

# **The Impact of Corporate Takeover Activities on Analyst Optimism: Evidence from International Mergers and Acquisitions Laws**

**Zhenghang (Nathan) Zhu**

Research School of Accounting  
Australian National University  
Email: zhenghang.zhu@anu.edu.au

**Yue (Rio) Wu\***

Research School of Accounting  
Australian National University  
Email: yue.wu@anu.edu.au

**Kun Tracy Wang**

Research School of Accounting  
Australian National University  
Email: kun.wang@anu.edu.au

---

\***Corresponding author:** Yue Wu, Research School of Accounting, College of Business and Economics, Australian National University, Acton, ACT2601, Australia. Email: yue.wu@anu.edu.au.

# **The Impact of Corporate Takeover Activities on Analyst Optimism: Evidence from International Mergers and Acquisitions Laws**

## **Abstract**

Using a comprehensive sample of firms from 33 countries, we examine the impact of corporate takeover activities on analyst optimism. Exploiting the staggered initiation of mergers and acquisitions (M&A) laws as a plausibly exogenous growth in the takeover market and adopting a difference-in-differences framework, we find that analyst optimism increases significantly following the takeover market reforms through M&A laws. Our results are robust to an array of tests, including alternative measurement of analyst forecast optimism and alternative difference-in-differences specifications. Our evidence further indicates that the impact of M&A law adoption on analyst optimism is greater in countries with relatively higher M&A market growth, higher capital market growth and lower improvement of corruption control. We also document that the impact of international M&A laws on analyst forecast optimism is more pronounced for financially distressed firms and less pronounced for analysts worked at high-status brokerage houses. Overall, we find that boosting the takeover markets via M&A laws has an unintended spill-over effects on the sell-side analyst industry as it exacerbates analyst optimistic bias.

**Keywords:** *Corporate takeover activities; International M&A laws; Analyst optimism; Analyst forecast*

## 1. Introduction

The market for corporate control has been identified as a crucial corporate governance mechanism to mitigate agency problems and maximize firm value. A number of theoretical and empirical studies have demonstrated that corporate takeovers constrain managers from taking actions that are contrary to shareholders' interests (Manne 1965; Safieddine and Titman 1999). Because of such disciplinary benefit, many countries have passed mergers and acquisitions (M&A) laws to reform their takeover markets in the past few decades, aiming to boost capital market growth through enhanced external governance mechanism (Bris and Cabolis 2008).<sup>1</sup> These reforms are designed commonly to create a more equitable and transparent bidding process during corporate control transactions and simplify the M&A procedure, which significantly stimulate the growth of takeover activities in the domestic market.<sup>2</sup>

While M&A laws usually aim at changing corporate behaviors, participants in the corporate takeover markets are not limited to companies. Accordingly, the by-product of an active takeover market could be that the incentives of other market participants may also change, since the new rulings can affect a significant portion of their portfolios. We focus on one such participant, namely sell-side equity analysts. Although financial analysts are important information intermediaries in the market, they tend to be systematically over-optimistic about the earnings prospects of companies that they follow, and this phenomenon exists on an international scale (e.g., O'Brien 1988; Basu et al. 1998; Capstaff et al. 2001; Teoh and Wong 2002; Ertimur et al. 2011; Zhao et al. 2022). Because analyst forecast bias may

---

<sup>1</sup> These international M&A laws include provisions that are designed to ease the regulatory burden of acquirers in completing takeover transactions, improve information disclosure and protect minority shareholders' interests (Lel and Miller 2015). Therefore, the enactment of these laws results in a substantial increase in takeover activities and thereby takeover threats for CEOs. In consistent with the existing literature (e.g., Lel and Miller 2015; Khurana and Wang 2019), we label these worldwide legislations aiming to stimulate corporate takeover markets as 'international M&A laws'.

<sup>2</sup> The merger intensity increases by approximately 2.6 percentage point following the initiation of international M&A laws (Lel and Miller 2015, p.1595).

distort investors' expectations about earnings and affect their investment decisions, understanding factors that affect analyst optimism is of particular interests to regulators, practitioners, and academics alike.

In this study, we exploit the staggered implementation of M&A laws around the world as an exogenous shock to the growth of takeover market and investigate whether and how it affects analyst optimism. *Ex-ante*, it is unclear how the market for corporate control strengthened by international M&A laws would affect analyst optimism. Previous studies show that reforms to takeover markets can affect the level of private information gathering in the markets (e.g., Ferreira and Laux 2007; Zhao and Chen 2008). For instance, security analysts are motivated to gather private information in order to form accurate predictions about a firm's performance, especially when the firm is undergoing important corporate events, such as mergers and acquisitions. Therefore, the ease of takeover markets resulted from international M&A laws is likely to increase analysts' incentives to gather private information and cause them to exert greater efforts in collecting and disseminating information, which in turn increases the quality of information they provide.

On the other hand, other studies suggest that the interrelationship between analysts and their employers gives rise to a conflict of interest for analysts and incentivizes them to issue optimistic earnings forecasts and stock recommendations (Michaely and Womack 1999; Hirsch and Pozner 2005; Brauer and Wiersema 2018). Since M&A activities are relatively frequent and account for a significant portion of investment banking revenues, the related investment banking business (i.e., M&A advisory business) may provide strong incentives for analysts to compromise their objectivity (Kolasinski and Kothari 2008). Therefore, the increased takeover activities resulted from the passage of M&A laws may lead to more M&A advising opportunity, and thus motivating analysts to issue more optimistically biased forecasts in order to curry favour with the firm management and possibly secure future M&A advising business. This

suggests that the passage of international M&A laws is positively associated with analyst optimism.

We test these competing views by exploiting the worldwide adoption of M&A laws as a plausible exogenous shock to firms' takeover activities. As the relation between takeover activities and analyst optimism may be driven by omitted variables that jointly determine these two constructs, the global adoption of M&A laws allows us to exploit variations in takeover threats to firms and examine the relation between takeover activities and analyst optimism in a quasi-natural experiment, which may mitigate the endogeneity concern. Our setting improves our confidence in the causal inference in the effect of takeover activities on analyst optimism because it is unlikely that omitted factors will systematically correlate with a large number of staggered exogenous shocks in countries that are geographically dispersed and have diverse institutional characteristics. Our international setting also allows us to examine the role of country-level contextual factors in the relationship between M&A laws and analyst optimism.

To investigate the effect of M&A laws and analyst optimism, we construct a comprehensive sample consisting of treatment firms from 12 countries that passed the M&A laws and 21 countries that did not pass such laws during the period between 1992 and 2005. After applying a difference-in-differences (DID) research design and controlling for various time-varying country-, industry-, and firm-level factors, we find robust evidence suggesting that corporate takeover activities invigorated by the adoption of international M&A laws exacerbate analysts' optimistic bias in earnings forecasts. We also conduct a battery of tests to ensure the robustness of our finding. First, instead of using a sample that spans the entire sample period, we restrict our analysis to five years before and after the adoption of international M&A laws, and further require a firm to appear at least one year in both pre- and post-reform periods (i.e., a constant sample analysis). We find that our inference remains unchanged using this constant sample. Second, we use two approaches to assess the validity of the parallel trend

assumption underlying the DID method. We first conduct a placebo test in the post-reform period. If our documented changes in analyst forecast optimism are simply a result of increasing optimism over time due to unknown time-varying factors instead of the reforms, then we should expect to see increased analyst forecast optimism in the placebo test. However, in the absence of treatment firms, we do not find any evidence of changes in the forecast optimism. We next perform a dynamic DID analysis to examine the time trend in the effect of the adoption of international M&A laws on analyst optimism. The results show that the effect of the reforms is only present for the post-reform period, and that the effect is long-lasting. These results of both the placebo test and the dynamic DID analysis suggest that our main finding is unlikely to be driven a pre-reform trend. Finally, we perform a test to test whether our results are sensitive to the DID specification. We first apply the propensity-score-matching (PSM) technique to achieve a more comparable benchmark for the treatment firms. Results from this test further confirm our main finding, that is, an encouraging market for corporate control through adopting international M&A laws, on average, tends to increase the degree of analyst forecast optimism.

Next, we explore where the effect of adopting international M&A laws on analyst forecast optimism varies across countries, client firms, and analysts. We find that the impact of easing corporate takeover activities on analyst forecast optimism is more pronounced in countries with relatively higher M&A market growth, higher capital market growth and lower improvement of corruption control. We also find that the negative impact of international M&A laws on analyst forecast optimism is more pronounced for financially distressed firms. Moreover, we document that the impact of adopting international M&A laws is less pronounced for analysts worked at high-status brokerage houses. Taken together, our results support the notion that an active takeover market invigorated by the passage of M&A laws

motivates analysts to issue more optimistically biased forecasts in order to curry favour with the firm management in pursuit of future investment banking deals.

Our study makes at least the following contributions. First, we extend the literature that examines the relation between external governance structures and analyst forecast quality. Despite the importance of understanding the determinants of analyst forecast quality, existing studies offer competing predictions and mixed findings in this area. For example, while Armstrong et al. (2010) find that lower takeover threats faced by managers reduce the information asymmetry in the market and thus enhance analyst forecast accuracy, Francis and Martin (2010) find contrasting results when they vary the dimension of information environment examined, implying a positive relation between takeover threats and analyst forecast accuracy. The mixed findings are likely due to the endogenous relation between a firm's corporate governance structure, its external information environment, and analyst behaviors. By using the international adoption of M&A laws as a plausible exogenous shock, our study can surpass this endogeneity concern in the literature and provide causal evidence that corporate takeover markets deteriorate equity analyst forecast quality. More importantly, our setting enables us to differentiate between the alternative channels through which takeover threats affect analyst forecast optimism. We find that the growth in takeover market motivates analysts to issue more optimistically biased forecasts in order to curry favour with firm management and secure possible future M&A advising business.

Second, our study contributes to the literature examining the economic consequences of adopting international M&A laws (e.g., Lel and Miller 2015; Khurana and Wang 2019; Balachandran et al. 2020; Hu, Li et al. 2021). A few studies show that the adoption of M&A laws enhances managerial discipline (Lel and Miller 2015), constrains bad news hoarding (Balachandran et al. 2020), increases firms' accounting conservatism in their financial reports (Khurana and Wang 2019) and reduces tax avoidance activities (Hu, Li et al. 2021). We extend

this line of studies by providing evidence that stimulating M&A activities through adopting M&A laws has an unintended spill-over effect on the sell-side analyst industry as it exacerbates analysts' optimistic bias. Our findings are of interest to policy makers and regulators around the world who have adopted the M&A laws or are interested in promoting the market for corporate control.

Third, our study extends the research on international analyst forecast activities. Previous studies that investigate the effect of takeover threats on analyst forecast activities mainly focus on a single country setting, thus do not shed light on the role of country-level institutions in shaping the effect of market for corporate control on analyst forecast activities. For example, Armstrong et al. (2012) find that the passage of state antitakeover laws in the U.S. has led to decreased information asymmetry and lower private information gathering. Our study differs from Armstrong et al. (2012) by investigating the effect of takeover threats on analyst behaviors across countries and shedding new insights into how the adoption of M&A laws affect the global analyst industry. We provide new insights that while the worldwide adoption of M&A laws reduces firms' information opaqueness and uncertainty, it exacerbates analysts' optimistic bias in their forecasts, and that the effect is more salient in countries with relatively higher M&A market growth, higher capital market growth and lower improvement of corruption control.

## **2. Literature review and hypothesis development**

The adoption of M&A laws is widely observed in many countries and it is generally regarded as a source of variations in managerial takeover threats. Theories underpinning M&A activities suggest several motivations for enacting the laws. For instance, M&A laws may serve to strength corporate information transparency, promote efficient capital allocation, attract more capital into the stock market, and protect minority shareholders. Literature on regulation

also finds that the countries established a set of legal frameworks that ease the regulatory burden of acquirers in completing takeover transactions tend to improve information disclosure and protect minority shareholders' interest by enacting the M&A laws (e.g., Lel and Miller 2015). Recent research has begun to explore the impact of adopting international M&A laws on managerial discipline. For example, Lel and Miller (2015) document greater acquisition intensity and a higher likelihood of underperforming CEO turnover following the initiation of the law in the international context. They also find that the governance role of M&A laws is mainly attributable to the countries with poor investor protection. Consistent with these findings, subsequent research offers evidence that the passage of international M&A laws leads to increased accounting conservatism, lower stock price crash risk, and reduced tax avoidance activities (Khurana and Wang 2019; Balachandran et al. 2020; Hu, Li et al. 2021). Collectively, the main insight from this stream of literature is that the passage of international M&A laws has led to a greater threat of takeovers, which in turn has served as an important external governance mechanism, providing boards with intensive incentives to discipline managers.

In contrast to the previous studies, the central question that we are addressing is '*whether an active takeover market stimulated by the adoption of international M&A laws affect sell-side analyst optimism?*'. Sell-side analysts face an incentive trade-off between issuing accurate forecasts to enhance their reputation (Hong and Kubik 2003; Ljungqvist 2009; Fang and Yasuda 2009) and issuing optimistic forecasts to promote investment banking business (Dugar and Nathan 1995; Jackson 2005; Guan et al. 2012) and/or maintain positive relationships with firm management (Ke and Yu 2006; Chen and Matsumoto 2006; Mayew 2008). Thus, the impact of an active market for corporate control, invigorated by the passage of M&A law, on analyst optimism depends on how they affect these perceived incentives.

On one hand, an active corporate takeover market may dampen sell-side analyst optimism by increasing investor demand for more accurate analyst forecasts. The increase in

the probability of takeover activities has found to arouse investors' trade interests and their incentives to collect price information related to takeovers (Jindra and Walking 2004; Li and Qian 2013; Cassell et al. 2013).<sup>3</sup> This is partially owing to the fact that the increased takeover threat may motivate managers to withhold private information in order to defend against unwanted takeover attempts (Shleifer and Vishny 1989; Francis et al. 2005; Servaes and Tamayo 2014). If the public disclosure channels are curtailed, then information needs related to takeover events may only be met through other information sources such as financial analysts. This could lead investors to demand a higher level of accuracy in the information provided by analysts, and such a rising information demand could potentially limit analyst bias and incentivize them to issue more accurate (less optimistic) forecasts because of the reputational capital gains and possible trading commissions that might follow (Hong and Kubik 2003; Fang and Yasuda 2009). Therefore, it is possible that the passage of international M&A laws is negatively associated with analyst optimism.

On the other hand, an active corporate takeover market invigorated by the passage of M&A laws may exacerbate analyst optimistic bias due to the conflict of interest. Prior research suggests that the interrelationship between analysts and their employers gives rise to a conflict of interest for analysts and incentivize them to issue optimistic earnings forecasts and stock recommendations (Michaely and Womack 1999; Hirsch and Pozner 2005; Brauer and Wiersema 2018). Doing so will increase the likelihood that analysts will have access to corporate executives and help their employers attract investment banking clients (Chen and Matsumoto 2006; Mayew 2008; Guan et al. 2012). In fact, because M&A activities are relatively frequent and account for a significant portion of investment banking revenues, the related investment banking business (i.e., M&A advisory) provides strong incentives for

---

<sup>3</sup> Supporting this notion, Armstrong et al. (2012) find that the passage of state antitakeover laws in the U.S., which reduces the threat of hostile takeover faced by managers, has led to decreased information asymmetry and lower private information gathering.

analysts to compromise their objectivity, even more so than the incentives provided by the underwriting business (Kolasinski and Kothari 2008). In this regard, the growth in takeover market resulted from the passage of M&A laws may possibly lead to an outward shift in the supply curve of M&A advising opportunity, which may motivate analysts to issue more optimistically biased forecasts in order to curry favour with firm management and secure possible future M&A advising business. This is because greater analyst optimism may help managers fend off the greater takeover threat posed by the M&A laws, as it may increase the firm's acquisition price.

Reflecting the competing view on the effect of international M&A laws on equity analysts' forecasting performance, we state our competing hypotheses as follows:

*H1a: The passage of M&A laws reduces analyst optimism.*

*H1b: The passage of M&A laws increases analyst optimism.*

### **3. Sample and research design**

#### *3.1. Sample and Data*

We begin our sample selection by identifying countries that have initiated M&A laws. To do this, we rely on data collected by Lel and Miller (2015), who collect information regarding the enactment of international M&A laws from various resources, including Institute for the Study of Security Markets, the Trades, Automated Quotes, financial law publications, the websites of national regulatory agencies, and previous studies. According to Lel and Miller (2015), 12 countries enacted M&A laws for the first time from 1992 to 2003 (the treatment group) and 21 control countries did not have takeover laws during the same period (the control group). Following the literature on international M&A laws (e.g., Lel and Miller 2015; Khurana and Wang 2019; Balachandran et al. 2020), we exclude countries that passed takeover laws after 2003 to avoid the confounding effects of the passage of the European Union's Takeover

Directive in 2004<sup>4</sup> and the worldwide adoption of International Financial Reporting Standards in 2005. Panel A in Table 1 provides information on the enactment year for the 12 countries that initiated an M&A law. The earliest adoption of M&A laws occurs in 1995 when Sri Lanka passed Company Takeovers and Mergers Code, and the last adoption of M&A laws occurs in 2002 when Taiwan passed the Business Mergers and Acquisitions Acts and German passed the Takeover Act. Following Khurana and Wang (2019), we restrict our sample period to be from 1992 to 2005 to ensure we have at least three years of data for both the pre-adoption and post-adoption periods.

We next retrieve data on equity analysts' forecasting performances from institutional Brokers Estimate Service (I/B/E/S) detail files. To ensure that data on analyst forecast included in our study is timely, following the literature (e.g., Datta et al. 2013; Haw et al. 2015), we only use forecasts issued within three months before actual earnings announcements. If the same equity analyst provides multiple forecasts for a particular financial year, we then only retain the latest one. Keeping the most recent analyst forecast can better reflect the most updated information. Lastly, we obtain financial data used in constructing control variables from Worldscope, and we require the necessary data be available from the database for a given test to ensure a relatively large number of observations for each test. After merging all the datasets, we then exclude observations in financial industry (SIC 6000-6999).<sup>5</sup>

Panel A in Table 1 reports the sample national distribution and the year when the country enacted its staggered M&A law. Among the countries that passed the M&A laws, German has the largest number of observations at 2,029 (469 unique firms), followed by Malaysia with 1,284 observations (263 unique firms). On the other hand, Sri Lanka has the smallest number of observations in our sample (17 observations from 8 unique firms). Panels B and C of Table

---

<sup>4</sup> The implementation of the European Union's Takeover Directive in 2004 allows countries considerable flexibility to opt out of the Directive, leading to difficulty in determining the laws that are applicable across countries (Lel and Miller 2015; Balachandran et al. 2020).

<sup>5</sup> Our results are still robust when we include observations in financial industry.

1 reports the sample distribution by year and industry, respectively. We observe an increasing trend of sample size from 806 observations in 1992 to 3,633 observations in 2005. The peak of average forecast optimism coincides with the internet-bubble in the late 1990s. In terms of forecast optimism across industries, pharmaceutical industry and extractive industry on average has lowest forecast optimism (0.006), whereas mining/construction industry on average has highest forecast optimism (0.037).

[Table 1 here]

### 3.2. Model specification

To test the relation between the passage of M&A laws and analyst optimism, we apply a DID research design by estimating a regression model analogously to Lel and Miller (2015) and Khurana and Wang (2019). This technique aims to reproduce a scientific experiment by using observational data and compares the average change in the outcome variable over time between the treatment and control groups. The regression takes the following form:

$$Bias = \beta_0 + \beta_1 Post + \beta_n Controls + Year FE + Firm FE + \varepsilon \quad (1)$$

where *Bias* is measured by the difference between the median analyst forecasts and actual earnings for a given year scaled by share price at the beginning of year.<sup>6</sup> Following Zhao et al. (2022), we use the last estimates given by analysts following a firm that were made within 90 calendar days of the annual earnings announcement when computing *Bias*. A higher value of *Bias* indicates greater degree of analyst forecast optimism.

Our variable of interest is *Post*, which is a dummy variable indicating post-enactment periods for countries that adopted M&A laws. Following Lel and Miller (2015) and Khurana and Wang (2019), we identify 21 countries that never enacted M&A laws to be our control groups, and thus *Post* is assigned with a value of zero for observations in these control countries

---

<sup>6</sup> Following Cotter et al. (2012) and Horton et al. (2013), we also use absolute value of actual earnings rather than stock price as a deflator to address the concern that the usage of stock price cannot avoid the confounding effect of systematic movement of worldwide stock price. We find our results are unaffected by the choice of deflator.

and also those observations in the pre-enactment periods from treatment countries. *H1a* (*H1b*) is supported if  $\beta_I$  is significantly negative (positive).

Although a DID research design separates the effect of adopting international M&A laws from other factors potentially affecting equity analyst optimism by focusing on periods surrounding the reforms, industry-specific and firm-specific time-varying factors with potential influence on analysts' forecasting activities remain a concern. Therefore, it is important to control for the systematic differences across industries and firms to isolate the impact of international M&A law adoption. Accordingly, we include in the model a set of control variables that may simultaneously affect analysts' activities. Specifically, we first control for the market competition (*HHI*) since Haw et al. (2015) note that it is likely to have lower analyst forecast accuracy for firms operating in a more competitive environment. We measure market competition (*HHI*) as the sum of the squared market shares of firms in each year-country-industry combination (Haw et al. 2015). Next, we include *INDSIZE* to measure industry size because firms in a large industry may attract more analyst attentions (Haw et al. 2015). We include firm size (*SIZE*) to proxy for various factors including investor attention and information availability, as these factors affect analysts' forecast accuracy (Hope 2003; Haw et al. 2015). *SIZE* is measured by the natural logarithm of a firm's total assets. We add *Loss* because analysts tend to provide more biased forecasts for firms with a net loss (Brown 2001; Duru and Reeb 2002). *Loss* is an indicator variable that equals one if the firm reports a net loss in the current year, or zero otherwise.

Previous studies indicate that the proprietaries of analyst forecasts are significantly associated with firms' leverage, profitability, earnings surprise, earnings variability, and earnings quality, therefore we also control leverage (*LEV*), *ROA*, earnings surprise (*SURPIRSE*), the level of absolute accruals (*Accrual*), the standard deviation of returns on equity (*STDROE*), and the correlation between stock returns and earnings (*CORR*) (e.g., Duru

and Reeb 2002; Dhaliwal et al. 2012; Horton et al. 2013; Haw et al. 2015; Hu, Long et al. 2021). *LEV* is the ratio of total liabilities to total assets at the beginning of the year. *ROA* is the firms' net income before extraordinary items divided by total assets. *SURPRISE* is the absolute value of change of EPS. *Accrual* is the absolute difference between net incomes and cash flows, divided by total assets. *STDROE* is measured as the standard deviation of returns on equity in the last three years. We define *CORR* as the correlation between net income and annual stock returns over the past three years.

We also control for four analyst-related variables. Specifically, we include analyst coverage (*Coverage*) since firms with larger analyst coverage have less information asymmetry, which improves analyst forecast accuracy (Horton et al. 2013). We control for analyst forecast horizon (*Horizon*) because longer forecast horizon results in less forecast accuracy (Brown et al. 1987). *Horizon* is measured as the natural logarithm of one plus the average number of days between analyst forecast date and subsequent actual earnings announcement date. The size of brokerage house (*BHSIZE*) is included to because prior research suggests a positive association between analyst accuracy and size of analysts' brokerage house (Clement and Tse 2003). *BHSIZE* is the natural logarithm of average number of analysts that provide current annual forecasts for all the brokerage houses that employ an investment analyst who follows the focal firm. Since analysts with better knowledge about the client firms could provide more accurate forecasts (Clement and Tse 2003), we control for analysts' experience about a focal firm (*AnaExp*) in the regression. *AnaExp* is calculated as the average number of years that analysts follow the focal firm. At last, we include the year and firm fixed effects to account for the variation in analyst optimism that is potentially driven by year and unobserved firm heterogeneities.

All of the continuous variables are winsorized at the 1% and 99% levels. Standard errors are clustered at the firm level. The definitions of variables are summarized in the Appendix.

## 4. Summary statistics

Table 2 shows the univariate analysis for the full sample. The mean of *Bias* is 0.02, indicating that, on average, analysts tend to issue optimistically biased forecasts, which is consistent with those reported in prior research (e.g., Basu et al. 1998; Capstaff et al. 2001). The mean value of *Post* is 0.124, which indicates that 12.4% of the observations in our sample are from the post-M&A-law-enactment period. For an average firm in our sample, the number of analyst following is 4.19, the forecast horizon is 34.79 days, and the number of years that analysts follow the firm is 3.5 years.<sup>7</sup> About 20% of the observations report a loss in our full sample.

[Table 2 here]

The correlation matrix in Table 3 shows that *Post* is positively correlated to *Bias*, which provides initial support for *H1b*. Since univariate correlation analysis does not take account of the influence of other correlated variables, we need to rely on the evidence from multivariate analysis to support our hypothesis.

[Table 3 here]

## 5. Results and analysis

### 5.1. Baseline results

Table 4 reports the results of testing the competing hypotheses regarding the effect of takeover activities invigorated by M&A laws on analyst optimism. Column 1 reports the results when we regress *Bias* on *Post* and year and firm fixed effects but do not include any control variables. We find that the coefficient on *Post* ( $\beta = 0.050$ ,  $p < 0.01$ ) is positive and statistically significant. The result also holds when we further include all of the control variables in the

---

<sup>7</sup> The mean of analyst following and forecast horizon are calculated based on the raw data on analyst coverage and forecast horizon, respectively.

regression (reported in Column 2). These findings suggest that analyst earnings forecasts become more optimistic following the adoption of M&A laws, which supports *H1b*. The coefficients of the control variables are generally consistent with those reported in the literature (e.g., Duru and Reeb 2002; Hu, Long et al. 2021). We find that analyst forecast optimism is positively associated with firm size, loss occurrence and the magnitude of earnings surprises, whereas it is negatively associated with firm leverage and firm performance.

[Table 4 here]

## 5.2 Robustness tests

### 5.2.1 Alternative test window

To examine whether our findings are sensitive to the test window used in our analysis, we restrict our sample to the  $[t-5, t+5]$  year window (with year  $t$  representing the reform's implementation year of a treatment country) in measuring analyst-related variables and re-estimating our model. We further require a firm to be observable during both the pre- and post-adoption periods. These additional requirements help mitigate the potential influence from the differences in firm composition and sample years during the pre- and post-reform periods on our findings. In addition, this test can further mitigate the concern of confounding events. The result is reported in Table 5 Column 1. Our main findings still hold, that is, analyst forecast optimism increases significantly after the adoption of international M&A law, which indicates that our results are robust to different test windows.

[Table 5 here]

### 5.2.2 Alternative difference-in-differences specification

Next, we examine whether our results are sensitive to alternative DID model specifications by using the matching technique based on one-to-one nearest-neighbor propensity score matching without replacement to identify comparable control firms from countries that did not adopt international M&A laws. Specifically, we match each treatment

firm with a firm from a country that did not adopt such laws based on firm size, and year and industry fixed effects. Then we assign a pseudo adoption year to the matched benchmark firm based on the adoption year of the treatment firm. The new model specification is as follows.

$$Bias = \beta_0 + \beta_1 Post + \beta_2 Treatment + \beta_3 Post \times Treatment + \beta_n Controls + Year\ FE + Firm\ FE + \varepsilon \quad (2)$$

where *Treatment* is an indicator variable indicating treatment firms (i.e., firms in countries with international M&A laws adopted in year *t*), and *Post* is an indicator variable indicating whether it is in the post-reform period. *Treatment* will be suppressed in this specification because of the inclusion of firm fixed effects. Again, we find the results from this test support our earlier results. As reported in Table 5 Column 2, the coefficient on the interaction term *Post* × *Treatment* is significantly positive in the analyst forecast optimism model, indicating that our main findings are robust to alternative DID specification.

### 5.2.3 Test of the parallel trends assumption

An important underlying assumption of a DID research design is the parallel trend assumption. That is, there is no statistically significant difference between the treatment group and the control group before international M&A laws are adopted. To test the plausibility of the parallel trends assumption, we first conduct a placebo test by restricting our analysis to the post-reform period and setting the fifth year after the year in which a country's reform became effective as the pseudo reform effective year. We replace *POST* in Eq. (1) with *POST\_Pseudo*, which is an indicator variable indicating the pseudo reform year and any years after. Table 5 Column 3 reports the results of the placebo test. The coefficient on *POST\_Pseudo* is negative and statistically insignificant. This finding thus supports the assumption that, in the absence of international M&A laws, the treatment and control samples show a similar trend in the analyst forecast optimism.

Next, we employ a dynamic DID analysis to evaluate the dynamic effects of adopting international M&A laws. Ideally, if the adoption of M&A laws truly affects analyst forecast

optimism, such impact should only exist in periods after the adoption of such laws. In this test, we generate a set of year indicators to indicate whether a given year is three years ( $Year_{-3}$ ), two years ( $Year_{-2}$ ), or one year before M&A law enactment ( $Year_{-1}$ ), the year of M&A law enactment ( $Year_0$ ), or the first year ( $Year_1$ ), second year ( $Year_2$ ), or the third and subsequent years after M&A law enactment ( $Year_{3+}$ ). We then regress analyst forecast optimism on these year indicators together with the control variables. The results are reported in Table 5 Column 4. We find that the coefficients on all of the pre-adoption year indicators ( $Year_{-3}$ ,  $Year_{-2}$  and  $Year_{-1}$ ) are statistically insignificant, implying that our results are not driven by a pre-reform trend. More importantly, the post-adoption year indicators are all positive and statistically significant. Thus, these results lay further support on our main finding that the adoption of M&A laws exacerbate analysts' optimistic bias in earnings forecasts.

## 6. Additional analyses

### 6.1. Country-level cross-sectional variation in the impact of international M&A laws on analyst optimism

Next, we examine whether the impact of international M&A laws on analyst forecast optimism varies with country-level institutions. We conjecture that if it is truly the adoption of international M&A laws that drive our results, the effect should be more pronounced in countries where the M&A laws are most effective in stimulating takeover activities. We test this conjecture by decomposing  $Post$  into  $Post_{HiMAGrowth}$  and  $Post_{LoMAGrowth}$ , which indicate whether the growth of M&A number from the pre-reform period to the post-reform period in a given country is greater or lower than the sample median, respectively. We then re-estimate Eq. (1) using these two variables as our test variables.<sup>8</sup> Column 1 of Table 6 reports

---

<sup>8</sup> The growth of M&A number in a given country is calculated as the total number of M&As (obtained from Security Data Corporation M&A database) in a given country in post-reform period minus the total number of M&As in pre-reform period, scaled by the total number of M&As in pre-reform period. The pre-reform period (post-reform period) is a five-year period before (after) the enactment of the M&A law.

the results. Consistent with our prediction, we find that the impact of stimulating takeover activities via adopting M&A laws on analyst forecast optimism is only observable in countries where M&A laws are most effective.

We also use the change of market capitalization of listed domestic companies between the pre- and post-reform periods to capture the effectiveness of international M&A laws in capital market development. Literature on M&A reforms suggests that the countries pass the M&A laws to fuel capital market development (Lel and Miller 2015; Glendening et al. 2016), and the development of capital market triggers more demands of investment banking service. Thus we predict that the impact of passage of M&A laws on analyst forecast optimism is more salient in countries where M&A laws are more effective to facilitate capital market development. Specifically, we decompose *Post* into *Post\_HiCapgrowth* and *Post\_LoCapgrowth*, which indicate whether the change of market capitalization from the pre-reform period to the post-period in a given country is greater or lower than the sample median, respectively.<sup>9</sup> Column 2 of Table 6 shows the results. Consistent with our prediction, we find that the positive effect of passage of M&A law reforms on analyst optimism is only observable in countries with the highest growth of capital markets.

[Table 6 here]

In addition, the passage of staggered M&A laws improves corporate information disclosure, disciplines managerial behaviors, and protects minority shareholders' interest, which can help overcome managerial moral hazard and adverse selection issues (Lel and Millers 2015). Considering the effect of institutional development in attenuating analyst optimism (Bradshaw et al. 2019), we expect the impact of international M&A laws on analyst

---

<sup>9</sup> The change of market capitalization in a given country is calculated as the mean of GDP-scaled total market value of listed domestic companies in a given country (obtained from World Bank) in post-reform period minus the mean of GDP-scaled total market value in pre-reform period, scaled by the mean of GDP-scaled total market value in pre-reform period. The pre-reform period (post-reform period) is a five-year period before (after) the enactment of the M&A law.

forecast optimism to be greater in countries where the M&A law is less effective to protect investors' interest. To test the prediction, we decompose *Post Post\_HiCPIgrowth* and *Post\_LoCPIgrowth*, which indicate whether the change of corruption control from the pre-reform period to the post-period in a given country is greater or lower than the sample median, respectively.<sup>10</sup> Column 3 of Table 6 shows the results. Consistent with our prediction, we can only observe the positive effect of passage of M&A laws on analyst optimism in countries with lowest improvement of corruption control.

## 6.2. Firm-level cross-sectional variation in the impact of international M&A laws on analyst optimism

We also investigate whether the relation between adopting international M&A laws and analyst forecast optimism varies with firm characteristics. Prior research suggests that firms experiencing financial distress are more likely to be the target in the takeover market and thus facing more takeover threats, because assets of these firms can be redeployed to other firms that can use them more effectively (Jensen 1991; Bugeja 2015). Therefore, a more active market for corporate control, invigorated by the passage of M&A laws might increase the probability if financially distressed firms being acquired, which in turn increases client firms' demand for analysts to use optimistic forecasts to ward off the takeover threats. To test this conjecture, we construct three measures of financially distressed firms based on whether a firm makes a loss, has a low level of profit growth, and is a small firm in the fiscal year. Specifically, we re-estimate Eq. (1) by interacting *Post* with the loss indicator (*Loss*), ROA growth indicator (*LoROAGrowth*), and the indicator for small firm size (*LoSIZE*), respectively. *LoROAGrowth*

---

<sup>10</sup> The change of corruption control in a given country is calculated as the mean of corruption perception index (CPI) in a given country (obtained from Transparency International) in post-reform period minus the mean of CPI in pre-reform period, scaled by the mean of CPI in pre-reform period. The CPI index reflects the extent to which corruption is perceived to exist among public officials and politicians, which has been widely used by literature to proxy for control of corruption and investor protection (e.g., Fan et al. 2012; Brockman et al. 2013; Rauter 2020). An advantage of this index is that it provides both time-series and cross-sectional variation since 1995. The higher value of CPI reflects greater control of corruption and investor protection. The pre-reform period (post-reform period) is a five-year period before (after) the enactment of the M&A law.

is an indicator variable that equals one if a firm's ROA growth is less than the sample median in a given year, and zero otherwise. ROA growth is calculated as the change of ROA divided by ROA in the previous year. *LoSIZE* is an indicator variable that equals one if a firm's *SIZE* is less than the sample median in a given year, and zero otherwise. Table 7 reports the results, and we find that the interaction terms  $Post \times Loss$ ,  $Post \times LoROAGrowth$ , and  $Post \times LoSIZE$  are all positive and significant, suggesting that the impact of adopting international M&A laws is greater for firms with greater financial distress.

[Table 7 here]

### 6.3. Channel test

We posit that analysts tend to make more optimistic forecasts following the takeover market reforms in an attempt to curry favour to firm management and obtain more investment banking business in the future. We examine the plausibility of this argument by testing whether the impact of adopting international M&A laws on analyst forecast optimism varies with brokerage house characteristics. Prior research shows that analysts employed by high-status investment banks tend to have more access to firm management (Clement 1999; Al-Aamri et al. 2022), and thus, given the established link between analysts and firm management, they may have less incentive to use optimistically biased forecasts to please firm management. Therefore, if the adoption of international M&A laws affects analyst forecast optimism through altering analysts' incentives to gain greater access to firm management, we expect such an impact to be less pronounced for analysts at relatively high-status brokerage houses.

To test this possibility, we investigate whether the enactment of M&A laws in the client's country affects the forecast optimism of brokerage houses that cover the client firm, and whether the effect varies with brokerage house status. Specifically, we regress the average forecast optimism in a given broker-firm-year cluster (*BrokerBias*) on *Post*, the control variables included in the baseline model, and year and firm fixed effects. *BrokerBias* is the

mean of forecast *Bias* provided by a focal brokerage house for a focal firm in a given year. To investigate the moderating effect of brokerage house status, we further interact *Post* with brokerage house status and rerun the equation. Since high-status brokerage houses are larger and have a longer history in investment bank service than other brokers (e.g., Al-Aamri et al. 2022), we measure the brokerage house status as *HiBrokerSize* and *HiBrokerExp*, respectively. *HiBrokerSize* is an indicator variable that equals one if the brokerage house size (measured by number of analysts) is greater than the sample median in a given year, and zero otherwise, while *HiBrokerExp* is an indicator variable that equals one if the brokerage house experience (measured as the number of years since the brokerage house starts to provide forecasts) is greater than the sample median in a given year.

Table 8 shows the results. We continue to find a significantly positive coefficients on *Post* in Column 1 of Table 8, indicating that the change in analyst forecast optimism derives from the outward shift in the supply curve of M&A advising opportunity in clients' country. In addition, we find negative and significant coefficients on both interaction terms *Post*×*HiBrokerSize* and *Post*×*HiBrokerExp* in Columns 2 and 3, suggesting that the effect of passing staggered M&A laws is less salient for high-status brokerage houses. Taken together, the results support our view that brokerage houses' greater tendency of forecast optimism following the M&A law adoption derives from their greater incentives to curry favour to firm management and obtain more investment banking business.

[Table 8 here]

#### *6.4. Alternative explanation for the positive relationship between the passage of M&A laws and analyst forecast optimism*

While our finding of a positive relationship between the passage of M&A laws and analyst forecast optimism is consistent with the argument that the takeover market reforms increase analysts' incentives to produce optimistic forecasts to curry favour with the firm's

management in pursuit of potential investment banking deals, it is possible that the increased takeover threat leads managers to adjust corporate disclosure policies to defend against takeover attempts (Shleifer and Vishny 1989; Francis et al. 2005; Servaes and Tamayo 2014). This could potentially result in a deteriorated corporate information transparency, thus making it difficult for analysts to make accurate forecasts. To eliminate this alternative explanation, we examine the impact of adopting international M&A laws on firms' information transparency. In doing so, we re-estimate Eq. (1) using two new dependent variables, namely information opaqueness (*Opaque*) and information uncertainty (*Uncertainty*).<sup>11</sup> Table 9 reports the results. We find that the adoption of international M&A laws improves firms' information transparency, as evidenced by reduced information opaqueness and uncertainty for treatment firms during the post-reform periods. This result suggests that our finding of a positive relationship between the adoption of international M&A laws and analyst optimism is unlikely to be explained by a deterioration in firms' information transparency.

[Table 9 here]

## 7. Other robustness tests

Finally, we conduct several additional analyses to ensure the robustness of the findings. To begin with, we examine whether analyst optimism is also observable in their stock recommendations. Following Mola and Guidolin (2009), we measure an analyst's optimism as the percentage of analyst recommendations that upgrade a stock to the "strong buy" rating (*Upgrade\_Sbuy*). An upgrade to the "strong buy" rating signals the greatest level of optimism because it not only is the highest level of ratings but also indicates that the analyst's prior views

---

<sup>11</sup> Following Balachandran et al. (2020) and Herrmann et al. (2015), *Opaque* is measured by the three-year moving sum of the absolute value of discretionary accruals estimated based on the performance-adjusted Jones model. *Uncertainty* is estimated based on BKLS (1998) model, which is measured using the following formula:  $Uncertainty = \left(1 - \frac{1}{N}\right) \times D + SE$ , where  $D$  is the variance of analysts' earnings forecasts,  $N$  is the number of analysts' earnings forecasts, and  $SE$  is the squared analysts' earnings forecast error measured by subtracting the analysts' median earning forecast from actual earnings.

on the stock have been exceeded (Mola and Guidolin 2009). Then we regress *Upgrade\_Sbuy* on *Post*, the control variables included in the baseline model, and year and firm fixed effects. Column 1 of Table 10 shows the results. The positive coefficient on *Post* indicates that the enactment of staggered M&A laws enhances analysts' optimism in their recommendations.

[Table 10 here]

Cotter et al. (2012) argue that using stock price as a deflator is not suitable for tests covering sample period 2003-2007 (as it is in our case) because of the systematic movement of worldwide stock prices in this period. We therefore examine whether our findings are sensitive to the choice of the deflator. We find that our results (reported in Column 2 of Table 10) still hold when we use actual earnings per share as the deflator. Lastly, we evaluate the robustness of our findings to the choice of analyst forecast horizon. Columns 3 and 4 of Table 10 report results using analyst forecast with horizons of 180 and 360 days to earnings announcement dates to compute forecast optimism. Again, the degree of analyst forecast optimism significantly increases after the adoption of M&A laws, indicating that our results are not sensitive to the choices of forecast horizons.

## **8. Conclusion**

In this paper, using an international setting and exploiting the adoption of international M&A laws as a plausible to firms' corporate takeover activities, we examine the effect of adopting the international M&A laws on sell-side analyst forecast optimism. We apply a DID research design that includes both firm- and year-fixed effects, which control for the within-firm and within-year change in analyst forecast optimism between the treatment and benchmark firms. We find robust evidence that implementing M&A laws exacerbates analyst forecast optimism.

The results of additional analyses further show that, the impact of easing corporate takeover activities on analyst forecast optimism is more pronounced in countries with relatively higher M&A market growth, higher growth in capital market, and lower improvements in corruption control. We also find that the negative impact of international M&A laws on analyst forecast optimism is more pronounced for financially distressed firms. Moreover, we document that the impact of adopting international M&A laws is less pronounced for analysts worked at high-status brokerage houses.

Taken together, our results support the notion that an active takeover market invigorated by the passage of M&A laws motivates analysts to issue more optimistically biased forecasts in order to curry favour with the firm management in pursuit of future investment banking deals. Overall, we document that the widespread adoption of international M&A laws appears to have an unintended consequence on sell-side analyst industry worldwide, yet the effect varies with firm-, analyst-, and country-level characteristics. While previous studies suggest that takeover market reforms, invigorated by international M&A laws, discipline managerial behavior and increase corporate reporting conservatism, the findings from our study suggest that a country's implementation of takeover market reforms can also have the potential to create a real but negative impact on information intermediaries by inducing more conflicts of interest.

## References

- Al-Aamri, I., Hussain, S., Su, C. and Hsu, H.H., 2022. The importance of brokerage house size in determining the utility of IFRS8 segment data to financial analysts. *Journal of International Accounting, Auditing and Taxation*, 47, p.100472.
- Armstrong, C.S., Balakrishnan, K. and Cohen, D., 2012. Corporate governance and the information environment: Evidence from state antitakeover laws. *Journal of Accounting and Economics*, 53(1-2), pp.185-204.
- Armstrong, C.S., Guay, W.R. and Weber, J.P., 2010. The role of information and financial reporting in corporate governance and debt contracting. *Journal of Accounting and Economics*, 50(2-3), pp.179-234.
- Balachandran, B., Duong, H. N., Luong, H., & Nguyen, L. (2020). Does takeover activity affect stock price crash risk? Evidence from international M&A laws. *Journal of Corporate Finance*, 64, 101697.
- Basu, S., Hwang, L. and Jan, C.L., 1998. International variation in accounting measurement rules and analysts' earnings forecast errors. *Journal of Business Finance & Accounting*, 25(9-10), pp.1207-1247.
- Bradshaw, M.T., Huang, A.G. and Tan, H., 2019. The effects of analyst-country institutions on biased research: Evidence from target prices. *Journal of Accounting Research*, 57(1), pp.85-120.
- Brauer, M. and Wiersema, M., 2018. Analyzing analyst research: A review of past coverage and recommendations for future research. *Journal of Management*, 44(1), pp.218-248.
- Bris, A. and Cabolis, C., 2008. The value of investor protection: Firm evidence from cross-border mergers. *The Review of Financial Studies*, 21(2), pp.605-648.
- Brown, L.D., 2001. How important is past analyst forecast accuracy?. *Financial Analysts Journal*, 57(6), pp.44-49.
- Brown, L.D., Richardson, G.D. and Schwager, S.J., 1987. An information interpretation of financial analyst superiority in forecasting earnings. *Journal of Accounting Research*, 25(1), pp.49-67.
- Bugeja, M., 2015. The impact of target firm financial distress in Australian takeovers. *Accounting & Finance*, 55(2), pp.361-396.
- Capstaff, J., Paudyal, K. and Rees, W., 2001. A comparative analysis of earnings forecasts in Europe. *Journal of Business Finance & Accounting*, 28(5-6), pp.531-562.
- Cassell, C.A., Dreher, L.M. and Myers, L.A., 2013. Reviewing the SEC's review process: 10-K comment letters and the cost of remediation. *The Accounting Review*, 88(6), pp.1875-1908.
- Chen, S. and Matsumoto, D.A., 2006. Favorable versus unfavorable recommendations: The impact on analyst access to management-provided information. *Journal of Accounting Research*, 44(4), pp.657-689.
- Clement, M. B., 1999. Analyst forecast accuracy: Do ability, resources, and portfolio complexity matter?. *Journal of Accounting and Economics*, 27(3), pp. 285-303.
- Clement, M.B. and Tse, S.Y., 2003. Do investors respond to analysts' forecast revisions as if forecast accuracy is all that matters?. *The Accounting Review*, 78(1), pp.227-249.
- Cotter, J., Tarca, A. and Wee, M., 2012. IFRS adoption and analysts' earnings forecasts: Australian evidence. *Accounting & Finance*, 52(2), pp.395-419.

- Datta, S., Iskandar-Datta, M. and Singh, V., 2013. Product market power, industry structure, and corporate earnings management. *Journal of Banking & Finance*, 37(8), pp.3273-3285.
- Dhaliwal, D.S., Radhakrishnan, S., Tsang, A. and Yang, Y.G., 2012. Nonfinancial disclosure and analyst forecast accuracy: International evidence on corporate social responsibility disclosure. *The Accounting Review*, 87(3), pp.723-759.
- Dugar, A. and Nathan, S., 1995. The effect of investment banking relationships on financial analysts' earnings forecasts and investment recommendations. *Contemporary Accounting Research*, 12(1), pp.131-160.
- Duru, A. and Reeb, D.M., 2002. International diversification and analysts' forecast accuracy and bias. *The Accounting Review*, 77(2), pp.415-433.
- Ertimur, Y., Muslu, V. and Zhang, F., 2011. Why are recommendations optimistic? Evidence from analysts' coverage initiations. *Review of Accounting Studies*, 16(4), pp.679-718.
- Fang, L. and Yasuda, A., 2009. The effectiveness of reputation as a disciplinary mechanism in sell-side research. *The Review of Financial Studies*, 22(9), pp.3735-3777.
- Ferreira, M.A. and Laux, P.A., 2007. Corporate governance, idiosyncratic risk, and information flow. *The Journal of Finance*, 62(2), pp.951-989.
- Francis, J., LaFond, R., Olsson, P. and Schipper, K., 2005. The market pricing of accruals quality. *Journal of Accounting and Economics*, 39(2), pp.295-327.
- Francis, J.R. and Martin, X., 2010. Acquisition profitability and timely loss recognition. *Journal of Accounting and Economics*, 49(1-2), pp.161-178.
- Glendening, M., Khurana, I.K. and Wang, W., 2016. The market for corporate control and dividend policies: Cross-country evidence from M&A laws. *Journal of International Business Studies*, 47(9), pp.1106-1134.
- Guan, Y., Lu, H. and Wong, M.F., 2012. Conflict-of-interest reforms and investment bank analysts' research biases. *Journal of Accounting, Auditing & Finance*, 27(4), pp.443-470.
- Haw, I.M., Hu, B. and Lee, J.J., 2015. Product market competition and analyst forecasting activity: International evidence. *Journal of Banking & Finance*, 56, pp.48-60.
- Herrmann, D., Kang, T. and Yoo, Y.K., 2015. The impact of cross-listing in the United States on the precision of public and private information. *Journal of International Business Studies*, 46(1), pp.87-103.
- Hirsch, P. and Pozner, J.E., 2005. To avoid surprises, acknowledge the dark side: Illustrations from securities analysts. *Strategic Organization*, 3(2), pp.229-238.
- Hong, H. and Kubik, J.D., 2003. Analyzing the analysts: Career concerns and biased earnings forecasts. *The Journal of Finance*, 58(1), pp.313-351.
- Hope, O.K., 2003. Disclosure practices, enforcement of accounting standards, and analysts' forecast accuracy: An international study. *Journal of Accounting Research*, 41(2), pp.235-272.
- Horton, J., Serafeim, G. and Serafeim, I., 2013. Does mandatory IFRS adoption improve the information environment?. *Contemporary Accounting Research*, 30(1), pp.388-423.
- Hu, J., Li, S. and Shevlin, T., 2021. How does the market for corporate control impact tax avoidance? Evidence from international M&A laws. *Review of Accounting Studies*, In press.
- Hu, J., Long, W., Luo, L. and Peng, Y., 2021. Share pledging and optimism in analyst earnings forecasts: Evidence from China. *Journal of Banking & Finance*, 132, p.106245.

- Jackson, A.R., 2005. Trade generation, reputation, and sell-side analysts. *The Journal of Finance*, 60(2), pp.673-717.
- Jensen, M.C., 1991, Corporate control and the politics of finance, *Journal of Applied Corporate Finance*, 4, pp.13–33.
- Jindra, J. and Walkling, R.A., 2004. Speculation spreads and the market pricing of proposed acquisitions. *Journal of Corporate Finance*, 10(4), pp.495-526.
- Ke, B. and Yu, Y., 2006. The effect of issuing biased earnings forecasts on analysts' access to management and survival. *Journal of Accounting Research*, 44(5), pp.965-999.
- Khurana, I.K. and Wang, W., 2019. International Mergers and Acquisitions Laws, the Market for Corporate Control, and Accounting Conservatism. *Journal of Accounting Research*, 57(1), pp.241-290.
- Kolasinski, A.C. and Kothari, S.P., 2008. Investment banking and analyst objectivity: Evidence from analysts affiliated with mergers and acquisitions advisors. *Journal of Financial and Quantitative Analysis*, 43(4), pp.817-842.
- Lel, U. and Miller, D.P., 2015. Does takeover activity cause managerial discipline? Evidence from international M&A laws. *The Review of Financial Studies*, 28(6), pp.1588-1622.
- Li, J. and Qian, C., 2013. Principal-principal conflicts under weak institutions: A study of corporate takeovers in China. *Strategic Management Journal*, 34(4), pp.498-508.
- Ljungqvist, A., Malloy, C. and Marston, F., 2009. Rewriting history. *The Journal of Finance*, 64(4), pp.1935-1960.
- Manne, H.G., 1965. Mergers and the market for corporate control. *Journal of Political Economy*, 73(2), pp.110-120.
- Mayew, W.J., 2008. Evidence of management discrimination among analysts during earnings conference calls. *Journal of Accounting Research*, 46(3), pp.627-659.
- Michaely, R. and Womack, K.L., 1999. Conflict of interest and the credibility of underwriter analyst recommendations. *The Review of Financial Studies*, 12(4), pp.653-686.
- Mola, S. and Guidolin, M., 2009. Affiliated mutual funds and analyst optimism. *Journal of Financial Economics*, 93(1), pp.108-137.
- O'Brien, P.C., 1988. Analysts' forecasts as earnings expectations. *Journal of Accounting and Economics*, 10(1), pp.53-83.
- Safieddine, A. and Titman, S., 1999. Leverage and corporate performance: Evidence from unsuccessful takeovers. *The Journal of Finance*, 54(2), pp.547-580.
- Servaes, H. and Tamayo, A., 2014. How do industry peers respond to control threats?. *Management Science*, 60(2), pp.380-399.
- Shleifer, A. and Vishny, R.W., 1989. Management entrenchment: The case of manager-specific investments. *Journal of Financial Economics*, 25(1), pp.123-139.
- Teoh, S.H. and Wong, T.J., 2002. Why new issues and high-accrual firms underperform: The role of analysts' credulity. *The Review of Financial Studies*, 15(3), pp.869-900.
- Zhao, C., Li, Y., Govindaraj, S. and Zhong, Z.K., 2022. CDS Trading and Analyst Optimism. *The British Accounting Review*, 54(4), p.101109.
- Zhao, Y. and Chen, K.H., 2008. The influence of takeover protection on earnings management. *Journal of Business Finance & Accounting*, 35(3-4), pp.347-375.

## Appendix. Variable Definition

| Variables  | Definition   | Source  |
|--|--|---|
| <b>Dependent variables</b>                             |  |   |
| <i>Bias</i>  | The difference between the median analyst forecasts and actual earnings for a given year deflated by share price at the beginning of the year. A higher value of <i>Bias</i> indicates greater degree of analyst forecast optimism.  | IBES  |
| <i>BrokerBias</i>                                      | Mean of <i>Bias</i> provided by a focal brokerage house for a focal company in a given year.   | IBES  |
| <i>OPAQUE</i>  | The three-year moving sum of the absolute value of discretionary accruals estimated based on the performance-adjusted Jones model.   | Worldscope  |
| <i>Uncertainty</i>                                     | Overall information uncertainty estimated based on BKLS (1998) model, which is measured using the following formula: $Uncertainty = (1 - 1/N) \times D + SE$ , where D is the variance of analysts' earnings forecasts, N is the number of analysts' earnings forecasts, and SE is the squared analysts' earnings forecasts error measured by subtracting the analysts' median earning forecast from actual earnings.                | IBES  |
| <i>Upgrade_Sbuy</i>                                    | The percentage of analyst recommendations that upgrade a stock to the "strong buy" rating.   | IBES  |
| <b>Variable of interests</b>                           |  |   |
| <i>Post</i>  | An indicator variable that equals one if the observation is from the post-law-enactment period, and zero otherwise.  | Lel and Miller (2015)   |
| <i>Treat</i>   | An indicator variable that equals one if the country passed the M&A law during the period from 1995 to 2002.   | As above  |
| <i>Year_-3</i>   | An indicator variable that equals one if the year is three years before the M&A law enactment year, and zero otherwise.  | As above  |
| <i>Year_-2</i>   | An indicator variable that equals one if the year is two years before the M&A law enactment year, and zero otherwise.  | As above  |
| <i>Year_-1</i>   | An indicator variable that equals one if the year is one year before the M&A law enactment year, and zero otherwise.   | As above  |
| <i>Year_0</i>  | An indicator variable that equals one if it is the M&A law enactment year, and zero otherwise.   | As above  |
| <i>Year_1</i>  | An indicator variable that equals one if the year is the first year after the M&A law enactment year, and zero otherwise.  | As above  |
| <i>Year_2</i>  | An indicator variable that equals one if the year is the second year after the M&A law enactment year, and zero otherwise.   | As above  |
| <i>Year_3+</i>   | An indicator variable that equals one if the year is the third and subsequent years after the M&A law enactment year, and zero otherwise.  | As above  |
| <i>POST_Pseudo</i>                                     | An indicator variable indicating the pseudo reform year and any years after. The pseudo reform year is set as the fifth year after the year in which a country's reform became effective.  | As above  |
| <i>Post_HiMAgrowth</i><br>( <i>Post_LoMAgrowth</i> )   | An indicator variable that equals one if the country adopted the M&A law and the growth of the number of M&As from the pre-reform period to the post-reform period in a given country is greater than (lower than or equal to) the sample median, and zero otherwise. The pre-reform period (post-reform period) is the five-year period before (after) the enactment of the M&A law.  | Lel and Miller (2015);<br>Security Data Corporation<br>M&A database |
| <i>Post_HiCapgrowth</i><br>( <i>Post_LoCapgrowth</i> ) | An indicator variable that equals one if the country adopted the M&A law and the growth of average GDP-scaled market capitalization of listed domestic firms from the pre-reform period to the post-reform period in a given country is greater than (lower than or equal to) the sample median, and zero otherwise. The pre-reform period (post-reform period) is the five-year period before (after) the enactment of the M&A law. | Lel and Miller (2015);<br>World Bank                                |
| <i>Post_HiCPIgrowth</i><br>( <i>Post_LoCPIgrowth</i> ) | An indicator variable that equals one if the country adopted the M&A law and the change in the corruption perception index (CPI) from the pre-reform period to the post-reform period in a given country is greater than (lower than or equal to) the sample median,   | Lel and Miller (2015);<br>Transparency International                |

and zero otherwise. The pre-reform period (post-reform period) is the five-year period before (after) the enactment of the M&A law.

| <b>Control variables</b> |   |            |
|--------------------------|---|------------|
| <i>Coverage</i>          | The natural logarithm of number of analysts who issued at least one earning forecast for the firm in a given year.  | IBES       |
| <i>Horizon</i>           | The natural logarithm of one plus the average number of days between analyst forecast date and subsequent actual earnings announcement date.  | IBES       |
| <i>BHSIZE</i>            | The natural logarithm of average number of analysts that provide current annual forecasts for all the brokerage houses that employ an investment analyst who follows the focal firm.                        | IBES       |
| <i>AnaExp</i>            | The average number of years that analysts follow the focal firm.  | IBES       |
| <i>HHI</i>               | The sum of the squared market shares of firms in each year-country-industry combination.  | Worldscope |
| <i>INDSIZE</i>           | The natural logarithm of the sum of market value of equity in U.S. dollars in each year-country-industry combination at the beginning of the year.  | Worldscope |
| <i>SIZE</i>              | The natural logarithm of the firm's total assets in U.S. dollars at the beginning of the year.  | Worldscope |
| <i>LEV</i>               | The total liabilities divided by total assets at the beginning of the year.   | Worldscope |
| <i>SURPRISE</i>          | The absolute value of the difference between current EPS and EPS in last year.  | Worldscope |
| <i>Loss</i>              | An indicator variable equals one if the firm reports a net loss in the year, and zero otherwise.  | Worldscope |
| <i>ROA</i>               | The net income before extraordinary items divided by total assets.  | Worldscope |
| <i>Accrual</i>           | The absolute difference between net income and cash flows, divided by total assets.   | Worldscope |
| <i>STDROE</i>            | The standard deviation of the return on equity over the past three years.   | Worldscope |
| <i>CORR</i>              | The correlation between annual returns and earnings over the past three years.  | Worldscope |
| <i>LoROAGrowth</i>       | An indicator variable that equals one if the firm's ROA growth is less than the sample median in a given year, and zero otherwise. The ROA growth is the change of ROA divided by ROA in the previous year. | Worldscope |
| <i>LoSIZE</i>            | An indicator variable that equals one if the firm's <i>SIZE</i> is less than the sample median in a given year, and zero otherwise.   | Worldscope |
| <i>HiBrokerSize</i>      | An indicator variable that equals one if the number of analysts of the brokerage house is greater than the sample median in a given year, and zero otherwise.   | IBES       |
| <i>HiBrokerExp</i>       | An indicator variable that equals one if the number of years since the brokerage house starts to provide forecasts is greater than the sample median in a given year, and zero otherwise.                   | IBES       |

**Table 1. Sample Distribution**

Panels A, B, and C present sample distribution by country, year, and industry, respectively. In Panel A, bold indicates countries that passed the M&A laws during the period between 1992 and 2005.

*Panel A. Sample Distribution by Country*

| Country            | Number of firm-years | Number of firms | M&A law enactment year | Mean of <i>Bias</i> |
|--------------------|----------------------|-----------------|------------------------|---------------------|
| Argentina          | 192                  | 45              | None                   | 0.005               |
| <b>Austria</b>     | 321                  | 66              | 1998                   | 0.003               |
| Brazil             | 508                  | 98              | None                   | 0.011               |
| <b>Chile</b>       | 261                  | 47              | 2000                   | 0.016               |
| China              | 513                  | 243             | None                   | 0.020               |
| Colombia           | 20                   | 7               | None                   | 0.201               |
| Czechia            | 45                   | 18              | None                   | 0.044               |
| Denmark            | 471                  | 80              | None                   | 0.007               |
| France             | 2,575                | 482             | None                   | 0.009               |
| <b>Germany</b>     | 2,029                | 469             | 2002                   | 0.021               |
| Greece             | 511                  | 118             | None                   | 0.007               |
| Hungary            | 89                   | 22              | None                   | -0.037              |
| <b>India</b>       | 603                  | 156             | 1997                   | 0.006               |
| <b>Indonesia</b>   | 467                  | 103             | 1998                   | 0.086               |
| <b>Ireland</b>     | 295                  | 57              | 1997                   | 0.214               |
| Israel             | 104                  | 35              | None                   | 0.069               |
| Japan              | 15,489               | 2822            | None                   | 0.011               |
| Luxembourg         | 23                   | 7               | None                   | 0.015               |
| <b>Malaysia</b>    | 1,284                | 263             | 1998                   | 0.009               |
| Mexico             | 417                  | 65              | None                   | 0.019               |
| <b>New Zealand</b> | 340                  | 67              | 2001                   | 0.013               |
| Norway             | 632                  | 129             | None                   | 0.015               |
| <b>Pakistan</b>    | 61                   | 22              | 2000                   | 0.009               |
| Peru               | 57                   | 17              | None                   | 0.020               |
| <b>Philippines</b> | 236                  | 48              | 1998                   | 0.125               |
| Poland             | 120                  | 35              | None                   | 0.011               |
| Portugal           | 219                  | 42              | None                   | 0.023               |
| South Korea        | 1,186                | 347             | None                   | 0.073               |
| <b>Sri Lanka</b>   | 17                   | 8               | 1995                   | 0.007               |
| <b>Taiwan</b>      | 859                  | 276             | 2002                   | 0.021               |
| Thailand           | 659                  | 165             | None                   | 0.077               |
| Türkiye            | 577                  | 131             | None                   | 0.000               |
| Venezuela          | 21                   | 8               | None                   | 0.000               |
| Overall            | 31,201               | 6498            |                        | 0.020               |

*Panel B. Sample Distribution by Year*

| Year    | Number of firm-years | Mean of <i>Bias</i> |
|---------|----------------------|---------------------|
| 1992    | 806                  | 0.009               |
| 1993    | 869                  | 0.003               |
| 1994    | 910                  | -0.001              |
| 1995    | 1,408                | 0.007               |
| 1996    | 1,418                | 0.006               |
| 1997    | 1,819                | 0.034               |
| 1998    | 2,114                | 0.050               |
| 1999    | 2,211                | 0.044               |
| 2000    | 3,007                | 0.036               |
| 2001    | 3,505                | 0.034               |
| 2002    | 3,032                | 0.015               |
| 2003    | 3,200                | 0.008               |
| 2004    | 3,269                | -0.001              |
| 2005    | 3,633                | 0.006               |
| Overall | 31,201               | 0.020               |

*Panel C. Sample Distribution by Industry*

| Industry                   | Number of firm-years | Number of firms | Mean of <i>Bias</i> |
|----------------------------|----------------------|-----------------|---------------------|
| Mining/Construction        | 2,170                | 488             | 0.037               |
| Food                       | 1,966                | 372             | 0.009               |
| Txtils/Print/Publish       | 2,043                | 461             | 0.021               |
| Chemicals                  | 1,930                | 364             | 0.015               |
| Pharmaceuticals            | 731                  | 139             | 0.006               |
| Extractive                 | 649                  | 107             | 0.006               |
| Manf: Rubber/Glass/Etc     | 1,664                | 319             | 0.025               |
| Manf: Metal                | 1,919                | 385             | 0.023               |
| Manf: Machinery            | 2,024                | 383             | 0.012               |
| Manf: Electrical Equipment | 1,655                | 312             | 0.020               |
| Manf: Transport Equipment  | 1,410                | 248             | 0.016               |
| Manf: Instruments          | 874                  | 169             | 0.008               |
| Manf: Misc                 | 403                  | 74              | 0.012               |
| Computers                  | 2,569                | 676             | 0.018               |
| Transportation             | 2,230                | 430             | 0.025               |
| Utilities                  | 859                  | 175             | 0.010               |
| Retail: Wholesale          | 1,837                | 403             | 0.027               |
| Retail: Misc               | 1,917                | 418             | 0.023               |
| Retail: Restaurant         | 285                  | 73              | 0.022               |
| Services                   | 1,771                | 453             | 0.024               |
| Others                     | 295                  | 49              | 0.017               |
| Overall                    | 31,201               | 6,498           | 0.020               |

**Table 2.** Summary statistics

This table shows summary statistics for the variables used in our main analyses. The sample size is 31,201. All variables are defined in the Appendix.

| Variable        | Mean   | S.D.  | Q1     | Median | Q3     |
|-----------------|--------|-------|--------|--------|--------|
| <i>Bias</i>     | 0.020  | 0.243 | -0.004 | 0.000  | 0.009  |
| <i>Post</i>     | 0.124  | 0.329 | 0.000  | 0.000  | 0.000  |
| <i>Coverage</i> | 0.927  | 0.956 | 0.000  | 0.693  | 1.609  |
| <i>Horizon</i>  | 3.301  | 0.858 | 2.856  | 3.510  | 3.922  |
| <i>BHSIZE</i>   | 4.249  | 1.574 | 3.584  | 4.643  | 5.342  |
| <i>AnaExp</i>   | 3.486  | 2.480 | 1.750  | 2.857  | 4.500  |
| <i>HHI</i>      | 0.191  | 0.208 | 0.064  | 0.112  | 0.231  |
| <i>INDSIZE</i>  | 16.685 | 2.206 | 15.082 | 16.973 | 18.448 |
| <i>SIZE</i>     | 13.313 | 1.628 | 12.156 | 13.173 | 14.335 |
| <i>LEV</i>      | 0.564  | 0.221 | 0.417  | 0.574  | 0.718  |
| <i>SURPRISE</i> | 0.121  | 0.376 | 0.010  | 0.028  | 0.086  |
| <i>Loss</i>     | 0.204  | 0.403 | 0.000  | 0.000  | 0.000  |
| <i>ROA</i>      | 0.020  | 0.106 | 0.003  | 0.021  | 0.052  |
| <i>Accrual</i>  | 0.065  | 0.096 | 0.018  | 0.041  | 0.080  |
| <i>STDROE</i>   | 0.188  | 0.957 | 0.015  | 0.035  | 0.086  |
| <i>CORR</i>     | 0.110  | 0.464 | -0.334 | 0.216  | 0.552  |

**Table 3.** Correlation matrix

This table shows correlation matrix among variables used in our main analyses. The sample size is 31,201. Bold indicates statistical significance at the 10% level or better. All variables are defined in the Appendix.

|                      | (1)           | (2)           | (3)           | (4)           | (5)           | (6)           | (7)           | (8)           | (9)           | (10)          | (11)          | (12)          | (13)          | (14)         | (15)         | (16) |
|----------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|--------------|--------------|------|
| (1) <i>Bias</i>      | 1             |               |               |               |               |               |               |               |               |               |               |               |               |              |              |      |
| (2) <i>Post</i>      | <b>0.043</b>  | 1             |               |               |               |               |               |               |               |               |               |               |               |              |              |      |
| (3) <i>Coverage</i>  | <b>-0.031</b> | <b>0.124</b>  | 1             |               |               |               |               |               |               |               |               |               |               |              |              |      |
| (4) <i>Horizon</i>   | -0.004        | <b>-0.071</b> | <b>0.095</b>  | 1             |               |               |               |               |               |               |               |               |               |              |              |      |
| (5) <i>BHSIZE</i>    | <b>0.025</b>  | <b>0.029</b>  | <b>0.292</b>  | <b>0.018</b>  | 1             |               |               |               |               |               |               |               |               |              |              |      |
| (6) <i>AnaExp</i>    | -0.001        | <b>-0.106</b> | <b>-0.321</b> | <b>-0.156</b> | <b>-0.499</b> | 1             |               |               |               |               |               |               |               |              |              |      |
| (7) <i>HHI</i>       | <b>0.023</b>  | <b>0.164</b>  | <b>0.195</b>  | 0.002         | <b>0.061</b>  | <b>-0.224</b> | 1             |               |               |               |               |               |               |              |              |      |
| (8) <i>INDSIZE</i>   | <b>-0.045</b> | <b>-0.229</b> | <b>-0.073</b> | 0.008         | 0.006         | <b>0.236</b>  | <b>-0.635</b> | 1             |               |               |               |               |               |              |              |      |
| (9) <i>SIZE</i>      | 0.000         | <b>-0.095</b> | <b>0.450</b>  | <b>0.168</b>  | <b>0.271</b>  | <b>-0.048</b> | <b>-0.053</b> | <b>0.255</b>  | 1             |               |               |               |               |              |              |      |
| (10) <i>LEV</i>      | <b>0.060</b>  | <b>-0.111</b> | <b>-0.066</b> | <b>-0.016</b> | <b>0.023</b>  | <b>0.126</b>  | <b>-0.028</b> | <b>0.054</b>  | <b>0.257</b>  | 1             |               |               |               |              |              |      |
| (11) <i>SURPRISE</i> | <b>0.183</b>  | <b>0.029</b>  | <b>-0.106</b> | <b>-0.061</b> | <b>-0.084</b> | <b>0.119</b>  | 0.009         | <b>-0.089</b> | <b>-0.045</b> | <b>0.256</b>  | 1             |               |               |              |              |      |
| (12) <i>Loss</i>     | <b>0.161</b>  | <b>-0.048</b> | <b>-0.164</b> | <b>-0.055</b> | <b>-0.060</b> | <b>0.141</b>  | <b>-0.071</b> | <b>0.050</b>  | <b>-0.069</b> | <b>0.175</b>  | <b>0.218</b>  | 1             |               |              |              |      |
| (13) <i>ROA</i>      | <b>-0.207</b> | <b>0.072</b>  | <b>0.152</b>  | <b>0.051</b>  | <b>0.053</b>  | <b>-0.121</b> | <b>0.076</b>  | <b>-0.073</b> | <b>0.011</b>  | <b>-0.167</b> | <b>-0.256</b> | <b>-0.472</b> | 1             |              |              |      |
| (14) <i>Accrual</i>  | <b>0.037</b>  | <b>0.115</b>  | <b>0.035</b>  | <b>-0.043</b> | <b>-0.017</b> | <b>-0.095</b> | <b>0.088</b>  | <b>-0.113</b> | <b>-0.220</b> | <b>-0.062</b> | <b>0.244</b>  | <b>0.043</b>  | <b>-0.044</b> | 1            |              |      |
| (15) <i>STDROE</i>   | <b>0.046</b>  | <b>0.017</b>  | <b>-0.059</b> | <b>-0.056</b> | <b>-0.040</b> | <b>0.080</b>  | 0.002         | <b>-0.025</b> | <b>-0.044</b> | <b>0.217</b>  | <b>0.263</b>  | <b>0.095</b>  | <b>-0.090</b> | <b>0.159</b> | 1            |      |
| (16) <i>CORR</i>     | 0.001         | <b>0.046</b>  | <b>-0.030</b> | <b>-0.011</b> | <b>-0.081</b> | <b>0.053</b>  | <b>0.016</b>  | <b>-0.027</b> | <b>-0.062</b> | <b>-0.021</b> | <b>0.020</b>  | -0.006        | <b>0.013</b>  | 0.007        | <b>0.022</b> | 1    |

**Table 4.** The effect of M&A laws on analyst forecast optimism

This table presents the effect of M&A laws on analyst forecast optimism. *Bias* is measured as the median analyst forecasts minus actual earnings for a given year, deflated by price at the beginning of the year. Column 1 reports the results of the regression that only includes the variable of interest, and year and firm fixed effects. Column 2 shows the results of the regression with all control variables. All variables are defined in the Appendix. All continuous variables are winsorized at the 1% and 99% levels. Standard errors for two-tailed tests are given in parentheses and are clustered at the firm level. \*\*\*, \*\*, and \* stand for statistical significance at the 1%, 5%, and 10% levels, respectively.

| Dep. Var.         | (1)<br><i>Bias</i>  | (2)<br><i>Bias</i>   |
|-------------------|---------------------|----------------------|
| <i>Post</i>       | 0.050***<br>(0.015) | 0.044***<br>(0.015)  |
| <i>Coverage</i>   |                     | -0.005<br>(0.003)    |
| <i>Horizon</i>    |                     | 0.001<br>(0.002)     |
| <i>BHSIZE</i>     |                     | -0.000<br>(0.002)    |
| <i>AnaExp</i>     |                     | 0.000<br>(0.002)     |
| <i>HHI</i>        |                     | -0.021<br>(0.037)    |
| <i>INDSIZE</i>    |                     | 0.006<br>(0.006)     |
| <i>SIZE</i>       |                     | 0.021*<br>(0.012)    |
| <i>LEV</i>        |                     | -0.074*<br>(0.040)   |
| <i>SURPRISE</i>   |                     | 0.073***<br>(0.028)  |
| <i>Loss</i>       |                     | 0.045***<br>(0.009)  |
| <i>ROA</i>        |                     | -0.435***<br>(0.105) |
| <i>Accrual</i>    |                     | 0.058<br>(0.082)     |
| <i>STDROE</i>     |                     | 0.002<br>(0.004)     |
| <i>CORR</i>       |                     | 0.003<br>(0.004)     |
| Constant          | -0.004<br>(0.006)   | -0.322**<br>(0.157)  |
| Year fixed effect | YES                 | YES                  |
| Firm fixed effect | YES                 | YES                  |
| Observations      | 31,201              | 31,201               |
| R-squared         | 0.363               | 0.402                |

**Table 5. Robustness test**

This table shows the results of robustness tests. Column 1 reports the regression results using a sample restricted to the [t-5, t+5] year window (with year t representing the reform's implementation year in a treatment country). Column 2 reports the results using a propensity-score-matched sample. Column 3 presents the results of a placebo test that sets the pseudo reform year as the fifth year after the actual year in which a country's reform became effective. *Post\_Pseudo* in Column 3 is an indicator variable that equals one if the observation is from the pseudo post-reform period, and zero otherwise. Column 4 shows the dynamic effects of M&A laws. All variables are defined in the Appendix. All continuous variables are winsorized at the 1% and 99% levels. Standard errors for two-tailed tests are given in parentheses and are clustered at the firm level. \*\*\*, \*\*, and \* stand for statistical significance at the 1%, 5%, and 10% levels, respectively.

| Dep. Var.                  | (1)<br><i>Bias</i>   | (2)<br><i>Bias</i>  | (3)<br><i>Bias</i> | (4)<br><i>Bias</i>  |
|----------------------------|----------------------|---------------------|--------------------|---------------------|
| Model                      | [-5, +5]             | PSM                 | Placebo test       | Dynamic DID         |
| <i>Post</i>                | 0.084***<br>(0.028)  | -0.001<br>(0.008)   |                    |                     |
| <i>Post</i> × <i>Treat</i> |                      | 0.063***<br>(0.023) |                    |                     |
| <i>Post_Pseudo</i>         |                      |                     | -0.012<br>(0.009)  |                     |
| <i>Year</i> <sub>-3</sub>  |                      |                     |                    | -0.008<br>(0.015)   |
| <i>Year</i> <sub>-2</sub>  |                      |                     |                    | -0.006<br>(0.011)   |
| <i>Year</i> <sub>-1</sub>  |                      |                     |                    | -0.013<br>(0.012)   |
| <i>Year</i> <sub>0</sub>   |                      |                     |                    | 0.008<br>(0.014)    |
| <i>Year</i> <sub>1</sub>   |                      |                     |                    | 0.041***<br>(0.014) |
| <i>Year</i> <sub>2</sub>   |                      |                     |                    | 0.023**<br>(0.011)  |
| <i>Year</i> <sub>3+</sub>  |                      |                     |                    | 0.019*<br>(0.011)   |
| Constant                   | -1.436***<br>(0.501) | -0.238<br>(0.299)   | 0.082<br>(0.154)   | -0.306**<br>(0.120) |
| Controls                   | YES                  | YES                 | YES                | YES                 |
| Year fixed effect          | YES                  | YES                 | YES                | YES                 |
| Firm fixed effect          | YES                  | YES                 | YES                | YES                 |
| Observations               | 3,120                | 13,546              | 18,587             | 31,201              |
| R-squared                  | 0.353                | 0.446               | 0.360              | 0.354               |

**Table 6.** Country-level cross-sectional tests

This table shows the moderating effect of changes in country-level institutions between the pre- and post-reform periods on the relationship between the passage of M&A laws and analyst optimism. The changes in country-level institutions between the pre- and post-reform periods are measured by growth of M&A numbers (Column 1), growth of capital market (Column 2) and improvement in corruption control (Column 3), respectively. *Post\_HiMAgrowth* (*Post\_LoMAgrowth*) is an indicator variable that equals one if the country passed the M&A law and the growth of the number of M&As from the pre-reform period to the post-reform period in a given country is greater than (lower than or equal to) the sample median, and zero otherwise. *Post\_HiCapgrowth* (*Post\_LoCapgrowth*) is an indicator variable that equals one if the country passed the M&A law and the growth of the average GDP-scaled market capitalization of listed domestic firms from the pre-reform period to the post-reform period in a given country is greater than (lower than or equal to) the sample median, and zero otherwise. *Post\_HiCPIgrowth* (*Post\_LoCPIgrowth*) is an indicator variable that equals one if the country passed the M&A law and the change in the corruption perception index (CPI) from the pre-reform period to the post-reform period in a given country is greater than (lower than or equal to) the sample median, and zero otherwise. The pre-reform period (post-reform period) is the five-year period before (after) the enactment of the M&A law. All variables are defined in the Appendix. All continuous variables are winsorized at the 1% and 99% levels. Standard errors for two-tailed tests are given in parentheses and are clustered at the firm level. \*\*\*, \*\*, and \* stand for statistical significance at the 1%, 5%, and 10% levels, respectively.

| Dep. Var.                             | (1)<br><i>Bias</i>  | (2)<br><i>Bias</i>  | (3)<br><i>Bias</i>  |
|---------------------------------------|---------------------|---------------------|---------------------|
| <i>Post_HiMAgrowth</i> <sup>a1</sup>  | 0.110***<br>(0.038) |                     |                     |
| <i>Post_LoMAgrowth</i> <sup>a2</sup>  | 0.011<br>(0.009)    |                     |                     |
| <i>Post_HiCapgrowth</i> <sup>a1</sup> |                     | 0.031*<br>(0.016)   |                     |
| <i>Post_LoCapgrowth</i> <sup>a2</sup> |                     | -0.003<br>(0.007)   |                     |
| <i>Post_HiCPIgrowth</i> <sup>a1</sup> |                     |                     | 0.006<br>(0.008)    |
| <i>Post_LoCPIgrowth</i> <sup>a2</sup> |                     |                     | 0.077***<br>(0.027) |
| Constant                              | -0.283*<br>(0.149)  | -0.269**<br>(0.108) | -0.339**<br>(0.160) |
| Controls                              | YES                 | YES                 | YES                 |
| Year fixed effect                     | YES                 | YES                 | YES                 |
| Firm fixed effect                     | YES                 | YES                 | YES                 |
| Observations                          | 31,201              | 30,286              | 31,201              |
| R-squared                             | 0.403               | 0.417               | 0.402               |
| F-test of equality of coefficients    |                     |                     |                     |
| <i>p</i> -value: a1=a2                | 0.009               | 0.043               | 0.010               |

**Table 7.** Firm-level cross-sectional tests

This table presents the results of the moderating effect of the firm's financial constraint on the relationship between the adoption of M&A laws and analyst optimism. Financial constraint is measured by *Loss*, *LoROAGrowth*, and *LoSIZE* in Columns 1, 2, and 3, respectively. *LoROAGrowth* is an indicator variable that equals one if the firm's ROA growth is less than the sample median in a given year, and zero otherwise. *LoSIZE* is an indicator variable that equals one if *SIZE* is less than the sample median in a given year, and zero otherwise. All variables are defined in the Appendix. All continuous variables are winsorized at the 1% and 99% levels. Standard errors for two-tailed tests are given in parentheses and are clustered at the firm level. \*\*\*, \*\*, and \* stand for statistical significance at the 1%, 5%, and 10% levels, respectively.

| Dep. Var.                        | (1)<br><i>Bias</i>   | (2)<br><i>Bias</i>   | (3)<br><i>Bias</i>   |
|----------------------------------|----------------------|----------------------|----------------------|
| <i>Post</i>                      | 0.031*<br>(0.016)    | 0.027*<br>(0.015)    | 0.026<br>(0.015)     |
| <i>Post</i> × <i>Loss</i>        | 0.096**<br>(0.038)   |                      |                      |
| <i>LoROAGrowth</i>               |                      | 0.009**<br>(0.004)   |                      |
| <i>Post</i> × <i>LoROAGrowth</i> |                      | 0.033**<br>(0.014)   |                      |
| <i>LoSIZE</i>                    |                      |                      | -0.007<br>(0.006)    |
| <i>Post</i> × <i>LoSIZE</i>      |                      |                      | 0.048**<br>(0.020)   |
| <i>Loss</i>                      | 0.038***<br>(0.009)  | 0.041***<br>(0.008)  | 0.045***<br>(0.008)  |
| <i>Coverage</i>                  | -0.005<br>(0.003)    | -0.006*<br>(0.003)   | -0.005*<br>(0.002)   |
| <i>Horizon</i>                   | 0.001<br>(0.002)     | 0.001<br>(0.002)     | 0.001<br>(0.002)     |
| <i>BHSIZE</i>                    | -0.000<br>(0.002)    | -0.000<br>(0.002)    | -0.000<br>(0.002)    |
| <i>AnaExp</i>                    | 0.000<br>(0.002)     | 0.000<br>(0.002)     | 0.000<br>(0.001)     |
| <i>HHI</i>                       | -0.021<br>(0.037)    | -0.022<br>(0.037)    | -0.019<br>(0.037)    |
| <i>INDSIZE</i>                   | 0.006<br>(0.006)     | 0.005<br>(0.006)     | 0.006<br>(0.006)     |
| <i>SIZE</i>                      | 0.022*<br>(0.012)    | 0.020*<br>(0.012)    | 0.022<br>(0.014)     |
| <i>LEV</i>                       | -0.076*<br>(0.040)   | -0.065<br>(0.040)    | -0.074**<br>(0.032)  |
| <i>SURPRISE</i>                  | 0.073***<br>(0.028)  | 0.075***<br>(0.028)  | 0.073***<br>(0.024)  |
| <i>ROA</i>                       | -0.425***<br>(0.104) | -0.419***<br>(0.107) | -0.436***<br>(0.095) |
| <i>Accrual</i>                   | 0.059<br>(0.082)     | 0.055<br>(0.083)     | 0.056<br>(0.099)     |
| <i>STDROE</i>                    | 0.002<br>(0.004)     | 0.002<br>(0.004)     | 0.002<br>(0.003)     |
| <i>CORR</i>                      | 0.003<br>(0.003)     | 0.003<br>(0.003)     | 0.003<br>(0.004)     |
| Constant                         | -0.331**<br>(0.157)  | -0.312**<br>(0.156)  | -0.331*<br>(0.166)   |
| Year fixed effect                | YES                  | YES                  | YES                  |
| Firm fixed effect                | YES                  | YES                  | YES                  |
| Observations                     | 31,201               | 31,201               | 31,201               |
| R-squared                        | 0.403                | 0.402                | 0.402                |

**Table 8.** Channel test: The moderating effect of brokerage house characters

This table presents the results of the moderating effect of brokerage house characteristics. Column 1 shows the effect of the passage of M&A laws in clients' country on the average forecast optimism of a focal brokerage house. Columns 2 and 3 show the moderating effect of brokerage house size and experience on the association between the adoption of M&A laws and forecast optimism, respectively. *BrokerBias* is the average forecast bias (*Bias*) provided by a focal brokerage house to a focal company in a given year. *HiBrokerSize* is an indicator variable that equals one if the number of analysts of a brokerage house is greater than the sample median in a given year, and zero otherwise. *HiBrokerExp* is an indicator variable that equals one if the number of years since the brokerage house starts to provide earnings forecasts is greater than the sample median in a given year, and zero otherwise. All variables are defined in the Appendix. All continuous variables are winsorized at the 1% and 99% levels. Standard errors for two-tailed tests are given in parentheses and are clustered at the firm level. \*\*\*, \*\*, and \* stand for statistical significance at the 1%, 5%, and 10% levels, respectively.

| Dep. Var.                         | (1)<br><i>BrokerBias</i> | (2)<br><i>BrokerBias</i> | (3)<br><i>BrokerBias</i> |
|-----------------------------------|--------------------------|--------------------------|--------------------------|
| <i>Post</i>                       | 0.010***<br>(0.003)      | 0.012***<br>(0.004)      | 0.012***<br>(0.002)      |
| <i>HiBrokerSize</i>               |                          | 0.001*<br>(0.001)        |                          |
| <i>Post</i> × <i>HiBrokerSize</i> |                          | -0.004***<br>(0.001)     |                          |
| <i>HiBrokerExp</i>                |                          |                          | 0.001<br>(0.001)         |
| <i>Post</i> × <i>HiBrokerExp</i>  |                          |                          | -0.003**<br>(0.002)      |
| <i>Coverage</i>                   | -0.004**<br>(0.002)      | -0.004**<br>(0.002)      | -0.004***<br>(0.001)     |
| <i>Horizon</i>                    | 0.003**<br>(0.001)       | 0.003**<br>(0.001)       | 0.003***<br>(0.001)      |
| <i>AnaExp</i>                     | 0.001<br>(0.001)         | 0.001<br>(0.001)         | 0.001<br>(0.000)         |
| <i>HHI</i>                        | -0.001<br>(0.016)        | -0.001<br>(0.016)        | -0.001<br>(0.007)        |
| <i>INDSIZE</i>                    | 0.001<br>(0.002)         | 0.001<br>(0.002)         | 0.001<br>(0.001)         |
| <i>SIZE</i>                       | 0.002<br>(0.004)         | 0.002<br>(0.004)         | 0.002<br>(0.002)         |
| <i>LEV</i>                        | -0.041***<br>(0.014)     | -0.041***<br>(0.014)     | -0.041***<br>(0.012)     |
| <i>SURPRISE</i>                   | 0.037**<br>(0.016)       | 0.037**<br>(0.016)       | 0.037***<br>(0.007)      |
| <i>Loss</i>                       | 0.033***<br>(0.004)      | 0.033***<br>(0.004)      | 0.033***<br>(0.002)      |
| <i>ROA</i>                        | -0.247***<br>(0.038)     | -0.247***<br>(0.038)     | -0.247***<br>(0.016)     |
| <i>Accrual</i>                    | 0.005<br>(0.019)         | 0.005<br>(0.019)         | 0.005<br>(0.011)         |
| <i>STDROE</i>                     | -0.001<br>(0.003)        | -0.001<br>(0.003)        | -0.001<br>(0.001)        |
| <i>CORR</i>                       | 0.003*<br>(0.001)        | 0.003*<br>(0.001)        | 0.003***<br>(0.001)      |
| Constant                          | -0.020<br>(0.054)        | -0.019<br>(0.054)        | -0.020<br>(0.025)        |
| Year fixed effect                 | YES                      | YES                      | YES                      |
| Firm fixed effect                 | YES                      | YES                      | YES                      |
| Observations                      | 127,897                  | 127,897                  | 127,897                  |
| R-squared                         | 0.368                    | 0.368                    | 0.368                    |

**Table 9.** Alternative explanation on the effect of M&A law passage on analyst optimism

This table presents the effect of M&A laws on corporate information transparency. The dependent variable in Column 1 is *OPAQUE*, which is the three-year moving sum of the absolute value of discretionary accruals estimated based on the performance-adjusted Jones model. Column 2 shows the effect of M&A laws on analysts' overall information uncertainty (*Uncertainty*), which is estimated based on the BKLS (1998) model. All variables are defined in the Appendix. All continuous variables are winsorized at the 1% and 99% levels. Standard errors for two-tailed tests are given in parentheses and are clustered at the firm level. \*\*\*, \*\*, and \* stand for statistical significance at the 1%, 5%, and 10% levels, respectively.

| Dep. Var.         | (1)<br><i>OPAQUE</i> | (2)<br><i>Uncertainty</i> |
|-------------------|----------------------|---------------------------|
| <i>Post</i>       | -0.021***<br>(0.007) | -0.317***<br>(0.089)      |
| <i>Coverage</i>   | 0.003*<br>(0.002)    | 0.063<br>(0.042)          |
| <i>Horizon</i>    | -0.001<br>(0.001)    | 0.014<br>(0.030)          |
| <i>BHSIZE</i>     | -0.002*<br>(0.001)   | 0.057**<br>(0.027)        |
| <i>AnaExp</i>     | -0.001<br>(0.001)    | 0.022<br>(0.024)          |
| <i>HHI</i>        | 0.007<br>(0.018)     | 0.331<br>(0.407)          |
| <i>INDSIZE</i>    | 0.004*<br>(0.002)    | 0.112**<br>(0.050)        |
| <i>SIZE</i>       | -0.016***<br>(0.006) | 0.385***<br>(0.104)       |
| <i>LEV</i>        | 0.046***<br>(0.016)  | -0.669**<br>(0.319)       |
| <i>SURPRISE</i>   | 0.012***<br>(0.004)  | 0.745***<br>(0.157)       |
| <i>Loss</i>       | -0.002<br>(0.002)    | 1.603***<br>(0.115)       |
| <i>ROA</i>        | -0.017<br>(0.019)    | -2.970***<br>(0.812)      |
| <i>Accrual</i>    | 0.041***<br>(0.015)  | -0.833***<br>(0.306)      |
| <i>STDROE</i>     | 0.004**<br>(0.002)   | -0.096*<br>(0.053)        |
| <i>CORR</i>       | -0.001<br>(0.002)    | 0.039<br>(0.045)          |
| Constant          | 0.242***<br>(0.069)  | -6.439***<br>(1.323)      |
| Year fixed effect | YES                  | YES                       |
| Firm fixed effect | YES                  | YES                       |
| Observations      | 31,201               | 28,943                    |
| R-squared         | 0.680                | 0.572                     |

**Table 10.** Additional robustness tests

This table presents the results of additional robustness tests. In Columns 1 and 2, the dependent variables are *Upgrade\_Sbuy* (measured as the proportion of recommendation upgrades to "strong buy") and *Bias\_Alt1* (measured as the difference between the median analyst forecasts and actual earnings for a given year scaled by the absolute value of actual earnings), respectively. In Column 3 (Column 4), the dependent variable is *Bias\_Alt2* (*Bias\_Alt3*), which is calculated as the median analyst forecasts with a horizon of 180 (360) days to earnings announcement date and actual earnings for a given year. *Coverage\_180Horizon* and *Coverage\_360Horizon* (*Horizon\_180* and *Horizon\_360*) are measures of analyst coverage (forecast horizon) calculated based on analyst forecasts with horizons of 180 and 360 days to earnings announcement date, respectively. Other variables are defined in the Appendix. All continuous variables are winsorized at the 1% and 99% levels. Standard errors for two-tailed tests are given in parentheses and are clustered at the firm level. \*\*\*, \*\*, and \* stand for statistical significance at the 1%, 5%, and 10% levels, respectively.

| Dep. Var.                  | (1)<br><i>Upgrade_Sbuy</i> | (2)<br><i>Bias_Alt1</i> | (3)<br><i>Bias_Alt2</i> | (4)<br><i>Bias_Alt3</i> |
|----------------------------|----------------------------|-------------------------|-------------------------|-------------------------|
| <i>Post</i>                | 0.038***<br>(0.012)        | 0.221***<br>(0.051)     | 0.039***<br>(0.014)     | 0.041***<br>(0.015)     |
| <i>Coverage</i>            | 0.034***<br>(0.004)        | -0.012<br>(0.016)       |                         |                         |
| <i>Coverage_180Horizon</i> |                            |                         | -0.007**<br>(0.003)     |                         |
| <i>Coverage_360Horizon</i> |                            |                         |                         | -0.009**<br>(0.003)     |
| <i>Horizon</i>             | 0.001<br>(0.003)           | 0.031***<br>(0.011)     |                         |                         |
| <i>Horizon_180</i>         |                            |                         | -0.002<br>(0.002)       |                         |
| <i>Horizon_360</i>         |                            |                         |                         | -0.002<br>(0.003)       |
| <i>BHSIZE</i>              | -0.010***<br>(0.002)       | 0.007<br>(0.009)        | 0.003*<br>(0.002)       | 0.004*<br>(0.002)       |
| <i>AnaExp</i>              | -0.003*<br>(0.002)         | 0.002<br>(0.008)        | 0.002<br>(0.002)        | 0.001<br>(0.002)        |
| <i>HHI</i>                 | 0.029<br>(0.036)           | -0.579***<br>(0.160)    | -0.010<br>(0.034)       | -0.005<br>(0.038)       |
| <i>INDSIZE</i>             | 0.011**<br>(0.004)         | 0.048**<br>(0.023)      | 0.004<br>(0.006)        | 0.003<br>(0.007)        |
| <i>SIZE</i>                | -0.001<br>(0.008)          | 0.116***<br>(0.032)     | 0.027***<br>(0.010)     | 0.030**<br>(0.013)      |
| <i>LEV</i>                 | -0.073***<br>(0.019)       | -0.354***<br>(0.110)    | -0.077**<br>(0.037)     | -0.097**<br>(0.042)     |
| <i>SURPRISE</i>            | -0.015***<br>(0.005)       | -0.117***<br>(0.026)    | 0.076***<br>(0.025)     | 0.084***<br>(0.024)     |
| <i>Loss</i>                | -0.022***<br>(0.004)       | 0.324***<br>(0.029)     | 0.051***<br>(0.009)     | 0.057***<br>(0.011)     |
| <i>ROA</i>                 | 0.056**<br>(0.022)         | -0.295***<br>(0.093)    | -0.446***<br>(0.107)    | -0.545***<br>(0.129)    |
| <i>Accrual</i>             | -0.008<br>(0.022)          | 0.053<br>(0.118)        | 0.050<br>(0.067)        | 0.064<br>(0.085)        |
| <i>STDROE</i>              | 0.000<br>(0.002)           | 0.020**<br>(0.010)      | 0.002<br>(0.003)        | 0.001<br>(0.005)        |
| <i>CORR</i>                | -0.001<br>(0.004)          | -0.012<br>(0.017)       | 0.004<br>(0.003)        | 0.008**<br>(0.004)      |
| Constant                   | -0.142<br>(0.107)          | -1.863***<br>(0.464)    | -0.361***<br>(0.126)    | -0.382**<br>(0.166)     |
| Year fixed effect          | YES                        | YES                     | YES                     | YES                     |
| Firm fixed effect          | YES                        | YES                     | YES                     | YES                     |
| Observations               | 31,201                     | 31,201                  | 31,199                  | 31,200                  |
| R-squared                  | 0.391                      | 0.291                   | 0.419                   | 0.417                   |