferred resources, type of mining and processing technology, tax environments and remaining concession lives. Historical costs invested in the project also have limited evidentiary value with respect to the value of the project, as there is no assurance that historical expenditures will result in positive cash flows in the future for any specific project.

CD: Over the course of your career, what is the most significant change you have seen in how resource rich countries and investors approach development?

Burrows: Risk, be it financial or political, has always existed – especially in countries that are rich in natural resources, but lack infrastructure. Disputes

between governments and foreign investors have always been a possibility. Mining projects are also exposed to significant regulatory risk, particularly as a result of environmental and social concerns. Many countries have become more active over time in regulating the mining industry. In addition, risks of expropriation have increased significantly over time as countries have increasingly desired to increase their control over the natural resources within their borders. Different mineral deposits can have quite different costs of capital depending on location, as investors may apply a premium to deposits located in countries that are regarded as risky. Investors are much more aware today than they were decades ago of the effects of geopolitical risk on the cost of capital and accordingly the value of a project. Again, adjusting for these value differences requires close coordination between the valuation expert and mining and process engineers. CD