Resources Policy 38 (2013) 8–17

Contents lists available at SciVerse ScienceDirect

Resources Policy

journal homepage: www.elsevier.com/locate/resourpol

Gold mine feasibility study disclosure in Australia: Determinants and implications ☆

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ARTICLE INFO

Article history:
Received 16 February 2012
Received in revised form
20 June 2012
Accepted 25 June 2012
Available online 18 July 2012

JEL Classification:
L72

Keywords:
Voluntary disclosure
Debt financing
Feasibility study
Gold
Development stage enterprises

ABSTRACT

This study investigates disclosure practices for gold development companies in their feasibility studies. The information environment around feasibility studies released by developmental stage enterprises in the Australian gold mining industry is characterised by little in the way of disclosure guidance or rules. This contrasts with Canadian disclosure requirements which are highly prescriptive. Using a sample of 85 Australian gold feasibility studies, we develop a new voluntary disclosure index and consider three problems. First, we examine the association between levels of voluntary disclosure in the feasibility study and external involvement. Second, we consider whether levels of voluntary disclosure are associated with successful debt financing. Third, we analyse the relationship between levels of voluntary disclosure and a successful project outcome. Voluntary disclosure is found to be driven by the presence of an external feasibility manager and the number of external consultants named in the feasibility release. Our evidence also finds that voluntary disclosure levels are positively related to debt financing availability and project success, suggesting voluntary disclosure levels are a useful signal of project quality.

Introduction

The Australian Securities Exchange (ASX) has recently initiated a review of reserves and resources disclosure for mining and oil and gas companies.[1] However, there is currently very little existing research to inform this review. Unlike the prescriptive approach of the Canadian National Instrument (NI) 43-101, the ASX currently provides little guidance as to what should be disclosed in feasibility study announcements, leaving the content of the announcement entirely at the discretion of management. Despite the lack of guidance in the Australian context, this disclosure of non-financial technical information plays an important role in project financing due to the strong management incentives to disclose good news. Furthermore, the information environment of Gold Development Stage Enterprises (GDSEs) can be characterised as high information asymmetry between managers and capital providers, with voluntary disclosure providing an important signal of project quality (Spence, 1973).

Given that all DSEs are pre-cash flow generating, our setting is one where the informativeness of traditional financial accounting information is low and thus the usefulness of technical voluntary disclosure in capital financing is much greater (Ferguson and Scott, 2011).[2] Prior literature has found that non-financial information can play a greater role in firm valuation in similar DSEs settings (Amir and Lev, 1996; Trueman et al., 2000). Other reasons why disclosure incentives are strong is Australia's low litigation environment (Skinner, 1994), and the likelihood that proprietary costs of disclosure are relatively low given that deposit size is typically disclosed prior to the feasibility report.

To examine the role of disclosure in this setting, we develop a new disclosure index to calibrate feasibility disclosure by GDSEs.[3] A further experimental advantage of this setting is that the researcher is able to hold industry and mine life cycle effects

☆The author acknowledges the comments and suggestions of Marlene Plumlee, Mark Soliman, Greg Clinch, Dan Dhaliwal, Terry Shevlin, Peter Lam and seminar participants at UNSW, University of Melbourne, University of Queensland, ANU, UTS and participants at the AFAANZ conference (2008) and the Auckland Regional Accounting Conference (2009).

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[1] ASX Listing Rules Review Issues Paper, "Reserves and Resources Disclosure Rules for Mining and Oil & Gas Companies," 2011.

[2] Mining DSEs have lower analyst coverage compared to other firms (Ferguson et al., 2011b).

[3] Development-stage enterprises (DSEs) are defined in Statement of Financial Accounting Standards ("SFAS") No. 7, *Accounting and Reporting by Development Stage Enterprises*. Enterprises are considered to be DSEs if they devote substantially all of their efforts to raising capital and establishing its business and principal operations, and derive no existing sales from their principal operations. A 'gold' project is defined consistent with assertions by the former Chief Executive Officer of Australia's largest gold company Newcrest Mining, Mr Ian Smith. Smith suggests that 'gold' projects constitute mines with at least 60% gold revenue. All projects included in the sample have <40% forecast by-product credits and thus conform to Smith's definition of a 'gold' mine ('A sure hand on the wheel', *The Australian* 4/09/2010 p. 26).

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http://dx.doi.org/10.1016/j.resourpol.2012.06.015

constant by focusing on GDSEs completing feasibility studies. Unlike other DSEs (e.g., biotechnology, Internet-based), the key voluntary disclosure of mining DSEs (the feasibility report) is readily comparable across firms, and therefore useful for making an index. This new disclosure index is then applied for considering the following three questions.

First, we examine the association between our feasibility disclosure index and external involvement. Firms may involve external parties to signal that the information contained is credible (Spence, 1973). The external involvement examined is external feasibility study managers, and external consultants. Second, we test whether our disclosure index is related to a GDSE's ability to obtain debt finance. This question is interesting given the difficulties faced by mining DSEs in attracting initial debt financing due to the high risk involved in developing new mining projects (Ball and Brown, 1980) and the high information asymmetry in the industry. Last, recognising the high failure rate observed in the industry, we consider whether our disclosure index is linked to project outcomes. This element of our study builds on Ferguson et al. (2011a) by applying a richer measure of disclosure quality.

We find that both external consultants and external feasibility managers have a strongly positive impact on voluntary disclosure. Further, *ex ante* feasibility disclosure levels are found to be positively associated with future project debt financing and negatively associated with project failure. Accordingly, this study informs the current debate between a regulatory system that leaves disclosure policy open to managers (the current system in Australia), or a regulatory system that restricts the choices available by extensively prescribing disclosure (the Canadian system). While the ASX Issues Paper emphasises the benefits of maximising the amount of disclosure to the public by mandating established best practice, the ASX Issues Paper ignores the role of voluntary disclosure in signalling project quality.

The remainder of the paper is structured as follows. In Section 2 the Australian disclosure environment relevant to GDSE feasibility studies is reviewed. Section 3 summarises the factors related to feasibility disclosure as well as exploratory research hypotheses. Section 4 briefly describes the sample and outlines the research design. Results are discussed in Section 5, and Section 6 concludes the paper.

Institutional background

The full feasibility study is critical for GDSEs since it is the platform on which either equity or debt project finance is sought. Although GDSEs may report scoping studies or pre-feasibility studies at an earlier date, the analysis in this study is based on feasibility study completions only, thereby controlling for GDSE life cycle properties.

The information environment for GDSEs can be viewed as being comprised of two parts: a geotechnical component, and an economic component. Depending on the GDSE, the full feasibility study will contain information on key aspects of the project relevant to external decision makers, such as the mining resources/reserves, mining method, the metallurgy, engineering, infrastructure, capital cost and operating cost estimates, project economics, project scheduling, and environmental considerations. However the content of the disclosure is at the discretion of the company as there are no prescriptive guidelines or specific disclosure 'rules'. The 'voluntary' Australian disclosure setting can be contrasted with the 'mandatory' Canadian setting where mining DSEs are required to file a full technical report when disclosing Reserves or Resources, including a feasibility report when disclosing Reserves—in compliance with Part 4 of NI 43-101. The full technical report is prescriptive and allows management little discretion in terms of what is disclosed.

With respect to formal ASX Listing Rules, there are 3 primary disclosure requirements relevant to mining DSEs. The first is the ASX's quarterly activities reporting requirements.[4] The second key disclosure requirement requires the public release of geological information to be in compliance with appropriate resource and reserve recognition and disclosure requirements laid out in the Joint Ore Reserve Committee (JORC) Code.[5] Significantly, none of the specific disclosure provisions applicable to the mining industry say anything about the reporting of management forecasts of project economics for mining DSEs contained in the feasibility study and what should or should not be contained in feasibility completion announcements. A last more general disclosure requirement applicable to all listed entities is the ASX's continuous disclosure requirement which states that material information with respect to share price or valuation must be released immediately.[6] In Summary, feasibility completion is a major milestone for GDSEs, suggesting Rule 3.1 implies completions should be disclosed (on materiality grounds). There are no additional specific provisions or guidelines beyond these regarding feasibility study completions and how they should be disclosed to the market. The implication is that non-disclosure or absence of information in the feasibility study can be interpreted as bad news (Hollander et al., 2010).

Literature review and hypothesis development

Managers disclose information about their projects to capital providers to reduce the information asymmetry between them (Akerlof, 1970), and the associated cost of capital. While financial accounting disclosure acts as a principal disclosure mechanism for some business models (Beyer et al., 2010), other business models voluntarily supplement their financial accounting disclosure with non-financial disclosure (Amir and Lev, 1996). The extent and nature of this voluntary disclosure acts as a signal for project quality (Spence, 1973), including a lack of disclosure (Hollander et al., 2010).

The unregulated disclosure environment governing feasibility studies suggests managers have a high degree of discretion over both the extent and nature of such disclosures. Craswell and Taylor (1992) outline an economic framework for analysing the decision to disclose Reserves (one component of the feasibility study) by oil and gas firms, considering both the demand for disclosure (by capital providers) and the supply of disclosure (by management). Within the mining sector, Mirza and Zimmer (2001) complement Craswell and Taylor by highlighting the impact of project characteristics (project uncertainty, project financing and measurement costs) on both the demand and supply of disclosure. In addressing our first question in this study (external involvement impacting the extent of feasibility study disclosure), we consider whether there is external management of the feasibility study and the number of external consultants named in the feasibility study.

External feasibility managers and consultants

As feasibility reports are based on estimates and forecasts, there may be a concern that the GDSE management may overstate the project quality. While an external audit can introduce independence into the disclosure of financial accounting information, management can introduce independence into their feasibility

[4] Chapter 5 of the Listing Rules '*Additional reporting on mining and exploration activities*'.

[5] ASX Listing Rule 5.6.

[6] ASX Listing Rule 3.1.