The value of mining assets

China's need for resources will continue to bolster the Australian mining industry, and it is more important than ever that investors have a clear picture of what projects are really worth. **MIKE FARRELL** reviews a new book on the subject.

The Valuation of Mining Assets
By Wayne Lonergan (Sydney University Press, 2006)

This timely book draws on Wayne Lonergan's 35 year experience in the industry as a partner of Coopers & Lybrand (subsequently PricewaterhouseCoopers) and more recently a founding partner of the specialist valuer Lonergan Edwards & Associates. Over the years he has been involved at senior levels in the national accounting and financial services industry bodies. He is the author of the industry standard *The Valuation of Businesses, Shares & Other Equity* and is a well-known contributor to *JASSA* and other journals.

The China boom in metals prices and the revival of mining investment markets and mining-related financial transaction activity after a long period of relative decline has created an obvious need for this very useful manual, not least because a new generation of analysts has joined the industry since the last metals bull market.

The book has 20 chapters, a glossary and index and is organised into five parts:

Part I is an introduction giving an overview of valuation issues for mining assets, the JORC and VALMIN codes and the problems involved in defining and valuing mining projects and translating the project into cashflow models.

Part II cuts to the chase with a comprehensive treatment of the CAPM approach to selecting appropriate risk-adjusted discount rates. There is a good discussion of the problems and practicalities of forecasting variables such as foreign exchange rates, inflation and metals prices; choosing between real and nominal discount rates; reality checking forecasts against ratio-based valuations; and the use of real option valuation techniques to capture the value of assets and operating strategies that are invariably excluded or ignored in traditional discounted cash flow analysis.

Part III focuses on the special problems of valuing gold mining projects. Most important is the impact of gold price hedging and gold lending on project values, and the special accounting issues flowing from the use of gold financing instruments.

Part IV deals with subsidiary valuation issues such as the value of geotechnical and exploration data and their effect on exploration acreage values and methods of separately valuing different components of the same property. These include the distinction between the value of tangible assets such as land for stamp duty purposes and the total value of the mining property, and the value of the mine and the value of the associated metallurgical plant in complex projects that include both.

Part V deals with the important reporting issues — in which Lonergan is an acknowledged expert — of accounting for goodwill in the mining industry and acquisition accounting in mining takeover transactions, both under Australian accounting standards and the impact of IASB standards from January 2005. Lonergan brings a sound grasp of modern portfolio theory, financial economics and accounting to deal with the practical problems and pitfalls involved in valuing mining assets. He successfully translates textbook theory into a set of practical principles valid in "real world" financial markets and transactions.

Readers are guided through the correct definition and construction of cash flow models of mining projects, starting with estimating mineable tonnages from reserves and cut-off grades through to the validity of basing forecast mine revenues on futures prices and exchange rates. Discount rate selection using CAPM is treated in depth, with practical tips for deciding on appropriate beta factors in the light of incomplete market data.

Lonergan devotes considerable space to resolving the confusions between the correct use of real and nominal discount rates and the reasons why after tax discount rates should always be used. Even more space is allocated to the special problems involved in valuing gold assets that arise from the widespread use of gold financial instruments such as gold loans and forward-selling programs. He effectively quashes the (wrong) practice of making arbitrary variations in gold project discount rates to somehow capture the value of non-cashflow assets and the impact of gold hedging.

The usefulness of real option valuation techniques is convincingly explained. However I would like to have seen much more on this topic, since the practical use of real options has been promoted in the mining literature since the late 1980s, and it is now high time that we should be seeing more of this in the market.

Throughout the book, Lonergan uses practical examples to illuminate the text and to demonstrate the important issues. The book contains several case studies and tabulations of industry valuation practices, and represents a good practical handbook for the practitioner. Good value and strongly recommended. J

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