Managing Expectations through Budgetary Slack: Evidence from Project Financing

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January 2023

Abstract: In this study, we examine whether mandatory management forecast characteristics are influenced by lender expectations around project financing approvals. In our setting, debt enters the firm's capital structure for the first time and thus firms experience the initiation of bank monitoring. We contend that managers will be motivated to meet the expectations of lenders, who are primarily concerned with cost overruns and project failure, through the creation of budgetary slack. In particular, we examine whether project financing approvals impact mandatory cash flow forecast accuracy and bias. Using a large sample of firms that provide mandatory forecasts of expected future cash outflows around project financing approvals, we find that managers' forecasts become less accurate and more biased. In particular, consistent with the creation of budgetary slack, cost overestimates increase after project financing approval, yet we observe no difference for underestimates. Examining the timing of the overestimation, we find that managers are more likely to create budgetary slack while debt tranches remain to be drawn, coinciding with high-risk construction during the development phase. We interpret these results as evidence consistent with the use of budgetary slack to manage lender expectations and mitigate concerns of cost overruns. The results of our study build upon extant work which examines the relation between corporate disclosure and external monitors. In so doing, our study sheds light on 'transactional' or one-time lending arrangements rather than the more 'relational' or repeated-game lending arrangements found in syndicated loans. Overall, the results of our study speak to how managers alter mandatory forecast characteristics when their projects become subject to lender monitoring.

Keywords: Budgetary slack, Mandatory management forecasts, project financing, private loans, transactional lending, non-relationship lending, first-time debt financing, first-time lender monitoring

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*Corresponding author: Gabriel Pündrich, email: gabriel.pundrich@warrington.ufl.edu. We thank Beatriz García Osma (editor), an anonymous reviewer, Ray Ball, John Core, Dan Collins, Peter Demerjian, Annita Florou, Jacquelyn Gillette, Amy Hutton, Claudia Imperatore, Alvis Lo, Valeria Marcia, Suzie Noh, Georg Rickmann, Sugata Roychowdhury, Lakshmanan Shivakumar, Eric So, Andrew Sutherland, Rodrigo Verdi, Joseph Weber, and workshop participants at University of Iowa, Massachusetts Institute of Technology, Boston College, HEC Lausanne, the 2019 American Accounting Association conference, and the 2020 Financial Accounting Research Symposium for comments and suggestions. Finally, we thank Matthew Grosse and Alyssa Moore for research assistance.

1. Introduction

Firms are subject to a variety of periodic disclosure demands. While regulators and standard setters place requirements on firms' mandatory disclosures, firms often provide an array of voluntary disclosures. One such voluntary disclosure that firms' stakeholders frequently rely upon can be found in management forecasts. Both equity and debt market participants use these forecasts as a signal of managerial outlook (Bozanic et al. 2018). In particular, prior literature suggests that expectations management is a primary motive for management forecasts (e.g., Cotter et al. 2006; Kato et al. 2009), where management forecasts are used as a tool to manage the expectations of analysts and investors. Typically, managers provide earnings forecasts and, to a lesser extent, managers may provide sales or cash flow forecasts. As such, management earnings forecasts are the predominant focus of papers that study voluntary management forecasts. As a result, we rarely observe published studies on mandatory forecasts or pertaining to forecasts other than earnings.

In contrast to the prior literature, we examine the characteristics of management forecasts under uncertainty in a setting where managers are *required* to provide cash flow forecasts to lenders in order to acquire additional funding. Namely, we study the operating activities payments disclosed by early-stage mining firms known as Mining Exploration Entities (henceforth, MEEs) in Australia.[1] In so doing, we are able to obtain a large sample of mandatory forecasts of *future cash* ***out****flow* expenditures. Although cash flow expenditure forecasts are highly relevant for investment purposes (Goodman et al. 2013), they are not typically observed by external stakeholders and are thus understudied. The presence of mandatory forecasts combined with the financing incentives managers face in our setting affords us the opportunity to be one of the first to pursue large sample, empirically testable hypotheses pertaining to budgetary slack, which

[1] In this study, we use the terms 'payment', 'cash payment', 'cash outflow', and 'cash expenditure' interchangeably.

Merchant (1985) defines as the "…the excess of the amount budgeted in an area over that which is necessary."[2] Managers may attempt to use budgetary slack to ease lender concerns pertaining to cost overruns in order to secure additional debt financing. That is, while a manager could simply pull back a voluntary disclosure when faced with uncertainty (Waymire 1985), the mandatory nature of our setting permits managers to either report truthfully at the potential cost of losing funding or choose to overestimate expenditures that are later shown to be within budget so that future rounds of financing can be acquired (Verrecchia 1983; 1990).

Debt financing in most developed economies includes public and private sources.[3] However, there is no material public corporate debt market in Australia. Therefore, the main source of financing available for MEEs comes in the form of either equity or private debt. MEEs typically obtain equity financing during the exploration stage. Once a viable discovery has been made, the development state starts and MEEs typically obtain a project financing loan from a private lender to fund their operations (see Figure 1 for a hypothetical timeline).[4] At this stage, mine construction begins, where cost overruns can occur and lead to default (BMO et al. 2014), which both lenders and borrowers try to avoid.[5] In fact, a report by Ernst and Young in 2014 suggests 69% of mine projects face cost overruns in the construction phase. In our setting, managers effectively have one chance to prove themselves to lenders since a failed project may have lasting reputational effects that prevent future project financing opportunities.

[2] Despite substantial theoretical and experimental work on budgetary slack, there is little empirical evidence on the topic – and what little evidence there is typically relies on case studies. For example, Glaser et al. (2013) examine a single multinational conglomerate and find that cash windfalls are associated with capital misallocations.

[3] A small number of much larger global mining firms can access debt markets in the US or Europe, e.g., BHP, Anaconda Nickel.

[4] See Figure 1 in Ferguson and Lam (2021) for a detailed timeline. As shown in their figure, there are extensive feasibility studies that provide detailed forecasts (e.g., capex, expected mine life, output, commodity price assumptions, cash costs of production, revenue projections, etc.) to lenders.

[5] See, for example, the Bulong Nickel Project which "…defaulted on its senior secured notes when its new pressure acid leach technology did not work as expected." (Esty 2002)

In this study, we build on prior management forecast and debt contracting research by examining whether management forecast characteristics, and the accompanying budgetary slack potentially created through biasing those forecasts, are influenced by lender expectations. Extant research suggests that financial reporting attributes affect debt contract terms (Asquith et al. 2005) and that debt covenants affect managers' financial reporting decisions (Dichev and Skinner 2002). Debt enters the firm's capital structure for the first time in our setting, and thus firms experience the initiation of bank monitoring. Thus, we expect debt monitoring to affect managers' internal information decisions and hence the firm's external financial reporting decisions. For example, in order to manage banks' expectations, internal private information shared with the lender—such as forecasts of cash outflows—may become more conservative or optimistic. The presence of low-quality forecast information and its accompanying disclosure costs (e.g., the potential loss of future financing) may prevent full and truthful disclosure so that the firm may obtain future rounds of funding (Verrecchia 1983; 1990). These internal reporting incentives are analogous to managers publicly disclosing more optimistic earnings forecasts to manage the expectations of external parties such as equity investors in order to acquire additional funding.

In our setting, we contend that managers will be motivated to meet the expectations of lenders, who are primarily concerned with cost overruns and project failure (i.e., zero payoff scenarios). In particular, we examine whether project financing approval impacts mandatory cash flow forecast accuracy and bias. We hypothesize that managers will provide overestimates of cash outflows to lenders in order to create budgetary slack that they can later meet or exceed. In practical terms, our hypothesis suggests that managers will 'under-promise and over-deliver.' We further predict that since project financing is typically provided in tranches (similar to venture capital funding rounds (Sahlman 1990; Gompers and Lerner 1999)), managers' incentives to overestimate will be

heightened around debt drawdowns. The rationale behind this prediction is that managers must meet project development and construction milestones in order to secure a drawdown of further loan tranches to enable project completion and the commencement of cash flow generation in the production phase (Litvak 2004).

Consistent with our predictions, we find that after project financing approval, managers' forecast overestimates increase. In addition, we find that the result is most pronounced in the year following project financing approval, where the majority of debt tranche drawdown and construction activity occurs. These results shed light on how managers alter forecast characteristics once projects are subject to debt monitoring (e.g., Daley and Vigeland 1983; Demerjian and Owens 2016). That is, our evidence is consistent with the use of budgetary slack to manage lender expectations and mitigate cost overrun concerns. Thus, our findings contrast with prior work on *voluntary* earnings forecasts where managers can choose non-disclosure when faced with uncertainty as well as prior work on the use of earnings forecasts to manage *equity* investor expectations (e.g., Waymire 1985; Cotter et al. 2006; Kato et al. 2009). As such, we are the first to show that firms are more likely to receive additional rounds of funding by managing lender expectations regarding cost overruns through the creation of budgetary slack using mandatory management cash outflow forecasts.

Our findings build upon recent work which examines the relation between corporate disclosure and external monitors. Vashishtha (2014) investigates how bank monitoring influences voluntary disclosure and finds that firms reduce voluntary management forecasts following debt covenant violations. Relatedly, Bourveau et al. (2022) investigate voluntary forecast behavior in the lead-up to debt covenant violations and find an increase in forecast errors and optimism. In contrast to our work, both of these studies examine the voluntary disclosure behavior of firms with

an established credit history and lengthy syndicated lending relationship. However, managers' incentives in large firms with rich information environments are likely to differ from those of small firms without a credit history (Diamond 1991). For example, our setting features a lower analyst following that may provide managers different incentives concerning their forecasts (Brown et al. 2014; Jiang 2008). Hence, our study speaks to how managers who seek project financing alter their mandatory forecasts when the lending relationship is characterized by a high degree of information asymmetry and significant levels of project failure.

The results of our study contribute to the corporate disclosure and debt contracting literatures in at least three ways. First, our study provides novel evidence on the properties of managers' cash flow forecasts in a setting where forecasts are mandatory rather than voluntary. In particular, our evidence suggests that the introduction of debt financing and its associated monitoring affects managers' forecast characteristics. Second, there is limited evidence on how managers seek to avoid forecast ambiguity in the presence of high information asymmetry and uncertain project outcomes—our study aims to help fill this gap. Third, whereas prior studies typically focus on loan pricing and covenant requirements of large syndicated corporate loans, we provide evidence on the forecasting implications of project financing loans.[6] In so doing, our study sheds light on 'transactional' or one-time lending arrangements rather than the more 'relational' or repeated-game lending arrangements found in syndicated loans. As such, our study contrasts with prior literature on 'relational' lending (Petersen and Rajan 1994; Berger and Udell 1995) and with prior studies of management forecasts where bank monitoring already exists (Shivakumar et al. 2011; Vashishtha 2014; Bourveau et al. 2022).

[6] Most project financing loans to the mining industry in Australia are sourced from a sole lender, although larger facilities may be financing by two or more lenders (Ferguson and Lam 2021).

The remainder of this paper is organized as follows. Section 2 reviews the background and develops the hypothesis. Section 3 contains the research design, while Section 4 contains the results. Section 5 concludes.

2. Background and hypothesis development

There are substantial differences in institutional banking industry features between the US and Australia. First, mines in Australia are rarely financed through public debt markets; rather, the vast majority of project financing occurs through private debt arrangements (Ferguson and Lam 2021). Second, corporate loans featuring syndication are typical in US banking industry studies due to larger loan size. Lead arrangers mitigate information asymmetry between borrowers and lenders (Bushman and Wittenberg-Moerman 2012), are 'delegated' by other syndicate members, and assume responsibility for screening and monitoring. Syndicate members rely on the superior knowledge of lead arrangers to certify the quality of the borrower's reported accounting numbers (Diamond 1984). In contrast, project financing deals in the MEE setting are typically funded by a sole arranger and feature smaller loan sizes. Third, MEEs are at high risk, with mining projects exhibiting many high-profile failures. These projects are notoriously high risk with suggestions that '50% by my estimate encounter big setbacks' and 'where it is possible worst-case forecasts are almost always too optimistic' (Arnold 1986).

MEEs' objectives are fairly straightforward. MEEs initially raise money through IPOs or SEOs and, after listing (or raising seasoned equity), spend money on exploration activity to discover natural resources. Their governance structures typically consist of a board of 3-4 persons, including a technical director. Usually, apart from a company secretary, they have no other employees. MEEs are not equity carve-outs, nor are they subsidiaries of larger mining companies.

MEEs typically survive by issuing ordinary common equity to shareholders. Occasionally, MEEs issue options over ordinary shares, which can trade on the Australian Securities Exchange (ASX).[7] Guidance from the ASX listing rules states that firms are classified as MEEs if their "…main business activity is expending funds on mineral exploration and evaluation and have minimal product revenues." Investors are typically speculators attracted by high payoffs associated with any mineral discovery and subsequent mine development (Ferguson and Lam 2021).

MEEs are viewed by the Australian Stock Exchange as being high risk and consequently are required to produce mandatory expenditure forecasts as part of their quarterly reporting requirements. More specifically, since 1996, the ASX has required MEEs to file quarterly cash flow reports called 'Appendix 5Bs' to assist the market in understanding the extent to which the entity is achieving its goals by disclosing information about expenditures and cash flow. As such, the filings are useful for liquidity risk assessment purposes. Appendix 5Bs are required to be filed periodically until an MEE enters production and subsequently applies to the ASX for permission to file only quarterly activity reports. According to the ASX listing rules, Appendix 5Bs must be filed within one month of the end of each calendar quarter-end. See Appendix II for an example of estimated or forecasted cash payments and actual cash flows.

Once MEEs have made a viable discovery, they enter the mine development phase, where they typically seek out project financing in the form of private debt where they finance mostly construction.[8] Occasionally, lenders take equity positions in MEEs they finance, which, unlike some countries, is permitted in Australia. Project financing loans are secured loans collateralized

[7] The number of MEEs listed on the ASX as of mid-2018 is 762, which reflects 25% of domestic listings (Bui et al. 2020). Moreover, in 2018, the minerals industry accounted for 57% of Australia's export earnings (Australian Bureau of Statistics, Facts & Figures (2019)).

[8] MEEs may obtain project financing from non-bank sources such as dedicated mining investment funds, joint venture participants (larger mining companies), export credit agencies, or off-take counterparties. See Ferguson and Lam (2021) for further discussion.

by all project assets (Gatti et al. 2013). The lender's incentive to monitor the MEE is operationalized through contractual devices, such as covenants, similar to provisions in commercial bank lending (Rajan and Winton 1995).[9] Despite the similarity in monitoring mechanisms, project financing covenants differ from general loan covenants given the very specific nature of the assets, the scope for opportunistic behavior, and the concentrated nature of economic and financial risk inherent in project financing arrangements (Dailami and Hauswald 2003). Lastly, the structure of project financing loan drawdowns is typically at the lender's discretion, with a drawdown of subsequent debt tranches (i.e., undrawn facilities) subject to stringent performance hurdles.

The relation between project financing and forecasting

Drawing on literature which suggests that expectations management is a primary motivation for providing forecasts (Merchant 1985; Lukka 1988; Dunk and Nouri 1998; Cotter et al. 2006; Kato et al. 2009), we examine a setting where debt enters the firm's capital structure for the first time and firms experience the initiation of bank monitoring (Diamond 1991). In addition, MEEs generate no internal funds prior to product extraction; thus, in our setting, banks provide loans to firms with, by and large, no prior credit history. We argue managers will be motivated to meet the expectations of new lenders by creating budget slack, who are primarily concerned about cost overruns and project failure, by creating budget slack. More specifically, we focus on whether managers create budgetary slack by overestimating project costs.

Budgetary slack has been classically defined in Merchant (1985) as "…the excess of the amount budgeted in an area over that which is necessary." Dunk and Nouri (1998) provide further

[9] Project financing covenants are not disclosed and thus are not publicly observable.

specificity by defining budgetary slack as "…the intentional *underestimation of revenues* and productive capabilities and/or *overestimation of costs* (*emphasis added*) and resources required to complete a budgeted task." While theories abound as to what incentivizes budgetary slack within an organization, there are at least two views that are salient to our setting. One view is that budgetary slack is driven by information asymmetry between managers and subordinates within an organization. Under this view, the subordinate withholds private information and biases their communications in order to make targets easier to achieve (Baiman and Evans 1983; Penno 1984). Another view is that budgetary slack is driven by uncertainty with respect to financial projections (i.e., either revenues or costs). Under this view, budgetary slack allows for a natural hedge against inaccurate forecasts (Merchant 1985; Lukka 1988). In either case, and pertinent to our setting where resource exploration and discovery are paramount for revenue generation, both views are consistent with that of Davila and Wouters (2005), who underscore the positive elements of budgetary slack when they state "…*companies following strategies that require innovation and experimentation* (*emphasis added*) can benefit from budgetary slack because it allows managers to focus on relevant long-term and short-term objectives other than meeting budgets such as quality or customer service (Van der Stede 2000)."[10]

Given the significant information asymmetries in our setting, it is also possible that managers seek to avoid ambiguity in relation to mandatory forecasts (Fox and Tversky 1995). If information asymmetries between the borrower and lender negatively influence project financing approvals, managers may seek to reduce forecast ambiguity. We suggest that a possible underlying

[10] Alternatively, lenders could estimate the forecasts themselves. However, as with traditional lending relationships, project finance monitoring is at arm's length. As such, while lenders would like to be able to forecast accurately, information asymmetry combined with the uncertainty of possible firms' outcomes reduces lenders' ability to do so. Given the inherent riskiness of the types of activities MEEs engage in, forecasting in our setting is subject to greater uncertainty and thus potentially greater inaccuracy compared to a traditional lending relationship, which hinders lenders' ability to accurately forecast.

mechanism responsible for changes in external management forecast characteristics could be biased internal cash outflow forecast (i.e., overestimated expected project costs) disclosed to lenders. This is consistent with the intuition that managers draw on similar skills (Goodman et al. 2013) and data (Verrecchia 1990; Gallemore and Labro 2015; Samuels 2021) when generating external forecasts and internal payoff forecasts.

That said, there are at least two managerial disincentives that could help constrain cost overestimates. First, if lenders observe higher actual expenditures than estimates, contract terms could be renegotiated. Construction cost overruns occur where the actual costs of developing the project exceed forecasted capital expenditures and budget projections, necessitating additional fundraising to bring the project into production.[11] Second, in the absence of a separate cost overrun facility, repeatedly overestimating expected project costs could undermine lender trust in management, which could threaten future rounds of funding. Several examples exist whereby banks withdraw financial support for MEEs during the development phase when cost overruns occur.[12] However, since overruns in the mine development phase can be fatal in MEEs (BMO et al. 2014), potentially constituting an event of default and allowing the bank to terminate the facility agreement making the existing financing due and payable, the incentives to bias overestimates to prevent default and payment acceleration may outweigh renegotiation and reputation costs.

[11] Some project financing facilities include a separate cost overrun facility to be drawn down should cost overruns emerge. The presence of such a cost overrun guarantee effectively transfers the risks of cost overruns to shareholders. Consequently, in such cases, shareholders will want managers to overestimate forecast expenditures to avoid cost overruns for their own benefit. Thus, the signaling benefits may apply to both debtholders and shareholders. Unfortunately, there is insufficient disclosure in most project financing approvals to empirically test these implications. Further, we note that during construction it is very difficult for managers to re-negotiate debt contracts or obtain further debt finance in the event of cost overruns due to the lack of borrower track record (Diamond 1991).

[12] See, for example, the collapse of Western Desert Resources. "The Darwin-based junior miner appointed Korda Mentha on Friday after Macquarie Group decided to stop bankrolling WDR's flagship Roper Bar mine," (Australian Mining 2014).

Consequently, and consistent with the budgetary slack literature, we argue that managers of MEEs have incentives to overestimate cost forecasts to avoid cost overruns during the development phase. Such signaling from managers is likely to be of added importance given the significant adverse selection, moral hazard problems lenders face in this sector and, as noted above, a preference for ambiguity aversion on behalf of the manager. In consideration of the preceding discussion, our primary hypothesis is as follows:

H1: Managers will overestimate forecasted cash payments related to operating activities after project financing is obtained.

3. Research Design

3.1 Model specification

To examine our hypothesis, we estimate the following regression:

$$SigForecastError_{i,t} = \alpha_t + b_1{*}TREAT_i + b_2{*}TREAT_t \; x \; POST_{i,t} + b_k{*}Forecast\_Controls_{i,(t-1)} + b_i{*}Firm\_Controls_{i,(t-1)} + b_i{*}Performance\_Controls_{i,(t-1)} + b_i{*}Other\_Controls_{i,(t-1)} + \varepsilon$$

where the interaction *POST x TREAT* is the main variable of interest. *TREAT* represents a dichotomous variable equal to 1 if the firm belongs to the treatment group of MEEs that announce project financing during the sample period, and *POST* represents a dichotomous variable equal to 1 if the quarter *t* issuing the cash flow forecast occurs after receiving project financing approval and 0 otherwise. The interaction *POST x TREAT* allows us to examine if overall forecast accuracy changes after receiving project financing, while controlling for the group difference between firms receiving project financing and those that do not. Total forecast cash flow includes the forecasts for exploration and evaluation payments, development payments, production payments, and

administration payments.[13] *SigForecastError* is estimated cash outflows (Estimated) for quarter *t* minus realized payments for quarter *t* (Actual), deflated by lagged market value (*Size*). Please see Appendix II for a detailed example of how we obtain this measure from Appendix 5B filings (specifically, see forecast cash payments on page 3 in Item 1.5 and actual cash flow spent on page 1 in Item 1.2). Consistent with our hypothesis, we expect the forecast error after project financing will be biased towards cash outflow forecast overestimates. In contrast, we expect no change in cash outflow forecast underestimates after project financing. To mitigate risks of possible self-selection bias associated with the characteristics of firms receiving project financing, tests are rerun on a sample restricted to firms that receive project financing, as well as using entropy balancing.

Control variables are based on prior studies investigating management forecasts and other literature examining MEEs (e.g., Kato et al. 2009; Ferguson and Pundrich 2015). In addition to controlling for lagged forecast error, we include control variables categorized into three groups: forecast characteristics (*Forecast_Controls*), firm controls (*Firm_Controls*), and firm performance (*Performance_Controls*). *Forecast_Controls* control for the autocorrelation forecast bias by including lagged forecast bias ($SigForecastError_{(t-1)}$). We include such lag controls because prior research (Kato et al. 2009) has found that forecast error is autocorrelated. We also include the number of pages accompanying the 5B to control for whether Appendix 5Bs or 5Bs are stand alone or appended to quarterly activities reports.

Firm-level control variables (*Firm_Controls*) include firm size (*Size*) calculated as the 60-day average market value over the 2-months prior to the project loan approval. We include a control

[13] Management cash flow forecasts of production expenditure and administration expenditures are included in Appendix 5Bs after 2010. Thus, our measure of forecast bias only includes exploration and evaluation expenditure and development expenditure up to the end of calendar year 2009.

variable for firm size since prior studies (Kato et al. 2009) find larger firms have less optimistic forecasts, possibly due to higher external discipline (e.g., they may be cross-listed on overseas exchanges or may face greater political and regulatory scrutiny). Further, managers of larger firms may bear relatively larger reputational costs. Cash burn rate (*Cash_Burn_Rate*) is included to control for incentives in communicating forecast cash outflow underestimates due to the restrictions on remaining cash balances. *Cash_Burn_Rate* is calculated as the inverse of the number of quarters worth of expenditure activity remaining at the current cash spending rate. Other variables included are the lagged amount of cash available in the firm in the quarter (*Cash*) scaled by lagged market value (*Size*). We include the company's age (*Firm_Age*) as the number of days the firm has been listed on the ASX to control for skill in forecasting payments since older firms are more experienced and therefore should have a smaller forecast bias. To control for ownership concentration, we include the ratio of shares owned by the top 20 shareholders in the company (*Top_20*).[14]

Performance characteristics (*Performance_Controls*) include commodity price control (*CRB_Index*) in the six months preceding the forecast, the market returns in the previous quarter (*Return_Quarter*), the lagged amount of reserves defined by the company (*Reserves*) along with the lagged amount of resources defined by the company (*Resources*). The commodity sentiment control (*CRB_Index*) is included in order to capture incentives to decrease (increase) estimates of cash outflow given that higher commodity prices may encourage managers to spend more while lower commodity prices may encourage managers to spend less. The amounts of reserves (*Reserves*) and resources (*Resources*) are included to control for project lifecycle effects with larger amounts of resources and reserves generally associated with project milestone progression,

[14] Firms are required by ASX to disclose the top 20 shareholders in their annual reports.

such as completion of feasibility studies which lower project risk. Finally, the stock market return on the quarter before the forecast (*Return_Quarter*) is used to control for stock-price performance, which encapsulates any other firm-level geological information or project milestone accomplishment released to the market that is not captured by the amounts of resources and reserves and might include announcements such as timely drilling or assay results or feasibility study completions.

3.2 Sample and data

The archive of Appendix 5B quarterly cash flow statements was hand collected from files provided by the Securities Institute Research Corporation Asia Pacific (SIRCA). Because lenders typically have access to internal information, the public Appendix 5B disclosures are primarily relied upon by equity market participants to obtain forecast data.[15] The forecast data collected from Appendix 5Bs contains four different types of mandatory forecasts of cash outflows along with current period actuals. These four forecast types include management forecasts of exploration and evaluation expenditure, management forecasts of development expenditure, management forecasts of production expenditure, and management forecasts of administration expenditure (see Appendix II for further detail). We extract the data from PDF files containing Appendix 5B filings and then apply an algorithm written in Python to scrape the data from the filings' tables.

The sample period spans July 1996 through September 2014, representing a maximum sample of 30,813 Appendix 5B filings disclosed by 1,029 MEEs. Project financing approvals are identified using the Morningstar DatAnalysis Premium and Factiva databases. Financial information is

[15] There are detailed 'Bankable or Definitive Feasibility Studies' usually prepared by large external project management firms which are provided to the lender, summaries of which are provided to the equity market. A bank will typically not rely on publicly released documentation, because information that is supplied to them privately (passed through the Financial Advisor or directly from management) is superior.

collected from Eikon Thompson Reuters' database. Resource and Reserve information is collected from the SNL Metals and Mining database. Ownership structure data is hand collected from annual reports available through Morningstar DatAnalysis Premium.

The sample selection is represented in Table 1. 3,362 Appendix 5Bs without a preceding 5B filing are discarded since the forecast error cannot be calculated in these cases. Another 3,186 Appendix 5Bs are discarded due to missing financial data from Eikon Thompson Reuters. Lastly, we exclude 22 companies (664 firm-quarter observations) as our Appendix 5Bs are dated after these firms receive project financing.[16] The merging of financial data, ownership, and mining data results in a final sample of 23,601 observations representing 1,007 MEEs. Of those observations, 4,433 are from 160 MEEs receiving project financing approval.

4. Main empirical results

4.1 Descriptive Statistics

Table 2 presents descriptive statistics for our sample which represents roughly 4 years of data pre- and 4 years of data post-financing. To mitigate the influence of outliers, all continuous variables are winsorized at the 1st and 99th percentiles. In Panel A, the number of forecast observations issued after a company receives project financing (*POST x TREAT*) is 6.7%. The mean (median) unsigned forecast bias (*UnsForecastError*) is 2.6% (1.4%). The mean of the unsigned forecast underestimates (*UnderestimateBias*) is 2.5% (1.3%), while the forecast overestimates *(OverestimateBias*) is 2.8%, indicating that the mean is slightly skewed towards forecast overestimates. The mean (median) market value of MEEs (*Size*) is $49 ($12) million Australian dollars, and the mean (median) total assets is $33 ($9) million dollars. The mean

[16] For example, project financing announcement approval occurs early in 1995, while our first Appendix 5B appeared only in September 1996.

(median) age of the firms in the sample is 10 (7) years. In terms of ownership, the mean (median) percentage ownership by the top 20 shareholders (*Top_20*) is 57% (56%). Appendix 5Bs have a mean (median) number of 8.7 (7) pages. The average proportion of reserves in dollars (*Reserves*) to the market value is 0.17, while resources (*Resources*) is 24. This is consistent with MEEs having deposits and projects with lower geological certainty compared to mining producers (i.e., MEEs typically disclose *Resources* as opposed to *Reserves,* unless they are moving towards project development and have completed suitable economic studies of those ore bodies).[17] The mean (median) return of assets (*ROA*) is -0.36 (-0.12), consistent with sample constituents being pre-production exploration, evaluation, and development companies (systematically loss-making). Lastly, the mean (median) leverage (*Leverage*) is 0.071 (0).

Panel B of Table 2 reports a subsample restricted only to firms receiving project financing. Descriptive statistics indicate that 35.9% of the Appendix 5Bs (1,591 filings) are made after the project financing approval. We collect debt drawdown information for this subsample from Appendix 5Bs, and in the period after project financing approval, the mean cash proceeds from borrowings (*Cash_From_Loan*) is $5.2 million.

Panel C of Table 2 continues to report descriptive statistics for firms receiving project financing but compares forecasts in the two-quarters pre and post loan approval. The mean (median) unsigned forecast error (*UnsForecastError*) increases by 33% (83%) after project financing loan approval. However, we find the mean unsigned forecast underestimate (*UnderestimateBias*) increases by 0% (9%) but this difference is not significant, while the forecast

[17] Resource and reserve categories are now required to comply with the Committee for Mineral Reserves International Reporting Standards (CRIRSCO). Previously, Australian resource and reserve reporting fell under the Joint Ore Reserve Committee (JORC) Code reporting requirements, which have heavily influenced the CRIRSCO standards now in place. The JORC Code emphasizes both geological certainty and economic certainty in resource and reserve reporting.

overestimates (*OverestimateBias*) increase by 61% (175%) after project financing and is significant at $p < 0.01$. Descriptive statistics show that in the quarter after obtaining project financing, firms are about 42% larger in terms of market value (*Size*), reflecting the fact that equity issues are typically undertaken after the project financing approval at higher share prices. There is no significant difference in cash burn nor concentration of the top 20 shareholders (*Top_20*) throughout this period. In addition, the commodity index (*CRB_Index*) does not change from pre- to post-project financing. The amount of reserves (*Reserves*) also does not change in the short period after project finance approval. Leverage is higher as expected, increasing by 76% in the two-quarters after receiving project financing.

Table 3 provides a Pearson correlation matrix for the explanatory variables. The correlation coefficient between *SigForecastError* and *POST x TREAT* is 0.05, suggesting the forecast error increases after project finance approval. The correlation between *Cash_Burn_Rate* and *SigForecastError* (coefficient -0.04) indicates that MEEs spending cash faster are more accurate in their forecasts. *Top_20* and *SigForecastError* are positively correlated (coefficient 0.03), indicating that firms with larger shareholders have less accurate forecasts.

4.2 Primary regression analyses

4.2.1 Management forecasts after project financing

Table 4, Panel A, presents regression results of tests examining the relation between forecast bias and project financing approvals. Column I depicts the effect of project financing approval (*POST x TREAT*) on the unsigned or absolute value of the forecast error (where *UnsForecastError* is the absolute value of estimated payments for quarter *t* minus realized payments for quarter *t*, deflated by lagged market value (*Size*)). Consistent with our hypothesis, the coefficient on *POST*

x TREAT is positive (0.011) and significant at $p < 0.01$, indicating that forecasts become less accurate after project financing approvals. In Column II, we repeat the same test using a signed variable, and the coefficient on *POST x TREAT* is again positive (0.008) and significant at $p < 0.01$. Notably, *TREAT* is suppressed in the model due to firm fixed effects, indicating that, on average, there are differences in forecast bias between the treatment and control group before firms receive project financing.

In Columns III and Column IV, we partition the dependent variable between unsigned forecast underestimates (*UnderestimateBias* is the unsigned *SigForecastError* when the difference between estimated and actual is negative, i.e., payments are more than expected) and unsigned forecast overestimates (*OverestimateBias* is the unsigned *SigForecastError* when the difference between estimated and realized is positive, i.e., payments are less than expected or creation of budget slack), respectively. *POST x TREAT* is not significant in Column III, indicating that firms do not issue more forecast underestimates after project financing approval. However, in Column IV, we find that the coefficient on *POST x TREAT* is positive (0.014, significant at $p < 0.01$), suggesting an increase in overestimates, which is consistent with the creation of budgetary slack to manage lender expectations. In sum, our evidence of an increase in forecast overestimates but no difference in forecast underestimates is consistent with an asymmetric increase in forecast bias after firms receive project financing in order to create budgetary slack to prevent cost overruns. We interpret this combined finding as evidence consistent with H1, which predicts that managers would overestimate forecasts after obtaining project financing.

4.2.2 Robustness of primary results

Our primary results are robust to a battery of additional tests. First, to examine potential self-selection bias associated with firms receiving project financing approvals and the role of loan size as a determinant of overestimation bias, tests are rerun in Table 4, Panel B, after restricting the sample to only include firms receiving project financing.[18] While we show that *TREAT* (i.e., receiving a loan) is associated with a conservative forecast in the prior panel, here we show that, among firms receiving loans, the level of conservatism varies as a function of the size of the loan. *Loan_Amount* captures the total loan amount agreed upon and is disbursed via small drawdowns (tranches) through time. If the full loan amount were to be paid in a single installment (such as is the case for some smaller project finance facilities), the incentives to manage lender expectations would be lower. However, since the total loan amount typically exceeds shareholder equity and the loan is disbursed through time in tranches, managers have strong incentives to manage lender expectations. Results in Table 4, Panel B, are largely similar to those in Table 4, Panel A, suggesting the increase in overestimates is due to project financing and not firm characteristics. Moreover, the interaction *POST x TREAT x Loan_Amount* is positive and significant in Column IV, indicating that the overestimate bias is stronger when the loan represents a higher percentage of firm capital structure.

Second, in untabulated results, we run a logistic regression examining the persistence of forecast bias before and after the loan using a comprehensive sample of firms that receive project financing loans and firms that do not receive project financing loans.[19] As in previous tests, we decompose forecast bias into underestimate and overestimate bias. While examining the determinants of underestimation bias, we find that *POST x TREAT* is negative and significant,

[18] As an alternative approach to address self-selection, our inferences remain unchanged using entropy balancing.
[19] These tests are also rerun restricting the sample to firms receiving project financing. Our inferences remain unchanged, providing further support that increases in the likelihood of overestimation are due to project financing approvals and not firm characteristics.

indicating that, after project financing, MEEs are less likely to underestimate. However, when we switch the dependent variable to overestimate bias, *POST x TREAT* is positive and significant, indicating that, after project financing, firms are more likely to overestimate, consistent with the creation of budgetary slack to manage lender expectations. Prior studies in the management forecast literature have identified that forecast characteristics tend to persist or are autocorrelated. Together, this evidence of persistence, both in terms of underestimates and overestimates, supports findings in Kato et al. (2009), who state that "*These results are inconsistent with the reputation argument, which predicts negative rather than positive autocorrelation in forecast bias."*[20]

Third, the dependent variable (*SigForecastError*) comprises four different types of mandatory forecasts of cash outflows along with the current period actuals. These four forecasts include management forecasts of exploration and evaluation expenditure, management forecasts of development expenditure, management forecasts of production expenditure, and management forecasts of administration expenditure (see 5B example in Appendix II). Of the four forecasts, lenders are most likely to focus on development expenditures after project financing approval because of the increased uncertainty during this phase and thus incentive to bias. Therefore, as a falsification test, we examine the association between project financing and forecast error by management forecast type (i.e., exploration and evaluation expenditures, development expenditure, production expenditure, and administration expenditure). Consistent with our expectations, untabulated analysis reveals that our results are driven by development expenditures, as we document no overestimation difference pre or post-project financing for the other forms of expenditure.

[20] We also control for the lender identity in the project financing loan approvals, enabling us to consider lender characteristics such as industry leadership, specialization, and loan syndication. We observe no incremental effects on overestimation from the leading project financier, alternative measures of specialists, or for projects funded by syndicates.

Fourth, some project finance loan approvals are occasionally preceded by smaller seed or bridge loans. Seed loans are typically provided for pre-development tasks such as feasibility study completion or pilot plant construction and operation associated with such feasibility studies. In contrast, bridging finance is usually provided to MEEs having completed bankable feasibility studies and requiring financing to commence project activity in the form of preliminary site works or to pay deposits on purchases of capital equipment with long lead times to delivery. The association between seed and bridge loans and forecast bias are considered in untabulated results. For this test, we include an additional dichotomous variable equal to one indicating quarter forecasts after a seed or bridge loan is provided. We find similar results using this measure when compared to actual project financing loans examined in Table 4, with a positive relation between after bridge and overestimation but not after seed and overestimation. This suggests an increase in forecast overestimates is not restricted to project financing deals but includes any smaller pre-development loans received before project finance approval. This result is intuitive since good stewardship of minor bridging loans commences the loan life cycle for these MEEs and thus contributes to the development of the borrowers' track record (Diamond 1991).

4.3 Supplemental analyses

4.3.1 Management forecast timing and uncertainty

We predict that MEEs face higher uncertainty during the high-risk construction phase of development and have greater incentives to signal debtholders of lower risk of cost overruns by creating budgetary slack as the project nears production (Rogers and Stocken 2005). To test this prediction, we add dummy variables for the years before and after the loan and expect the overestimation bias to be higher in the first year after the loan (*Y1_After_Loan*) since it represents

the high-risk project construction phase. Table 5 presents the results of this analysis. In Column I, the signed forecast error (*SigForecastError*) increases after project financing. However, we find that overestimates increase in the first and second year as shown in Column II (*Y1_After_Loan* = 0.023, $p < 0.01$, *Y2_After_Loan* = 0.019, $p < 0.01$) and not in subsequent years. Results showing that overestimation bias (Column II) is only higher in the first two years after project financing approval is consistent with the view that companies use budget slack for just a short period. A two-year period after project financing approval would see most MEEs already in production. This result is graphically represented in Figure 2, where we plot estimates of firms receiving project financing approvals. The figure illustrates that the greatest budget slack (overestimation) occurs within the first four quarters (first year) after project financing approval.

In Table 6, we consider whether management forecasts exhibit overestimations during high uncertainty, proxied by the standard deviation of all the components involved in the estimation bias found in prior tables. Again, we expect the first year after project financing approval (*Y1_After_Loan*) will have a significant and positive association with the standard deviation (dispersion) of forecast error and its components. In Columns I and II, we find that the variable *Y1_After_Loan* is significant and positive, consistent with our expectation that firms in the first year following the loan are less homogeneous. This result provides some evidence that payments are more heterogeneous in the first year and associated with higher dispersion. As time passes, MEEs' incentives to manage lender expectations and create budgetary slack decrease once the project enters production and cash flows or internal sources of financing become available (see Figure 3). Thus, budgetary slack is used for a short period of time where managers are incentivized to please lenders who still maintain discretion around the availability of remaining debt tranches.

This supports the suggestion that managers create budget slack and are not driven merely by the estimation difficulties during the construction period.

4.3.2 Overestimates and production commencement

In Table 7, we examine whether overestimation can predict positive project milestones such as production commencement or ramp-up revenue increases. To do so, we present regression results where product sales revenue is used as a proxy for firms' initial revenue generation. Our variable of interest is *Cumul_Overestimation*, which is the cumulative average of overestimations (*OverestimateBias*) up to the quarter before the revenue disclosure. *Receipts* represents a continuous variable equal to the actual product sales receipts in quarter *t* (see Item 1.1 in Appendix II) scaled by lagged market value (*Size*). We find that cumulative overestimation is positive and statistically significant (0.312, $p < 0.05$) in Column I, whereas cumulative underestimation is insignificant in Column II. Thus, the higher the cumulative overestimation after project financing approval, the greater the likelihood the firm will receive additional project ramp-up revenues.

4.3.3 Determinants of debt drawdowns

Table 8 examines the debt market incentives in overestimated forecasts, given that there may be similar debt market benefits (track record) in signals of managerial forecasts after project financing approvals. Column I shows that the lagged cumulative signed error (*Cumul_SignEstimation*) has a positive and significant (0.038, $p < 0.05$) relation with the amount of cash received from debt drawdowns (*DebtDrawdown*). However, when we split *Cumul_SignEstimation* into *Cumul_Overestimation* and *Cumul_Underestimation* in Columns II and III, respectively, we document that the result is driven by overestimation

(*Cumul_Overestimation*, $p < 0.01$) since the coefficient on underestimation is not significant. This result suggests managers start biasing forecasts prior to project financing approval, with benefits of a good track record mattering to the bank during the screening or contracting phase. This result does not necessarily support the notion that banks rely on public information for credit decisions, but rather that the forecast information used internally may be the same benchmark disclosed to the public through cash flow forecasts. Finally, we repeat these tests by using a breakdown of overestimations by type of expense. The results in Column IV reveal the driver of overestimation to be development expenses. This result is consistent with our robustness test in Section 4.2.2 which similarly suggests that lenders are most likely to focus on development expenditures because of the increased uncertainty and incentives to bias during this phase. Overall, the results presented in Tables 7 and 8 suggest that budgetary slack created by managers through overestimates is associated with firms securing remaining debt funding so that they can successfully progress to producer status and begin generating revenues.

5. Conclusion

In this study, we build on prior management forecasts and debt contracting research by examining whether management forecast characteristics are influenced by lender expectations. In contrast to prior literature, we examine the MEE setting where managers are *required* to provide cash flow forecasts. Namely, we study the operating activities payments disclosed by early-stage mining firms known as Mining Exploration Entities in Australia. In so doing, we are able to obtain a large sample of mandatory forecasts of *expected future cash outflows*. Although cash flow forecasts are highly relevant for investment purposes, they are not typically observed by external stakeholders and are thus understudied.

In our setting, material project debt enters the firm's capital structure for the first time and thus, firms experience the initiation of bank monitoring. We expect debt monitoring to affect not only the firm's external financial reporting decisions but also managers' internal information decisions. These internal reporting incentives are analogous to managers publicly disclosing more optimistic earnings forecasts to manage the expectations of lenders and equity investors.

We contend that managers will be motivated to meet the expectations of lenders, who are primarily concerned with cost overruns and project failure, through the creation of budgetary slack. In particular, we examine whether project financing approval impacts mandatory cash flow forecast accuracy and bias. We hypothesize that managers will provide overestimates of cash outflows to lenders in order to create budgetary slack that they can later meet or exceed. In practical terms, our hypothesis suggests that managers will 'under-promise and over-deliver.'

Using a large sample of firms that provide mandatory forecasts of expenses around project financing approvals, we predict and find that managers' forecasts become less accurate and more biased. In particular, consistent with the creation of budgetary slack, overestimates increase after project financing approval, yet we observe no difference in underestimates. Our results hold up to a battery of robustness tests. Examining the timing of the overestimation, we find that managers are more likely to create budgetary slack while debt tranches remain to be drawn, coinciding with the high-risk construction during the development phase. Both the results on the nature and timing of forecast bias are consistent with managers seeking to lower the ambiguity of forecasts, consistent with significant information asymmetries in this setting. We interpret this as evidence consistent with the use of budgetary slack to manage lender expectations and mitigate concerns of cost overruns.

The results of our study contribute to the corporate disclosure and debt contracting literatures. In particular, our findings build upon extant work which examines the relation between corporate disclosure and external monitors. First, our study provides some of the first evidence on the properties of managers' cash flow forecasts in a setting where forecasts are mandated rather than voluntary. Second, there is limited evidence on how managers seek to avoid ambiguity in relation to management forecasts in the presence of high information asymmetry and uncertain project outcomes. Our study speaks to how managers who seek project financing alter their mandatory forecasts in the form of overestimated expected project costs when the lending relationship is characterized by a high degree of information asymmetry and significant levels of project failure. Third, whereas prior studies typically focus on loan pricing and covenant requirements of large syndicated corporate loans, we provide evidence on the forecasting implications of project financing loans. In so doing, our study sheds light on 'transactional' or one-time lending arrangements rather than the more 'relational' or repeated-game lending arrangements found in syndicated loans. The results of our study also contribute to the management accounting literature on budgetary slack. Despite substantial theoretical and experimental work on budgetary slack, there is little empirical evidence on the topic – and what little evidence there is typically relies on case studies. We document that firms are more likely to receive additional rounds of funding by managing lender expectations regarding cost overruns through the creation of budgetary slack. Overall, the results of our study shed light on how managers alter mandatory forecast characteristics when their projects become subject to lender monitoring. As a concluding caveat, despite our study's unique setting that allows researchers the ability to draw novel inferences, we caveat that our inferences may not generalize to other settings.

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Figure 1 – Mine lifecycle and financing

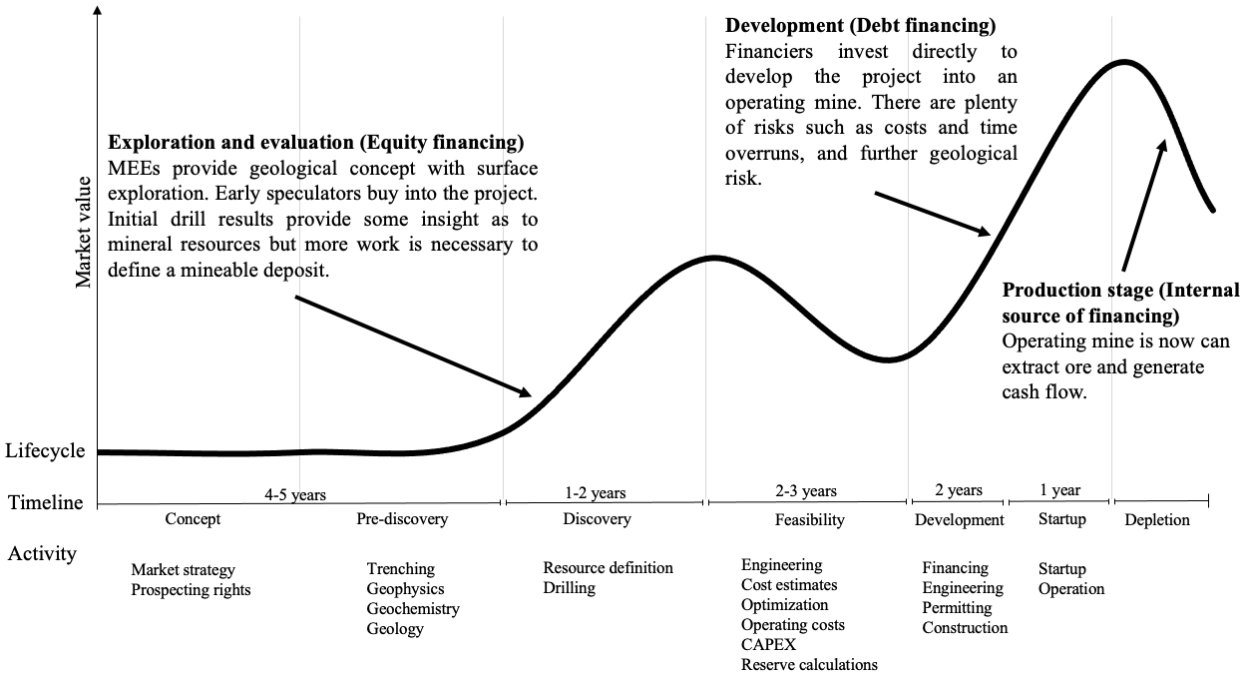

Figure 2 – Over (under) estimation and debt financing around project financing with sample restricted by only firms receiving project financing

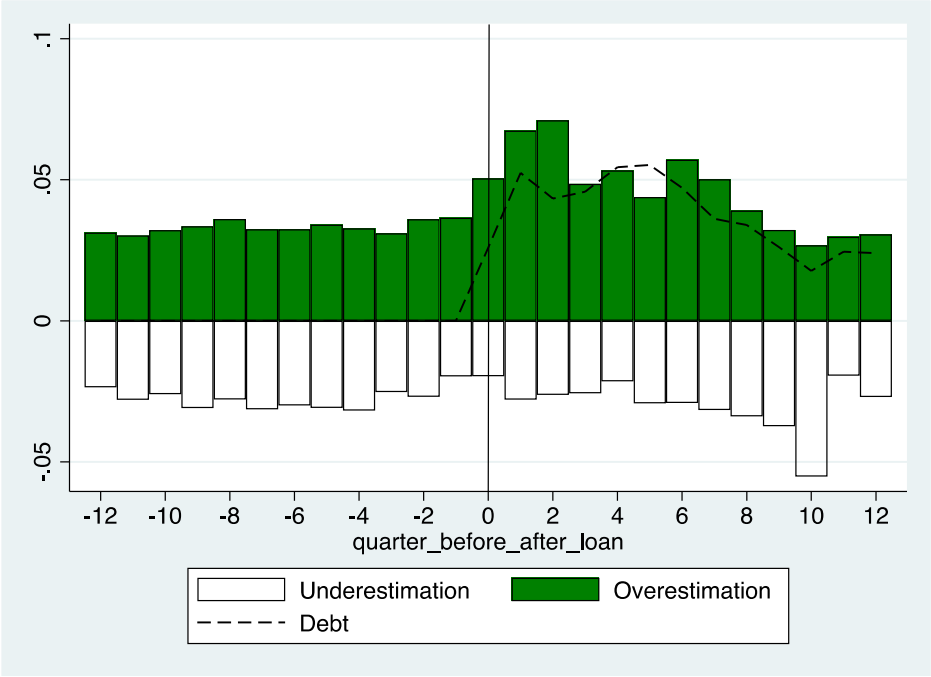

Figure 3 – Over (under) estimation and cash around project financing with sample restricted by only firms receiving project financing

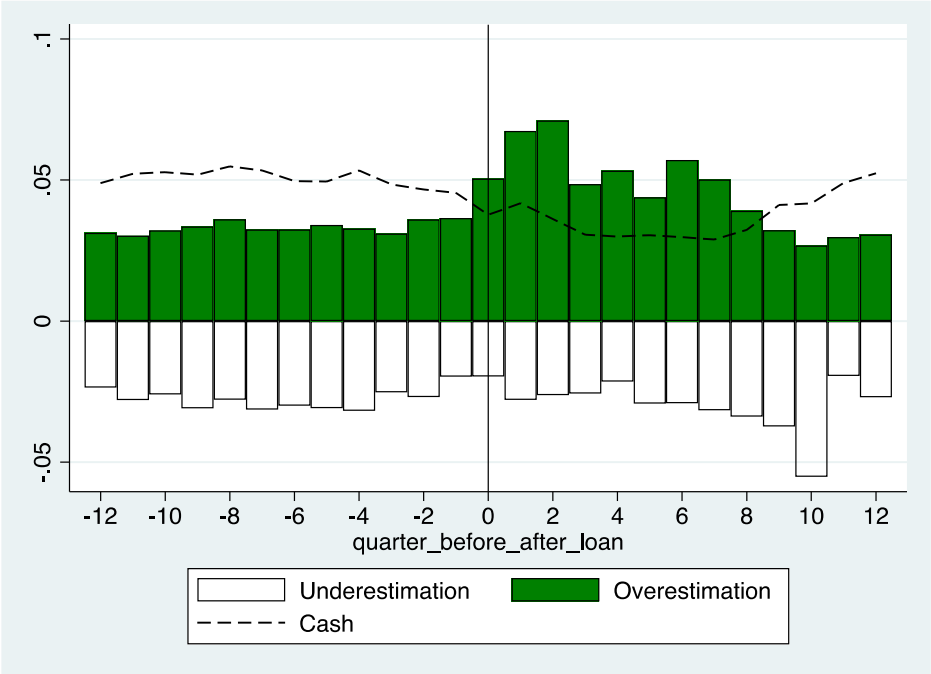

Table 1
Sample Selection

This table shows that the sample period spans July 1996 through September 2014, containing 30,813 Appendix 5Bs disclosed by 1,029 MEEs (all known observations). The sample selection is represented in Table 1, a total of 3,362 Appendix 5Bs without a preceding 5B filing are unable to be used as the forecast bias cannot be calculated. The merging of financial data, ownership, and mineral data results in a maximum of 23,601 observations, with the number of observations differing depending on the type of test conducted.

	Observations	N. Firms	Period
Initial sample	30,813	1,029	Jul 1996 to Sep 2014
Less: missing quarter *t*-1	3,362		
Less: missing Eikon Thompson	3,186		
Less: Project financing starts before sample observation	664	22	
Final sample	23,601	1,007	Jan 1997 to Sep 2014
Subsample of firms receiving project financing	4,433	160	Jan 1997 to Aug 2014

Table 2
Univariate Statistics

Panel A: Descriptive Statistics for complete sample

	N. Obs.	Mean	p25	Median	p75	Std. Dev.
POST x TREAT	23,601	0.067	0.000	0.000	0.000	0.251
UnsForecastError	23,601	0.026	0.005	0.014	0.032	0.036
SigForecastError	23,601	0.002	-0.013	0.000	0.014	0.045
UnderestimateBias	11,613	0.025	0.005	0.013	0.031	0.031
OverestimateBias	11,988	0.028	0.005	0.014	0.033	0.040
Return_Quarter	23,601	1.034	0.818	0.972	1.143	0.409
Size (mil)	23,601	49.341	5.610	12.993	36.979	115.848
Cash_Burn_Rate	23,601	0.872	0.155	0.341	0.844	1.351
Cash	23,601	0.243	0.062	0.146	0.303	0.289
Firm_Age	23,601	10.387	3.617	7.094	15.144	8.906
Top_20	23,601	0.574	0.447	0.568	0.696	0.177
CRB_Index	23,601	1.020	0.963	1.014	1.093	0.097
Number_Pages	23,601	8.796	5.000	7.000	11.000	4.700
Reserves	23,601	0.178	0.000	0.000	0.000	0.670
Resources	23,601	24.465	0.000	0.000	0.254	74.599
Total_Assets (mil)	23,601	33.332	3.072	9.183	25.290	75.775
ROA	23,601	-0.360	-0.355	-0.121	-0.021	0.771
Leverage	23,601	0.071	0.000	0.000	0.004	0.352

Panel B: Descriptive statistics for firms receiving project financing loan approvals

	N. Obs.	Mean	p25	Median	p75	Std. Dev.
POST x TREAT	4,433	0.359	0.000	0.000	1.000	0.480
UnsForecastError	4,433	0.029	0.005	0.014	0.035	0.040
SigForecastError	4,433	0.006	-0.011	0.001	0.017	0.049
UnderestimateBias	2,039	0.025	0.005	0.013	0.030	0.032
OverestimateBias	2,394	0.033	0.005	0.015	0.039	0.046
Return_Quarter	4,433	1.044	0.834	1.000	1.160	0.391
Size (mil)	4,433	99.792	10.419	30.403	89.703	177.490
Cash_Burn_Rate	4,433	0.960	0.179	0.412	1.020	1.379
Cash	4,433	0.212	0.061	0.129	0.261	0.250
Firm_Age	4,433	10.484	4.511	8.767	15.089	7.440
Top_20	4,433	0.585	0.448	0.574	0.726	0.187
CRB_Index	4,433	1.022	0.965	1.017	1.093	0.095
Number_Pages	4,433	9.188	5.000	7.000	12.000	5.157
Reserves	4,433	0.313	0.000	0.000	0.000	0.870
Resources	4,433	17.348	0.000	0.000	0.234	59.046
Total_Assets(mil)	4,433	67.798	5.213	20.555	75.366	111.919
ROA	4,433	-0.242	-0.228	-0.070	0.000	0.658
Leverage	4,433	0.162	0.000	0.000	0.142	0.481
Cash_From_Loan (mil)	972	5.208	0.000	0.000	1.932	16.488

Panel C: Descriptives for firms receiving project financing, two quarters before and after firms receive project financing

	Column I		Column II		Column III			
	Before Loan		After Loan		Difference			
	Mean	Median	Mean	Median	Mean	P	Median	P
UnsForecastError	0.027	0.012	0.036	0.022	33%	0.122	83%	0.011
SigForecastError	0.011	0.003	0.017	0.002	55%	0.385	-33%	0.640
UnderestimateBias	0.021	0.011	0.021	0.012	0%	0.913	9%	0.946
OverestimateBias	0.031	0.012	0.050	0.033	61%	0.041	175%	0.001
Return_Quarter	1.133	1.069	1.011	0.952	-11%	0.001	-11%	0.000
Size	136.451	62.098	188.930	88.308	38%	0.069	42%	0.039
Cash_Burn_Rate	1.032	0.468	1.230	0.511	19%	0.348	9%	0.647
Cash	0.172	0.102	0.209	0.116	22%	0.208	14%	0.495
Firm_Age	9.177	6.583	10.388	7.953	13%	0.224	21%	0.119
Top_20	0.616	0.611	0.641	0.642	4%	0.279	5%	0.291
CRB_Index	1.034	1.027	1.031	1.035	0%	0.779	1%	0.925
Number_Pages	9.119	7.000	9.457	7.000	4%	0.652	0%	0.993
Reserves	0.272	0.000	0.343	0.000	26%	0.546	0%	0.373
Resources	12.135	0.000	13.171	0.000	9%	0.884	0%	0.653
Total_Assets (mil)	82.753	46.233	114.741	75.851	39%	0.034	64%	0.027
ROA	-0.126	-0.055	-0.086	-0.047	-32%	0.207	-15%	0.232
Leverage	0.177	0.002	0.311	0.112	76%	0.03	5500%	0.021

Table 3
Correlation Matrix

		1	2	3	4	5	6	7	8	9	10	11	12
1	*SigForecastError*	1											
2	*POST x TREAT*	0.056*	1										
3	*Number_Pages*	-0.015	0.067*	1									
4	*Size*	0.028*	0.299*	0.232*	1								
5	*Cash_Burn_Rate*	-0.044*	0.077*	-0.034*	-0.071*	1							
6	*Cash*	0.103*	-0.045*	-0.018	-0.243*	-0.279*	1						
7	*Firm_Age*	0.011	0.075*	-0.006	0.109*	0.143*	-0.163*	1					
8	*Top_20*	0.031*	0.079*	0.029*	0.147*	0.050*	0.021	-0.005	1				
9	*CRB_Index*	-0.022	0.018	0.035*	0.092	-0.043*	-0.058*	-0.001	-0.012	1			
10	*Reserves*	-0.007	0.107*	0.051*	0.113*	0.049*	-0.023	0.051*	0.101*	0.009	1		
11	*Resources*	-0.007	0.021	0.045*	0.005	0.038*	-0.001	0.023	0.053*	-0.008	0.449*	1	
12	*Return_Quarter*	-0.022	-0.012	0.016	0.074*	-0.036*	-0.038*	-0.005	-0.014	0.222*	-0.008	-0.022	1

Table 4

Regression of forecast bias on the start of project financing and its forecast controls, firm controls, performance controls and year control

Panel A: Complete sample containing both groups of firms receiving project financing (treatment) and the control group of only equity-financed firms

Model: $ForecastError_t = \alpha_t + b_1 TREAT_i \times POST_{i,t} + b_k Controls_{i,(t-1)} + \varepsilon$

VARIABLES	Column I *UnsForescast Error$_t$*	Column II *SigForecast Error$_t$*	Column III *Underestimate Bias$_t$*	Column IV *Overestimate Bias$_t$*
POST$_{i,t}$ x TREAT$_i$	0.011***	0.008***	0.003	0.014***
	[5.352]	[2.709]	[1.569]	[4.867]
UnsForecastError$_{i,(t-1)}$	0.256***		0.168***	0.279***
	[14.419]		[8.044]	[12.515]
SigForecastError$_{i,(t-1)}$		0.196***		
		[10.210]		
Number_Pages$_{i,t}$	0.000	-0.000	0.000	0.000
	[0.873]	[-0.538]	[0.745]	[0.926]
Size$_{i,(t-1)}$	-0.003***	0.002***	-0.004***	-0.002***
	[-7.892]	[3.228]	[-9.340]	[-3.737]
Cash_Burn_Rate$_{i,(t-1)}$	0.002***	0.000	0.002***	0.001**
	[5.536]	[0.332]	[6.626]	[2.568]
Cash$_{i,(t-1)}$	0.015***	0.014***	0.009***	0.019***
	[9.319]	[6.389]	[5.872]	[8.598]
Firm_Age$_{i,(t-1)}$	-0.002***	-0.003***	-0.000	-0.003***
	[-4.070]	[-6.200]	[-0.269]	[-6.578]
Top_20$_{i,t}$	0.004	0.004	0.003	0.005
	[1.661]	[1.150]	[0.925]	[1.284]
CRB_Index$_{i,(t-1)}$	0.016	0.056**	-0.024	0.037
	[1.065]	[2.345]	[-1.041]	[1.545]
Reserves$_{i,(t-1)}$	0.003***	0.000	0.004***	0.003**
	[3.317]	[0.181]	[2.650]	[2.206]
Resources$_{i,(t-1)}$	-0.000	0.000	-0.000	-0.000
	[-0.397]	[0.533]	[-0.213]	[-0.631]
Return_Quarter$_{i,(t-1)}$	-0.006***	-0.002***	-0.005***	-0.007***
	[-7.318]	[-2.885]	[-6.019]	[-6.260]
Constant	0.079***	0.001	0.096***	0.075***
	[10.906]	[0.148]	[5.515]	[8.327]
Observations	23,601	23,601	11,567	11,953
Firm FE	Yes	Yes	Yes	Yes
Year-quarter FE	Yes	Yes	Yes	Yes
Adj. R-squared	0.285	0.189	0.297	0.326

This table presents regression results of tests examining the change in management forecast bias before and after the announcement of a project financing approval. Our variable of interest is the interaction *POST x TREAT*. *TREAT* represents a dichotomous variable equal to 1 if the firm belongs to the treatment group of companies that eventually receive project financing during our sample period and *POST* represents a dichotomous variable equal to 1 if the quarter *t* issuing the cash flow forecast occurs after receiving a project financing loan and 0 otherwise. Column I depicts the effect of project financing approval (*POST x TREAT*) on the unsigned or absolute value of the forecast bias (*UnsForecastError*) (the absolute estimated cash payments on operating activities on quarter *t* minus the actual cash outflow on quarter *t*, deflate by lagged market value (*Size*)). Column II repeats the test on the signed forecast error (*SigForecastError*). Column III and IV separate the analysis between underestimate bias (when the estimated cash payments on operating activities on quarter *t* minus the actual cash outflow on quarter *t* is negative, i.e., payments were understated) and overestimate bias (when the estimated cash payments on operating activities on quarter *t* minus the actual cash outflow on quarter

t is positive, i.e., payments were overstated), respectively. Hypothesis 1 predicts that firms overstate forecasts after receiving debt financing. All variables vary quarterly, with exception of *Top_20*, which is updated annually. Control variables are described in Appendix I. Standard errors are clustered at the firm and year-quarter level. Z-stat is reported in brackets. Symbols ***, **, and * indicate two-sided significance at the 1%, 5%, and 10% levels. Firm and year-quarter fixed effects are included.

Panel B: Homogeneous sample restricted to the treatment group of firms receiving project financing for self-selection robustness and test for loan size

Model: $ForecastError_t = \alpha_t + b_1 TREAT_i \times POST_{i,t} + b_k Controls_{i,(t-1)} + \varepsilon$

VARIABLES	Column I *UnsForecast Error$_t$*	Column II *SigForecast Error$_t$*	Column III *Underestimate Bias$_t$*	Column IV *Overestimate Bias$_t$*
$POST_{i,t}$ x $TREAT_i$	0.008***	0.009***	-0.001	0.015***
	[3.459]	[2.653]	[-0.548]	[4.650]
$POST_{i,t}$ x $TREAT_i$ x $Loan\_Amount_{i,t}$	0.000***	0.001***	-0.000	0.001***
	[7.169]	[4.872]	[-0.125]	[6.087]
$UnsForecastError_{i,(t-1)}$	0.357***		0.252***	0.373***
	[11.083]		[5.727]	[8.910]
$SigForecastError_{i,(t-1)}$		0.290***		
		[8.553]		
$Number\_Pages_{i,t}$	-0.000	-0.000	0.000	-0.000
	[-0.348]	[-0.966]	[0.672]	[-0.284]
$Size_{i,(t-1)}$	-0.001	0.002**	-0.002***	-0.001
	[-1.400]	[2.151]	[-3.181]	[-0.761]
$Cash\_Burn\_Rate_{i,(t-1)}$	0.002***	-0.000	0.003***	0.001
	[3.364]	[-0.237]	[5.983]	[1.122]
$Cash_{i,(t-1)}$	0.016***	0.009*	0.013***	0.017***
	[4.358]	[1.851]	[2.992]	[2.912]
$Firm\_Age_{i,(t-1)}$	0.006	-0.042	0.013	-0.018
	[0.132]	[-0.538]	[0.231]	[-0.218]
$Top\_20_{i,t}$	0.006	0.004	-0.002	0.013
	[1.226]	[0.556]	[-0.347]	[1.381]
$CRB\_Index_{i,(t-1)}$	-0.043	-0.015	-0.075	-0.002
	[-0.896]	[-0.250]	[-1.553]	[-0.035]
$Reserves_{i,(t-1)}$	0.004***	0.000	0.006**	0.004*
	[2.863]	[0.023]	[2.599]	[1.904]
$Resources_{i,(t-1)}$	-0.000**	0.000	-0.000	-0.000***
	[-2.246]	[0.767]	[-0.627]	[-2.975]
$Return\_Quarter_{i,(t-1)}$	-0.004**	0.000	-0.005***	-0.004
	[-2.573]	[0.091]	[-3.081]	[-1.236]
Constant	-0.031	0.400	-0.077	0.200
	[-0.071]	[0.495]	[-0.132]	[0.239]
Observations	4,433	4,433	2,036	2,391
Firm FE	Yes	Yes	Yes	Yes
Year-quarter FE	Yes	Yes	Yes	Yes
Adj. R-squared	0.297	0.211	0.282	0.344

This table reruns the analysis on Panel A after restricting the sample only to firms receiving project financing as a robustness test for the possibility of self-selection associated with the characteristic of firms receiving project financing. All variables vary quarterly with exception of Top_20, which is updated annually. Control variables are described in Appendix I. Standard errors are clustered at the firm and year-quarter level. Z-stat is reported in brackets. Symbols ***, **, and * indicate two-sided significance at the 1%, 5%, and 10% levels. Firm and year-quarter fixed effects are included.

Table 5

Regression of forecast bias timing on the year dummies indicating years around the start of project financing

Model: $SigForecastError_{i,t} = \alpha_t + b_k\sum_{k=1}^{k=4}Y(k)Before\_loan + b_k\sum_{k=1}^{k=4}Y(k)After\_Loan + b_kControls_{i,(t-1)} + \varepsilon$

VARIABLES	Column I *SigForecast Error$_t$*	Column II *Overestimate Bias$_t$*
Y4_Before_Loan$_{i,t}$	0.001	0.001
	[0.205]	[0.189]
Y3_Before_Loan$_{i,t}$	-0.000	-0.001
	[-0.021]	[-0.454]
Y2_Before_Loan$_{i,t}$	-0.002	-0.001
	[-0.402]	[-0.263]
Y1_Before_Loan$_{i,t}$	0.000	-0.002
	[0.072]	[-0.533]
Y1_After_Loan$_{i,t}$	0.015***	0.023***
	[3.408]	[4.716]
Y2_After_Loan$_{i,t}$	0.011**	0.019***
	[2.108]	[3.873]
Y3_After_Loan$_{i,t}$	-0.004	0.003
	[-0.978]	[0.660]
Y4_After_Loan$_{i,t}$	-0.000	0.008
	[-0.075]	[1.353]
SigForecastError$_{i,(t-1)}$	0.288***	
	[8.398]	
UnsForecastError$_{i,(t-1)}$		0.365***
		[8.970]
Number_Pages$_{i,t}$	-0.000	-0.000
	[-0.917]	[-0.008]
Size$_{i,(t-1)}$	0.002*	-0.001
	[1.868]	[-0.787]
Cash_Burn_Rate$_{i,(t-1)}$	-0.000	0.001
	[-0.010]	[1.278]
Cash$_{i,(t-1)}$	0.009*	0.017***
	[1.874]	[3.017]
Firm_Age$_{i,(t-1)}$	-0.043	-0.017
	[-0.565]	[-0.209]
Top_20$_{i,t}$	0.005	0.013
	[0.691]	[1.377]
CRB_Index$_{i,(t-1)}$	-0.008	0.012
	[-0.148]	[0.182]
Reserves$_{i,(t-1)}$	-0.000	0.003*
	[-0.104]	[1.773]
Resources$_{i,(t-1)}$	0.000	-0.000**
	[1.070]	[-2.463]
Return_Quarter$_{i,(t-1)}$	0.000	-0.004
	[0.066]	[-1.317]
Constant	0.407	0.192
	[0.520]	[0.236]
Observations	4,433	2,391
Firm FE	Yes	Yes
Year-quarter FE	Yes	Yes

Adj. R-squared	0.212	0.349

Using the sample of firms receiving project financing, this table examines the timing when the forecast bias occurs. We expect that forecast bias is stronger in the first years after project financing starts, therefore we expect the indicators for first year after project financing (i.e., *Y1_After_Loan*) to be significantly positive with overestimation bias while we expect a negative or not significant association with the dummies indicating the years before project financing starts (i.e., *Y1_Before_Loan, Y2_Before_Loan, etc.*). All variables vary quarterly with exception of dummies indicating years around project financing and *Top_20,* which is updated annually. Control variables are described in Appendix I. Standard errors are clustered at the firm and year-quarter level. Z-stat is reported in brackets. Symbols ***, **, and * indicate two-sided significance at the 1%, 5%, and 10% levels. Firm and year-quarter fixed effects are included.

Table 6
Regression on the standard deviation (dispersion)

Model: $SD(ForecastError_{i,t}) = \alpha_t + b_k\sum Y(k)Before\_loan_{i,t} + b_k\sum Y(k)After\_Loan_{i,t} + b_kControls_{i,(t-1)} + \varepsilon$

VARIABLES	Column I *SD(SigForecast Error$_t$)*	Column II *SD(Overestimate Bias$_t$)*
Y4_Before_Loan$_{i,t}$	-0.004	-0.002
	[-1.661]	[-1.103]
Y3_Before_Loan$_{i,t}$	-0.003	-0.002
	[-1.370]	[-0.996]
Y2_Before_Loan$_{i,t}$	-0.002	-0.003*
	[-0.587]	[-1.713]
Y1_Before_Loan$_{i,t}$	0.001	-0.000
	[0.265]	[-0.071]
Y1_After_Loan$_{i,t}$	0.015***	0.004**
	[4.552]	[2.102]
Y2_After_Loan$_{i,t}$	0.008**	-0.001
	[2.368]	[-0.300]
Y3_After_Loan$_{i,t}$	0.002	-0.002
	[0.581]	[-0.750]
Y4_After_Loan$_{i,t}$	-0.000	0.002
	[-0.002]	[0.581]
SigForecastError$_{i,(t-1)}$	0.043**	
	[2.304]	
UnsForecastError$_{i,(t-1)}$		0.744***
		[11.287]
Number_Pages$_{i,t}$	0.000**	-0.000
	[2.069]	[-0.813]
Size$_{i,(t-1)}$	-0.003***	-0.000
	[-3.262]	[-0.341]
Cash_Burn_Rate$_{i,(t-1)}$	0.004***	0.000
	[6.295]	[0.350]
Cash$_{i,(t-1)}$	0.020***	0.002
	[5.944]	[1.163]
Firm_Age$_{i,(t-1)}$	-0.039	-0.014
	[-0.640]	[-0.447]
Top_20$_{i,t}$	0.001	-0.002
	[0.114]	[-0.439]
CRB_Index$_{i,(t-1)}$	-0.005	-0.004
	[-0.151]	[-0.128]
Reserves$_{i,(t-1)}$	0.003	-0.001
	[1.594]	[-0.672]
Resources$_{i,(t-1)}$	-0.000	0.000
	[-0.084]	[0.001]
Return_Quarter$_{i,(t-1)}$	-0.001	0.001
	[-0.621]	[0.528]
Constant	0.462	0.149
	[0.738]	[0.475]
Observations	4,371	2,842
Firm FE	Yes	Yes
Year-quarter FE	Yes	Yes
Adj. R-squared	0.335	0.618

This table examines the yearly standard deviation of the dependent variables examined in the prior table. We expect firms in the first year following the loan to present less homogeneous elements (i.e., higher standard deviation) involved in the forecast of cash outflows (actual cash flows, estimations). Our variable of interest is *Y1_After_Loan*, which we expect to be positively associated with all the elements involved in forecasting cash outflows. All variables vary quarterly with exception of dummies indicating years around project financing and *Top_20*, which is updated annually. Control variables are described in Appendix I. Standard errors are clustered at the firm and year-quarter level. Z-stat is reported in brackets. Symbols ***, **, and * indicate two-sided significance at the 1%, 5%, and 10% levels. Firm and year-quarter fixed effects are included.

Table 7
Regression of the determinants of initial ramp-up revenue

Model: $Receipts_t = \alpha_t + b_0 Cumul\_Overestimation_{i,(t-1)} + b_1 Cumul\_Underestimation_{i,(t-1)} + b_k Controls_{i,(t-1)} + \varepsilon$

VARIABLES	Column I *Receipts*$_{i,t}$	Column II *Receipts*$_{i,t}$
Cumul_Overestimation$_{i,(t-1)}$	0.312**	
	[2.564]	
Cumul_Underestimation$_{i,(t-1)}$		0.085
		[0.400]
Receipts$_{i,(t-1)}$	0.476***	0.479***
	[5.811]	[5.850]
Production_Exp$_{i,t}$	0.453***	0.458***
	[4.446]	[4.432]
Number_Pages$_{i,t}$	0.000	0.000
	[0.181]	[0.143]
Size$_{i,(t-1)}$	0.003	0.002
	[1.181]	[0.957]
Cash_Burn_Rate$_{i,(t-1)}$	0.003	0.003
	[1.631]	[1.471]
Cash$_{i,(t-1)}$	-0.025**	-0.026**
	[-2.246]	[-2.428]
Firm_Age$_{i,(t-1)}$	0.005	0.003
	[0.361]	[0.202]
Top_20$_{i,t}$	-0.012	-0.016
	[-0.508]	[-0.719]
CRB_Index$_{i,(t-1)}$	0.252	0.244
	[1.573]	[1.551]
Reserves$_{i,(t-1)}$	-0.005	-0.004
	[-1.200]	[-1.074]
Resources$_{i,(t-1)}$	-0.000	-0.000
	[-0.545]	[-0.755]
Return_Quarter$_{i,(t-1)}$	0.003	0.003
	[0.489]	[0.513]
Constant	-0.084	-0.050
	[-0.812]	[-0.464]
Observations	1,565	1,565
Firm FE	Yes	Yes
Year-quarter FE	Yes	Yes
Adj. R-squared	0.728	0.726

This table examines the determinants of receipts costs (Column I and II) as a proxy for firms' initial revenue generation. Our variable of interest is *Cumul_Overestimation*, which is the cumulative average of overestimations (*OverestimateBias)* up to the quarter before the revenue disclosure in Appendix 5B. *Receipts* represents a continuous variable equal to the actual receipts in quarter *t* (see Item 1.1in Appendix II) scaled by lagged market value (*Size*). Control variables are described in Appendix I. Standard errors are clustered at the firm and year-quarter level. Z-stat is reported in brackets. Symbols ***, **, and * indicate two-sided significance at the 1%, 5%, and 10% levels. Firm and year-quarter fixed effects are included.

Table 8
Regression of the determinants of debt drawdowns

Model: $DebtDrawdown_{i,t} = \alpha_t + b_0 Cumul\_Overestimation_{i,(t-1)} + b_1 Cumul\_Underestimation_{i,(t-1)} + b_k Controls_{i,(t-1)} + \varepsilon$

VARIABLES	Column I $DebtDrawdown_{i,t}$	Column II $DebtDrawdown_{i,t}$	Column III $DebtDrawdown_{i,t}$	Column IV $DebtDrawdown_{i,t}$
$Cumul\_SignEstimation_{i,(t-1)}$	0.038**			
	[2.182]			
$Cumul\_Overestimation_{i,(t-1)}$		0.106***		
		[4.444]		
$Cumul\_Underestimation_{i,(t-1)}$			0.009	
			[0.411]	
$OverestimateBias\_Exp_{i,(t-1)}$				-0.001
				[-0.019]
$OverestimateBias\_Dev_{i,(t-1)}$				0.077**
				[2.809]
$OverestimateBias\_Prod_{i,(t-1)}$				0.004
				[0.065]
$OverestimateBias\_Adm_{i,(t-1)}$				0.000
				[0.008]
$Receipts_{i,t}$	-0.020*	-0.022**	-0.018	-0.008
	[-1.845]	[-2.035]	[-1.171]	[-0.524]
$Production\_Exp_{i,(t-1)}$	-0.036***	-0.034***	-0.021	-0.019
	[-2.886]	[-2.924]	[-1.259]	[-0.927]
$Number\_Pages_{i,t}$	0.000**	0.000**	0.000**	0.000
	[2.261]	[2.205]	[2.181]	[0.253]
$Size_{i,(t-1)}$	0.001	0.001	-0.000	-0.000
	[1.444]	[1.511]	[-0.240]	[-0.407]
$Cash\_Burn\_Rate_{i,(t-1)}$	0.003***	0.003***	0.002***	0.002***
	[7.244]	[7.248]	[3.996]	[3.680]
$Cash_{i,(t-1)}$	-0.001	-0.001	0.001	-0.002
	[-0.451]	[-0.539]	[0.401]	[-0.728]
$Firm\_Age_{i,(t-1)}$	-0.003	-0.002	-0.007	-0.003
	[-1.021]	[-0.641]	[-1.570]	[-0.442]
$Top\_20_{i,t}$	0.002	0.002	-0.018**	-0.010
	[0.206]	[0.281]	[-2.347]	[-1.079]
$CRB\_Index_{i,(t-1)}$	-0.003	-0.006	0.085	-0.031
	[-0.122]	[-0.228]	[1.458]	[-0.718]
$Reserves_{i,(t-1)}$	-0.000	-0.001	0.001	-0.000
	[-0.149]	[-0.566]	[1.272]	[-0.360]
$Resources_{i,(t-1)}$	0.000	0.000*	0.000	0.000*
	[1.495]	[1.754]	[1.039]	[2.075]
$Return\_Quarter_{i,(t-1)}$	0.001	0.000	-0.001	0.000
	[0.466]	[0.379]	[-0.433]	[0.238]
Constant	0.006	-0.004	0.068*	0.042
	[0.221]	[-0.146]	[1.881]	[0.673]
Observations	1,016	1,020	400	585
Firm FE	Yes	Yes	Yes	Yes
Year-quarter FE	Yes	Yes	Yes	Yes
Adj. R-squared	0.317	0.327	0.344	0.361

This table examines the debt market incentives in increasing overestimations. Our dependent variable is the amount of cash received from debt drawdowns (*DebtDrawdown*), and our variable of interest is the lagged cumulative overestimation

(*Cumul_Overestimation*). Control variables are described in Appendix I. Standard errors are clustered at the firm and year-quarter level. Z-stat is reported in brackets. Symbols ***, **, and * indicate two-sided significance at the 1%, 5%, and 10% levels. Firm and year-quarter fixed effects are included.

Appendix I

List of Variable Definitions

Dependent Variables	
OverestimateBias	The unsigned bias when *SigForecastError* > 0. This unsigned variable captures the overestimation of cash flow payments (expected payments higher than actual). It is also associated with budget slack or underspending.
Receipts	Continuous variable equal to the actual revenue in quarter *t* (see Item 1.1 in Appendix II) scaled by lagged market value (*Size*).
SD(OverestimateBias)	Yearly standard deviation of *UnsForecastError*. This variable captures how dispersed the underestimation of cash flow payments (i.e., cost (budget) overruns or overspending) is in relation to the mean. A lesser standard deviation in cash flows carries less risk in overestimating capital budgeting as its estimation is more homogenous.
SD(SigForecastError)	Yearly standard deviation of *SigForecastError*. This variable captures how dispersed the estimation of cash flow payments is in relation to the mean. A lesser standard deviation in cash flows carries less risk in estimating capital budgeting as its estimation is more homogenous.
SigForecastError	Signed estimated payments (estimated, see example on "estimated cash payments" in Item 1.5, page 3, of Appendix II) for quarter *t* minus realized payments for quarter *t* (actual, see example on "actual cash flow spent" in Item 1.2, page 1, of Appendix II), deflated by lagged market value (*Size*). This variable is composed of four different types of mandatory forecasts of payment along with current period actuals. These four forecasts include management forecasts of exploration and evaluation expenditure, management forecasts of development expenditure, management forecasts of production expenditure, and management forecasts of administration expenditure (see 5B example in Appendix II). The cash flow payments are for operating activities and only represent cash outflows as the firms don't have relevant sales given their pre-production status.
UnderestimateBias	The unsigned bias when *SigForecastError* <= 0. This unsigned variable captures the underestimation of cash flow payments (expected payments lower than actual). It is also associated with cost (budget) overruns or overspending.
UnsForecastError	Absolute value of *SigForecastError*.
Explanatory Variables	
Cumul_Overestimation	Post loan cumulative average of *OverestimateBias* deflated by the pre loan average of *OverestimateBias.*
Cumul_SignEstimation	Post loan cumulative average of *SigForecastError* deflated by the pre loan average of *SigForecastError.*
Cumul_Underestimation	Post loan cumulative average of *UnderestimateBias* deflated by the pre loan average of *UnderestimateBias.*

DebtDrawdown	Calculated by cash inflow from borrowing (Item 1.18 from Appendix 5B) scaled by lagged market value (*Size*).
POST x TREAT	A dichotomous variable equal to 1 if the quarter *t* issuing the cash flow forecast occurs after receiving a project financing loan and 0 otherwise. The interaction *POST x TREAT* allows us to examine if the overall forecast accuracy changes after receiving *TREAT* and controls for the group difference between firms receiving project financing and those that do not.
TREAT	A dichotomous variable equal to 1 if the firm belongs to the treatment group of MEE companies that eventually receive project financing during our sample period and 0 otherwise. This group includes firms that receive seed, bridge, and first tranche of project financing.
Y4_Before_Loan, *Y3_Before_Loan*, *Y2_Before_Loan*, and *Y1_Before_Loan*	Dichotomous variables indicating each one of the years before the loan.
Y1_After_Loan, *Y2_After_Loan*, *Y3_After_Loan, and Y4_After_Loan*	Dichotomous variables indicating each one of the years after the loan.
Control Variables	
Cash	Cash at the end of the quarter scaled by *Size*.
Cash_Burn_Rate	Quarterly cash burn rate variable calculated as the multiplicative inverse of the cash at the end of the month divided by the cash outflow as the sum of the actual cash outflows with Exploration and Evaluation, Development, Production and Administration.
CRB_Index	CRB (Commodity Research Bureau) index return between 10 days before the report and 6-months before the report.
Firm_Age	The number of years the firm has been listed up to the day of the announcement.
Leverage	Proportion of total debt scaled by shareholder's equity.
Loan_Amount	Total loan amount provided by project financing scaled by beginning of period shareholder's equity.
Number_Pages	Number of pages in each report
Production_Exp	Actual expense classified as production.
Reserves	Amount of reserves in the quarter before the forecast quarter scaled by *Size*.
Resources	Amount of resources in the quarter before the forecast quarter scaled by *Size*.
Return_Quarter	Buy-and-hold return in the quarter before the forecast.
ROA	Return on assets calculated as the net income divided by total assets.

Size	Disclosing firm's size measured by 60-days average market capitalization lagged two months before the announcement (Kato et al. 2009).
Top_20	Fraction of shares owned by the 20 largest owners.

Appendix II

Rule 5.3

Appendix 5B

Mining exploration entity quarterly report

Introduced 1/7/96. Origin: Appendix 8. Amended 1/7/97, 1/7/98, 30/9/2001, 01/06/10.

Name of entity

GINDALBIE METALS LTD

ABN	Quarter ended ("current quarter")
24 060 857 614	30 SEPTEMBER 2011

1.1. Consolidated statement of cash flows

	Cash flows related to operating activities	Current quarter $A'000	Year to date (3 months) $A'000
1.1	Receipts from product sales and related debtors	7,099	7,099
1.2	Payments for (a) exploration & evaluation	(2,420)	(2,420)
	(b) development	(6,078)	(6,078)
	(c) production	(7,376)	(7,376)
	(d) administration	(2,413)	(2,413)
1.3	Dividends received	-	-
1.4	Interest and other items of a similar nature received	3,064	3,064
1.5	Interest and other costs of finance paid	-	-
1.6	Income taxes paid	-	-
1.7	Management fee & labour recovery income	-	-
1.8	Other income	-	-
	Net Operating Cash Flows	(8,124)	(8,124)
	Cash flows related to investing activities		
1.9	Payment for purchases of: (a) prospects	-	-
	(b) equity investments	-	-
	(c) other fixed assets	(107,923)	(107,923)
1.10	Proceeds from sale of: (a) prospects	-	-
	(b) equity investments	-	-
	(c) other fixed assets	-	-
1.11	Loans to other entities		
1.12	Loans repaid by other entities	-	-
1.13	Payment of joint venture subscription	-	-
	Net investing cash flows	(107,823)	(107,923)
1.14	Total operating and investing cash flows (carried forward)	(116,047)	(116,047)

+ See chapter 19 for defined terms.

1.15	Total operating and investing cash flows (brought forward)	(116,047)	(116,047)
	Cash flows related to financing activities		
1.16	Proceeds from issues of shares, options, etc.	133,966	133,966
1.17	Proceeds from sale of forfeited shares	-	-
1.18	Proceeds from borrowings	135,319	135,319
1.19	Repayment of borrowings	-	-
1.20	Dividends paid	-	-
1.21	Capital raising costs	(3,929)	(3,929)
1.22	Payments for cash backing of performance bonds	(8,569)	(8,569)
	Net financing cash flows	256,787	256,787
	Net increase (decrease) in cash held	140,740	140,740
1.23	Cash at beginning of quarter/year to date	236,633	236,633
1.24	Exchange rate adjustments to item 1.23		
1.25	**Cash at end of quarter**	377,373	377,373

1.2. Payments to directors of the entity and associates of the directors

Payments to related entities of the entity and associates of the related entities

		Current quarter $A'000
1.26	Aggregate amount of payments to the parties included in item 1.2	1,147
1.27	Aggregate amount of loans to the parties included in item 1.11	-

1.28 Explanation necessary for an understanding of the transactions

Directors remuneration	1,147

1.3. Non-cash financing and investing activities

2.1 Details of financing and investing transactions which have had a material effect on consolidated assets and liabilities but did not involve cash flows

2.2 Details of outlays made by other entities to establish or increase their share in projects in which the reporting entity has an interest

+ See chapter 19 for defined terms.

1.4. Financing facilities available

Add notes as necessary for an understanding of the position.

		Amount available $A'000	Amount used $A'000
3.1	Loan facilities	71,075	544,579
3.2	Credit standby arrangements	-	-

1.5. Estimated cash outflows for next quarter

		$A'000
4.1	Exploration and evaluation	9,818
4.2	Development	3,195
4.3	Production	9,799
4.4	Administration	1,917
	Total	**24,729**

Reconciliation of cash

Reconciliation of cash at the end of the quarter (as shown in the consolidated statement of cash flows) to the related items in the accounts is as follows.		Current quarter $A'000	Previous quarter $A'000
5.1	Cash on hand and at bank	148,547	91,454
5.2	Deposits at call	228,826	145,179
5.3	Bank overdraft	-	-
5.4	Other (provide details)	-	-
	Total: cash at end of quarter (item 1.25)	377,373	236,633

1.6. Changes in interests in mining tenements

		Tenement reference	Nature of interest (note (2))	Interest at beginning of quarter	Interest at end of quarter
6.1	Interests in mining tenements relinquished, reduced or lapsed				
6.2	Interests in mining tenements acquired or increased				

+ See chapter 19 for defined terms.

1.7. Issued and quoted securities at end of current quarter

Description includes rate of interest and any redemption or conversion rights together with prices and dates.

		Total number	Number quoted	Issue price per security (see note 3) (cents)	Amount paid up per security (see note 3) (cents)
7.1	*Preference* +**securities** *(description)*				
7.2	Changes during quarter (a) Increases through issues (b) Decreases through returns of capital, buy-backs, redemptions				
7.3	+**Ordinary securities**	1,135,565,349	1,135,565,349		
7.4	Changes during quarter (a) Increases through issues (b) Decreases through returns of capital, buy-backs	199,949,759	199,949,759	$0.67	$0.67
7.5	+**Convertible debt securities** (*description)*				
7.6	Changes during quarter (a) Increases through issues (b) Decreases through securities matured, converted				

+ See chapter 19 for defined terms.

7.7	**Options** *(description and conversion factor)*	***Vested Employee Options***		*Exercise price*	*Expiry date*
		2,500,000	Nil	60 cents	6 November 2011
		1,000,000	Nil	$1.31	1 August 2012
		1,500,000	Nil	94 cents	1 August 2012
		300,000	Nil	$1.84	30 September 2013
		250,000	Nil	$1.14	8 October 2015
		Non Vested Employee Options			
		250,000	Nil	$1.14 (Vest 31/12/11)	8 October 2015
		250,000	Nil	$1.14 (Vest 28/2/12)	8 October 2015
		250,000	Nil	$1.14 (Vest 31/3/12)	8 October 2015
		400,000	Nil	$1.19 (Vest 30/4/12)	9 May 2016
		300,000	Nil	$1.19 (Vest 30/6/12)	9 May 2016
		300,000	Nil	$1.19 (Vest 30/6/13)	9 May 2016
		400,000	Nil	$1.19 (Vest 30/4/12)	9 May 2016
		300,000	Nil	$1.19 (Vest 30/6/13)	9 May 2016
		300,000	Nil	$1.19 (Vest 30/6/12)	9 May 2016
		250,000	Nil	$1.14 (Vest 29/2/12)	8 October 2015
		250,000	Nil	$1.14 (Vest 30/4/12)	8 October 2015
		250,000	Nil	$1.14 (Vest 31/5/12)	8 October 2015
7.8	Issued during quarter	250,000	Nil	$1.14 (Vest 29/2/12)	8 October 2015
		250,000	Nil	$1.14 (Vest 30/4/12)	8 October 2015
		250,000	Nil	$1.14 (Vest 31/5/12)	8 October 2015
7.9	Exercised during quarter				
7.10	Lapsed during quarter				
7.11	**Debentures** *(totals only)*				
7.12	**Unsecured notes** *(totals only)*				

Compliance statement

1 This statement has been prepared under accounting policies which comply with accounting standards as defined in the Corporations Act or other standards acceptable to ASX (see note 4).

2 This statement does give a true and fair view of the matters disclosed.

Sign here: ..... Date: 12/10/11
(Director/Company secretary)

Print name: TIM NETSCHER
.....

+ See chapter 19 for defined terms.

Notes

1 The quarterly report provides a basis for informing the market how the entity's activities have been financed for the past quarter and the effect on its cash position. An entity wanting to disclose additional information is encouraged to do so, in a note or notes attached to this report.

2 The "Nature of interest" (items 6.1 and 6.2) includes options in respect of interests in mining tenements acquired, exercised or lapsed during the reporting period. If the entity is involved in a joint venture agreement and there are conditions precedent which will change its percentage interest in a mining tenement, it should disclose the change of percentage interest and conditions precedent in the list required for items 6.1 and 6.2.

3 **Issued and quoted securities** The issue price and amount paid up is not required in items 7.1 and 7.3 for fully paid securities.

4 The definitions in, and provisions of, *AASB 1022: Accounting for Extractive Industries* and *AASB 1026: Statement of Cash Flows* apply to this report.

5 **Accounting Standards** ASX will accept, for example, the use of International Accounting Standards for foreign entities. If the standards used do not address a topic, the Australian standard on that topic (if any) must be complied with.

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