

THE JORC CODE – A BANKER'S VIEW

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Note: The following paper represents the views of the authors and not necessarily those of HSBC Bank or Westpac.

Introduction

The JORC Code (the “Code”) “sets out the minimum standards, recommendations and guidelines for Public Reporting of exploration results, Mineral Resources and Ore Reserves in Australasia” (JORC, 1999). The Code goes on to define Public Reporting as a report “prepared for the purpose of informing investors or potential investors and their advisers”, and as the Australian and New Zealand Stock Exchanges have adopted the Code into their listing rules, it is natural that companies focus their attention on the needs and requirements of the equities markets.

However the banking community also relies on reserve estimates and reports in evaluating whether or not to advance finance to the resources company. This paper focuses on the understanding, use and reliability of reserves estimates produced under the Code for banking purposes and expresses some concerns of the authors which we believe are shared by the banking community.

Bank Lending Considerations

A bank’s focus on ore reserves is a subset of understanding all of the technical risks associated with the project which forms one part of understanding the overall financial risk. Rozman (1998) discusses a mining company’s risk consideration in a very comprehensive manner and we do not seek to address issues which are very competently covered in this paper.

However, we note that a bank’s decision whether or not to advance funds to a company or project depends not only on the particular risks of the project, but the bank’s overall appetite for credit risk in that market. This appetite will depend on the bank’s current level of exposure to the resources industry as a portion of its overall loan portfolio, as well as its level of exposure to the particular commodity and company. In this regard, each bank will have its own prudential limits on the maximum exposure it prefers to hold on any one industry or company which are determined by regulation and bank policy.

On the basis that a bank has an appetite for the mining market, the commodity, the company and the size of the envisaged exposure, then the risk spotlight will fall firmly on technical risk, and in the first instance the estimated ore reserves, as the basis of any loan.

In the authors’ experience, ore reserves hold potentially the greatest risk for project finance lenders where there is no recourse to the parent entity beyond the project. Recent history of mining finance since the mid 1980s has shown that realisation of grade estimates is rarely achieved and thus banks start their analysis of ore reserves from a position of scepticism in regard to tonnage and grade predictions.

Possibility and Gravity of Loss

The reality of ore reserve estimation is that a company never knows with certainty what reserves it has until they have been fully extracted.

Indeed, a common method of petroleum reserve estimation is based on probability assessments with “Proven” reserves generally taken to have at least a 90% probability of being achieved and “Probable” reserves only 50%.

Few banks would enter into a financing if there was a 10% probability of financial loss and certainly no banks would lend money with a 50% probability of loss. Whilst we are not suggesting that a loss to bankers would automatically result from ore reserves not being achieved, the reality is twofold:

most bankers generally accept “Proved Ore Reserves” as a fact in the same way they treat audited financial statements, not an estimate with “the highest degree of confidence” that “extraction could be reasonably justified”; and

whilst much effort has been placed in the last 20 years on evaluating the likelihood of reserve estimates, little effort has been placed on the result should reserve estimates prove inaccurate.

Whilst probability analysis has been tackled on a number of fronts by very skilled practitioners in the fields of statistics and geostatistics (Krige, Gy, David, Rendu, Clark, Matheron, Journel and Huijbregts, et al) assisted by continuously improving technology and computing power which has developed to aid processing vast quantities of data, the question of ‘gravity’ is still paramount. From a lender's point of view it is not enough for the mining company to simply estimate the probability of an occurrence, it must also understand the result side of the risk equation and then accurately convey this to an expectant banking audience.

For example, the Ore Reserve statement encapsulates all the basic project factors including amongst other things recoveries, costs, environmental issues and economic forecasts. How often, however, are these assumptions, or the sensitivity of the estimated reserves to the assumptions, presented with the Ore Reserve statement? Banks typically evaluate projects based on their own (usually conservative) cost and economic assumptions. However, rarely if ever, would banks be in a position to adjust the Ore Reserve estimates for the assumptions used in the balance of their analyses. This observation is not made to suggest reserve estimates should be based on financial assumptions provided by financiers, rather that the current practice may not be ideal. Indeed, given the differences of opinion on future economic forecasts, it is reasonable to state that one man's reserve is another man's resource – it is not just a question of the quality of the geological understanding of the relevant Competent Person.

It is the misunderstanding of the accuracy of Ore Reserve estimates discussed above that has led to the banking industry regarding mining finance, particularly project finance as being higher risk lending demanding deeper investigation and higher fees.

The categorisation of Proved and Probable Ore Reserves and the 3 categories of resource are very important from a bank's point of view as they are regarded as categories of risk and thus are intertwined with portfolio theory – the “safest” category – Proved – may be acceptable as a basis for lending, but there is limited banking risk appetite for Probable reserves. The difficulty for lenders results from a situation where lending against Probable reserves in a large developed mine is weighed against lending against a Proved Ore Reserve on a greenfields property belonging to a smaller less well known company. Again this involves the gravity side of the risk equation.

Clearly there are factors here of volatility – ie factors related to issues outside the reserve per se where human credibility and track record are important – can we really accept that this is a Proved rather Probable Ore Reserve when we do not know this company or the particular Ore Reserve estimator? This is particularly important when dealing with commodities outside precious metals, commodities where markets are constantly shifting and security of supply for the off-taker is important.

Most technically knowledgeable banks will realise that compliance with the Code is not just a “box to be ticked” but there is a danger that less familiar lenders could simply accept a statement without questioning the many underlying issues to their later detriment. Thus for the sake of mining industry credibility the target of increasing Ore Reserve reliability and transparency should be a paramount aim.

Competent Person

The Code requires Mineral Resource and Ore Reserves statements to be prepared by or under the direction of a Competent Person who must have particular relevant qualifications and experience.

The selection of the Competent Person is left, however, to the company's senior management, or in smaller companies, the company Board of Directors. As noted by Miskelly (2001), the Competent Person “will need to belong to a self-regulated organisation...whose members are bound by a code of

ethics or equivalent rules and which has disciplinary powers over its members”. But this does not necessarily mean that the Competent Person is the most experienced person available.

Human frailty that may result in errors creates risk and uncertainty that cannot be accurately measured. Therefore banks necessarily develop a certain level of trust in the providers of the information in order to mitigate the interpretation risk. Such trust will be directly related to the quality of product of the technical specialists involved in the assessment process and the level of trust and respect banks have developed for the specific Competent Persons.

In reality, from a bank’s perspective, most corporate Competent Persons are not independent, may not be 100% objective (especially if emotionally tied to a particular project), and not necessarily work to the highest of international standards.

Thus, banks will at present continue to insist on Ore Reserve reviews and audits being conducted by parties outside and independent from the mining company. It is also very likely that in many instances that whilst a bank may only be involved with a company on one or two occasions it may well employ particular consultants several times each year, therefore it has a much higher level of trust in these consulting companies and in particular individuals within these consulting companies. It is also likely to have some degree of control over a consultant company because in this case there is role reversal and the bank becomes the client.

Board Responsibility

The release of a Public Report is unquestionably the responsibility of the company’s Board of Directors, although Miskelly (2001) also notes that Competent Persons are subject to increasing legal responsibilities.

However, we suggest based upon our experience as bankers, that currently there is not a sufficient and general appreciation at the Board level of many resource companies of the risk implications for corporate health which are contained within the Ore Reserve statement. In our experience many Boards simply abrogate responsibility of the Ore Reserve report to the Competent Person as “they are appropriately qualified so it must be OK”. Patently this action does not reflect a suitable duty of care which would be expected of the Board of the company by all the stakeholders.

Engendering responsibility at Board level for ensuring the acceptability of the reserve estimate as a true reflection of all of the relevant factors should be strongly encouraged and would be preferable to the lone signature of the Competent Person. This would be exactly the same as the Board taking full responsibility for the company’s commodity or foreign exchange hedging policy which is now an expected and accepted corporate practice. Many Boards seem to think that hedging is more important than the underlying project assets and performance which we believe to be a strange concept because if there is decrement in the Ore Reserve it will affect every aspect of corporate health including the ability to deliver into hedges of the product and repayment of outstanding debt.

Formal Board approval would also give continuity to the Ore Reserve estimate which goes beyond the corporate life of a particular individual. How often have we heard that with the appointment of a new Competent Person the Ore Reserve has been recalculated because of a number of factors which have been determined to have been judged incorrectly by the previous incumbent?

Indeed, not only are Boards already legally responsible for Public Reports, in most financings the Board makes a representation about the accuracy of estimates and forecasts (including reserve estimates) provided to banks as a basis for the financing. Requiring a formal Board approval for all reserve estimates would assist in reinforcing the legal responsibilities already imposed on directors.

Conclusions

Whilst most banks with relevant technical expertise in Australia have embraced the Code as a requirement for Ore Reserve statements, it is less consistently applied (if even understood) by smaller international banks. Banks deal in risk appraisal and assessment, yet Ore Reserve statements tend to be accepted as fact. From a banking perspective, understanding the likely results should the

assumptions underlying the Ore Reserve statement be incorrect or inaccurate is just as important as the actual reserves level.

Companies seeking debt funding should calculate reserves on spot price alone, and not use financial engineering within the Ore Reserve estimation procedure. However, the economic and financial assumptions used should be clearly stated in conjunction with the Ore Reserve statement. Therefore, whilst we are happy to include tax credits, locked in hedging etc in a cashflow model we believe these should be avoided in the Ore Reserve model.

The Code has taken the industry a large step forward in aiming at good practice and consistency of approach. However, whilst mandatory in reporting, use of the Code in a banking review will not save a company money or time unless there is objectivity, independence and reliability.

A company’s use of individuals and consultants with impeccable credentials and an excellent track record in the estimation of the Ore Reserve backed up with full Board support will increase the bank’s level confidence in the project and lower volatility in estimates over time. It goes without saying that by lowering volatility the relative pricing of the debt funding package should also be lowered, or in a more extreme case, a project which might otherwise not be financeable may become viable.

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