

Optimistic Gatekeepers: Credit Rating Grace Periods around M&A Deals

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Abstract

We investigate the major credit rating agencies' (CRAs) rating methodologies around M&As and their implications for acquirers' ratings. A unique feature of CRAs' methodologies is the provision of a "grace period," where CRAs withhold (or reduce) downgrade actions for acquirers that are deemed to have a temporary deterioration in credit risk around the merger and credible plans to restore their post-acquisition credit metrics. Using abnormal rating optimism around mergers as a proxy for rating grace periods, we document that, on average, CRAs are not able to correctly identify which M&As lead to only temporary increases in credit risk: greater rating optimism around mergers is predictive of a higher likelihood of post-merger rating downgrades and negative merger outcomes. CRAs are more optimistic for acquirers that publicly commit to quantitative post-M&A leverage targets, consistent with managers' disclosures influencing CRAs' beliefs that M&A-related increases in credit risk are temporary. Finally, acquirers that benefit from a grace period are more likely to remain overleveraged relative to their industry peers following the current and subsequent acquisitions. Our findings suggest that the major agencies' focus on long-term creditworthiness and their inaccuracy in distinguishing temporary from long-term increases in acquisition credit risk weaken their governance role in M&As.

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“[Following an acquisition] there should be some room to allow a company to temporarily absorb either a step up in debt or some *temporary* operating challenges. *This is the approach rating agencies often take.* Given... management’s commitment to restoring its balance sheet, a similar *grace period* would seem appropriate.”

—Ganguin and Bilardello (2005, emphasis added),
Standard & Poor’s Fundamentals of Corporate Credit Analysis

1. Introduction

Credit rating agencies (CRAs) are important financial market gatekeepers meant to protect the interests of dispersed debt market participants (Roychowdhury and Srinivasan, 2019; Ormazabal, 2018).² As gatekeepers, CRAs play a key role in shaping corporate decisions. Prior research strongly supports the notion that managers’ desire to maintain a certain credit rating level influences their investment and capital structure decisions (Graham and Harvey, 2001; Kisgen, 2006; Kisgen, 2009; Almeida et al., 2017; Graham, 2022). The influence of CRAs on financing and investment decisions is particularly significant around mergers and acquisitions (M&A).³ Large M&A transactions frequently involve significant shocks to acquirers’ leverage and credit risk metrics in order to finance deals (Harford et al., 2009; Ghosh and Jain, 2000; Furfine and Rosen, 2011). Prior literature finds that the existence and the level of credit ratings can influence a firm’s decision to conduct acquisitions (Harford and Uysal, 2014; Sufi, 2009; Aktas et al., 2021). However, previous studies take acquirers’ credit ratings as exogenously given, ignoring the role of credit rating agencies in the M&A process.

In this study, we examine leading CRAs’ (e.g., S&P and Moody’s) rating methodologies around M&As and their implications for acquirers’ ratings. As the opening quotation from an S&P manual on corporate credit analysis indicates, a unique feature of major agencies’ rating methodologies around acquisitions is the provision of a “grace period”. This grace period methodology implies that CRAs withhold (or reduce) downgrade actions for acquirers deemed to have only *temporary* increases in credit risk during the period immediately following an acquisition, based on acquirers’ plans to restore their credit

² Roychowdhury and Srinivasan (2019) define gatekeepers as: “any entity that... exercises influence directly or otherwise over corporations’ access to capital, the quantity and quality of their disclosures and financial reports, their governance practices, and/or their operational and investment decisions.” p. 296.

³ M&A transactions are among the most economically consequential corporate events. M&A transactions represent a global market of over \$57 trillion since 2000 with a recent peak of \$5.2 trillion in 2021 (IMAA, 2023).

metrics to levels consistent with their assigned ratings. As part of their M&A review process, rating agencies assess announced integration and deleveraging plans. To the extent that they believe managers have a credible plan to restore their leverage metrics going forward, the agencies' post-transaction ratings will reflect these deleveraging expectations (Beinstein et al., 2018). This "grace period" is based on the CRAs' belief that merger-related increases in credit risk are *temporary* (see the Ganguin and Bilardello (2005) quote above). It is consistent with the leading rating agencies' stated objective of responding only to *long-term* changes in credit risk, thus reducing the likelihood of costly rating reversals (Cantor and Mann, 2003; S&P, 2003). Nonetheless, several recent business press articles and market participants have expressed concerns over CRAs' practice of giving acquirers credit for future deleveraging plans that may never materialize.⁴

Since prior literature has not examined this aspect of leading agencies' rating methodologies, we begin our analysis by first documenting how the grace period works in practice and its prevalence. Second, given that the grace period is predicated on allowing acquirers to absorb *temporary* increases in risk, we examine whether the major CRAs can accurately predict when M&A deals represent short-term increases in credit risk. Third, we examine the consequences of the grace period methodology on acquirers' post-merger capital structure decisions. Finally, we examine what factors lead CRAs to provide a grace period to acquirers.

Using a sample of acquirers from 2001–2016 with credit ratings from S&P (as ratings representative of the major CRAs), we first provide evidence that acquiring firms experience an increase in abnormal rating optimism around leverage-increasing transactions, consistent with the provision of a rating

⁴ Several analysts and investors explicitly expressed concerns about ratings quality around highly leveraged acquisitions at the SEC's Fixed Income Market Structure Advisory Committee meeting in October 2018. J.P. Morgan credit research analysts stated: "This has raised concerns in the investment community that the ratings post some M&A transactions may be too high... [Acquirers] are starting out with leverage metrics well above those typical for the assigned rating... (Beinstein et al., 2018)." Morgan Stanley analysts stated: "M&A has contributed to near record-high investment grade leverage levels today and the deterioration in ratings quality..." (Stratmann et al., 2018). A *Wall Street Journal* article titled "Bond Ratings Firms Go Easy on Some Heavily Indebted Companies" also highlighted S&P and Moody's optimistic ratings and consistently missed deleveraging predictions for some highly leveraged acquirers (Banerji and Podkul, 2019).

grace period. In addition, we document that S&P's provision of a grace period appears to have a significant positive effect on acquirers' credit ratings relative to the ratings that would be assigned using a leverage-implied rating approach. For example, in the top tercile of leverage-increasing acquisitions, we find that S&P's ratings are 3.82 times less likely to be downgraded around merger completion than leverage-implied ratings. In addition, we show that the mapping of leverage metrics into CRAs' ratings is weaker in the post-acquisition period compared to the pre-acquisition period. Together, this evidence is consistent with the notion that CRAs underweight leverage changes around the merger, consistent with the provision of a grace period.

We next examine whether the major agencies' ratings accurately identify when acquisitions reflect temporary increases in credit risk. The ability to distinguish between temporary and long-term credit shocks would add value in the M&A setting because early downgrades are costly as they can have negative consequences for acquirers' financial flexibility and a stifling effect on M&A activity.⁵ If the CRAs have the ability to correctly predict when M&A-related leverage increases are temporary, then the CRAs' choice to provide acquirers with a grace period is an efficient rating strategy that maintains rating stability while avoiding costly rating reversals (Cantor and Mann, 2003; S&P, 2003). The CRAs' expectation that certain acquirers will return to pre-M&A credit risk levels may be reasonable given the large body of research which provides evidence that firms have long-run target leverage ratios, adjust their capital structure to eliminate deviations from these targets, and deleverage from high levels to maintain financial flexibility.⁶

Ex ante however, it is not clear that the CRAs' have the ability to correctly identify temporary shocks in the M&A setting. Large M&A deals are complex transactions that often lead to significant disruptions in the acquirer's traditional business model. Prior literature finds that even sophisticated market participants face significant uncertainty around M&A transactions (Erickson et al., 2012). In addition,

⁵ Consistent with this notion and with the role of CRAs as gatekeepers in financial markets, in untabulated analyses, we find that withdrawn M&A deals are about twice as likely to have been downgraded following an M&A announcement, compared to completed M&A deals.

⁶ See for example Harford et al. (2009), Rosenbaum and Pearl (2009), Flannery and Rangan (2006), Lemmon et al. (2008), DeAngelo et al. (2018), and Huang and Ritter (2009).

CRAs' methodologies for M&A transactions emphasize not only evaluating the fundamentals of the combined entity, but also evaluating the credibility of deleveraging plans, in particular, the willingness and commitment of managers to restoring their credit metrics following an acquisition (Ganguin and Bilardello, 2005). Thus, CRAs' ability to distinguish long-term credit shocks around M&A transactions depends not only on their ability to evaluate the current economics of the deal but also on their ability to perform the difficult task of correctly predicting managers' future plans.

Using abnormal rating optimism around the merger as a proxy for the provision of rating grace periods, we find that increases in abnormal rating optimism around merger completion are associated with *increases* in long-term credit risk, i.e., a higher incidence of rating downgrades during the one to three years following the merger. Increases in abnormal rating optimism around merger completion predict rating downgrades twelve to twenty-four months ahead, which is three to six times longer than the horizon of downgrade predictability found in prior studies on major CRAs' ratings in non-merger settings (e.g., Beaver et al., 2006). We also find that increases in rating optimism around acquisitions are associated with negative long-term merger outcomes: declines in return on assets and cash flow from operations, and a greater likelihood of goodwill impairments over the two to three years following merger completion. These results are robust across several measures of abnormal rating optimism and alternative measurement windows around the merger. Taken together, our evidence indicates that CRAs on average have substantial difficulty identifying when M&A deals lead to only temporary changes in acquirers' credit risk.

Next, we examine the consequences of granting a grace period on acquirers' capital structure decisions. Rating downgrades are consequential for rated firms because ratings affect a firm's cost of capital and thus, its financial flexibility (Tang, 2009; Sangiorgi and Spatt, 2017). While a grace period can avoid hindering an acquirer's immediate access to financing, we conjecture that it could also come at the expense of future financial flexibility, as the grace period may encourage managers to delay or reduce post-merger deleveraging actions. Consistent with this, we find that acquirers that are afforded a grace period around the current merger are less likely to undertake deleveraging to pre-merger leverage levels and are more likely to remain overleveraged at above industry-rating leverage levels in the post-merger period.

Furthermore, these acquirers are also less likely to deleverage from industry-rating highs in future acquisitions, reducing their future financial flexibility.

As gatekeepers, major CRAs pledge their reputational capital in M&A deals that attract considerable scrutiny from market participants, regulators, the business press, and other stakeholders. Thus, a natural question is why do rating agencies afford acquirers this apparently unwarranted grace period in such a highly visible setting? We conjecture that the agencies' difficulty assessing whether changes to acquirers' credit risk are temporary is related to their overweighting of acquirers' public commitments to reducing leverage following M&A transactions. Both Moody's and S&P's rating methodologies, as well as their published credit opinions around M&A transactions, make numerous references to managers' commitments to reducing post-merger credit risk and meeting leverage targets, suggesting that the major rating agencies fixate on managerial commitments in their rating decisions for acquirers.⁷ If managers' deleveraging commitments influence CRAs' assessment that M&A-related increases in credit risk are temporary, then we should find a positive association between acquirers' discussion of post-acquisition leverage targets and CRAs' rating optimism—i.e., granting of a grace period.

To test our conjecture, we examine whether increases in rating optimism around the completion of a merger are more likely when the acquirer publicly provides quantitative post-acquisition leverage targets. Using a sample of leverage target disclosures obtained from conference calls following acquisition announcements, we find that acquirers' disclosure of post-merger deleveraging targets is positively associated with increases in rating optimism around the completion of an acquisition. We also find that the major CRAs are more optimistic for acquirers that have deleveraged around prior acquisitions. These results suggest that rating agencies' granting of a grace period around acquisitions is, at least partially, driven by expectations that an acquisition-related spike in leverage is temporary.

⁷ The major CRAs' have also been criticized in sell-side research reports and business press articles for their over-reliance on optimistic deleveraging targets disclosed by management (Beinstein et al., 2018; Banerji and Podkul, 2019). We discuss this further in Section 6.3.1 and provide examples of managers' discussion of post-merger deleveraging targets in the Online Appendix.

Our study offers several contributions. First, our study contributes to the literature on the role of credit rating agencies in mergers and acquisitions. Prior studies provide evidence that credit ratings influence managers' acquisition decisions (Harford and Uysal, 2014; Sufi, 2009; Rosenbaum and Pearl, 2009; Aktas et al., 2021). We extend this literature by examining an aspect of rating agencies' methodologies in M&A that has not been previously examined. We provide evidence that CRAs provide a rating grace period around M&A transactions when they believe that merger-related credit risk increases are temporary. We provide evidence that, on average, CRAs are not able to correctly identify which M&A deals lead to only temporary increases in credit risk. Our results suggest that the grace period is extended even to firms that experience increases in long-term credit risk and that it may come at the expense of future financial flexibility. Prior studies also find that recent rating downgrades and the threat of downgrades deter managers' decisions to acquire (Aktas et al., 2021; Kang, 2021). Thus, the grace period we describe in our setting may play a role in enabling unfavorable M&A transactions. Taken together, our findings suggest that the major CRAs' methodological feature of granting a grace period when they believe merger-related leverage increases are transitory weakens the CRAs' governance role in the M&A setting as it allows some firms to engage in negative-outcome M&A transactions supported by high-risk financing policies and declines in future financial flexibility.

Second, our study contributes to the literature that examines the implications of CRAs' rating properties on the value of credit ratings as measures of credit risk. Some studies (e.g., Beaver et al, 2006) provide evidence that the major CRAs' ratings can lag behind investor-paid credit ratings and market-based measures of default risk. They interpret major CRAs' slow response to new information as an attempt to avoid unnecessary rating reversals due to the extensive use of their ratings in contracting. More recent research (e.g., Gredil et al., 2022) supports the notion that the major agencies do not respond to new information when they believe that it reflects only transitory credit risk. Using mutual fund fire-sales as a proxy for temporary credit risk changes, Gredil et al. (2022) show that CRAs can distinguish between transitory and long-term credit shocks in real time, thereby adding value relative to more volatile market-

based default estimates.⁸ We complement prior studies by showing that in a setting like M&A, where there are major disruptions to firms' business models, the leading rating agencies have substantial difficulty separating long- and temporary changes in credit risk. In contrast to the non-M&A settings studied in prior research, CRAs' ability to distinguish long-term credit shocks around M&A depends both on their ability to evaluate the economics of the deal and on the ability to correctly predict managers' deleveraging decisions, which is arguably a more difficult task than evaluating exogenous credit shocks (Gredil et al., 2022). Our study highlights certain circumstances when CRAs' ability to separate temporary from long-term shocks breaks down due to difficulties in evaluating complex events.

Finally, our study should interest regulators and market participants. In recent years, the SEC has met with industry leaders because of a joint concern about the potential implications of CRAs' ratings around acquisitions (SEC, 2018). Participants noted examples of acquirers who benefit from higher ratings despite having post-M&A leverage metrics above those normal for their rating category, as the leading agencies give them credit for plans to improve leverage in the future (Beinstein et al., 2018). Our study offers systematic empirical support for the anecdotal evidence about the role and implications of grace periods in CRAs' rating methodologies.

2. Rating Methodology Background and Empirical Predictions

2.1 Background

The major rating agencies' provision of a rating grace period for acquirers is in line with their general methodological focus on long-term credit trends and rating stability. In their rating methodologies, the major CRAs (e.g., S&P and Moody's) emphasize their objective of responding only to long-term changes in credit risk and ignoring short-term fluctuations in credit risk to maintain stable ratings and avoid rating reversals. For example, S&P states that the value of S&P's products "is greatest when its ratings focus on the long term and do not fluctuate with near term performance" (S&P, 2003). Similarly, in

⁸ The notion that the leading agencies can distinguish long-term components of default risk is also supported by Altman and Rijken, 2004 and Löffler (2012) who conclude that the rating agencies can "see" through the transitory phases of economic cycles.

Moody's discussion of its rating system (Cantor and Mann, 2003), Moody's indicates that it "changes ratings only when an issuer's relative fundamental creditworthiness has changed and the change is unlikely to be reversed in a short period of time" (p. 7). "Moody's corporate bond ratings are intended to be 'accurate' and 'stable' measures of relative credit risk.... Moody's performance should therefore be measured by both rating accuracy... and rating stability" (p. 1). This emphasis on long-term creditworthiness and rating stability is distinct to the major agencies' rating methodologies due to their importance in debt contracting (Beaver et al., 2006).

Rating stability is important for various market participants and credit rating users whose demands shape the properties of rating agencies' methodologies (Beaver et al., 2006).⁹ Both regulators and investors have emphasized the importance of rating stability when writing regulations or constructing investment portfolios (Cantor and Packer, 1995). In addition, debt issuers incorporate rating stability expectations when targeting specific capital structures or ratings, as deviations from certain thresholds can impact their cost of capital.¹⁰

2.2 Empirical Predictions

If the leading rating agencies have the ability to correctly assess when an M&A-driven increase in credit risk is temporary, then it may be efficient for them to provide a grace period (e.g., abstain from fully downgrading to the level implied by current leverage metrics even when the merger causes an acquirer's leverage to raise above what is typical for its assigned rating) to avoid costly rating reversals and rating volatility. For example, if an acquirer with a rating of BBB- (investment-grade) takes on significant additional debt to finance an M&A deal that would place its post-deal leverage in line with firms that have

⁹ Rating volatility can have substantial economic costs for debt issuers and investors because the major agencies' ratings are used widely for regulatory and contracting purposes (e.g., in the investment mandates of fixed income funds and in bank debt contracts). An example of the regulatory use of ratings is the global Basel Accords, which allow banks to condition capital requirements on borrowers' credit ratings.

¹⁰ For example, executives at Time Warner Cable stated in a September 14, 2011 conference call: "When we talked to the rating agencies about our business and how to be investment grade and what have you, we arrived at a target of 3.25x EBITDA as kind of our North Star where we want leverage to be long run. We can go above that for short periods of time if we have an articulated and believable plan to bring it back below, but that's kind of how we're running the business. So we're trying to target around that leverage that minimizes the cost of capital."

BB+ ratings (speculative-grade) but will be able to reduce leverage closer to pre-deal levels through post-merger growth (i.e., a temporary credit shock), then it would be efficient for the rating agency to delay a downgrade to reduce contracting costs such as the triggering of lending covenants that rely on the investment-grade rating threshold. Conversely, if an M&A deal's purported synergies do not materialize or the acquirer chooses not to deleverage from high merger levels and the increase in leverage around the acquisition will persist into the future (i.e., a long-term credit shock), then granting a grace period is inefficient by inhibiting discipline on the acquirer's management by monitoring mechanisms, such as debt covenants or investor engagement.

CRAs' expectation that certain acquirers will return to pre-M&A credit risk levels may be reasonable for several reasons. Firms often undertake acquisitions based on expectations of cost reductions and synergies. Acquirers could pay down debt in future periods as they generate incremental cash flows following the closing and implementation of deals. Since credit rating agencies measure leverage as the ratio of outstanding gross or net debt to cash flows (often using a metric such as EBITDA), if an acquisition achieves its purported cost reductions or revenue synergies (or both), then leverage increases to complete the deal would be temporary. Thus, while many acquisitions are leverage-increasing for the acquirer, the successful execution of a deal can provide for deleveraging over a horizon following the acquisition's completion. In addition, extensive evidence suggests that firms have the willingness to deleverage from high leverage ratios and adjust their capital structure to eliminate current deviations from long-term leverage targets (Harford et al. 2009; Flannery and Rangan, 2006; Lemmon et al., 2008; DeAngelo et al., 2018, and Huang and Ritter, 2009). Therefore, if the major agencies can accurately identify temporary credit risk shocks in the M&A context, then we would expect that ratings that appear optimistic relative to current credit metrics at the time of the merger to resolve in the years following merger completion without rating corrections (i.e., without future downgrades).

Prior literature supports the notion that the leading credit rating agencies can distinguish long-term from short-term changes in credit risk (Gredil et al., 2022; Altman and Rijken, 2004; Loffler, 2012). In

particular, Gredil et al. (2022) find that the major CRAs' ratings ignore transitory credit shocks from mutual fund fire-sales, while market-based measures do not. This ability could extend to the M&A setting as well.

However, it is also possible that the leading agencies' face difficulties in correctly anticipating whether an M&A-driven increase in credit risk is truly short-lived. Assessing the implications of M&A-driven credit risk shocks is likely more difficult than assessing the impact of exogenous fire-sale shocks (Gredil et al., 2022). M&A transactions are complex deals that take time to execute and face significant uncertainty (Erickson et al., 2012). Like investors and financial analysts, rating agencies may have difficulties correctly estimating the likelihood of merger success. Importantly, even if an M&A deal is successful, it does not necessarily follow that the acquirer would be willing to use the resources generated by the merger to pay off debt (e.g., the acquirer may pursue further investment opportunities). Thus, the leading agencies have to evaluate both the economics of the deal and the credibility of an acquirer's post-M&A deleveraging plans. If the major agencies incorrectly identify long-term credit shocks around M&A deals as temporary, we expect the rating grace period around M&As to be predictive of rating corrections (e.g., downgrades) in the longer run.

3. Sample Description

To construct our sample, we start with all public U.S. firms covered by Compustat that have a S&P long-term issuer credit rating available any time during the years 2001 to 2016.¹¹ We start our sample period in 2001 because our rating optimism measure relies on credit ratings data from Egan-Jones Rating Company (EJR), which are available beginning in 2000. For each firm with an outstanding credit rating, we identify all transactions from the SDC Mergers and Acquisitions Database that are completed during our sample period. We require that the transaction deal value is at least one million dollars and omit transactions related to buybacks, exchange offers, and recapitalizations. We also require non-missing deal values for each transaction. While acquirers must be public U.S. firms, target firms may be public or private and U.S. or

¹¹ Our main results are robust to using Moody's as our representative rating agency. Throughout the paper, when we say that results are "robust" or "similar" given certain conditions, we mean that the sign and significance level of estimated coefficients are similar enough that substantive interpretations remain unchanged when compared with our tabulated results.

non-U.S. firms. As with previous studies (e.g., Harford and Uysal, 2014; Moeller et al., 2007; Karampatsas et al., 2014), we impose a minimum relative deal size requirement to focus on deals that are large enough to be meaningful to acquirers. Specifically, we require that deal values are at least one percent of the acquirer's market value of equity or one percent of the acquirer's total assets as of the fiscal quarter end before the merger announcement date.¹² After applying these restrictions, our sample consists of 8,930 acquisitions that are conducted by 1,913 acquirers.

In our primary acquisition sample, we require data on both S&P and EJR credit ratings during the four fiscal quarters before and four fiscal quarters after the merger completion date. Requiring S&P's ratings around acquisitions yields 5,977 acquisition observations, and after further requiring EJR ratings our sample consists of 2,591 acquisitions. We code ratings numerically with higher numbers corresponding to more favorable ratings (i.e., C=1, AAA=21). Firms with a rating of D (default) or SD (selective default) during the year before merger completion are excluded from our analysis as in prior studies (e.g., Aktas et al., 2021).

We further require several Compustat variables to control for changes in firm characteristics around acquisitions that may influence credit ratings following Baghai et al. (2014). These include $\Delta Debt$ to $EBITDA$, $\Delta Market$ to $Book$, $\Delta Book$ Leverage, $\Delta Cash$ to $Assets$, $\Delta IntCov$, $\Delta Profit$, $\Delta Size$, and $\Delta Tangibility$. We calculate these changes in financial characteristics as the average level over the two fiscal quarters after merger completion minus the average level over the two fiscal quarters before merger completion. Flow variables (e.g., EBITDA, sales, etc.) are computed over the last twelve months (LTM) to be more consistent with variable definitions used by credit rating agencies and in financial covenants of private loan contracts (Demerjian and Owens, 2016). Detailed variable definitions are provided in the Online Appendix Section OA.1. To mitigate the effect of outliers, we winsorize continuous variables at the 1st and 99th percentiles. Our final acquisition sample consists of 1,939 acquisitions conducted by 550 rated firms from 2001 to 2016.

¹² Our main results are robust to imposing only one or neither of these relative deal size restrictions.

Table 1 presents summary statistics for our acquisition sample. The table indicates that firms in our sample on average experience several changes in firm characteristics around acquisitions. On average, acquirers experience increases in debt to EBITDA of 0.401, decreases in market to book of 0.060, increases in book leverage of 0.015, decreases in interest coverage of 0.636, decreases in sales margin of 0.0008, increases in log assets of 0.127, and decreases in tangibility of 0.002.

4. Rating Grace Period for Acquirers: Evidence and Measurement

4.1 Descriptive Evidence

Since leading CRAs' use of a grace period as part of implementing their rating methodologies has not been studied before, we begin by providing descriptive evidence of a grace period around acquisitions and its prevalence. To assess whether the major CRAs grant a grace period to acquirers, we need a benchmark of what ratings would look like absent the grace period. In this section, we use three different benchmarks to evaluate whether the leading CRAs' ratings appear optimistic relative to acquirers' current credit risk metrics around acquisitions.

First, we use the ratings of Egan-Jones Rating Company (EJR) as a benchmark. In our setting, EJR's ratings provide a useful benchmark because of the methodological differences *in rating horizons* between major CRAs and EJR. Major CRAs' rating methodologies emphasize responding only to long-term credit changes and thus, they may underweight credit risk changes around an M&A deal if they are believed to be short lived. In contrast, EJR's rating methodology incorporates short-term credit risk changes to provide timely investment signals to its institutional investor clients.¹³ Specifically, according to its stated methodology, EJR's ratings are meant to indicate EJR's opinion about credit risk over the next 6 to 12 months (Egan-Jones Rating Company, 2023); they are *not* meant to respond only to long-term changes.¹⁴

¹³ Prior studies find that the rating behavior of these agencies is consistent with these methodological differences. For example, Beaver et al. (2006) find that EJR makes nearly twice as many rating changes as the major CRAs, and its rating downgrades lead those of major CRAs by 1 to 4 months. Cornaggia and Cornaggia (2013) also find evidence consistent with the major CRAs strongly favoring rating stability, while investor-paid agencies strongly favor timeliness, consistent with both groups of agencies' methodologies reflecting the different stability and timeliness preferences of their end-users.

¹⁴ Egan-Jones Rating Company, "Methodologies for Determining Credit Ratings (Main Methodology)", March 16th, 2023.

In contrast, the major CRAs' corporate credit ratings focus on longer-term changes in credit risk, i.e., horizons greater than 12 to 24 months (S&P Global Ratings, 2023).¹⁵ Thus, EJR's greater sensitivity to short-term changes in credit risk provides a useful counterfactual for what ratings might look like around an acquisition in the absence of the provision of a grace period, which is driven by major CRAs' focus on long-term changes in credit risk.¹⁶

In Figure 1, we plot the average difference in S&P's and EJR's ratings around leverage increasing acquisitions. An increase in S&P's rating optimism relative to EJR's around the acquisition would be consistent with the presence of a rating grace period, i.e., a period around deal completion when S&P withholds (or reduces) downgrade actions for acquirers that it believes will only have a temporary increase in credit risk. In Figure 1, we focus on leverage increasing acquisitions because large increases in leverage can place immediate stress on acquirers' credit metrics that may be transitory if the acquirer deleverages soon after the merger. We expect the difference between S&P's and EJR's ratings to increase around leverage increasing acquisitions because of differences in their rating horizons, i.e., a longer horizon for S&P and a shorter horizon for EJR. Figure 1 shows an increase in S&P's ratings relative to EJR's ratings starting approximately four quarters before acquisition completion, peaking three to four quarters after completion, and then declining during the four to twelve quarters after completion. The findings in Figure 1 suggest that acquiring firms experience an increase in S&P rating optimism around merger completion that is consistent with the provision of a rating grace period, particularly for acquirers that experience large increases in leverage.

¹⁵ For example, in its Global Ratings Definitions, S&P referred to horizons of "generally up to two years for investment grade and generally up to one year for speculative grade" as intermediate horizons, suggesting that S&P's horizons for long-term corporate credit rating generally extend beyond these cut-off points (see S&P Global Ratings Definitions as of June 9th, 2023, accessed at: <https://disclosure.spglobal.com/ratings/en/regulatory/article/-/view/sourceId/504352>).

¹⁶ Note that this measure of S&P rating optimism does not assume that Egan-Jones fully prices the changes in long-term credit risk during the period around the merger. This measure only assumes that EJR incorporates the immediate credit implications from the acquisition into its rating without attempting to distinguish between temporary and long-term shocks.

We further examine the S&P’s provision of a grace period for acquirers by comparing S&P and EJR’s downgrade frequencies around M&A deals. Table 2 Panel A.1 shows that S&P has an overall significantly lower downgrade frequency around the merger for similarly rated acquirers compared with EJR. Such differences in downgrade frequency are also present for acquirers that experience leverage increases in the top-tercile (Panel B.1) and the top-decile (Panel C.1) of the merger-related leverage change distribution. For example, Panel B.1 shows that, for deals in the top leverage change tercile, across all rating categories, S&P downgrades acquirers around the merger 26.9% of the time relative to a frequency of 43.7% for EJR. The percentages are 37.8% for S&P relative to 63.2% for EJR around deals in the top leverage change decile (Panel C.1).

Second, we use the ratings implied by an acquirer’s current leverage as an alternative benchmark to evaluate the provision of a grace period around acquisitions, as leverage is a primary determinant of default risk and a focal point for credit rating agencies in their rating processes. Following the methodology that corporate credit research analysts use to evaluate credit rating optimism (e.g., Stratmann et al., 2018), we calculate a leverage-implied rating (*LevRating*) for each issuer by comparing each issuer’s current debt to EBITDA level against the leverage thresholds defined for each broad rating category (i.e., without plus or minus modifiers) in Moody’s sector-specific rating methodology.¹⁷ Thus, firms with actual ratings above their leverage-implied ratings have assigned ratings that are more optimistic than would be expected based on their current leverage levels.

Figure 2 compares actual ratings with leverage-implied ratings around merger completion. Panel A compares rating levels four quarters after completion, while Panel B compares rating changes from four quarters before to four quarters after merger completion. Figure 2 presents evidence that S&P’s ratings exhibit greater optimism relative to the acquirers’ leverage-implied ratings for acquisitions that experience

¹⁷ For example, Moody’s rating methodology for the consumer durables sector defines expected Debt / EBITDA thresholds of between 2x to 3x for a Baa broad rating and 3x to 4x for a Ba broad rating. Thus, an issuer in this industry with a Debt / EBITDA of 2.5x in quarter t and 3.5x in quarter $t + 1$ would be assigned broad ratings of Baa and Ba in quarters t and $t + 1$ respectively. We use Moody’s leverage thresholds to infer those of S&P because S&P does not publish leverage thresholds in its rating methodologies. Our data are based on Moody’s rating methodologies published on Moodys.com as of August 31, 2024.

leverage increases as seen by the three panels, which include (from left to right) acquisitions in the top tercile, quintile, and decile of leverage changes, respectively. To illustrate, in Panel A.2, 29.2% of acquirers have a leverage-implied rating of B or below compared to only 16.9% of acquirers that have an S&P rating of B or below. In Panel A.3, 38.9% of acquirers have a leverage-implied rating of B or below compared to only 21.6% of acquirers that have an S&P rating of B or below. Thus, S&P's provision of a grace period to acquirers appears to have a significant positive effect on their credit ratings relative to an alternative rating approach that focuses on the actual leverage of the firms.

Panel B of Figure 2 provides further evidence of the implications of S&P's provision of a grace period around acquisitions by examining the frequency of rating changes to different broad rating categories following acquisitions for actual S&P ratings and ratings implied by a leverage benchmark.¹⁸ As in Panel A, the three panels present acquisitions in the top tercile, quintile, and decile of leverage changes, respectively. Across all three panels, S&P's ratings are 2.92 to 3.82 times less likely to be downgraded than leverage-implied ratings. This suggests that S&P's provision of a grace period around acquisitions significantly reduces acquirers' risk of being downgraded even when their acquisitions increase outstanding leverage.

Third, we use the CRAs' own rating approach around the merger window as yet another benchmark for evaluating the provision of a grace period during the merger window. Specifically, we compare the sensitivity of S&P's ratings to leverage during the period after the acquisition relative to the period before the acquisition. We run regressions where the dependent variable is the quarterly S&P credit rating level, measured at either four quarters before completion or four quarters after merger completion. *Post* is an indicator equal to one if the observation is measured four quarters after completion, otherwise zero. The main explanatory variables of interest are Debt to EBITDA and the interaction variable Debt to EBITDA $\times$ Post. Table 8 presents the results of this regression where the coefficient on Debt to EBITDA

¹⁸ Note that leverage-implied rating upgrades exist in these leverage increasing samples because rating changes are measured over a [-4,4] quarter window around the merger, consistent with our primary rating optimism measurement window, while leverage change quantiles are measured over a tighter [-2,2] quarter window to better capture leverage changes associated with the merger.

is negative and significant, which intuitively indicates that acquirers with higher leverage have lower S&P ratings. The results also show that the coefficient on $\text{Debt to EBITDA} \times \text{Post}$ is positive and significant, which indicates that the mapping of leverage into S&P's ratings is weaker in the post-merger period compared with in the pre-merger period. The coefficients on *Debt to EBITDA* of -0.763 and *Debt to EBITDA* $\times$ *Post* of 0.404 imply that the sensitivity of S&P's ratings to leverage reduces by 47% from four quarters before to four quarters after the merger. This evidence is consistent with the notion that CRAs underweight leverage changes around the merger and further supports the existence of a grace period as suggested by the findings in Figures 1 and 2 and Table 2.

Given that an acquirer's plans to restore its credit metrics to pre-merger levels plays a critical role in the CRAs' provision of grace period, we also provide descriptive evidence about the probability that acquirers will restore their leverage in the years following the acquisition. We expect that the major CRAs may grant a grace period to both an acquirer who, in the longer run, restores its leverage exactly to the pre-merger level (i.e., complete deleveraging) and to an acquirer who will have higher leverage going forward, but still substantially lower than at the time of the acquisition (i.e., partial deleveraging). However, as shown in Figure 3, on average, acquirers with leverage-increasing acquisitions do not appear to completely deleverage in subsequent periods. At the three-year post-acquisition mark, these acquirers appear to have leverage levels significantly higher than those present before the acquisition. In addition, Panels A.2, B.2 and C.2 of Table 2 indicate that the majority of acquirers do not successfully deleverage to pre-acquisition levels, and the probability of post-acquisition deleveraging gets smaller when the merger-driven leverage increase gets larger. Taken together, this descriptive evidence highlights the importance of evaluating whether the CRAs' have the ability to correctly identify which acquirers suffer only short-term merger-related shocks to credit risk and thus, deserve a grace period.

4.2 Measuring the Grace Period

One measure we use in our multivariate analyses to more formally capture the existence of a grace period is a proxy of abnormal optimism of S&P relative to EJR ratings.¹⁹ Prior studies measure abnormal rating optimism based on the difference at a point in time between S&P’s and EJR’s ratings (e.g., Badoer et al., 2019). We adopt a “difference-in-difference” measure of abnormal rating optimism to capture differences in the rating agencies’ beliefs about credit risk implications *specific* to the M&A transaction; in this way, we capture the notion of a grace period through the relative rating response of S&P to a merger-related leverage shock. Our main measure of S&P’s rating optimism is calculated as: $\Delta A_{brating} = (S\&P\ Rating_{post} - EJR\ Rating_{post}) - (S\&P\ Rating_{pre} - EJR\ Rating_{pre})$. We choose four quarters before and four quarters after the merger completion fiscal quarter as the *pre* and *post* periods respectively to allow sufficient time for the CRAs to incorporate the acquisition into their ratings. In addition, that time range approximately aligns with the beginning and peak of S&P’s average increase in rating optimism in Figure 1, which depicts a period of rating optimism for acquirers that appears consistent with a rating grace period.^{20, 21} Thus, increases in $\Delta A_{brating}$ reflect increases in S&P’s rating optimism relative to EJR from before to after the acquisition.

So far, our description of the grace period around acquisitions and of the empirical proxy of abnormal optimism focus on instances in which acquirers experience an increase in credit risk around a merger and CRAs may give them credit for plans to reduce credit risk in the future. However, the grace

¹⁹ In Section 6.2, we show that our findings are robust to using alternative rating benchmarks that do not rely on EJR’s ratings.

²⁰ Our choice of a [-4,4] quarter measurement window has several advantages. First the fixed length window ensures that we compare rating changes over the same time horizon across every acquisition, which is important because rating changes increase in likelihood over time. Second, the four quarter pre-merger period occurs before the vast majority of merger announcements (97.2%) making it a reasonable choice to capture pre-merger credit metrics, although our results are virtually identical if we drop the 2.8% of observations where the merger announcement is before four quarters before completion. However, in untabulated sensitivity tests, we re-run our main analyses in Tables 3 to 5 and find that the results are robust to using several alternative measurement windows for $\Delta A_{brating}$, including a shorter [-2, 2] quarter measurement window, a longer [-4,8] quarter measurement window, where we start the measurement window of our dependent variables eight quarters after completion, and a measurement window starting four quarters before announcement to four quarters after completion.

²¹ To provide further evidence that our results are not solely driven by differences in timeliness between Egan-Jones and the major CRAs, we also re-run our main analyses using alternative measurement windows with a short pre-period and a long post-period, including [Completion-2Q, Completion+8Q] and [Announcement-1Q, Completion+8Q]. We find results consistent with our main findings using these alternative pre and post-period windows.

period may be part of CRAs' broader methodological focus on responding to longer-term credit risk changes and downplaying shorter-term changes.²² Thus, it is possible that CRAs would decline to upgrade an acquirer that experiences a decrease in credit risk if they expect that acquirer to take measures to restore leverage to its higher pre-merger levels in the near term. This scenario would manifest as abnormal rating pessimism in our empirical proxy.²³ In this study, we choose to mainly focus our discussion on the side of leverage increases and rating optimism for the following reasons: (a) the CRAs themselves describe the grace period in the context of risk-increasing mergers (see opening quotation); (b) prior literature argues that rating agencies have an asymmetric loss function because creditors in general are more sensitive to downside risk than to upside potential (Beaver et al. 2006); (c) practitioners and regulators are more concerned about leverage-increasing acquisitions (Beinstein et al., 2018; SEC, 2018). We conduct sensitivity analyses in Section 6.4 that examine the robustness of our findings to re-running our analyses where we focus only on instances in which S&P is optimistic in its ratings for acquirers.

5. CRAs' Ability to Distinguish Long-Term Shocks to Acquirers' Credit Risk

5.1 Future Downgrades

If the major CRAs have the ability to distinguish between long-term and temporary credit shocks in the M&A setting, then we would expect the grace period around M&As to resolve in the years following merger completion without post-merger rating corrections. In contrast, if the major CRAs' are on average unable to distinguish between long-term and temporary shocks to credit risk around M&As, then we would expect the grace period to be followed by predictable rating downgrades. We use future downgrades to assess CRAs' ability to distinguish between long-term and temporary credit risk changes because a post-

²² The idea of a grace period implies that firms suffer a temporary credit risk shock and the major CRAs give them time (i.e., a grace period) to absorb this shock. It is also possible that firms experience a temporary shock to leverage in non-M&A settings. This raises the question of whether the grace period is unique to M&As or whether it is provided in other leverage increasing non-M&A settings as well. While we do not address this question in this study, we acknowledge that it is an interesting question and leave it for future research.

²³ Table 1 indicates that ΔA_{rating} has a slightly negative mean of -0.0371 in our sample. Specifically, S&P is optimistic relative to EJR ($\Delta A_{rating} > 0$) in 29.1% of acquisitions and pessimistic ($\Delta A_{rating} < 0$) in 31.9% of acquisitions. However, for leverage-increasing acquisitions ($\Delta Debt\ to\ EBITDA > 0$) (i.e., 65% of our sample), which we expect to be the most credit-risk increasing acquisitions, we find that S&P is more optimistic than EJR in 32.9% of acquisitions and more pessimistic in 28.5% of acquisitions.

merger downgrade after an initial period of rating optimism around an acquisition represents a rating correction, which is an acknowledgment by the CRA that the acquirer's long-term credit risk has in fact increased.²⁴

We estimate our regressions using the specification in Equation (1) below where $Y_{i,t}$ represents the dependent variable of interest. The specification controls for changes in firm characteristics around acquisitions that are included in credit rating models (Baghai et al., 2014).²⁵

$$Y_{i,t} = \alpha + \beta_1 * \Delta \text{Abrating}_{i,t} + \beta_2 * \Delta \text{Debt to EBITDA}_{i,t} + \beta_3 * \Delta \text{Market to Book}_{i,t} + \beta_4 * \Delta \text{Book Leverage}_{i,t} + \beta_5 * \Delta \text{Cash to Assets}_{i,t} + \beta_6 * \Delta \text{IntCov}_{i,t} + \beta_7 * \Delta \text{Profit}_{i,t} + \beta_8 * \Delta \text{Size}_{i,t} + \beta_9 * \Delta \text{Tangibility}_{i,t} + \gamma * \text{Year FE} + \phi * \text{Industry FE} + \epsilon_{i,t} \quad (1)$$

To examine the relation between abnormal rating optimism and future downgrades, we estimate a linear probability model in which the dependent variable is $\text{Downgrade}[0,1]$, $\text{Downgrade}[1,2]$, or $\text{Downgrade}[1,3]$, where $\text{Downgrade}[s,t]$ is defined as an indicator variable equal to one if S&P downgrades its credit rating at least one notch during the period $[s, t]$ years relative to the merger completion fiscal quarter, else zero.

Table 3 reports the results of regressions of future rating downgrades on abnormal rating optimism. We separate $\Delta \text{Abrating}$ into three horizons spanning from one year before to after merger completion (i.e., $[-1,0]$, $[0,1]$, $[-1,1]$). $\text{Downgrade}[s,t]$ is always measured starting at the end or after the $\Delta \text{Abrating}$ measurement window to avoid any mechanical associations. Columns 1 and 2 first show regressions where the dependent variables are $\text{Downgrade}[0,1]$ and $\text{Downgrade}[1,2]$, respectively. The coefficient on

²⁴ We borrow this rating inaccuracy measure from prior research (e.g., Kempf, 2020; Kempf and Tsoutsoura, 2021). Kempf (2020) argues that measuring ratings inaccuracy as changes between the initial rating and subsequent ratings has several important advantages. First, the calculation of this measure does not require a large number of sample events. In contrast, traditional metrics of rating accuracy that are based on actual defaults rely on a large number of sample events per rating category in order to be meaningfully calculated. Second, this measure can capture smaller changes in a firm's expected default probability that may not always lead to an actual default. This is important in our setting, as the acquirers in our sample are companies in relatively good financial health and not close to default. Third, to the extent that subsequent rating downgrades are driven by the arrival of idiosyncratic information that is unrelated to the CRAs information set around the merger completion date, this would introduce noise in the measurement of rating inaccuracy and bias against finding cross-sectional differences in our subsequent analysis.

²⁵ We estimate regressions using ordinary least squares with standard errors clustered by acquirer. Continuous independent variables are standardized to have a mean of zero and standard deviation of one to ease the economic interpretation of coefficient estimates. Note that $\Delta \text{Abrating}$ is not standardized as it is a discrete variable.

$\Delta Abrating[-1,0]$ is positive and statistically significant ($p < .05$) in both columns, indicating that the change in S&P's abnormal optimism from four quarters before the merger to the merger completion quarter is predictive of future S&P downgrades up to two years after merger completion. Columns 3-6 provide further supporting evidence that increases in $\Delta Abrating$, measured from four quarters prior to four quarters following merger completion, is predictive of future downgrades up to three years following merger completion. For $Downgrade[1,2]$ ($Downgrade[1,3]$), the magnitudes of the coefficients imply that a one notch increase in $\Delta Abrating[-1,1]$ is associated with a 3.1 (2.8) percent increase in downgrade likelihood (i.e., a 24.6 (13.8) percent increase relative to the unconditional mean).

The downgrade prediction results are significant because the twelve to twenty-four month horizon of future downgrade predictability significantly exceeds that found in prior studies that document that S&P's rating changes lag those of EJR's. For example, in a non-M&A setting, Beaver et al. (2006) find evidence that EJR's downgrades lead major CRAs' downgrades by up to four months. Our finding that S&P's future downgrades around acquisitions are predictable over horizons that are three to six times longer than those found in Beaver et al. (2006) suggests that S&P's rating optimism for acquirers is unlikely to be driven by stale ratings (i.e., an inefficient response to new information) or distorted incentives as argued for non-acquirers (e.g., Bruno et al. 2016). Those explanations are particularly unlikely in our setting given that M&A deals attract significant attention from stakeholders, increasing the reputational stakes for agencies.²⁶ Instead, our evidence is consistent with the leading CRAs' providing rating optimism for acquirers that reflects an *intentional* grace period based on the belief that M&A-related changes to acquirers' credit metrics are temporary. However, our finding that rating optimism predicts future downgrades implies that on average the major CRAs have substantial difficulty separating long- and short-term changes in credit risk around acquisitions.

5.2 Acquisition Performance

²⁶ M&A transactions generate significant attention from the major CRAs, so inattention is unlikely to explain any delayed rating response around mergers. Both S&P and Moody's, for instance, actively monitor issuers around M&A and frequently publish reports in which they opine on the credit risk implications of announced acquisitions.

To corroborate our analysis of rating downgrades, we next examine the relation between rating optimism and two sets of merger quality measures from prior literature: (1) changes in operating performance (i.e., return on assets and net operating cash flows) around mergers, and (2) the likelihood of goodwill impairments, which prior studies have used as an indication of lower quality acquisition performance (e.g., Goodman et al., 2014; Francis and Martin, 2010). We expect that if CRAs are unable to accurately identify when acquisitions represent long-term increases in credit risk, then rating optimism will be associated with negative merger outcomes that accompany increases in long-term credit risk.

Table 4 presents regression results where the dependent variables are ΔROA_{2yr} and ΔROA_{3yr} in columns 1–2, ΔCFO_{2yr} and ΔCFO_{3yr} in columns 3–4, and $GWImp_{2yr}$ and $GWImp_{3yr}$ in columns 5–6. The dependent variables are calculated as the average values over the two (three) fiscal years starting one year after the merger completion fiscal year end, which coincides with the end of the measurement window for $\Delta Abrating$, minus the average values over the two (three) fiscal years before completion. The independent variables are the same as in equation (1). The regression results show that the coefficient on $\Delta Abrating$ is consistently negative and significant ($p < .01$) in columns 1–4 when the dependent variables are ΔROA and ΔCFO , and the coefficient on $\Delta Abrating$ is positive and significant ($p < .05$) in columns 5–6 when the dependent variables represent goodwill impairments. This suggests that changes in abnormal rating optimism are consistently related to decreases in return on assets and operating cash flows, as well as a higher incidence of goodwill impairments around acquisitions. The results imply that a one notch increase in $\Delta Abrating$ is associated with a 0.005 decrease in return on assets, a 0.004 decrease in operating cash flows, and a 1.8 percentage increase in the likelihood of goodwill impairments over the three-year horizon following the merger. These changes are economically large, representing a respective 51.2 percent decrease, 68.5 percent decrease, and 8.2 percent increase relative to the unconditional means of ΔROA_{3yr} , ΔCFO_{3yr} , and $GWImp_{3yr}$ around the acquisition.²⁷

²⁷ Prior literature documents that acquisition outcomes are related to the acquirer's payment form (e.g., Loughran and Vijh, 1997). In our setting, because both S&P and EJR observe and incorporate public information on deal characteristics (e.g., cash versus stock payment form) into their ratings, we do not expect these deal characteristics to

Overall, our results indicate that abnormal changes in credit rating optimism are consistently related to worse acquisition outcomes in terms of weaker future operating performance and a greater likelihood of goodwill impairments. Taken together, these findings further support the notion that, on average, the leading rating agencies are unable to accurately anticipate (at the time a deal closes) which acquirers are likely to exhibit long-term declines in their credit metrics and operating performance.

6. Additional Analyses

6.1 Consequences of Rating Optimism on Post-Merger Deleveraging

In our next set of analyses, we examine the consequences that CRAs' granting a grace period to acquirers has on acquirers' post-merger deleveraging. Credit rating downgrades are consequential for rated firms because ratings affect a firm's cost of capital and financial flexibility (Tang, 2009; Sangiorgi and Spatt, 2017). When the agencies afford a grace period to an acquirer, e.g., by not downgrading ratings around the current acquisition, such rating optimism can preserve the acquirer's immediate access to financing. However, we conjecture that such rating optimism may come at the expense of future financial flexibility through reduced post-merger deleveraging, as managers' deleveraging decisions are influenced by their desire to maintain a certain credit rating level (Kisgen, 2006; Kisgen, 2009). Optimistic credit ratings may thus encourage managers to delay or reduce post-merger deleveraging actions. While merger performance is of general interest to all firm stakeholders, post-merger deleveraging is particularly likely to be of interest to firm creditors and thus, to the credit rating agencies.

We test whether rating optimism is associated with post-merger deleveraging by acquirers by estimating a linear probability model, following the specification in Equation (1), with two measures of deleveraging in the post-merger period: *Deleverage2yr* (*Deleverage3yr*), an indicator that is equal to one if the acquirer's debt to EBITDA eight (twelve) quarters after merger completion is less than or equal to the

affect the relation between our abnormal rating optimism measure and merger outcomes. Nevertheless, in untabulated tests, we confirm that our results in Tables 3-4 are robust to including additional controls for 100% cash payment and 100% stock payment acquisitions in our regressions. We also note that while 100% stock acquisitions would serve as an ideal control group in our setting, they are uncommon in our sample, representing only 4 percent of observations. Excluding these observations leads to similar results.

acquirer's debt to EBITDA four quarters before merger completion; and *LowLeverage2yr* (*LowLeverage3yr*), an indicator equal to one if the acquirer's debt to EBITDA eight (twelve) quarters after merger completion is below the median debt to EBITDA of benchmark firms with the same SIC-2 industry and rating, measured over the year prior to the merger completion date. In addition to examining post-merger deleveraging around the current acquisition, we also examine the same deleveraging measures around the next acquisition, i.e., the next material acquisition within 5 years of the completion date of the current acquisition.

Table 5 presents the regression results for our deleveraging tests around merger transactions. In each of columns 1–4, we find a significant negative association between $\Delta Abrating$ and the measures of post-merger deleveraging around the current acquisition. Specifically, for *Deleverage2yr* (*Deleverage3yr*), the coefficient estimates imply that a one notch increase in $\Delta Abrating$ leads to a 2.6 (4.3) percentage point decrease (i.e., a 6.1 (10.6) percent decline from the unconditional mean) in the probability of deleveraging to the pre-acquisition leverage level during the two (three) year post-merger period. For *LowLeverage2yr* (*LowLeverage3yr*), the coefficient estimates imply that a one notch increase in $\Delta Abrating$ leads to a 2.4 (2.6) percentage point decrease (i.e., a 5.5 (6.3) percent decline from the unconditional mean) in the probability of deleveraging below the industry-rating median leverage in the two (three) year post-merger period. Furthermore, in columns 5–8, we examine post-merger deleveraging around the next material acquisition and continue to find evidence that rating optimism has a significant negative relation with post-merger deleveraging relative to firms with the same industry and rating.

Our results suggest that acquirers that are afforded a grace period around the current merger are less likely to undertake deleveraging to pre-merger leverage levels and are more likely to remain overleveraged at high industry-rating leverage levels in the post-merger period. Optimistically rated acquirers are also more likely to avoid deleveraging from industry-rating highs in subsequent acquisitions. Thus, a plausible implication of our results is that rating optimism around mergers appears to allow some firms to engage in negative-outcome M&A transactions supported by high-risk financing policies and diminishing future financial flexibility. Although we are unable to make strong causal conclusions based

on this analysis, the notion that credit rating changes influence firms' capital structure decisions is strongly supported by prior literature, including both survey evidence (Graham and Harvey, 2001) and empirical studies (Kisgen, 2006, 2009).

6.2. Alternative Measures of Abnormal Rating Optimism

So far, in our multivariate analyses, we have used EJR ratings as a benchmark to capture instances where major CRAs provide a grace period around M&As and examine the consequences of such a rating methodology. In this section, we assess the robustness of our results using alternative benchmarks to confirm that our findings are not merely driven by selecting EJR as a comparison point for S&P's ratings. In particular, motivated by credit research analysts' assessments of credit rating optimism (Stratmann et al., 2018), we use ratings implied by an acquirer's current leverage as an alternative benchmark to capture the provision of a grace period around acquisitions. We construct two alternative measures of ΔA_{rating} , which are calculated similar to our primary ΔA_{rating} measure but replace EJR ratings with leverage-implied ratings as the benchmark rating. The first measure, $\Delta A_{rating-MLIR}$, uses a methodology-based leverage-implied rating benchmark, described in Section 4.1, that is calculated by comparing an issuer's current leverage level to the leverage thresholds defined for each broad rating category in Moody's sector-specific rating methodology. The second measure, $\Delta A_{rating-HLIR}$, uses a historical leverage-implied rating benchmark. This is computed by first calculating the median debt to EBITDA ratio for each broad rating within every GICS 4-digit industry group in the previous calendar year.²⁸ A firm-quarter's historical leverage-implied rating is then assigned based on the broad rating with the closest within-industry median leverage from the prior year.

As shown in Table 6, when we use an acquirer's leverage implied ratings to capture the grace period-related optimism in CRAs' ratings, we continue to find that greater rating optimism around mergers is predictive of a higher likelihood of post-merger rating downgrades and negative merger outcomes. These

²⁸ We require that each industry-rating group has a minimum of five observations to calculate historical leverage-implied ratings.

results are consistent with our findings in Tables 3 to 5 and help mitigate the concern that our findings are primarily driven by using Egan Jones' ratings as our benchmark ratings.

6.3. *Why Do Major Rating Agencies Rate Acquirers Optimistically?*

The preceding analyses suggest that the major CRAs' have difficulty identifying when acquisitions represent long-term increases in credit risk and thus, the credit rating optimism they provide for acquirers is, *on average*, unwarranted. In this section, we examine *why* rating agencies provide optimistic ratings to acquirers.

6.3.1 *Managerial Disclosures*

We conjecture that the major CRAs' optimism for acquirers is related to their methodology of responding only to long-term changes in credit risk (Cantor and Mann, 2003), in conjunction with their difficulty predicting whether acquisition-related increases in leverage are truly temporary. We test this conjecture by examining the role of acquirers' public deleveraging commitments, which may influence CRAs' beliefs that an acquirers' increase in credit risk is temporary.

In their discussion of rating methodology around M&A deals, S&P and Moody's emphasize the importance of managers' commitments to restoring credit metrics and meeting leverage targets. For example, S&P analysts assess "managers' commitments to restoring the balance sheet" (Ganguin and Bilardello, 2005), and Moody's analysts evaluate "if management places a high priority on returning credit metrics to pre-transaction levels" (Moody's, 2016).²⁹ In addition, recent analyst research reports and business press articles have critiqued CRAs' overreliance on managers' deleveraging targets (Beinstein et al., 2018; Banerji and Podkul, 2019), suggesting that managers' disclosures influence credit rating optimism. If managers' deleveraging commitments influence CRAs' beliefs that M&A-related increases in credit risk

²⁹ Further supporting this, we find numerous references to managers' public deleveraging commitments in CRAs' published credit opinion reports. For example, in published rating opinion reports on Newell Brands, S&P analysts stated that "The company is committed to accelerate debt repayments and... use excess cash flows from operations to bring debt leverage to its publicly stated target of between 3x-3.5x (S&P Global Ratings, 2016)," and Moody's analysts stated: "We expect leverage to steadily decline and approach 3.5 times... The company has committed to eliminate meaningful share repurchases and deploy substantially all of its free cash flow to debt reduction until it achieves its target leverage levels (Moody's, 2016)."

are temporary, then we should find a positive association between acquirers' deleveraging disclosures and CRAs' rating optimism around acquisitions.

These managerial disclosure tests take advantage of S&P's and EJR's methodological differences in horizon. Due to their shorter horizon, EJR's ratings are less likely to respond to managements' commitments to deleverage in the long run. Because S&P emphasizes long-term credit risk, managements' deleveraging targets, which generally target long-term horizons of one or more years following merger completion, are more relevant to S&P's rating assessments than to EJR's, as EJR immediately incorporates short-term changes in credit risk into its ratings. If managerial disclosures influence rating agencies' beliefs that increases in credit risk around acquisitions are temporary, then we would expect deleveraging commitment disclosures to be associated with more optimistic S&P ratings relative to EJR ratings.

In our empirical tests, we examine the relation between rating optimism and disclosures of quantitative post-merger leverage targets issued during conference calls following acquisition announcements ("acquisition conference calls"). We focus specifically on quantitative targets as they are more likely to represent credible commitments than qualitative disclosures. Using the transcripts of these acquisition conference calls, we construct measures of leverage target disclosures based on a combination of programmatic keyword matching and manual labeling. In Online Appendix Section OA.3, we describe our procedure to collect managers' leverage forecasts and forecast horizons from acquisition conference calls. We provide examples of these leverage target disclosures in Online Appendix Section OA.2. Our final acquisition conference call sample consists of 1,426 acquisitions with matched conference calls from 2002–2016.

Next, using the data on managers' leverage forecasts and associated realized leverage, we construct the following two variables. First, we define an indicator variable *Lev Target*, which is equal to one when managers disclose a quantitative, post-merger leverage target, otherwise zero. Second, we use the realized leverage values to construct a measure of managerial forecast optimism used in our subsequent set of tests below. We define *Manager Optimism*, calculated as managers' leverage forecast error percentage, i.e., actual debt-to-EBITDA minus forecasted debt-to-EBITDA, scaled by actual debt-to-EBITDA. Note that

Manager Optimism is positive when managers' leverage target forecast is more optimistic (i.e., less than the acquirer's realized post-merger leverage). In our conference call sample, we find that about 8 percent of acquisitions disclose a quantitative post-merger leverage target.^{30, 31}

To examine the relation between rating optimism and deleveraging disclosures, we estimate regressions where the dependent variable is *ΔAbRating* and the main independent variable is *Lev Target*, with control variables included from Equation (1). Because of CRAs' stated emphasis on restored credit metrics, an acquirer's previous history of deleveraging around acquisitions may influence the CRAs' decision to provide a grace period around the current deal. Thus, we also include the independent variable *Prior Deleveraging*, defined as the average value of *Delever2y* over all previous material acquisitions completed during the [-5,-2] year window relative to the current merger completion date. *Prior Deleveraging* requires at least one material acquisition completed during the measurement window

In addition, we include a set of controls for common measures of CRAs' incentive conflicts examined in prior literature. To control for CRAs' catering incentives, we include an indicator variable *BBB-*, which equals one if the issuer's rating is a BBB-, which is one notch above the speculative-grade threshold. Catering incentives are stronger at this threshold rating because of the relatively high cost of a downgrade from an investment-grade rating to a speculative-grade rating. Several studies have also used bond issuance activity and relationships with issuers as a proxy for expected rating fees (e.g., Jiang et al., 2012; Bonsall, 2014; Agarwal et al., 2016; Badoer et al., 2019). Following Agarwal et al. (2016), we include the length of S&P's relationship with the issuer (*Rating Relation*), the natural logarithm of the number of

³⁰ Our sample of quantitative target leverage ratios publicly disclosed in conference calls is likely to represent a lower bound of all deleveraging projections shared by acquirers with issuer-paid agencies. We rely on these publicly disclosed leverage projections as the private communication between the acquirers and the agencies is unobservable. At the same time however, publicly stated deleveraging projections make for a more powerful test, as they are less likely to represent "cheap talk" and thus more likely to influence the agencies' rating decisions around M&A transactions. Acquirers may choose to provide such deleveraging projections publicly, in part, because they know public disclosures are likely to hold more weight with the CRAs.

³¹ We find that 70% of the leverage targets in our sample are optimistic (i.e., the disclosed leverage target is lower than future realized leverage), with an average optimism bias of 8%. While this suggests that managers issue on average optimistic leverage targets, it is difficult to distinguish whether this forecast optimism is due to managerial opportunism or genuine optimistic expectations of merger performance. We caution that this analysis is based on a relatively small sample of observable leverage targets in which we are able to match disclosed leverage target ratios to future realized leverage.

S&P rated bonds issued in the past five years (*N Bonds Last 5yr*), and the natural logarithm of the total amount of the issuers' bonds currently outstanding (*Bond Size*). To capture catering incentives due to loan contracts, we also include *PPrating*, an indicator variable for whether an acquirer has a loan with rating-based performance pricing at the time of the acquisition. Kraft (2015) finds that CRAs are more likely to cater to debt issuers whose lending contracts include rating-based performance pricing provisions.

Finally, we include several controls for merger characteristics commonly examined in prior literature (e.g., Harford and Uysal, 2014; Aktas et al. 2021), including control variables that capture cash mergers, stock mergers, public targets, private targets, target relative size, and horizontal mergers. See Online Appendix Section OA.1 for detailed variable definitions.

We present these regression results in Table 7. Columns 1–2 show that none of the catering incentive proxies have a statistically significant association with $\Delta AbRating$. More importantly, as shown in column 4, the coefficient on *Lev Target* is positive and significant, indicating that acquirers are rated more optimistically when managers disclose numeric leverage targets during conference calls following merger announcements. Column 4 implies that the presence of a quantitative leverage target within an acquisition conference call is associated with a 0.51 notch increase in $\Delta AbRating$. In addition, columns 3–4 show that the coefficients on *Prior Deleveraging* are also positive and significant, which suggests that CRAs also provide more optimistic ratings to acquirers with a greater history of deleveraging around previous acquisitions. The coefficients imply that a one standard deviation increase in *Prior Deleveraging* is associated with a 0.12–0.13 notch increase in $\Delta AbRating$. We do not find evidence of a significant association between $\Delta AbRating$ and the other acquisition and deal control variables. Overall, our evidence that CRAs provide more optimistic ratings to acquirers that publicly commit to post-merger deleveraging targets and have exhibited a tendency to deleverage around prior acquisitions is consistent with our hypothesis that acquirer rating optimism is driven by the agencies' decision to afford acquirers a grace period when they believe credit risk increases associated with M&A deals are temporary. Moreover, the lack of a statistically significant association between $\Delta AbRating$ and the incentive conflict proxies suggests

that CRAs' incentives to cater to acquirers' preferences around merger deals are unlikely to be a primary explanation for acquisition-related increases in rating optimism.³²

Our next set of tests further investigate whether the extent of optimism in managers' deleveraging forecasts can incrementally explain CRAs' unwarranted rating optimism around M&A deals. We examine the role of acquiring managers' forecast optimism in explaining the association between CRAs' merger-related optimism and post-merger outcomes using manager leverage forecast optimism as a moderator in an augmented specification of Equation (1). In this specification, the main independent variable of interest is an interaction variable defined as $\Delta A rating \times Manager\ Optimism$, where $\Delta A rating$ is our primary rating optimism measure, and *Manager Optimism*, is managers' leverage forecast optimism as defined above.

We present these regression results in Online Appendix Table OA.1 where the dependent variables are the same acquisition outcome variables examined in Tables 3–4. We find consistent evidence that *Manager Optimism* significantly amplifies the magnitude of the association between rating optimism and negative merger outcomes, including more future downgrades and reductions in ROA and CFO. Taken together, this evidence is consistent with the major CRAs overweighting managerial optimism in their assessment of acquirers' credit ratings.³³

6.4 Rating Optimism Subsample Tests

In this section, we conduct additional sensitivity analyses where we re-run our main analyses in Tables 3–5 focusing only on instances in which S&P is optimistic in its ratings for acquirers. These tests

³² These analyses address the alternative explanation that unwarranted optimism in credit ratings around M&As is driven by CRAs' incentives to cater to the preferences of acquirers to protect future revenue streams (Jiang et al., 2012; Kraft, 2015; Bruno et al., 2016). In addition to these findings that changes in abnormal rating optimism around mergers are not associated with common proxies for rating agencies' catering incentives, in untabulated analyses, we also find evidence that S&P's rating pessimism is symmetrically predictive of future rating upgrades at similar horizons as with rating optimism and downgrades; this rating behavior cannot be explained by rating catering incentives. Taken together, these results suggest that our findings are more consistent with CRAs' rating behavior for acquirers reflecting a methodological focus on long-term credit risk rather than incentives to simply inflate ratings.

³³ To further understand the mechanism through which over-optimism in deleveraging expectations leads to a grace period around M&A transactions, in Online Appendix Section OA.4, we assess the extent of optimism in Moody's forecasts for acquirers' fundamentals disclosed in its credit opinion research reports. We find evidence that optimistic bias in Moody's leverage forecasts is positively associated with changes in Moody's rating optimism. Overall, these results further support the notion that optimism about deleveraging expectations manifests through optimism in CRAs' fundamental forecasts that lead to more favorable credit ratings.

help to support our focus on rating optimism in this study, as discussed at the end of Section 4.2. We present this analysis in Table 9. Panel A shows the regression results using $\Delta A\text{brating}OPT$ as the main explanatory variable, which is equal to $\Delta A\text{brating}[-1,1]$ if $\Delta A\text{brating}[-1,1] > 0$ else 0. Panel B shows the regression results where $\Delta A\text{brating}[-1,1]$ is the main explanatory variable within the subsample of acquirers where $\Delta A\text{brating}[-1,1] \geq 0$. Overall, we find generally consistent evidence with our main findings.

7. Conclusion

In this study, we examine leading CRAs' rating methodologies around M&As and their implications for acquirers' credit ratings. Anecdotal evidence and the agencies' own manuals on corporate rating analysis (e.g., Ganguin and Bilardello, 2005) suggest that these agencies provide some acquirers with a "grace period," i.e., abstaining from fully downgrading to the level implied by current credit metrics during the period immediately following an acquisition when the agencies expect M&A-related shocks to acquirers' credit metrics to be *temporary*. This rating "grace period" is consistent with the leading rating agencies' stated objective of responding only to long-term changes in default risk.

Consistent with the provision of a rating grace period, we document that acquiring firms experience an increase in abnormal rating optimism around leverage-increasing transactions and that the mapping of leverage metrics into CRAs' ratings is weaker in the post-acquisition period compared to the pre-acquisition period. We then provide evidence that the grace period around mergers is predictive of a higher likelihood of post-merger rating downgrades and negative merger outcomes. Our evidence suggests that, on average, CRAs are not able to correctly identify which M&A transactions lead only to temporary increases in credit risk.

We also examine the consequences of a grace period for acquirers' capital structure decisions. We find that acquirers with more rating optimism around the current merger are less likely to undertake deleveraging to pre-merger leverage levels and are more likely to remain at high industry-rating leverage levels in the post-merger period. They are also more likely to avoid deleveraging from industry-rating highs in future acquisitions. This evidence suggests that a grace period around M&A can come at the expense of future financial flexibility.

Finally, we examine when the leading agencies are more likely to grant a grace period around M&As. We find that the leading agencies are more optimistic for acquirers that publicly commit to quantitative post-M&A leverage targets and have deleveraged around prior acquisitions, consistent with our hypothesis that acquirer rating optimism is driven by the agencies' decision to afford acquirers a grace period when they believe credit risk increases associated with M&A deals are temporary.

This study contributes to the literature on the role of credit rating agencies in mergers and acquisitions and to the literature on the implications of CRAs' rating properties on the value of credit ratings as measures of credit risk. We provide evidence that, the major rating agencies' focus on long-term creditworthiness coupled with their inaccuracy in distinguishing long-term from temporary increases in credit risk weakens their governance role in M&As, allowing some firms to engage in negative-outcome M&A transactions supported by high-risk financing policies.

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Figure 1:
S&P Rating Optimism Around Leverage Increasing Acquisitions

This figure depicts *Abrating*, the difference between the long-term issuer credit rating of S&P minus that of Egan-Jones (EJR), by quarter for leverage increasing acquisitions. Ratings are expressed as numbers where 1 represents a C rating and 21 represents a AAA rating. The figure plots the average *Abrating* around acquisition completion, where the three plot lines represent acquisitions in the top tercile, quintile, and decile of leverage changes. Leverage changes are calculated as the change in debt-to-EBITDA from two quarters before to two quarters after acquisition completion. For this figure only, S&P and EJR rating data are required for each quarter in the [-12,12] quarter window.

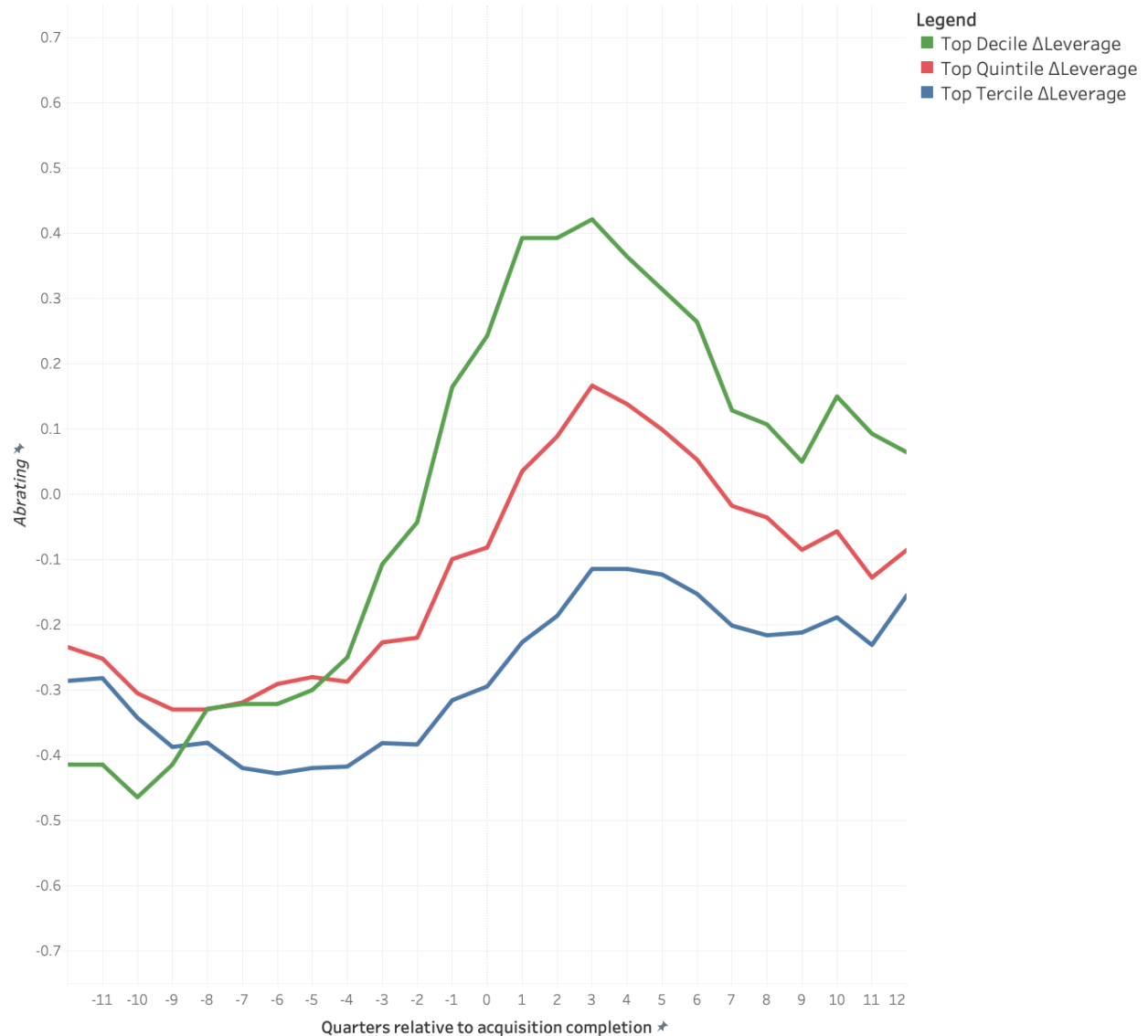
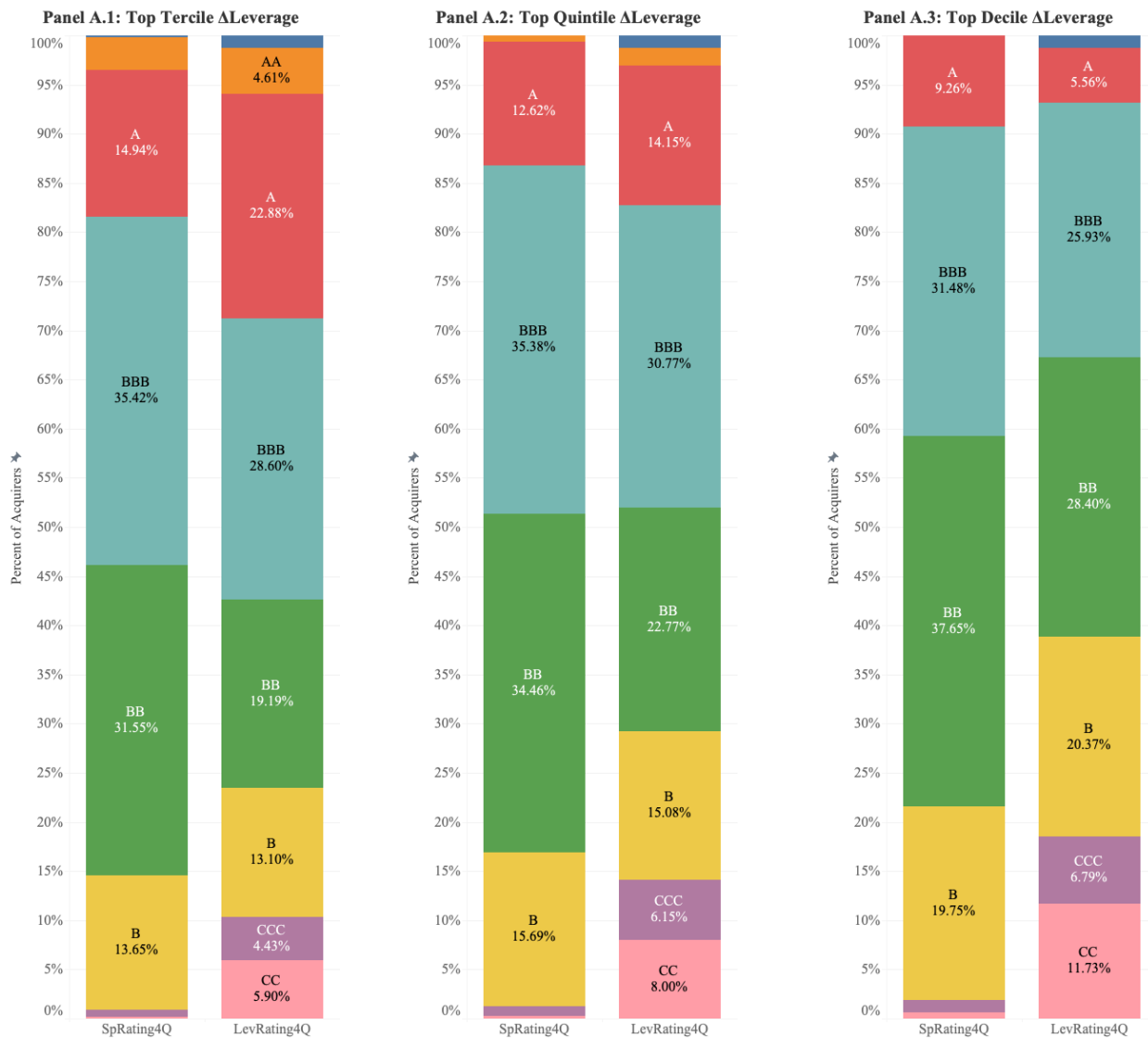


Figure 2: S&P Ratings vs Leverage Implied Ratings Around Acquisitions

This figure compares actual ratings (SpRating) with leverage-implied ratings (LevRating) around merger completion. Ratings are grouped into broad rating categories (i.e., without plus or minus modifiers). Leverage implied ratings are defined using the leverage thresholds for each broad rating category, as defined in Moody's sector-specific rating methodologies (see Section 4.1 for details). Panel A compares broad rating levels four quarters after completion, while Panel B compares broad rating changes from four quarters before to four quarters after merger completion. Leverage change quantiles are calculated using the change in debt-to-EBITDA from two quarters before to two quarters after acquisition completion. For this figure only, S&P and leverage-implied rating data are required for both four quarters before and four quarters after acquisition completion.

Panel A: Actual vs Leverage Implied Ratings Levels After Merger Completion



Panel B: Actual vs Leverage Implied Ratings Changes Around Merger Completion

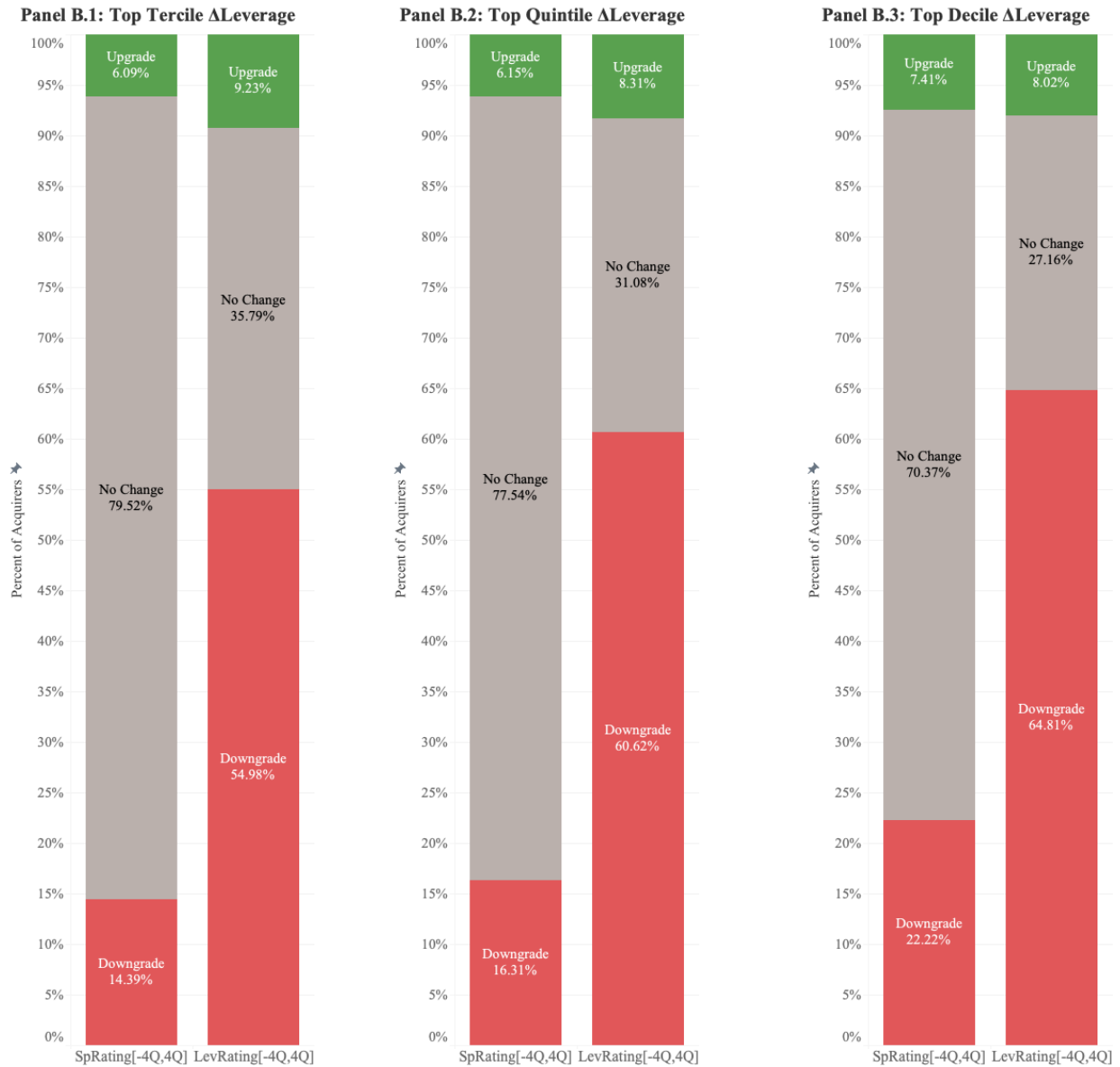


Figure 3: Leverage Around Acquisitions

This figure depicts average leverage (debt to EBITDA) by quarter for the acquisition sample. The three plot lines depict the quarterly leverage of three samples: all acquisitions, acquisitions in the top tercile of leverage changes, and acquisitions in the top quintile of leverage changes. Leverage changes are calculated as the change in debt to EBITDA from two quarters before to two quarters after acquisition completion. For this figure only, debt to EBITDA data is required for each quarter in the [-12,12] quarter window.

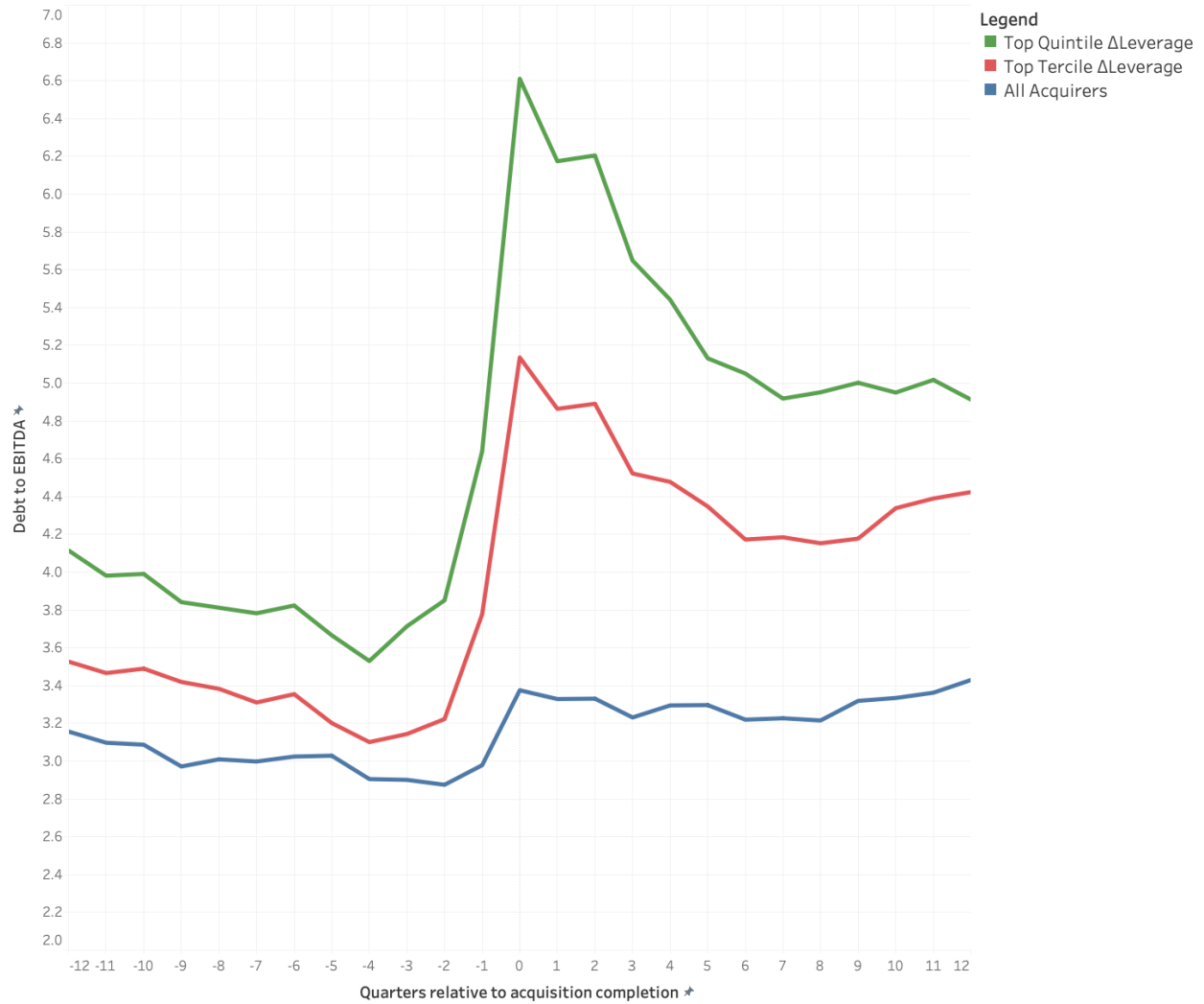


Table 1: Acquisition Sample Summary Statistics

This table presents summary statistics for the main acquisition sample. The sample consists of acquisitions from 2001–2016. Variable definitions are detailed in Online Appendix Section OA.1.

VARIABLES	N	Mean	SD	P25	P50	P75
<i>ΔDebt to EBITDA</i>	1,939	0.400	1.235	-0.074	0.152	0.594
<i>ΔMarket to Book</i>	1,939	-0.059	2.397	-0.377	-0.017	0.256
<i>ΔBook Leverage</i>	1,939	0.015	0.051	-0.011	0.007	0.035
<i>ΔIntCov</i>	1,939	-0.627	7.469	-0.694	0.000	0.692
<i>ΔProfit</i>	1,939	-0.001	0.032	-0.008	0.000	0.006
<i>ΔSize</i>	1,939	0.127	0.192	0.024	0.072	0.159
<i>ΔTangibility</i>	1,939	-0.002	0.030	-0.012	-0.001	0.006
<i>Rating</i>	1,939	12.590	3.321	10.000	13.000	15.000
<i>ΔAbrating</i>	1,939	-0.037	1.580	-1.000	0.000	1.000
<i>ΔAbrating[-1,0]</i>	1,939	-0.050	1.132	-1.000	0.000	0.000
<i>ΔAbrating[0,1]</i>	1,939	0.013	1.137	0.000	0.000	0.000
<i>Downgrade[0,1]</i>	1,939	0.104	0.306	0.000	0.000	0.000
<i>Downgrade[1,2]</i>	1,879	0.126	0.332	0.000	0.000	0.000
<i>Downgrade[1,3]</i>	1,820	0.203	0.403	0.000	0.000	0.000
<i>Upgrade[1,2]</i>	1,879	0.086	0.280	0.000	0.000	0.000
<i>Upgrade[1,3]</i>	1,820	0.147	0.354	0.000	0.000	0.000
<i>ΔROA2yr</i>	1,855	-0.011	0.067	-0.028	-0.003	0.015
<i>ΔROA3yr</i>	1,795	-0.010	0.061	-0.027	-0.003	0.015
<i>ΔCFO2yr</i>	1,825	-0.006	0.044	-0.026	-0.003	0.018
<i>ΔCFO3yr</i>	1,767	-0.006	0.043	-0.026	-0.005	0.017
<i>GWImp2yr</i>	1,939	0.174	0.379	0.000	0.000	0.000
<i>GWImp3yr</i>	1,939	0.220	0.414	0.000	0.000	0.000
<i>Delever2yr</i>	1,787	0.429	0.495	0.000	0.000	1.000
<i>Delever3yr</i>	1,737	0.404	0.491	0.000	0.000	1.000
<i>LowLever2yr</i>	1,809	0.434	0.496	0.000	0.000	1.000
<i>LowLever3yr</i>	1,762	0.416	0.493	0.000	0.000	1.000
<i>Delever2yr-NextAcq</i>	1,326	0.398	0.490	0.000	0.000	1.000
<i>Delever3yr-NextAcq</i>	1,266	0.386	0.487	0.000	0.000	1.000
<i>LowLever2yr-NextAcq</i>	1,335	0.396	0.489	0.000	0.000	1.000
<i>LowLever3yr-NextAcq</i>	1,273	0.383	0.486	0.000	0.000	1.000
<i>BBB-</i>	1,939	0.111	0.315	0.000	0.000	0.000
<i>Rating Relation</i>	1,939	8.188	1.115	7.959	8.421	8.754
<i>Bond Size</i>	1,939	13.230	3.947	12.900	13.980	15.140
<i>N Bonds Last 5yr</i>	1,939	1.453	1.019	0.693	1.386	1.946
<i>PPrating</i>	1,911	0.482	0.500	0.000	0.000	1.000
<i>Lev Target</i>	1,431	0.080	0.271	0.000	0.000	0.000
<i>Manager Optimism</i>	111	0.080	0.316	-0.055	0.087	0.269
<i>ΔMDAbrating</i>	297	0.202	1.353	0.000	0.000	1.000
<i>D2eFcBias</i>	285	0.046	0.962	-0.485	0.086	0.588
<i>RevFcBias</i>	262	-0.076	0.828	-0.387	-0.157	0.127
<i>ProfitFcBias</i>	72	0.008	1.020	-0.388	-0.127	0.195
<i>SoftAdj</i>	297	-0.374	1.090	-1.000	0.000	0.000

Table 2: Acquirer Downgrade and Deleveraging Frequency

This table reports rating downgrade frequency around merger completion, average leverage changes ($\Delta Debt$ to $EBITDA$), and deleveraging frequency ($Delever3yr$) by rating category for acquirers from 2001–2016. Panels A, B, and C, respectively report statistics for all acquirers, the top tercile of acquirers by leverage change, and the top decile of acquirers by leverage change. $Downgrade[-1,1]$ is defined as a rating decline of at least one notch over the period beginning four quarters before to four quarters after merger completion. $\Delta Debt$ to $EBITDA$ is reported within each S&P rating category. $Delever3yr$ is an indicator equal to one if the acquirer's debt to $EBITDA$ twelve quarters after merger completion is less than or equal to the acquirer's debt to $EBITDA$ four quarters before merger completion, otherwise zero. $^{**}/^{***}$ denote statistically significant differences at the 10%, 5%, and 1% levels (two-sided) respectively for columns that compute differences. Standard errors are clustered by firm. Variable definitions are detailed in Online Appendix Section OA.1.

Panel A.1: All Acquirers - Downgrade[-1,1] Frequency

	(1)	(2)	(3)	(4)	(5)	(6)
Rating	S&P N	S&P Downgrade %	EJR N	EJR Downgrade %	(2) – (4)	$\Delta Debt$ to $EBITDA$
AAA to A	579	20.9%	699	29.5%	-8.5%**	0.37
BBB	654	15.1%	635	26.1%	-11.1%***	0.37
BB to B	694	17.6%	565	25.7%	-8.1%***	0.45
Below B-	12	8.3%	40	5.0%	3.40%	0.15
All Ratings	1939	17.7%	1939	26.8%	-9.1%***	0.40

Panel A.2: All Acquirers - Post-Merger Deleveraging Frequency

	Frequency	Percentage
$Delever3yr = 0$	1035	59.6%
$Delever3yr = 1$	702	40.4%
Total	1737	100.0%

Panel B.1: Top Tercile of Acquirers by Leverage Change - Downgrade[-1,1] Frequency

	(1)	(2)	(3)	(4)	(5)	(6)
Rating	S&P N	S&P Downgrade %	EJR N	EJR Downgrade %	(2) – (4)	$\Delta Debt$ to $EBITDA$
AAA to A	163	39.3%	208	50.0%	-10.7%	1.42
BBB	212	25.9%	214	43.0%	-17.1%***	1.34
BB to B	268	20.5%	213	39.4%	-18.9%***	1.67
Below B-	3	0.0%	11	18.2%	-18.2%	3.57
All Ratings	646	26.9%	646	43.7%	-16.7%***	1.51

Panel B.2: Top Tercile of Acquirers by Leverage Change - Post-Merger Deleveraging Frequency

	Frequency	Percentage
$Delever3yr = 0$	393	68.8%
$Delever3yr = 1$	178	31.2%
Total	571	100.0%

Panel C.1: Top Decile of Acquirers by Leverage Change – Downgrade[-1,1] Frequency

	(1)	(2)	(3)	(4)	(5)	(6)
Rating	S&P N	S&P Downgrade %	EJR N	EJR Downgrade %	(2) – (4)	Δ Debt to EBITDA
AAA to A	40	62.5%	52	71.2%	-8.7%	3.51
BBB	56	33.9%	54	59.3%	-25.3%**	3.01
BB to B	94	30.9%	79	64.6%	-33.7%***	3.24
Below B-	3	0.0%	8	25.0%	-25.0%	3.57
All Ratings	193	37.8%	193	63.2%	-25.4%***	3.23

Panel C.2: Top Decile of Acquirers by Leverage Change - Post-Merger Deleveraging Frequency

	Frequency	Percentage
<i>Delever3yr</i> = 0	122	73.1%
<i>Delever3yr</i> = 1	45	26.9%
Total	167	100.0%

Table 3: Future Rating Changes and Acquisition Rating Optimism

This table shows regressions results where the dependent variable $Downgrade[s,t]$ is an indicator variable equal to one if S&P downgrades its credit rating during years $[s,t]$, centered on the completion fiscal quarter, otherwise zero. $\Delta Abrating[s,t]$ is the change in $Abrating$ during years $[s,t]$ centered on the completion fiscal quarter. $Abrating$ is calculated as the long-term issuer credit rating of S&P minus that of Egan-Jones (EJR). Ratings are expressed as numbers where 1 represents a C rating and 21 represents a AAA rating. All regressions are estimated with a linear probability model using OLS with year and industry fixed effects, and standard errors clustered by acquirer. Continuous independent variables are standardized to have mean 0 and standard deviation 1. ***/**/* denote statistical significance at the 10%, 5%, and 1% levels (two-sided) respectively. Variable definitions are detailed in Online Appendix Section OA.1.

VARIABLES	(1) <i>Downgrade</i> <i>[0,1]</i>	(2) <i>Downgrade</i> <i>[1,2]</i>	(3) <i>Downgrade</i> <i>[1,2]</i>	(4) <i>Downgrade</i> <i>[1,2]</i>	(5) <i>Downgrade</i> <i>[1,3]</i>	(6) <i>Downgrade</i> <i>[1,3]</i>
$\Delta Abrating[-1,0]$	0.033*** [4.131]	0.019** [2.449]	0.022*** [2.804]		0.025** [2.369]	
$\Delta Abrating[0,1]$			0.038*** [4.511]		0.031*** [3.191]	
$\Delta Abrating[-1,1]$				0.031*** [4.939]		0.028*** [3.805]
$\Delta Debt\ to\ EBITDA$	0.052*** [3.909]	0.020* [1.781]	0.020* [1.852]	0.019* [1.726]	0.023 [1.640]	0.022 [1.596]
$\Delta Market\ to\ Book$	0.002 [0.238]	0.001 [0.144]	0.002 [0.193]	0.002 [0.161]	-0.007 [-0.715]	-0.007 [-0.719]
$\Delta Book\ Leverage$	0.017* [1.824]	-0.002 [-0.164]	-0.005 [-0.446]	-0.004 [-0.364]	-0.003 [-0.224]	-0.002 [-0.186]
$\Delta Cash\ to\ Assets$	-0.002 [-0.242]	-0.005 [-0.483]	-0.004 [-0.426]	-0.005 [-0.475]	-0.013 [-1.135]	-0.013 [-1.151]
$\Delta IntCov$	0.008 [1.058]	-0.007 [-0.937]	-0.003 [-0.454]	-0.004 [-0.479]	0.006 [0.592]	0.006 [0.585]
$\Delta Profit$	-0.010 [-0.842]	-0.021** [-2.288]	-0.017* [-1.868]	-0.018* [-1.949]	-0.030** [-2.579]	-0.031*** [-2.605]
$\Delta Size$	-0.050*** [-4.606]	-0.019** [-1.969]	-0.020** [-2.105]	-0.020** [-2.137]	-0.021 [-1.629]	-0.021 [-1.631]
$\Delta Tangibility$	-0.001 [-0.064]	0.000 [0.031]	0.000 [0.023]	-0.000 [-0.022]	-0.000 [-0.003]	-0.000 [-0.021]
Observations	1,939	1,879	1,879	1,879	1,819	1,819
R-squared	0.135	0.118	0.133	0.131	0.122	0.122
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes

Table 4: Acquisition Performance and Rating Optimism

This table shows regressions results where the dependent variable in columns 1–2 is the change in return on assets ΔROA_{2yr} (ΔROA_{3yr}) over the two (three) fiscal years before to the two (three) fiscal years after merger completion, where the post-period starts one year after the fiscal year end of completion. In columns 3–4, the dependent variable ΔCFO_{2yr} (ΔCFO_{3yr}) is defined the same as above, but with the change in net cash flow from operations (CFO). In columns 5–6, $GWImp_{2yr}$ ($GWImp_{3yr}$) is an indicator equal to one if the acquirer reports goodwill impairment losses greater than one percent of assets during the two (three) year period following merger completion, otherwise zero. $\Delta Abrating$ is the change in *Abrating* measured from four quarters before to four quarters after merger completion. All regressions are estimated using OLS with year and industry fixed effects, and standard errors clustered by acquirer. Continuous independent variables are standardized to have mean 0 and standard deviation 1. ***/**/* denote statistical significance at the 10%, 5%, and 1% levels (two-sided) respectively. Variable definitions are detailed in Online Appendix Section OA.1.

VARIABLES	(1) ΔROA_{2yr}	(2) ΔROA_{3yr}	(3) ΔCFO_{2yr}	(4) ΔCFO_{3yr}	(5) $GWImp_{2yr}$	(6) $GWImp_{3yr}$
$\Delta Abrating$	-0.005*** [-3.547]	-0.005*** [-3.516]	-0.003*** [-3.107]	-0.004*** [-4.187]	0.020*** [2.958]	0.018** [2.302]
$\Delta Debt\ to\ EBITDA$	0.003 [0.984]	-0.001 [-0.411]	-0.002 [-0.975]	-0.003 [-1.265]	0.009 [0.613]	0.015 [0.894]
$\Delta Market\ to\ Book$	0.001 [0.598]	0.001 [0.702]	0.001 [0.629]	-0.000 [-0.010]	-0.016 [-1.584]	-0.014 [-1.391]
$\Delta Book\ Leverage$	-0.003 [-1.496]	-0.002 [-0.974]	-0.002 [-1.189]	0.000 [0.023]	-0.000 [-0.006]	0.007 [0.628]
$\Delta Cash\ to\ Assets$	0.004** [2.149]	0.004*** [2.601]	0.005*** [3.243]	0.004*** [3.350]	0.005 [0.430]	-0.005 [-0.419]
$\Delta IntCov$	0.004*** [2.586]	0.003** [2.329]	0.003** [2.520]	0.003** [2.320]	0.017* [1.795]	0.016* [1.733]
$\Delta Profit$	0.015*** [4.011]	0.009*** [3.252]	0.003 [1.272]	0.001 [0.560]	-0.012 [-0.975]	-0.004 [-0.296]
$\Delta Size$	-0.006** [-2.243]	-0.005** [-2.080]	-0.003 [-1.590]	-0.002 [-1.433]	-0.001 [-0.042]	-0.005 [-0.334]
$\Delta Tangibility$	-0.001 [-0.614]	-0.001 [-0.435]	0.003*** [2.744]	0.004*** [3.400]	0.032*** [3.031]	0.022** [1.986]
Observations	1,854	1,794	1,824	1,766	1,939	1,939
R-squared	0.264	0.223	0.131	0.140	0.133	0.137
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes

Table 5: Post-Merger Deleveraging and Acquisition Rating Optimism

This table shows regressions results where the dependent variable in columns 1–2 is *Delever2y* (*Delever3yr*), an indicator equal to one if the acquirer's debt to EBITDA eight (twelve) quarters after merger completion is less than or equal to the acquirer's debt to EBITDA four quarters before merger completion. In columns 3–4, the dependent variable is *LowLever2yr* (*LowLever3yr*), an indicator equal to one if the acquirer's debt to EBITDA eight (twelve) quarters after merger completion is below the median debt to EBITDA of benchmark firms with the same SIC-2 industry and rating, measured four quarters before merger completion. In columns 5–8, the dependent variables are defined as in columns 1–4, but are measured around the next material acquisition within 5 years after the current merger date. All regressions are estimated using a linear probability model with year and industry fixed effects, and standard errors clustered by acquirer. Continuous independent variables are standardized to have mean 0 and standard deviation 1. ***/**/* denote statistical significance at the 10%, 5%, and 1% levels (two-sided) respectively. Variable definitions are detailed in Online Appendix Section OA.1.

VARIABLES	(1) <i>Delever2yr</i>	(2) <i>Delever3yr</i>	(3) <i>LowLever2yr</i>	(4) <i>LowLever3yr</i>	(5) <i>Delever2yr- NextAcq</i>	(6) <i>Delever3yr- NextAcq</i>	(7) <i>LowLever2yr- NextAcq</i>	(8) <i>LowLever3yr- NextAcq</i>
<i>ΔAbrating</i>	-0.026*** [-3.071]	-0.043*** [-5.268]	-0.024*** [-2.650]	-0.026** [-2.474]	-0.012 [-1.237]	-0.004 [-0.370]	-0.019* [-1.880]	-0.023** [-2.255]
<i>ΔDebt to EBITDA</i>	-0.053*** [-3.106]	-0.031* [-1.669]	-0.068*** [-4.085]	-0.045*** [-2.618]	0.005 [0.170]	0.021 [0.637]	-0.029 [-1.142]	-0.036 [-1.259]
<i>ΔMarket to Book</i>	-0.009 [-0.688]	-0.005 [-0.389]	-0.003 [-0.275]	0.015 [1.369]	-0.024 [-1.548]	-0.018 [-1.163]	-0.003 [-0.258]	-0.009 [-0.768]
<i>ΔBook Leverage</i>	-0.073*** [-5.182]	-0.073*** [-5.113]	-0.042*** [-2.926]	-0.056*** [-4.042]	-0.003 [-0.176]	-0.015 [-0.780]	0.023 [1.265]	0.005 [0.260]
<i>ΔCash to Assets</i>	0.015 [1.300]	0.010 [0.721]	-0.008 [-0.611]	0.004 [0.251]	0.042*** [2.874]	0.021 [1.312]	-0.006 [-0.352]	-0.003 [-0.208]
<i>ΔIntCov</i>	0.020* [1.770]	0.002 [0.196]	0.000 [0.021]	-0.009 [-0.560]	0.006 [0.410]	0.020 [1.530]	0.020 [1.393]	0.016 [1.045]
<i>ΔProfit</i>	0.019 [1.310]	0.013 [0.750]	0.013 [0.917]	0.004 [0.267]	0.010 [0.520]	-0.003 [-0.123]	-0.005 [-0.231]	-0.021 [-1.007]
<i>ΔSize</i>	0.012 [0.718]	0.006 [0.347]	0.029* [1.843]	0.030* [1.895]	0.042 [1.632]	0.031 [1.147]	0.020 [0.835]	0.038 [1.525]
<i>ΔTangibility</i>	0.019 [1.340]	0.020 [1.389]	0.007 [0.471]	0.022 [1.478]	0.033* [1.936]	0.027* [1.671]	0.021 [1.154]	0.038** [2.319]
Observations	1,786	1,736	1,808	1,761	1,319	1,260	1,328	1,267
R-squared	0.179	0.165	0.152	0.144	0.115	0.130	0.125	0.120
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 6: Alternative Measures of Rating Optimism

This table shows the results of re-running the main regression specifications from Tables 3 to 5 using two alternative rating benchmarks. Panel A (Panel B) shows the regression results using $\Delta A\text{brating-MLIR}$ ($\Delta A\text{brating-HLIR}$) as the main explanatory variable. $\Delta A\text{brating-MLIR}$ is computed the same as $\Delta A\text{brating}$ but replaces EJR ratings with the methodology-based leverage-implied ratings (MLIR), which are calculated based on the leverage thresholds defined in Moody's sector-specific rating methodologies (see Section 4.1 for details). Similarly, $\Delta A\text{brating-HLIR}$ is computed the same as $\Delta A\text{brating}$ but replaces EJR ratings with historical leverage-implied ratings (see Section 6.2 for details). EJR ratings data is not required for these samples. All regressions include control variables and year and industry fixed effects. Standard errors are clustered by acquirer. ***/**/* denote statistical significance at the 10%, 5%, and 1% levels (two-sided) respectively. Variable definitions are detailed in Online Appendix Section OA.1.

<i>Panel A: Methodology-Based Leverage Implied Rating (MLIR) Benchmark</i>						
<i>VARIABLES</i>	(1) <i>Downgrade[1,2]</i>	(2) <i>ΔROA2yr</i>	(3) <i>ΔCFO2yr</i>	(4) <i>GWImp2yr</i>	(5) <i>Delever2yr</i>	(6) <i>LowLever2yr</i>
<i>ΔAbrating-MLIR</i>	0.005** [2.316]	-0.002*** [-3.082]	-0.002*** [-6.326]	0.003 [1.054]	-0.047*** [-19.197]	-0.024*** [-9.919]
Controls Included	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3,236	3,187	3,186	3,350	3,142	3,129
R-squared	0.089	0.177	0.139	0.094	0.261	0.16
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes

<i>Panel B: Historical Leverage Implied Rating (HLIR) Benchmark</i>						
<i>VARIABLES</i>	(1) <i>Downgrade[1,2]</i>	(2) <i>ΔROA2yr</i>	(3) <i>ΔCFO2yr</i>	(4) <i>GWImp2yr</i>	(5) <i>Delever2yr</i>	(6) <i>LowLever2yr</i>
<i>ΔAbrating-HLIR</i>	0.005*** [3.778]	-0.002*** [-6.853]	-0.002*** [-8.801]	0.001 [0.705]	-0.016*** [-7.183]	-0.009*** [-4.242]
Controls Included	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3,499	3,444	3,376	3,629	3,422	3,408
R-squared	0.085	0.197	0.127	0.093	0.154	0.129
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes

Table 7: Determinants of Acquisition Rating Optimism

This table shows regressions results where the dependent variable is $\Delta A_{brating}$. Columns 3–4 include the independent variable *Prior Deleveraging*, defined as the average value of *Delever2y* over all previous material acquisitions completed during the [-5,-2] years around completion. Column 4 includes the independent variable *Lev Target*, an indicator equal to one if managers disclose a post-merger debt-to-EBITDA target during an acquisition conference call, else zero. See Online Appendix Section OA.1 for all other variable definitions. All regressions are estimated using OLS and standard errors clustered by acquirer. Continuous independent variables are standardized to have mean 0 and standard deviation 1. ***/**/* denote statistical significance at the 10%, 5%, and 1% levels (two-sided) respectively.

VARIABLES	(1) $\Delta A_{brating}$	(2) $\Delta A_{brating}$	(3) $\Delta A_{brating}$	(4) $\Delta A_{brating}$
<i>Lev Target</i>				0.512** [2.459]
<i>Prior Deleveraging</i>			0.115** [2.068]	0.129** [2.094]
$\Delta Debt\ to\ EBITDA$	0.241*** [3.488]	0.137* [1.833]	0.202** [2.048]	0.118 [1.104]
<i>BBB-</i>	0.096 [0.575]	0.092 [0.555]	-0.001 [-0.004]	-0.084 [-0.356]
<i>Rating Relation</i>	-0.004 [-0.051]	0.000 [0.005]	0.036 [0.296]	0.015 [0.113]
<i>N Bonds Last 5yr</i>	0.005 [0.091]	0.006 [0.110]	0.051 [0.692]	0.014 [0.180]
<i>Bond Size</i>	0.006 [0.078]	0.03 [0.448]	0.058 [0.658]	0.105 [1.136]
<i>PPrating</i>	0.037 [0.463]	0.039 [0.491]	0.035 [0.336]	0.056 [0.499]
<i>All Cash</i>	-0.071 [-0.891]	-0.069 [-0.871]	0.035 [0.329]	0.116 [0.932]
<i>All Stock</i>	-0.025 [-0.120]	0.041 [0.199]	0.150 [0.511]	0.583 [1.200]
<i>Public Target</i>	0.126 [1.340]	0.104 [1.098]	0.020 [0.168]	0.054 [0.400]
<i>Private Target</i>	0.051 [0.622]	0.045 [0.542]	0.002 [0.014]	0.148 [1.175]
<i>Relative Size</i>	-0.002 [-0.039]	-0.016 [-0.228]	-0.103 [-1.150]	0.012 [0.121]
<i>Horizontal</i>	-0.021 [-0.291]	-0.022 [-0.296]	0.144 [1.453]	0.155 [1.373]
$\Delta Market\ to\ Book$		0.012 [0.251]	-0.049 [-0.761]	0.023 [0.343]
$\Delta Book\ Leverage$		0.067 [1.253]	0.057 [0.636]	0.114 [1.258]
$\Delta Cash\ to\ Assets$		0.014 [0.320]	-0.023 [-0.361]	0.005 [0.074]
$\Delta IntCov$		-0.164** [-2.552]	-0.185* [-1.778]	-0.185 [-1.413]
$\Delta Profit$		-0.133*** [-2.724]	-0.073 [-1.048]	-0.147 [-1.498]
$\Delta Size$		0.085 [1.210]	0.101 [0.850]	0.054 [0.469]
$\Delta Tangibility$		0.069 [1.349]	0.132 [1.406]	0.100 [1.041]
Observations	1,909	1,909	1,118	873
R-squared	0.158	0.175	0.225	0.207
Year and Industry FE	Yes	Yes	Yes	Yes

Table 8: Rating Sensitivity to Leverage Around Mergers

This table shows regressions results where the dependent variable is the quarterly S&P credit rating level, expressed as a number where 1 represents a C rating and 21 represents a AAA rating. The sample consists of observations measured at four quarters before completion and at four quarters after merger completion. *Post* is an indicator equal to one if the observation is measured four quarters after completion, otherwise zero. All regressions are estimated using OLS with year and industry fixed effects, and standard errors clustered by acquirer. Continuous independent variables are standardized to have mean 0 and standard deviation 1. */**/** denote statistical significance at the 10%, 5%, and 1% levels (two-sided) respectively. Variable definitions are detailed in Online Appendix Section OA.1.

VARIABLES	(1) Rating
<i>Debt to EBITDA</i> × <i>Post</i>	0.404*** [3.701]
<i>Market to Book</i> × <i>Post</i>	0.096 [1.163]
<i>Book Leverage</i> × <i>Post</i>	-0.220** [-2.539]
<i>Cash to Assets</i> × <i>Post</i>	0.241*** [5.536]
<i>IntCov</i> × <i>Post</i>	-0.011 [-0.161]
<i>Profit</i> × <i>Post</i>	-0.143 [-1.616]
<i>Size</i> × <i>Post</i>	-0.049 [-1.029]
<i>Tangibility</i> × <i>Post</i>	0.141** [2.478]
<i>Debt to EBITDA</i>	-0.763*** [-5.514]
<i>Market to Book</i>	-0.009 [-0.114]
<i>Book Leverage</i>	-0.521*** [-4.323]
<i>Cash to Assets</i>	-0.166 [-1.534]
<i>IntCov</i>	-0.022 [-0.166]
<i>Profit</i>	0.409*** [3.074]
<i>Size</i>	1.909*** [17.086]
<i>Tangibility</i>	-0.443** [-2.151]
<i>Post</i>	-0.364*** [-7.373]
Observations	3,802
R-squared	0.651
Year FE	Yes
Industry FE	Yes

Table 9: Rating Optimism Subsample Tests

This table shows the results of re-running the main regression specifications from Tables 3 to 5 for 2-year horizons focusing on instances in which S&P is optimistic in its ratings for acquirers. Panel A shows the regression results using $\Delta A\text{brating}OPT$ as the main explanatory variable, which is equal to $\Delta A\text{brating}[-1,1]$ if $\Delta A\text{brating}[-1,1] > 0$ else 0. Panel B shows the regression results where $\Delta A\text{brating}[-1,1]$ is the main explanatory variable within the subsample of acquirers where $\Delta A\text{brating}[-1,1] \geq 0$. All regressions include control variables and year and industry fixed effects.

Standard errors are clustered by acquirer. ^{*/**/**} denote statistical significance at the 10%, 5%, and 1% levels (two-sided) respectively. Variable definitions are detailed in Online Appendix Section OA.1.

Panel A: $\Delta A\text{brating}OPT$

VARIABLES	(1) <i>Downgrade[1,2]</i>	(2) <i>ΔROA2yr</i>	(3) <i>ΔCFO2yr</i>	(4) <i>GWImp2yr</i>	(5) <i>Delever2yr</i>	(6) <i>LowLever2yr</i>
<i>ΔAbratingOPT[-1,1]</i>	0.057*** [4.571]	-0.011*** [-3.685]	-0.005*** [-3.646]	0.043*** [3.045]	-0.045*** [-3.344]	-0.025 [-1.601]
Controls Included	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,877	1,852	1,822	1,937	1,784	1,806
R-squared	0.135	0.268	0.14	0.145	0.175	0.151
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes

Panel B: Rating optimism subsample

VARIABLES	(1) <i>Downgrade[1,2]</i>	(2) <i>ΔROA2yr</i>	(3) <i>ΔCFO2yr</i>	(4) <i>GWImp2yr</i>	(5) <i>Delever2yr</i>	(6) <i>LowLever2yr</i>
<i>ΔAbrating[-1,1]</i>	0.054*** [4.056]	-0.011*** [-3.450]	-0.005*** [-3.028]	0.045*** [2.867]	-0.037*** [-2.608]	-0.013 [-0.772]
Controls Included	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,276	1,259	1,237	1,315	1,213	1,230
R-squared	0.16	0.306	0.153	0.141	0.178	0.152
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes

Optimistic Gatekeepers: Credit Rating Grace Periods around M&A Deals

Online Appendix

This Online Appendix consists of the following sections. Section OA.1 presents detailed variable definitions. Section OA.2 presents examples of managers' leverage target disclosures. Section OA.3 details the sample construction procedure for the managerial leverage target dataset. Section OA.4 discusses an analysis of rating agencies' forecasts of acquirer performance. Section OA.5 describes the sample construction procedure of Moody's quantitative forecasts.

OA.1 Variable Definitions

Acquirer Dependent Variables

- *Downgrade[s,t]*: An indicator variable equal to one if S&P downgrades its long-term issuer credit rating at least one notch during the period [s,t] years centered around the merger completion fiscal quarter, else zero (Source: Capital IQ).
- *ΔROA2yr (ΔROA3yr)*: Computed as the average ROA over the two (three) fiscal years starting one year after the merger completion fiscal year end minus the average ROA over the two (three) fiscal years before merger completion. ROA is calculated as income before extraordinary items scaled by total assets (Source: Compustat).
- *ΔCFO2yr (ΔCFO3yr)*: Computed the same as *ΔROA2yr (ΔROA3yr)*, but using CFO. CFO is calculated as net cash flow from operations scaled by total assets (Source: Compustat).
- *GWImp2yr (GWImp3yr)*: An indicator equal to one if the acquirer reports goodwill impairment losses greater than one percent of assets during the two (three) year period following merger completion, otherwise zero. (Source: Compustat).
- *Debt to EBITDA* is calculated as long- and short-term debt divided by the sum of operating income before depreciation for the current quarter plus prior three quarters (Source: Compustat).
- *Delever2yr (Delever3yr)*: An indicator equal to one if the acquirer's *Debt to EBITDA* eight (twelve) quarters after the merger completion fiscal quarter is less than or equal to the acquirer's *Debt to EBITDA* four quarters before the merger completion fiscal quarter (Source: Compustat).
- *LowLever2yr (LowLever3yr)*: An indicator equal to one if the acquirer's *Debt to EBITDA* eight (twelve) quarters after the merger completion fiscal quarter is below the median *Debt to EBITDA* of benchmark firms with the same SIC-2 industry and rating, measured over the year prior to the merger completion fiscal quarter.

Acquirer Independent Variables

- *ΔAbRating*: Computed as *AbRating* four quarters after the merger completion fiscal quarter minus *AbRating* four quarters before the merger completion fiscal quarter, where *AbRating* is computed as the long-term issuer credit rating of S&P minus that of Egan-Jones (EJR). Ratings are expressed as numbers where 1 represents a C rating and 21 represents a AAA rating (Source: Capital IQ; Bloomberg).
- *ΔAbRating[s,t]*: The change in *AbRating* from years [s,t] relative to the merger completion fiscal quarter.
- *ΔAbratingOPT[-1,1]*: Equal to *ΔAbrating[-1,1]* if *ΔAbrating[-1,1]* ≥ 0 else 0.
- *ΔAbrating-MLIR*: Computed the same as *ΔAbrating* but replaces EJR ratings with the methodology-based leverage-implied ratings (MLIR), which are calculated based on the leverage thresholds defined in Moody's sector-specific rating methodologies (see Section 4.1 for details).
- *ΔAbrating-HLIR*: Computed the same as *ΔAbrating* but replaces EJR ratings with the historical leverage-implied ratings. The historical leverage-implied ratings are computed by first calculating the median debt to EBITDA ratio for each broad rating within every GICS 4-digit industry group in the previous calendar year. A firm-quarter's historical leverage-implied rating is then assigned based on the broad rating with the closest within-industry median leverage from the prior year (Source: Capital IQ, Compustat).
- *Rating*: S&P's long-term issuer credit rating, measured as of the year prior to the merger completion quarter. (Source: Capital IQ).
- *Market to Book*: Market capitalization divided by total book value of assets (Source: Compustat).
- *Book Leverage*: Long- and short-term debt divided by total assets (Source: Compustat).
- *Cash to Assets*: Cash and marketable securities divided by total assets (Source: Compustat).
- *IntCov*: The sum of EBITDA for the current quarter plus prior three quarters divided by the sum of interest expense for the current quarter plus prior three quarters (Source: Compustat).
- *Profit*: The sum of EBITDA for the current quarter plus prior three quarters divided by the sum of sales revenue for the current quarter plus prior three quarters (Source: Compustat).

- *Size*: The natural log of the book value of assets (Source: Compustat).
- *Tangibility*: Net property, plant, and equipment divided by total assets (Source: Compustat).
- Δ *Financial Characteristic*: Average value of *Financial Characteristic* over the two fiscal quarters after the merger completion quarter minus the average value of *Financial Characteristic* over the two fiscal quarters before the merger completion quarter. *Financial Characteristic* includes the following variables: *Debt to EBITDA*, *Market to Book*, *Book Leverage*, *Cash to Assets*, *IntCov*, *Profit*, *Size*, and *Tangibility*.
- *BBB-*: An indicator for whether *Rating* equals BBB- (Source: Capital IQ).
- *Rating Relation*: The natural logarithm of the number of calendar days between the day when the firm was first rated by S&P to the merger completion fiscal quarter (Source: Mergent FISD).
- *Bond Size*: The natural logarithm of the total amount of the bonds outstanding (Source: Mergent FISD).
- *N Bonds Last 5yr*: The natural logarithm of one plus the number of the S&P's rated bond issuances for the issuer within the past 5 years (Source: Mergent FISD).
- *PPrating*: An indicator variable for whether an acquirer has a loan with rating-based performance pricing at the time of the acquisition (Source: Dealscan).
- *All Cash*: An indicator variable equal to one if the method of payment is 100% cash, otherwise zero (Source: SDC).
- *All Stock*: An indicator variable equal to one if the method of payment is 100% stock, otherwise zero (Source: SDC).
- *Public Target*: An indicator variable equal to one if the target firm is a public firm, otherwise zero (Source: SDC).
- *Private Target*: An indicator variable equal to one if the target firm is a private firm, otherwise zero (Source: SDC).
- *Relative Size*: The deal value divided by the acquirer's market value of equity as of the fiscal quarter end before the merger announcement date (Source: SDC, CRSP).
- *Horizontal*: An indicator variable equal to one if the target firm is in the same 3-digit SIC code as the acquirer, otherwise zero (Source: SDC).

Conference Call Variables

- *Lev Target*: An indicator variable equal to one if managers disclose a quantitative, post-merger *Debt-to-EBITDA* target during an acquisition conference call, otherwise zero. See Online Appendix Section OA.3 for further details (Source: Capital IQ Transcripts and Thomson Reuters StreetEvents).
- *Manager Optimism*: Managers' leverage forecast error percentage, computed as actual *Debt-to-EBITDA* minus forecasted *Debt-to-EBITDA*, scaled by actual *Debt-to-EBITDA*. See Online Appendix Section OA.3 for further details (Source: Capital IQ Transcripts, Thomson Reuters StreetEvents, and Compustat).

Rating Agency Forecast Variables

- Δ *MDAbrating*: Equivalent to Δ *AbRating*, but uses Moody's credit ratings (Source: Moody's Investor Service; Mergent FISD).
- *RevFcBias*, *D2eFcBias*, *ProfitFcBias*: Forecast bias percentage, measured as (Forecast – Actual)/Actual, calculated for Moody's key indicator forecasts for revenue, debt-to-ebitda, and profitability, respectively. (Source: Moody's Investor Service).
- *SoftAdj*: The difference between the actual credit rating and the hypothetical credit rating implied by the adjusted historical financials and key rating indicator forecasts (Source: Moody's Investor Service).

OA.2: Managers' Leverage Target Disclosure Examples During Acquisition Conference Calls

Examples of Managers' Leverage Target Disclosures

Company	Date	Conference Call Excerpt
Thermo Fisher Scientific Inc.	April 15, 2013	We expect to be back down to our target leverage ratio of 2.5x to 3x within 2 years. And to achieve this, we'll need to devote the large majority of our cash flow towards paying down debt during that 2-year period. We've discussed the proposed permanent financing structure with the rating agencies, and although we do expect some change to our existing ratings, we fully expect to remain investment grade.
Reynolds American Inc.	July 15, 2014	Historically, we've operated between 1.5 and 2.5x and we're clearly going out above that. And we've, as I said earlier, we promised the rating agencies we'd get below 3 within 2 years.
Newell Brands Inc.	December 14, 2015	We also expect the highly cash-generative nature of our combined business to enable us to quickly pay down debt to achieve a leverage ratio of 3 to 3.5x within 2 to 3 years. We will also maintain our dividend per share at or above its current level.
L3Harris Technologies, Inc.	February 6, 2015	Pro forma net leverage will be about 2.9x net debt to adjusted EBITDA at closing, with significant prepayable debt and the opportunity to rapidly deleverage. This structure provides balance sheet flexibility and preserves our ability to invest for growth while we reduce net leverage to about 1.5x by year 3.
Tenneco Inc.	April 24, 2008	Our consolidated debt level was \$1,463 billion at quarter end and our cash balance was a \$161 million bringing debt net of cash balances to \$1,302 million. Net debt to adjusted last twelve months EBITDA at March 31 was 2.7 times improved from 3.2 times on March 31 of last year. Our goal for 2008 is to achieve a net debt to adjusted EBITDA ratio 2.2 times.
W.W. Grainger, Inc.	July 30, 2015	We will not be changing our long-term debt-to-EBITDA ratio of 1x to 1.5x, which we announced when we announced our additional share repurchase, and we expect this acquisition to be 100% debt-financed, roughly 50-50 between pounds and U.S. dollars.
American Tower Corporation	May 1, 2014	Our goal is to be able to delever back down to that 5x over the next 9 to 12 months or so through a combination, as I mentioned, of expected EBITDA growth and selected debt repayments. And we continue to value our investment-grade rating and balance sheet flexibility and overall, believe that our balance-sheet strength is clearly a competitive advantage.
Ball Corporation	February 15, 2006	Total debt pro-forma to EBITDA would be about three times at closing. We think we could get down to 2.5 times by the end of the year.

OA.3 Sample Construction Procedure for Managerial Leverage Target Dataset

To construct our sample of quantitative leverage targets disclosed by managers during acquisition conference calls (Section 6.3.1), we first collect conference call transcripts from Capital IQ and Thomson Reuters StreetEvents, where the call date is within the [0,60] day window starting from the M&A announcement date for each of our sample acquisitions. For each acquisition, we then keep only one matched conference call transcript: either the first conference call categorized as an “M&A Call” by Capital IQ, or otherwise, we keep the first conference call transcript in either Capital IQ or Thomson Reuters StreetEvents following the announcement date within the [0,60] day window. We combine transcript data from both databases because Capital IQ has sparse coverage prior to 2008. However, Capital IQ provides “M&A Call” categorizations, while Thomson StreetEvents does not label call type.

For each acquisition conference call, we first perform a (case and punctuation in-sensitive) search for words beginning with “debt”, “lever”, and “delever”, within a [-1,1] sentence distance to a numeric ratio, which is defined as a whole, decimal, or textual number followed by “x”, “times”, or “turns.” For each search match, we then use the context of the surrounding paragraph to manually label whether managers disclose a quantitative post-merger-completion debt-to-EBITDA target or forecast. If managers specify that their forecast is for “net debt-to-EBITDA” or “net leverage”, we calculate the debt numerator as long- and short-term debt minus cash.³⁴

For each search match where *Lev Target* equals one, i.e., where managers disclose a quantitative post-merger debt-to-EBITDA forecast, we hand collect the numeric debt-to-EBITDA forecast disclosed and the forecast horizon, which is measured in months or years following merger completion. On the few occasions where there are multiple debt-to-EBITDA forecasts disclosed for different horizons, we keep the first forecast with a horizon greater than twelve months following completion. For range forecasts (e.g., 2x to 3x debt-to-EBITDA), we use the upper bound of the leverage forecast, consistent with (Ciconte et al.,

³⁴ We focus on debt-to-EBITDA forecasts in particular because of their prominence in debt covenants (Demerjian and Owens, 2016) and CRAs’ rating methodologies. We assume that leverage forecasts are in terms of debt-to-EBITDA, unless specified otherwise. Our results are robust to using leverage actuals based on either all debt-to-EBITDA ratios or all net debt-to-EBITDA ratios.

2014) who find evidence that managers' true expectations are closer to the upper bound of range forecasts rather than the midpoint.³⁵

We also use the upper bound for range horizons (e.g., 12 to 18 months). If the disclosed horizon references a year, we compute the horizon in terms of quarters from merger completion. If there is an "early" qualifier (e.g., early 2016), we set the forecast horizon to the first quarter of that year; if there is a "mid" qualifier (e.g., mid-2016), we set the forecast horizon to the second quarter of that year; otherwise, we set the forecast horizon to the end of the stated year. For forecasts without a stated horizon, we set the forecast horizon to the median forecast horizon of 18 months, which is also consistent with the forecast horizon used by Moody's when forecasting firm fundamentals (as discussed in Online Appendix Section OA.4). We require that the forecast horizon is at least two quarters after merger completion to allow sufficient time for deleveraging activity. Finally, we match each manager leverage forecast with the realized leverage ratio calculated from Compustat as of the next fiscal quarter following each forecast horizon to compute *Manager Optimism*.

OA.4 Rating Agencies' Forecasts of Acquirer Performance

To further support our conjecture that the leading agencies' beliefs about the temporary nature of M&A shocks are influenced by overly optimistic expectations of acquirer performance and deleveraging, we also investigate the relation between rating optimism and rating agencies' own quantitative forecasts for acquirer performance. Specifically, we examine whether optimistic bias in rating agencies' quantitative forecasts for acquirers' post-merger performance (i.e., leverage, revenue, and profitability forecasts) are positively associated with abnormal optimism in credit ratings around acquisitions.

To conduct this analysis, we collect a sample of quantitative forecasts published in Moody's credit opinion research reports around our sample acquisitions.³⁶ The sample and measure construction procedure is detailed in Online Appendix Section OA.5. We calculate three measures of forecast bias *RevFcBias*,

³⁵ We find very similar results using the midpoint of the forecast range.

³⁶ We focus on Moody's forecasts rather than those of S&P because Moody's provides regular, consistently defined quantitative forecasts for key rating metrics in its published credit opinions, while S&P does not consistently provide such quantitative forecasts in its reports.

D2eFcBias, and *ProfitFcBias* as the signed forecast error percentage $(\text{Forecast} - \text{Actual})/\text{Actual}$ for each of Moody's forecasts for revenue, debt-to-EBITDA, and profitability (i.e., EBITA Margin) respectively. We consider a forecast error to be optimistically biased if the forecast error is positive (i.e., forecast > actual) for revenue and profitability forecasts and if the forecast error is negative (i.e., forecast < actual) for debt-to-EBITDA forecasts.

To examine the relation between rating agencies' forecast bias and credit rating optimism, we estimate regressions where the dependent variable is *ΔMDAbrating*, which is equivalent to *ΔAbrating* but uses Moody's credit ratings, and the main independent variables are *RevFcBias*, *D2eFcBias*, and *ProfitFcBias*. In addition to the control variables in equation (1), we also include a measure of Moody's soft rating adjustment (*SoftAdj*), following Kraft (2015), to control for qualitative factors that influence credit ratings (e.g., catering incentives) in our analysis. *SoftAdj* is calculated as the difference between the actual credit rating and the hypothetical credit rating implied by the adjusted historical financials and key rating indicator forecasts. Our final sample consists of 297 acquisitions with matching credit opinion reports that have at least one of either a revenue, debt-to-EBITDA, or EBITA margin forecast, matching actual values, and non-missing *ΔMDAbrating* and soft adjustments.

We present the results of these regressions in Online Appendix Table OA.2. In column 4, which includes all three forecast bias variables together in the same regression, the coefficient on *D2eFcBias* is negative and significant ($p < .01$) and the coefficient on *ProfitFcBias* is positive and significant ($p < .05$). The results indicate that rating agencies' own optimistically biased forecasts for debt-to-EBITDA and profitability are associated with more optimistic credit ratings around acquisitions. We do not find evidence that revenue forecast errors are significantly associated with rating optimism. Notably, the coefficient on *SoftAdj* is insignificant in all columns, which indicates that *ΔMDAbrating* is not significantly associated with soft rating adjustments. Taken together, the evidence of a consistent positive relation between Moody's forecast optimism and credit rating optimism for acquirers further supports the notion that acquirers' optimistic credit ratings are influenced by rating agencies' over-optimistic expectations of issuers' post-merger deleveraging and acquisition performance.

OA.5 Sample Construction Procedure for Moody's Quantitative Forecasts

This appendix provides details on our procedure to construct our sample of Moody's quantitative forecasts, which we examine in Online Appendix Section OA.4. We obtain credit opinion reports from 2015–2019 through a Credit View subscription to Moody's Investor Service. We start collecting credit opinion reports from 2015, as 2015 is the year Moody's began regularly publishing quantitative forecasts with its credit opinion reports. These credit opinion reports provide forecasts based on industry-specific methodologies within a rating factors scorecard that indicates the financial metrics that are the most important factors for developing an issuer's credit ratings.

We match each acquisition to the first credit opinion report within one year following the completion date to ensure that Moody's incorporates the announced acquisition within its forecast. From the credit opinion reports, we collect quantitative forecasts for three key rating metrics: revenue, debt-to-EBITDA, and EBITA margin. These key indicator metrics correspond to the rating factor categories used by Moody's for scale, leverage and coverage, and profitability, respectively. For each key metric, Moody's provides the forecasted and last-twelve-month (LTM) values, which incorporate Moody's financial statement adjustments (Kraft, 2015). The forecasts are labeled as Moody's "forward view over the next 12–18 months." In order to compute measures of forecast bias, we match Moody's forecasts to the realized actual values reported in Moody's Financial Metrics. For each key indicator forecast, we match the corresponding actual from the next fiscal year ending 6–18 months after the credit opinion report date.³⁷ When the actual is not reported in Moody's Financial Metrics, we obtain the actual from the next credit opinion report within 6–18 months after the current report date. We use these actuals to compute the forecast bias measures described in Online Appendix Section OA.4. From each report, we also identify Moody's

³⁷ A senior Moody's analyst we interviewed stated that the key indicator forecasts are generally forecasted for either the current or the following year fiscal year end. Consistent with this, we observe that forecasts from the rating factors scorecard generally match the projection for the current or next fiscal year end shown in the often included "key indicator" table of the credit opinion reports that specifies forecasts by fiscal year end. As such, we match forecasts to their corresponding actuals as of the next fiscal year end within the 6–18 months following the report date.

long-term rating from the report's first page header, or when missing, we use the rating from the largest outstanding senior unsecured bond from Mergent FISD as of the report date.

In total, we identify 511 acquisitions with matching credit opinion reports and non-missing rating and control variables. Our final sample consists of 297 acquisitions with matching credit opinion reports that have at least one of either a revenue, debt-to-EBITDA, or EBITA margin forecast, matching actual values, and non-missing ΔMD *Abrating* and soft adjustments.

Table OA.1: Post-Merger Outcomes, Manager Optimism, and Rating Optimism

This table shows regressions results where the dependent variables are the post-merger outcomes examined in Tables 3–4. $\Delta \text{Abrating} \times \text{Manager Optimism}$ is an interaction variable that equals $\Delta \text{Abrating}$ multiplied by manager's leverage forecast optimism (*Manager Optimism*), which is defined in Section 6.3.1. All regressions are estimated using OLS with year and industry fixed effects, and standard errors clustered by acquirer. Continuous independent variables are standardized to have mean 0 and standard deviation 1. ****, ***, **, * denote statistical significance at the 10%, 5%, and 1% levels (two-sided) respectively. Variable definitions are detailed in Online Appendix Section OA.1.

VARIABLES	(1) <i>Downgrade</i> [1,2]	(2) <i>Downgrade</i> [1,3]	(3) $\Delta \text{ROA}2\text{yr}$	(4) $\Delta \text{ROA}3\text{yr}$	(5) $\Delta \text{CFO}2\text{yr}$	(6) $\Delta \text{CFO}3\text{yr}$	(7) <i>GWImp</i> 2yr	(8) <i>GWImp</i> 3yr
$\Delta \text{Abrating} \times \text{Manager Optimism}$	0.142*** [3.222]	0.090 [1.034]	-0.039** [-2.119]	-0.019** [-2.425]	-0.039*** [-5.026]	-0.040*** [-5.386]	0.044 [0.289]	0.021 [0.122]
<i>Manager Optimism</i>	0.070* [1.809]	0.090 [1.673]	-0.014** [-2.097]	-0.003 [-0.781]	-0.019*** [-3.440]	-0.013** [-2.416]	-0.038 [-0.437]	-0.086 [-0.982]
$\Delta \text{Abrating}$	-0.011 [-0.416]	0.039 [0.673]	0.011 [1.514]	0.002 [0.405]	0.013*** [3.406]	0.014*** [3.576]	-0.039 [-0.454]	0.042 [0.507]
$\Delta \text{Debt to EBITDA}$	-0.089* [-1.956]	-0.092 [-1.169]	0.016** [2.222]	0.015** [2.075]	0.008 [1.511]	0.005 [0.806]	-0.070 [-0.739]	-0.130 [-0.945]
$\Delta \text{Market to Book}$	0.006 [0.170]	-0.058* [-1.769]	-0.002 [-0.521]	0.002 [0.675]	-0.005** [-2.362]	-0.006** [-2.335]	-0.038 [-0.914]	-0.039 [-0.889]
$\Delta \text{Book Leverage}$	-0.018 [-0.693]	0.030 [0.457]	-0.006 [-1.479]	-0.012** [-2.548]	-0.004 [-0.979]	-0.002 [-0.399]	0.071 [0.962]	0.201*** [2.736]
$\Delta \text{Cash to Assets}$	-0.018 [-0.893]	-0.035 [-0.757]	0.002 [0.514]	-0.004 [-0.992]	0.009** [2.457]	0.010*** [2.686]	0.011 [0.176]	0.081 [1.322]
ΔIntCov	-0.119*** [-3.871]	-0.115*** [-3.635]	0.010 [1.188]	-0.001 [-0.415]	-0.006** [-2.079]	-0.006* [-1.965]	0.062 [0.901]	-0.072 [-0.940]
ΔProfit	0.065** [2.053]	0.010 [0.111]	0.017* [1.998]	0.022** [2.535]	0.002 [0.375]	0.005 [0.704]	0.201** [2.246]	0.243** [2.287]
ΔSize	0.012 [0.443]	-0.022 [-0.465]	-0.007 [-1.414]	-0.008* [-1.866]	-0.005 [-1.082]	-0.003 [-0.677]	0.084 [1.497]	0.088 [1.113]
$\Delta \text{Tangibility}$	-0.012 [-0.259]	0.011 [0.157]	0.003 [0.499]	0.004 [0.803]	0.006 [1.414]	0.006 [1.236]	-0.056 [-0.693]	-0.114 [-1.271]
Observations	94	93	93	91	93	91	94	94
R-squared	0.744	0.620	0.738	0.754	0.723	0.674	0.412	0.450
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table OA.2: Rating Agencies' Forecasts and Acquisition Rating Optimism

This table shows regressions results where the dependent variable is $\Delta MD A brating$, which is defined the same as $\Delta A brating$, but using Moody's rather than S&P's long-term issuer credit ratings. The independent variables $D2eFcBias$, $RevFcBias$, and $ProfitFcBias$ are measures of forecast bias percentage, computed as (Forecast – Actual)/Actual. These are calculated for Moody's key indicator forecasts for debt to EBITDA, revenue, and profitability, respectively. $SoftAdj$ is the difference between the actual credit rating and the hypothetical credit rating implied by the adjusted historical financials and key rating indicator forecasts. All regressions are estimated using OLS with year and industry fixed effects, and standard errors clustered by acquirer. Continuous independent variables are standardized to have mean 0 and standard deviation 1. ***/**/* denote statistical significance at the 10%, 5%, and 1% levels (two-sided) respectively. Variable definitions are detailed in Online Appendix Section OA.1.

VARIABLES	(1) $\Delta MD A brating$	(2) $\Delta MD A brating$	(3) $\Delta MD A brating$	(4) $\Delta MD A brating$
$D2eFcBias$	-0.159* [-1.912]			-0.393*** [-3.559]
$RevFcBias$		0.125 [1.372]		-0.110 [-1.089]
$ProfitFcBias$			0.645*** [3.295]	0.507** [2.648]
$SoftAdj$	-0.054 [-0.617]	-0.121 [-1.421]	-0.036 [-0.209]	0.003 [0.015]
$\Delta Debt\ to\ EBITDA$	0.055 [0.358]	-0.004 [-0.024]	0.511 [0.790]	0.355 [0.613]
$\Delta Market\ to\ Book$	-0.131 [-1.088]	-0.125 [-1.313]	-0.039 [-0.529]	-0.062 [-0.679]
$\Delta Book\ Leverage$	0.193 [1.615]	0.233* [1.930]	-0.231 [-0.748]	-0.265 [-0.927]
$\Delta Cash\ to\ Assets$	0.174 [1.649]	0.171 [1.540]	0.099 [0.665]	0.114 [0.849]
$\Delta IntCov$	-0.107 [-0.849]	-0.129 [-0.989]	-1.006* [-1.826]	-1.354** [-2.276]
$\Delta Profit$	-0.246*** [-2.795]	-0.234*** [-3.180]	0.605 [1.522]	0.699 [1.492]
$\Delta Size$	0.031 [0.200]	0.030 [0.202]	0.174 [0.514]	0.232 [0.651]
$\Delta Tangibility$	0.280*** [2.751]	0.259** [2.157]	-0.040 [-0.140]	-0.202 [-0.615]
Observations	275	252	71	65
R-squared	0.323	0.358	0.765	0.835