Corporate governance and target price accuracy

Lee-Young Cheng[a], Yi-Chen Su[a], Zhipeng Yan[b,*], Yan Zhao[c]

[a] *Department of Finance, National Chung Cheng University, 168 University Rd., Min-Hsiung, Chia-Yi 62102, Taiwan*
[b] *Martin Tuchman School of Management, New Jersey Institute of Technology, University Heights, Newark, NJ 07102, USA*
[c] *Department of Economics and Business, City College of New York, CUNY, 160 Convent Ave, New York, NY 10031, USA*

A B S T R A C T

The purpose of this study is to examine whether the quality of corporate governance has an impact on target price accuracy. We explore the relationship between target price accuracy and ownership structure, board composition, and disclosure using a sample of 17,334 target price observations in the Taiwan Stock Exchange between 2007 and 2016. We find that strong corporate governance improves target price accuracy. We further show that firms with better corporate governance experience a stronger market reaction to their target price announcements.

1. Introduction

A target price forecast reflects a security analyst's estimate of a firm's stock price level over the forecast horizon, usually twelve months. It provides easy-to-interpret and direct investment advice. When making investment decisions, investors consider target price forecasts as one of the most important indicators. Brav and Lehavy (2003) suggest that target prices provide investors with analysts' clear and precise statements on the magnitude of the company's expected value. Asquith, Mikhail, and Au (2005) find that analyst reports play an important role in interpreting information from various sources and document strong market reactions to analyst reports.

Despite the importance of target price, the literature documents that forecasted target price is usually optimistically biased; and there is an unsettled debate on the limited accuracy of target prices. Asquith et al. (2005) and Bradshaw, Brown, and Huang (2013) find that only around 50% of target prices are achieved within the following twelve months in the US stock markets. Bonini, Zanetti, Bianchini, and Salvi (2010) find a target price accuracy of 33.1% in the Italian stock markets. Kerl (2011) finds an accuracy of 56.5% in the German stock markets.

There are relatively few studies that examine what determines target price accuracy, compared to the extensive literature on earnings forecasts (Bradshaw, 2004; Bradshaw et al., 2013). Previous research examined some of the factors that influence target price accuracy. For example, factors on analyst forecasting skills include the number of reports published by the analyst (Bonini et al., 2010), the collective reputation of analysts (Bonini et al., 2010), and past forecast accuracy (Bradshaw et al., 2013). The literature also examines factors relating to

company risks, such as, company size (Bonini et al., 2010; Demirakos, Strong, & Walker, 2010; Kerl, 2011), and stock price volatility (Kerl, 2011). The above studies neglect the effect of a fundamental determinant of target price accuracy, namely corporate governance.

Corporate governance is the arrangement of checks and balances. It minimizes and manages the conflicting interests between insiders and external shareholders and stakeholders. Specifically, corporate governance structure affects the accounting disclosure quality, aids users in assessing the quality of information, and guides analysts to more accurately forecast future performance. The accuracy of the target price ultimately relies on the quality of the information disclosed by the firm. If corporate governance can affect information asymmetries and agency costs, we expect that firms with a good corporate governance mechanism have less bias on the target price forecasts because of better information transparency.

In this study, we aim to fill the gap in the literature by examining what aspects of corporate governance determine the target price forecast accuracy. Specifically, using a sample of 17,334 target price observations in the Taiwan Stock Exchange during the period between 2007 and 2016, we explore the relationship between target price accuracy and various measures of corporate governance, such as ownership structure, board composition, and corporate disclosure.

We examine what aspects of corporate governance mechanisms could potentially reduce the errors of target price forecasts and mitigate analysts' optimistic behavior. We find firms that have larger board size, a higher percentage of independent directors and institutional holdings, a higher percentage of common stocks owned by the CEO, executive directors, and substantial shareholders experience smaller forecast

errors. Firms with CEOs not serving as the board chairman and audited by the big-four auditing firms also have more accurate forecasts. We further show that these good corporate governance features are associated with stronger market reaction to target-price announcements.

Our paper contributes to the literature by providing further evidence of corporate governance's impact on target price accuracy. To the best of our knowledge, no research has yet attempted to investigate what aspects of corporate governance are associated with the accuracy of target price forecasts. In addition, our findings are valuable to investors, allowing them to improve their capital allocation decisions by attaching higher weights to target price forecasts issued by firms with good corporate governance.

The remainder of this research is organized as follows. Section 2 discusses institutional background. Section 3 reviews the literature and develops hypotheses. Section 4 describes the data and research design. Section 5 presents the empirical results and Section 6 concludes the paper.

2. Institutional background

The Taiwan Stock Exchange (TWSE) is the primary equity market in Taiwan. It is one of the most active exchanges in the Asia-Pacific region. At the end of 2018, there were 928 companies listed on TWSE with a total market capitalization of NT$29.32 Trillion (NT$ is New Taiwan Dollar), and an annual turnover rate of 82.60%,[1] which is slightly lower than that in the US.

Taiwan provides a vibrant environment for investigating the issues related to corporate governance. It has a civil law system that provides relatively weaker protection of shareholders' rights compared to countries with common law systems (La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 2000). Controlling shareholders in many Taiwanese companies tend to be a family group related through blood or marriage ties (Yeh, Shu, & YH, 2012). As a result, many board members are family-related. Under the Taiwan Company Act, public companies in Taiwan must have at least two supervisors who are elected by shareholders. Unlike the two-board system in Germany, the board-supervisor system in Taiwan consists of two parallel organizations. Supervisors in Taiwan do not need to be shareholders and do not participate in business decision-making. They are responsible for monitoring directors, may attend the board meetings, and may investigate the business and financial conditions of the company.[2]

After 2002, all new IPOs in Taiwan must have at least 2 independent directors who should account for at least one fifth of the board according to the Securities and Exchange Act, Taiwan.[3] The Act also requires all audit committee members be independent directors and at least one of whom shall have accounting or financial expertise. This requirement is the same as that in the U.S., but different from that in the European Union, where at least one member of the audit committee shall be independent and shall have competence in accounting and/or auditing.

3. Literature review and hypotheses development

The target price provides investors an implicit estimate of the expected stock return over the forecast horizon, which can aid them in their investment decisions. Target price forecasts are one of the key elements in equity analysts' research reports. However, compared to the extensive literature on earnings forecasts and stock recommendations, there are relatively few studies on target price forecasts.

Previous research examines some of the factors that influence target

price accuracy. Kerl (2011) finds that target price accuracy is positively related to the level of detail of each report, company size and the reputation of the investment bank in the German stock market. Da and Schaumburg (2011) conclude the informativeness of target prices mainly derives from analysts' ability to estimate the relative pricing of stocks within a specific industry. Bilinski, Lyssimachou, and Walker (2013) find that analysts with richer forecasting experiences, following more firms, country-specialized, and employed by a large broker issue more accurate target prices. Clarkson, Nekrasov, Simon, and Tutticci (2015) consider how both fundamental and non-fundamental factors influence an analyst's target price accuracy. They find that analysts not only use forecasts of firm fundamentals but appeal to the recent high stock price and market sentiment when determining their target price forecasts. Bonini et al. (2010) and Bradshaw et al. (2013) document that analysts have a limited ability to predict prices and argue the lack of accuracy is possibly due to the fact that target price forecasting is an unmonitored activity.

The aforementioned studies largely neglect a fundamental determinant of target price accuracy, namely corporate governance. Corporate governance affects both quantity and quality of information a company is willing to disclose to financial analysts and the public. In addition, it affects how analysts interpret information collected, which, in turn, affects target price forecast accuracy.

According to the Efficient Market Theory, stock prices should fully incorporate underlying financial information. Both internal and external information are collected in the process when analysts provide forecasts (Lang, Lins, & Miller, 2004). When the level of asymmetric information between corporate insiders and outsiders increases, there is greater uncertainty about a firm, and it becomes difficult for analysts or investors to value the firm and make forecasts about its target price. They have to conduct a costly information search to improve their valuations and forecasts.

An extensive literature has shown that greater information disclosure and transparency can reduce information search costs and information asymmetry, facilitate a firm's ability to issue securities, and consequently lower its cost of capital and increase the value of a firm (Coller & Yohn, 1997; Healy, Hutton, & Palepu, 1999; Zambon, 2003). Diamond and Verrechia (1991) and Zhang (2001) conclude that higher levels of disclosure reduces the information asymmetry and the cost of capital. Vander Bauwhede and Willekens (2008) argue that firms with higher levels of disclosure reduce information asymmetry and agency costs, thus improve investor confidence in the reported accounting information.

On the other hand, however, there are costs associated with better disclosure. The explicit cost is the direct accounting costs of disclosure. The implicit cost is that disclosure could advantage product–market rivals by providing them valuable information (Leuz & Wysocki, 2006). For example, in a study of intellectual capital disclosure, Singh and Van der Zahn (2008) find a negative influence of proprietary costs faced by a firm on the positive intellectual capital disclosure-ownership retention linkage. Singh and Van der Zahn (2007) show that more intellectual capital disclosures may lead to deeper IPO underpricing. This suggests stock issuers may use intellectual capital disclosures as a strategic tool to complement underpricing and investors may see more disclosure as a positive sign of the IPO's future potential and aggressively bid for the shares. Guo, Lev, and Zhou (2004) find biotech firms that operate in a highly competitive environment are reluctant to disclose product-related information. In addition, managers have disincentives to make full disclosure because better monitoring and disclosure tends to affect managers adversely.

Prior studies show that stronger corporate governance structures may mitigate the disincentive to information disclosure. Sound corporate governance can help ensure firm management has the incentive to make their own profits and also attempt to increase the interests of investors and firm value (Kanagaretnam, Lobo, & Whalen, 2007). The appropriate application of the corporate governance mechanisms is a

---

basic step to use optimum resources and increase responsibility and transparency (Jalali, 2008).

In this paper, we are interested in the corporate governance mechanisms that influence the quantity and quality of information a company discloses, which ultimately affects target price forecast accuracy. Particularly, we focus on the board structures and the ownership structure, as well as the transparent disclosure, which is closely associated with sound corporate governance.

The first important aspect of corporate governance is the board structure. Bertoni, Meoli, and Vismara (2014) argues that each board of directors simultaneously performs both value-protection and value-creation mechanisms. An effective board of directors monitors the behavior of managers by ensuring that they operate in the interests of shareholders. It protects investors from managerial misbehavior. The board of directors also provides valuable resources to the firm, give strategic advice, contribute to the firm's reputation, and expand the firm's network of business contacts (Bertoni et al., 2014). Many studies explore the association between a board's operations and the quality of disclosure, providing evidence showing that the more efficient boards increase the quality and quantity of information announced by firms and hence reduce information asymmetry. For example, Ajinkya, Bhojraj, and Sengupta (2005) and Karamanou and Vafeas (2005) find that firms with more effective boards enhance the quality and the frequency of information released by management. Previous studies have identified three main board structure characteristics affecting the monitoring efficiency and quality of disclosure, i.e. independent board directors, board size, and board leadership structure (Chen, Charles, & Jaggi, 2000; Ho & Wong, 2001). Independent directors provide advice to corporate boards on strategic decisions, which may improve the firm's economic and financial performance. In addition, independent directors have more incentives to monitor management decisions and activities. Fama (1980) assumes that outside directors are the ultimate internal monitor of managerial decision-making, whose task is to protect the interests of the shareholders. Hermalin and Weisbach (2003) find that a greater percentage of outside directors are likely to substitute for an ineffective manager. Dechow, Sloan, and Sweeney (1996) and Beasley (1996) find that there is a negative relationship between outside directors and a likelihood of financial fraud. Peasnell, Pope, and Young (2000) and Klein (2002) revealed that a more independent board mitigates earnings management. Eng and Mak (2003) and Chen and Chen et al. (2000) document a positive relationship between the proportion of outside directors and the level of disclosure. In respect to the size of the board, there is an unsettled debated on the efficient board size in the literature. John and Senbet (1998) suggest that while the board's monitoring capacities increase as the number of members on the board increases, the incremental cost of poorer communication and lower decision making efficiencies are often associated with large groups. In respect to the board leadership structure, Ho and Wong (2001) shows that firms with one individual who serves as both chairman and CEO are considered to be more managerially dominated. The person who occupies both roles would tend to withhold unfavorable information. Forker (1992) finds that CEO/chairman duality is negatively associated with disclosure quality. Byard, Li, and Weintrop (2006) find that analyst forecast accuracy decreases when the CEO also serves as chairman of the board.

The second important aspect of corporate governance is ownership structure. Bos and Donker (2004) indicate that increased ownership concentration is an effective corporate governance mechanism in monitoring accounting decisions of incumbent management. The presence of blockholders may curb the discretionary behavior of the managers, incite them to adopt profitable strategies and disclose relevant and reliable information (Fan & Wong, 2002). Karamanou and Vafeas (2005) and Wang (2006) argued that the concentrated ownership decreases the level of discretionary accruals and increases the voluntary disclosures made by managers. Zhong, Chourou, and Ni (2017) provides evidence that institutional investors have more

incentives and/or are better able to exercise their monitoring role in countries with strong investor protection and hence improve earnings quality. Chung, Firth, and Kim (2002) find that when institutional investors own a large percentage of a firm's outstanding shares, there is less opportunistic earnings management. Ljungqvist, Marston, Starks, Wei, and Yan (2007) find that institutional ownership helps reduce recommendation optimism. Elgazzar (1998) and Bushee and Noe (2000) show that institutional investors are willing and able to constrain managers to respect corporate governance and to improve transparency. They argue that large institutional ownership may induce a higher level of disclosure. In a study of 444 IPOs listing on the Singapore Stock Exchange, Singh and Van der Zahn (2008) find that there exists a positive association between intellectual capital disclosure and ownership retention post IPOs.

Finally, transparent disclosure is another important aspect closely tied to corporate governance that affects how analysts and investors evaluate financial information. Singh and van der Zahn (2007 , 2008) shed light onto the determinants and economic consequences of information disclosure. Most of the empirical literature documents that disclosure levels are positively associated with forecast accuracy (Basu, Hwang, & Jang, 1998; Vanstraelen, Zarzeski, & Robb, 2003). Bhat, Hope, and Kang (2006) used country-level proxies as corporate governance transparency and find that there is a positive impact on analyst forecast accuracy after controlling for financial transparency. Hope (2003) concludes that higher quality disclosure increases analyst's understanding of the company's current and future performance. Stronger enforcement is more likely to ensure managers obey accounting rules which reduce the uncertainty of accounting choices in financial statements. Bilinski et al. (2013) state that the accounting disclosure quality explains cross-country differences in target price forecast accuracy. External audit can also be an effective control mechanism to monitor the managers and guarantee the integrity of financial reports (Jensen & Meckling, 1976; Watts & Zimmerman, 1983). The appointment of an independent external auditor can reduce the probability of earnings manipulation by lessening the managerial opportunism (Becker, DeFond, Jiambalvo, & Subramanyam, 1998; Chung, Firth, & Kim, 2003).

To summarize, financial information serves as a basis for investment decisions of the capital market participants (Bushman & Smith, 2001, 2003). The accuracy of the target price ultimately relies on the quantity and quality of the information disclosed by the firm. However, *ex ante*, the quality aspect of financial information is hard to observe. Without conducting a costly private information search, market participants have to rely on the soundness of the legal system and corporate governance to make a judgment on how valuable a piece of information is. Good corporate governance can reduce information asymmetry, agency costs, and information search costs and increase information transparency. Corporate governance is one of the determining factors affecting quantity and quality, in particular, of information disclosed which analysts use to arrive at target prices. We expect that firms with good corporate governance mechanisms have less bias on target price forecasts because of better information transparency. Therefore, our first hypothesis is:

H1. An analyst's target price is more accurate if the target firm has better corporate governance.

Most market participants use the target price declared by analysts as an indicator to make investment decisions. Therefore, target price accuracy has an impact on investment performance and returns. Loh and Mian (2006) find that stock recommendations of accurate target price forecasters are associated with better stock performance than less accurate target price forecasters over the same time period. Feldman, Livnat, and Zhang (2012) show that three types of revisions which contain target price, earnings forecasts, and stock recommendations are positively and significantly associated with immediate market reaction. Particularly, target price and stock recommendation are significantly

stronger than those of earnings forecast revisions. Brav and Lehavy (2003) examine the market impact of target prices and find approximately an 11% spread between upward and downward target price revisions.

If better corporate governance can improve target price accuracy and the market reacts to target price announcements; we, therefore, should expect larger market reactions to target price announcements by firms with better corporate governance.

H2. The market reaction to target price announcements is larger if the target firm has better corporate governance.

4. Research design and data

4.1. Target price accuracy

Following Bilinski et al. (2013) and Chen, Chang, Cheng, and Tu (2016) we employ two measures to capture target price accuracy. The first measure, ***TP_max,*** is the absolute difference between issued target prices and the maximum stock price (or minimum stock price if the target price is less than the actual stock price at the announcement date) scaled by the maximum stock price (or minimum stock price) during the 12-month forecast horizon at the announcement date *t*. ***TP_max*** denotes the maximum forecast error during the forecast period.

$$
TP\_max_{m,t} = \begin{cases} |\dfrac{TP_{m,t} - MaxP_{m,t}}{MaxP_{m,t}}|, \text{ if } TP_{m,t} > P_{m,t} \\ |\dfrac{MinP_{m,t} - TP_{,m,t}}{MinP_{m,t}} \\ | \\ , \text{ if } TP_{m,t} < P_{m,t} \end{cases} \quad (1)
$$

Where $TP_{m,t}$ is the target price for firm m at announcement date t. $P_{m,t}$ is the actual closing stock price of firm m at the announcement date t. $MaxP_{m,t}$ is the maximum stock price of firm m during the 12-month forecast horizon. $MinP_{m,t}$ is the minimum stock price of firm m during the 12-month forecast horizon. If the announcement date is not a trading day, the last trading day prior to t would be used for the actual closing stock price of firm m.

The second measure, ***TP_end***, is the absolute difference between the target price and the actual price at the end of the 12-month forecast horizon, scaled by the actual price at the end of the forecast horizon.

$$
TP\_end_{m,t} = \left| \frac{TP_{m,t} - P_{m,12}}{P_{m,12}} \right| \quad (2)
$$

Where $P_{m,12}$ is the actual price of company m at the end of the forecast period.

The forecast horizon is one year, or 252 trading days after the target price announcement date. Notably, any updated target price would shorten the relevant forecast horizon which is between the initial announcement date and three days before the following announcement date[4] within the year.

Both target price accuracy measures capture the absolute forecast error, since target prices far above the actual price are equally inaccurate as forecasts far below the stock price. The two measures capture forecast accuracy during and at the end of the 12-month forecast period respectively. This provides a more complete assessment of analyst forecasting accuracy compared to using only one forecast accuracy measure, as is common in EPS accuracy studies.

4.2. Corporate governance measures

We explore how corporate governance affects target price accuracy and market reaction from the following three aspects: (1) board structure, (2) ownership structure, and (3) disclosure. Table 1 provides a detailed definition of all key variables.

4.2.1. Board structure

The board structure is measured by three variables: board leadership, board independence, and board size. Fama and Jensen (1983) find that there is a considerable concentration of power in the hands of the CEO when the CEO is also the chairman of the board. Hence, we use duality (***DUAL***) to measure the board leadership. ***DUAL*** equals one if the CEO is also the chairman of the board and zero otherwise. We expect that ***DUAL*** is positively related to forecast errors.

Klein (1998) suggests that independent boards are more effective at monitoring the quality of firm's financial information. To measure board independence, we use percentage of independent directors (***PIDEP***). We expect that the proportion of independent directors is negatively related to forecast errors.

For board size, we define ***BSIZE*** as the total number of directors on the board. There is an unsettled debated on the efficient board size in the literature. Yermack (1996) shows that smaller board size can be more effective. Klein (1998) finds that larger boards provide better monitoring and more expertise than smaller boards. Hence, the impact of board size on forecast errors is unknown *ex ante*.

4.2.2. Ownership structure

Previous studies document that institutional investors have more incentives and/or are better able to exercise their monitoring role and hence improve financial statement quality (Bilinski, Cumming, Hass, Stathopoulos, & Walker, 2015Ljungqvist et al., 2007). We define institutional ownership level (***IO***) as the percentage of institutional investors' holdings and expect a negative relationship between institutional ownership and forecast errors.

Jensen and Murphy (1990) find the board's ownership will improve the firm's performance. In general, centralizing managerial power in block holding individuals will affect a firm's performance positively (Becker, Cronqvist, & Fahlenbrach, 2011). We define (***BOWN***) as the proportion of common stock owned by the CEO and executive directors. Blockholder ownership (***BHOWN***) is defined as the proportion of common stock owned by substantial shareholders. We expect that ***IO***, ***BOWN***, and ***BHOWN*** are all negatively related to forecast errors.

4.2.3. Disclosure

Auditors play a key role to ensure the quality of the disclosed financial reports and mitigate "window dressing[5]" which might mislead market participants. Previous studies reported a relationship between higher quality auditor measures (such as auditor tenure, auditor size, auditor specialization, and auditor independence) and higher financial reporting quality (Gul, Fung, & Jaggi, 2009; Lin & Hwang, 2010). We defined ***AUDI*** as a dummy variable which equals one if a firm is audited by one of the big fours (Deloitte, PWC, EY, KPMG) and zero otherwise. We expect that financial reports audited by big fours will lead to more accurate target price forecasts.

4.3. The relationship between corporate governance and target price accuracy

We formally examine the relationship between corporate governance and target price accuracy in the following regression model.

---

[4] Assumed that the serviceableness of former target price announcements range from the issued date up to three days before updating the price target.

[5] Window dressing means actions taken to improve the appearance of the financial statements prior to issuing financial statements.

Table 1
Variable definition.

Dependent variable	
TP_max	Average maximum return if investor strategically follow the announcement of target price during the analyst prediction period
TP_end	Average holding period return if investors buy (short sell) underlying stocks at the announcement date and sell (cover) at the end of the forecast period
CAR	Three-day (−1, +1) cumulative abnormal return
Independent variable	
Board structure	
DUAL	A dummy variable taking the value of one if CEO is the board chairman, and zero otherwise
PIDEP	The percentage of independent directors
BSIZE	Total number of board directors
Ownership structure	
IO	The percentage of institutional holdings
BOWN	The percentage of common stock owned by CEO and executive directors
BHOWN	The percentage of common stock owned by substantial shareholders
Disclosure	
AUDI	A dummy variable taking the value of one if the auditor is one of the big fours (Deloitte, PWC, EY, KPMG), and zero otherwise.
Additional explanatory variables	
MOM	90-day buy-and-hold returns prior to the previous fiscal year-end
VOL	Standard deviation of daily returns over the previous year
EVOL	5-year standard deviation of earnings after tax scale by total asset before issued year.
TPREV	Forecast target price from the current report and the most recent prior report [(TPt / TPt-1) – 1]
Other control variables	
lnMV	Natural logarithm of market capitalization of a firm
PE	Price to earnings ratio of a firm
PB	Price to book ratio of a firm

$TP_{m,t}$

$$= \beta_0 + \beta_1 DUAL_{m,t} + \beta_2 PIDEP_{m,t} + \beta_3 BSIZE_{m,t} + \beta_4 BOWN_{m,t} + \beta_5$$
$$BHOWN_{m,t} + \beta_6 AUDI_{m,t} + \beta_7 IO_{m,t} + \beta_8 MOM_{m,t} + \beta_9 VOL_{m,t} + \beta_{10}$$
$$EVOL_{m,t} + \beta_{11} TPREV_{m,t} + \beta_{12} LnMV_{m,t} + \beta_{13} PE_{m,t} + \beta_{14} PB_{m,t} + \varepsilon_{m,t}$$
$$(3)$$

We include additional explanatory and control variables to capture other factors which would affect the target price accuracy. Jegadeesh, Kim, Krische, and Lee (2004) show that analysts' profitability recommendations and past momentum have a positive relationship. We define price momentum (**MOM**) as 90-days buy-and-hold stock returns prior to the previous fiscal year-end. Bradshaw, Huang, and Tan (2014) demonstrate the importance of controlling for firm size and price standard deviation in their analysis of target prices in the US. We use volatility of daily returns over the previous year as stock price volatility (**VOL**). Furthermore, we use the standard deviation for the past five years of the return on total assets prior to issue year to measure the earnings volatility **(EVOL)**. We expect that steady (or lower) volatility leads to a more accurate target price. The target price forecast revisions (**TPREV**) are also included in our regression model.

To control firm characteristics, natural log of market capitalization (**lnMV**), price-to-earnings ratio (**PE**) and price to book ratio (**PB**) at the announcement date for each company are included in our regression model.

4.4. The relationship between corporate governance and market reaction to target price announcements

Brav and Lehavy (2003) find a significant market reaction to the target price announcement. We formally examine the relationship between corporate governance and target price accuracy in the following regression model.

$CAR_{m,t}$

$$= \beta_0 + \beta_1 DUAL_{m,t} + \beta_2 PIDEP_{m,t} + \beta_3 BSIZE_{m,t} + \beta_4 BOWN_{m,t} + \beta_5$$
$$BHOWN_{m,t} + \beta_6 AUDI_{m,t} + \beta_7 IO_{m,t} + \beta_8 MOM_{m,t} + \beta_9 VOL_{m,t} + \beta_{10}$$
$$EVOL_{m,t} + \beta_{11} TPREV_{m,t} + \beta_{12} LnMV_{m,t} + \beta_{13} PE_{m,t} + \beta_{14} PB_{m,t} + \varepsilon_{m,t}$$
$$(4)$$

The dependent variable, *CAR*, is the two-day (0, 1) cumulative

abnormal return around the target price announcement date *t*.

$$CAR_i = \sum_t^T (R_{i,t} - R_{b,t})$$
$$(5)$$

where $R_{i,t}$ is the daily return for firm *i* on day *t*, and $R_{b,t}$ is the daily benchmark index return. We expect that the target price announcement returns and good quality corporate governance are positively correlated.

4.5. Data

We obtained forecast target prices, corporate governance data, financial data, stock returns and industry sector codes over the period January 2007 to December 2016 from the Taiwan Economic Journal (TEJ) database. Our sample includes all public firms in the Taiwan stock market and excludes financial institutions, TDR and F-shares. Using monthly data, our sample includes 59 analysts covering 967 companies with 17,334 target prices observations.

5. Empirical results

5.1. Descriptive statistics

Panel A of Table 2 presents summary statistics for the key variables in our sample. On average, the forecast error is 21% during the forecast period, and 49% at the end of the period. 21% of the board members are independent. 25% of firms have the CEO serving as board chairman. About 8.53% of outstanding shares are owned by institutional investors, 3% are owned by the CEO and executive directors, and 20% are owned by substantial shareholders. The table also shows that 96% of firms are audited by big fours. Panel B of Table 2 presents Pearson pairwise correlations for the variables. The correlations are largely consistent with our expectations. Forecast errors (CARs) are smaller (larger) when a higher percentage of shares outstanding are held by institutional holders, the CEO, executive directors, and substantial shareholders. Firms with more independent directors and that are audited by big fours have smaller (larger) forecast errors (CARs).

To further illustrate the relationship between forecast errors, CARs, and corporate governance, Table 3 presents the mean values of forecast errors and CARs sorted by corporate governance variables. On average, firms with higher holdings by institutional holders, the CEO, executive

Table 2

Summary statistics.

Panel A provides summary statistics of the main variables used in this study. Panel B provides correlations of the corporate governance variables, additional explanatory variable.

Panel A

	Observations	MIN	MAX	MEAN	Std. Dev.
TP_max	17,334	0.0000	63.7273	0.2094	0.7133
TP_end	17,334	0.0000	89.8163	0.4850	1.0727
CARs	17,334	−1.4196	1.2887	0.0029	0.0674
DUAL	17,334	–	–	0.2508	0.433
PIDEP	17,334	0.000	0.7500	0.2132	0.170
BSIZE	17,334	3.000	21.0000	7.7559	2.488
IO	17,334	0.0035	0.9796	0.5332	0.2196
BOWN	17,334	0.0000	0.4949	0.0320	0.0532
BHOWN	17,334	0.0000	0.6585	0.1980	0.0955
AUDI	17,334	–	–	0.9559	0.205
MOM	17,334	−0.5681	2.9737	0.0477	0.2230
VOL	17,334	0.0042	4.6854	0.0268	0.1142
EVOL	17,334	0.0009	1.2294	0.0367	0.0429
TPREV	17,334	−2.9602	56.2663	0.0422	0.7618
lnMV	17,334	5.7838	15.4023	9.9730	1.4938
PE	17,334	0.0000	70.4000	17.0106	11.1568
PB	17,334	0.2500	61.3400	2.7055	2.3462

Panel B

	CAR	lnMV	PE	PB	TPREV	DUAL	PIDEP	BSIZE	IO	BOWN	BHOWN	MOM	VOL	EVOL	AUDI	TP_max	TP_end
CAR	–																
lnMV	−0.02**	–															
PE	0.01	−0.01*	–														
PB	0.05***	0.12***	0.01	–													
TPREV	0.10***	0.06***	0.01	0.09***	–												
DUAL	−0.00***	−0.11***	−0.01	−0.01	−0.01*	–											
PIDEP	−0.01***	−0.07***	−0.01	−0.10***	−0.02***	−0.05***	–										
BSIZE	−0.01***	0.39***	−0.01	−0.04***	−0.01	−0.11***	−0.06***	–									
IO	−0.01	0.63***	−0.01	0.14***	0.04***	−0.16***	−0.01	0.30***	–								
BOWN	0.02**	−0.20***	−0.01	0.12***	0.00	0.34***	0.08***	−0.20***	−0.36***	–							
BHOWN	0.01	0.10***	−0.01	0.08***	0.02**	−0.07***	0.08***	−0.08***	0.27***	−0.02**	–						
MOM	0.01	−0.04***	−0.05***	0.19***	0.04***	0.01	0.05***	−0.01	−0.01	0.05***	0.00	–					
VOL	0.00	0.00	0.00	0.08***	0.00	−0.01*	0.02**	0.00	0.03***	−0.01**	−0.03***	0.04***	–				
EVOL	−0.01	−0.05***	0.00	0.19***	0.01	−0.04***	0.06***	−0.05***	−0.05***	0.00	−0.07***	0.04***	0.03***	–			
AUDI	−0.01	0.16***	0.01	0.04***	0.01	0.02***	0.05***	0.08***	0.15***	−0.06***	−0.03***	0.00	0.01	0.01	–		
TP_max	0.04***	0.13***	0.00	0.32***	0.08***	−0.03***	0.02**	−0.03***	0.07***	0.05***	−0.02**	0.05***	0.02***	0.08***	0.03***	–	
TP_end	0.04***	0.12***	0.00	0.29***	0.08***	−0.02**	0.02**	−0.03***	0.07***	0.05***	−0.02**	0.05***	0.02***	0.08***	0.02***	–	–

***, ** and * denote statistical significance at the 1%, 5% and 10% respectively.

Table 3

Forecast errors and CARs sorted on corporate governance variables.

Table 3 presents the mean values of forecast errors and CARs sorted by corporate governance variables. We sort the firms into three groups based on corporate governance variables. **High** portfolio consists of the top 1/3 of firms based on each corporate governance measure. **Low** portfolio consists of the bottom 1/3 of firms based on each corporate governance measure. All variables are defined in Table 1.

	TP_max			TP_end			CARs		
	High	Low	High-low	High	Low	High-low	High	Low	High-low
DUAL	0.2506	0.2523	−0.0017	0.2669	0.2438	**0.0231*****	0.255	0.257	−0.0021*
PIDEP	0.2042	0.2106	−0.0064*	0.2012	0.2182	**−0.0169*****	0.214	0.219	−0.0051
BSIZE	7.6188	7.6007	0.018	7.4378	7.7898	**−0.3519*****	7.635	7.655	−0.0207
IO	0.5203	0.5131	0.0072*	0.5057	0.5282	**−0.0225*****	0.523	0.527	0.0039
BOWN	0.0328	0.0343	−0.0015	0.0331	0.033	0.0001*	0.033	0.031	**0.0027*****
BHOWN	0.1996	0.1916	**0.0080*****	0.1916	0.1979	**−0.0063*****	0.196	0.196	0.0003
D_BHOWN	0.0144	0.0063	**0.0081*****	0.0082	0.0071	0.0012	0.009	0.011	−0.0025
AUDI	0.9469	0.9587	**−0.0117*****	0.9458	0.9596	**−0.0138*****	0.953	0.961	−0.0076*

***, ** and * denote statistical significance at the 1%, 5% and 10% respectively.

directors, substantial shareholders, larger board size, more independent board directors, if the CEO is not serving as the board chairman, and if the firm is audited by big fours have smaller forecast errors and larger announcement returns. These results are again largely consistent with our hypotheses.

5.2. The relationship between corporate governance and target price accuracy

We formally examine whether good corporate governance can reduce forecast errors in this section. Table 4 presents the empirical

Table 4

The relationship between corporate governance and target price accuracy.

Table 4 presents regression results. The dependent variables are TP_max and TP_end. All variables are defined in Table 1. The t-statistics are in parentheses.

Variable	TP_max		TP_end	
Intercept	0.3506***	0.5977***	1.0458***	1.7050***
	(10.15)	(12.29)	(20.22)	(23.83)
DUAL	−0.0001	0.00537	0.0363*	0.0601***
	(−0.01)	(0.41)	(1.82)	(3.11)
PIDEP	−0.1095***	−0.0341	−0.2627***	0.1290***
	(−3.40)	(−1.01)	(−5.45)	(2.60)
BSIZE	−0.0095***	−0.0035	−0.0306***	−0.0111***
	(−4.13)	(−1.50)	(−8.80)	(−3.17)
IO	−0.0675**	0.0443	−0.1281***	−0.0056
	(−2.33)	(1.27)	(−2.96)	(−0.11)
BOWN	−0.1144	−0.0088	−0.5346***	−0.4802***
	(−0.98)	(−0.07)	(−3.07)	(−2.80)
BHOWN	−0.0969	−0.0334	−0.5093***	−0.1861*
	(−1.48)	(−0.51)	(−5.20)	(−1.95)
AUDI	0.0159	0.0203	−0.0953**	−0.1235***
	(0.59)	(0.77)	(−2.39)	(−3.19)
MOM		−0.0336		0.2745***
		(−1.45)		(8.07)
VOL		0.0041		−0.0217
		(0.08)		(−0.31)
EVOL		0.6148***		0.8953***
		(4.93)		(4.87)
TPREV		0.1694***		0.2070***
		(23.86)		(19.82)
lnMV		−0.0320***		−0.0616***
		(−6.53)		(−8.54)
PE		0.0000		0.0000
		(−0.40)		(0.52)
PB		−0.0068***		0.0133***
		(−2.80)		(3.71)
INDUSTRY EFFECT	YES	YES	YES	YES
Year Dummy	YES	YES	YES	YES
Adj R-Sq	0.0021	0.0383	0.0106	0.0801
Observations	17,334	17,334	17,334	17,334

***, ** and * denote statistical significance at the 1%, 5% and 10% respectively.

results.

The independence of the board is related to the presence of outside directors in the board and whether the CEO serves as the board chairman. An independent board is considered a mechanism to prevent governance malpractices. In our empirical results, firms with the CEO not serving as the board chairman and with a higher percentage of independent directors have smaller forecast errors. This is indicated by the significantly positive coefficients of **DUAL** (0.0363 to 0.0601) and significantly negative coefficients of **PIDEP** (−0.1095 to −0.2627).

CEOs, executive directors, and substantial shareholders have the power to impact important decisions. With appropriate stock ownership, they will have the incentive to provide effective monitoring and oversight of important corporate decisions. Hence, ownership can be a good proxy for overall good corporate governance. A higher percentage of common stocks owned by the CEO, executive directors, and substantial shareholders may reduce forecast errors, which is indicated by the significantly negative coefficients of **BOWN** (−0.4802 to −0.5346), and **BHOWN** (−0.1861 to −0.5093).

Active institutional holders with a large stake in the firms have good reasons to monitor the activities of managers carefully. A higher percentage of institutional holdings may ensure the quality of financial information released by the firm, and therefore, reduce the forecast errors of analysts. Our empirical result is consistent with this expectation and the coefficients of **IO** are significantly negative (−0.0675 to −0.1281).

We also find a negative relationship (coefficients of **BSIZE** are −0.0035 to −0.0306) between board size and forecast errors. Firms with small board size have larger forecast errors. Small board size may prevent minority shareholders' access to the board of directors and may have a negative effect on firm valuation because of potential expropriation.

Greater disclosure in general leads to more value (Klapper & Love, 2004). Firms that use one of the big fours are considered to have good corporate governance disclosure. The significantly negative coefficients of **AUDI** (−0.0953 to −0.1235) show that firms audited by big fours, on average, have smaller forecast errors than those audited by other auditors.

Finally, we also show that smaller firms with higher earnings volatilities and revisions of target price have larger forecast errors. The empirical results are consistent to our hypothesis 1: good corporate governance may improve the accuracy of target price forecast.

5.3. The relationship between corporate governance and market reaction to target price announcements

The previous section shows that good corporate governance can improve target price accuracy. We further examine the relationship between corporate governance and market reactions in this section. We

Table 5
The relationship between corporate governance and market reaction to target price announcements.

Table 5 presents regression results. The dependent variables are CARs. All variables are defined in Table 1. The t-statistics are in parentheses.

Variable	CARs(+)		CARs(−)	
Intercept	0.0369***	0.0167***	−0.0280***	0.0118**
	(9.55)	(3.05)	(−6.67)	(1.98)
DUAL	−0.0011	−0.0004	0.0014	0.0009
	(−0.74)	(−0.31)	(0.92)	(0.57)
PIDEP	0.0175***	0.0155***	−0.0210***	−0.0173***
	(4.82)	(4.07)	(−5.42)	(−4.25)
BSIZE	−0.0013***	−0.0016***	0.0013***	0.0020***
	(−5.36)	(−6.09)	(4.69)	(7.04)
IO	0.0090***	−0.0033	−0.0127***	0.0055
	(2.785)	(−0.84)	(−3.63)	(1.28)
BOWN	−0.0014	−0.0177	0.0203	0.0286*
	(−0.11)	(−1.40)	(1.38)	(1.91)
BHOWN	−0.0168**	−0.0150**	0.0277***	0.0277***
	(−2.26)	(−2.05)	(3.53)	(3.52)
AUDI	0.0036	0.0020	−0.0085***	−0.0070**
	(1.24)	(0.70)	(−2.62)	(−2.18)
MOM		−0.0010		−0.0008
		(−0.40)		(−0.28)
VOL		−0.0015		0.0022
		(−0.26)		(0.43)
EVOL		0.0381***		−0.0629***
		(2.64)		(−4.23)
TPREV		0.0207***		0.0027***
		(17.54)		(3.97)
lnMV		0.0022***		−0.0051***
		(4.04)		(−8.59)
PE		0.0000		0.0000
		(−0.67)		(0.81)
PB		0.0005**		0.0003
		(2.29)		(1.14)
INDUSTRY EFFECT	YES	YES	YES	YES
Year Dummy	YES	YES	YES	YES
Adj R-Sq	0.0059	0.0453	0.0082	0.0202
Observations	17,334	17,334	17,334	17,334

***, ** and * denote statistical significance at the 1%, 5% and 10% respectively.

expect good corporate governance and market reactions are positively related.

Table 5 presents the regression results of **CARs** on all corporate governance measures. Firms with a higher percentage of independent board members, smaller board size, and institutional holders and that are audited by big fours experience more positive (less negative) announcement returns. These results support our second hypothesis that good corporate governance leads to better target price announcement returns.

6. Conclusion

This study examines the relationship among corporate governance, target price accuracy, and market reactions. We find that good corporate governance can improve target price accuracy, and there are larger market reactions to target price announcements by firms with better corporate governance.

Instead of considering just a single measure of corporate governance, we consider several different governance measures. We found that the following aspects of corporate governance impact target price accuracy. Firms with larger board size, the CEO not serving as the board chairman, audited by big fours, higher percentage of independent directors and institutional holdings, higher percentage of common stocks owned by the CEO, executive directors, and substantial shareholders experience smaller forecast errors and better announcement market returns.

Our paper contributes to the literature by providing further evidence of corporate governance's impact on target price accuracy and

market reactions to target price announcements. To the best of our knowledge, no research has yet attempted to investigate what aspects of corporate governance are associated with the accuracy of target price forecast. In addition, our findings are valuable to investors, allowing them to improve their capital allocation decisions by attaching higher weights to target price forecast by firms with good corporate governance.

References

Jensen, M. C., & Murphy, K. J. (1990). Performance pay and top-management incentives. *Journal of Political Economy, 98*, 225–264.

Ajinkya, B., Bhojraj, S., & Sengupta, P. (2005). The association between outside directors, institutional investors and the properties of management earnings forecasts. *Journal of Accounting Research, 43*, 343–376.

Asquith, P., Mikhail, M., & Au, A. (2005). Information content of equity analyst reports. *Journal of Financial Economics, 75*, 245–282.

Basu, S., Hwang, L., & Jang, C. (1998). International variation in accounting measurement rules and analysts' earnings forecast errors. *Journal of Business, Finance and Accounting, 25*, 1207–1247.

Beasley, M. S. (1996). An empirical analysis of the relation between the board of director composition and financial statement fraud. *The Accounting Review, 71*, 443–465.

Becker, C., DeFond, M., Jiambalvo, J., & Subramanyam, K. (1998). The effect of audit quality on earnings management. *Contemporary Accounting Research, 15*, 1–24.

Becker, B., Cronqvist, H., & Fahlenbrach, R. (2011). Estimating the effects of large shareholders using a geographic instrument. *Journal of Financial and Quantitative Analysis, 46*, 907–942.

Bertoni, F., Meoli, M., & Vismara, S. (2014). Board independence, ownership structure and the valuation of IPOs in continental Europe. *Corporate Governance: An International Review, 22*, 116–131.

Bhat, G., Hope, O.-K., & Kang, T. (2006). Does corporate governance transparency affect the accuracy of analyst forecasts? *Accounting and Finance, 46*, 715–732.

Bilinski, P., Cumming, D., Hass, L., Stathopoulos, K., & Walker, M. (2015). *"Strategic distortions in analyst target prices in the presence of short-term institutional investors", working paper.* London: City University.

Bilinski, P., Lyssimachou, D., & Walker, M. (2013). Target price accuracy: International evidence. *The Accounting Review, 88*, 825–851.

Bonini, S., Zanetti, L., Bianchini, R., & Salvi, A. (2010). Target price accuracy in equity research. *Journal of Business, Finance and Accounting, 37*, 1177–1217.

Bos, A., & Donker, H. (2004). Monitoring accounting changes: Empirical evidence from the Netherlands. *Corporate Governance: An International Review, 12*, 60–73.

Bradshaw, M. T. (2004). How do analysts use their earnings forecasts in generating stock recommendations? *The Accounting Review, 79*, 25–50.

Bradshaw, M. T., Brown, L. D., & Huang, K. (2013). Do sell-side analysts exhibit differential target price forecasting ability? *Review of Accounting Studies, 18*, 930–955.

Bradshaw, M. T., Huang, A. G., & Tan, H. (2014). Analyst target price optimism around the world. *Midwest finance association 2013 annual meeting paper.*

Brav, A., & Lehavy, R. (2003). An empirical analysis of analysts' target prices: Short-term informativeness and long-term dynamics. *Journal of Finance, 58*, 1933–1967.

Bushee, B., & Noe, C. (2000). Corporate disclosure practices, institutional investors, and stock return volatility. *Journal of Accounting Research, 38*, 171–202.

Bushman, R., & Smith, A. (2001). Financial accounting information and corporate governance. *Journal of Accounting and Economics, 32*, 237–351.

Bushman, R., & Smith, A. (2003). Transparency, financial accounting information, and corporate governance. *Economic Policy Review, 9*(1), 65–87.

Byard, D., Li, Y., & Weintrop, J. (2006). Corporate governance and the quality of financial analyst's information. *Journal of Accounting and Public Policy, 25*, 609–625.

Chen, A. S., Chang, C. C., Cheng, L. Y., & Tu, H. Y. (2016). Do analysts cater to investor beliefs via target prices. *International Review of Economics and Finance, 44*, 232–252.

Chung, R., Firth, M., & Kim, J. (2002). Institutional monitoring and opportunistic earnings management. *Journal of Corporate Finance, 8*, 29–48.

Chung, R., Firth, M., & Kim, J. (2003). Auditor conservatism and reported earnings. *Accounting Business Research, 33*, 19–32.

Clarkson, P., Nekrasov, A., Simon, A., & Tutticci, I. (2015). *"Target price forecasts: Fundamental and non-fundamental factors", working paper.* Simon Fraser University.

Coller, M., & Yohn, T. L. (1997). Management forecasts and information asymmetry: An examination of bid-ask spreads. *Journal of Accounting Research, 35*, 181–191.

Da, Z., & Schaumburg, E. (2011). Relative valuation and analyst target price forecasts. *Journal of Financial Markets, 14*, 161–192.

Dechow, P., Sloan, R., & Sweeney, A. (1996). Causes and consequences of earnings manipulations: An analysis of firms subject to enforcement actions by the SEC. *Contemporary Accounting Research, 13*, 1–36.

Demirakos, E. G., Strong, N. C., & Walker, M. (2010). Does valuation model choice affect target price accuracy? *European Accounting Review, 19*, 35–72.

Diamond, D. W., & Verrechia, R. E. (1991). Disclosure, liquidity and the cost of equity

capital. *Journal of Finance, 46,* 1325–1359.

Eng, L. L., & Mak, Y. T. (2003). Corporate governance and voluntary disclosure. *Journal of Accounting and Public Policy, 22,* 325–345.

Fama, E. F. (1980). Agency problems and the theory of the firm. *Journal of Political Economy, 88,* 288–307.

Fama, E. F., & Jensen, M. C. (1983). Separation of ownership and control. *Journal of Law and Economics, 26,* 301–326.

Fan, J., & Wong, J. (2002). Corporate ownership structure and the informativeness of accounting earnings in East Asia. *Journal of Accounting and Economics, 33,* 401–425.

Forker, J. J. (1992). Corporate governance and disclosure quality. *Accounting and Business Research, 22,* 111–124.

Guo, R., Lev, B., & Zhou, N. (2004). Competitive costs of disclosure by biotech IPOs. *Journal of Accounting Research, 42,* 319–355.

Healy, P. M., Hutton, A. P., & Palepu, K. G. (1999). Stock performance and intermediation changes surrounding sustained increases in disclosure. *Contemporary Accounting Research, 16,* 485–520.

Ho, S.S.M., Wong, K.S., 2001. "A study of the relationship between corporate governance structures and the extent of voluntary disclosure", Journal of International Accounting, Auditing and Taxation, 10, 139–15.

Hope, O.-K. (2003). Disclosure practices, enforcement of accounting standards, and analysts' forecast accuracy: An international study. *Journal of Accounting Research, 41,* 235–273.

Chen, J. P., Charles, & Jaggi, B. L. (2000). The association between independent non-executive directors, family control and financial disclosures in Hong Kong. *Journal of Accounting and Public Policy, 19,* 285–310.

Elgazzar, S. (1998). Predisclosure information and institutional ownership: A cross-sectional examination of market revaluation during earnings announcement periods. *Accounting Review, 73,* 119–129.

Feldman, R., Livnat, J., & Zhang, Y. (2012). Analysts' earnings forecast, recommendation and target price revisions. *Journal of Portfolio Management, 38,* 120–132.

Gul, F. A., Fung, S. Y. T., & Jaggi, B. (2009). Earnings quality: Some evidence on the role of auditor tenure and auditors industry expertise. *Journal of Accounting and Economics, 47,* 265–287.

Hermalin, B., & Weisbach, M. (2003). Boards of directors as an endogenously determined institution: A survey of the economic literature. *Economic Policy Review, 9,* 7–26.

Jalali, F. (2008). Corporate governance and accounting. *Accountant magazine. Vol. 23. Accountant magazine* (pp. 3–9).

Jegadeesh, N., Kim, J., Krische, S., & Lee, C. (2004). Analyzing the analysts: When do recommendations add value? *Journal of Finance, 59,* 1083–1124.

John, K., & Senbet, L. W. (1998). Corporate governance and board effectiveness. *Journal of Banking and Finance, 22,* 371–403.

Kanagaretnam, K., Lobo, G. J., & Whalen, D. J. (2007). Does good corporate governance reduce information asymmetry around quarterly earnings announcements? *Journal of Accounting and Public Policy, 26,* 497–522.

Karamanou, I., & Vafeas, N. (2005). The association between corporate boards, audit committees, and management earnings forecasts: An empirical analysis. *Journal of Accounting Research, 43,* 453–486.

Kerl, A. G. (2011). Target price optimism. *Business Research, 4,* 74–96.

Klapper, L., & Love, I. (2004). Corporate governance, investor protection, and performance in emerging markets. *Journal of Corporate Finance, 10,* 703–723.

Klein, A. (1998). Firm performance and board committee structure. *Journal of Law and Economics,* 137–165.

Klein, A. (2002). Audit committee, board of director characteristics and earnings management. *Journal of Accounting and Economics, 33,* 375–400.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R. (2000). Investor protection and corporate governance. *Journal of Financial Economics, 58,* 3–27.

Jensen, M., & Meckling, W. (1976). Theory of the firm: Managerial behavior, agency costs, and ownership structure. *Journal of Financial Economics, 3,* 305–360.

Lang, M., Lins, K., & Miller, D. (2004). Concentrated control, analyst following, and valuation: Do analyst matter most when investors are protected least? *Journal of Accounting Research, 42,* 589–624.

Leuz, C., & Wysocki, P. (2006). *Economic consequences of financial reporting and disclosure regulation: What have we learned?* Working paperUniversity of Chicago.

Lin, W., & Hwang, M. (2010). Audit quality, corporate governance, and earnings management: A meta-analysis. *International Journal of Auditing, 14,* 57–77.

Ljungqvist, A., Marston, F., Starks, L., Wei, K., & Yan, H. (2007). Conflicts of interest in sell-side research and the moderating role of institutional investors. *Journal of Financial Economics, 85,* 420–456.

Loh, R., & Mian, M. (2006). Do accurate earnings forecasts facilitate superior investment recommendations? *Journal of Financial Economics, 80,* 455–483.

Peasnell, K., Pope, P., & Young, S. (2000). Accrual management to meet earnings targets: UK evidence pre- and post-Cadbury. *British Accounting Review, 32,* 415–445.

Singh, I., & Van der Zahn, M. (2007). Does intellectual capital disclosure reduce an IPO's cost of capital? The case of underpricing. *Journal of Intellectual Capital, 8,* 494–516.

Singh, I., & Van der Zahn, M. (2008). Determinants of intellectual capital disclosure in prospectuses of initial public offerings. *Accounting and Business Research, 38,* 409–431.

Vander Bauwhede, H. J. C., & Willekens, M. (2008). Disclosure on corporate governance in the European Union. *Corporate Governance: An International Review, 16,* 101–115.

Vanstraelen, A., Zarzeski, M. T., & Robb, S. W. G. (2003). Corporate nonfinancial disclosure practices and financial analyst forecast ability across three European countries. *Journal of International Financial Management and Accounting, 14,* 249–278.

Wang, D. (2006). Founding family ownership and earnings quality. *Journal of Accounting Research, 44,* 619–656.

Watts, R., & Zimmerman, J. (1983). Agency problems, auditing and the theory of the firm: Some evidence. *Journal of Law and Economics, 26,* 613–634.

Yeh, Y. H., Shu, P. G., & YH, S. (2012). Related-party transactions and corporate governance: The evidence from the Taiwan stock market. *Pacific-Basin Finance Journal, 20,* 755–776.

Yermack, D. (1996). Higher market valuation for firms with a small board of directors. *Journal of Financial Economics, 40,* 185–211.

Zambon, S. (2003). *Study on the measurement of intangible assets and associated reporting practices.* Brussels: Commission of the European Communities Enterprise Directorate General.

Zhang, G. (2001). Private information production, public disclosure, and the cost of capital: Theory and implications. *Contemporary Accounting Research, 18*(2), 363–384.

Zhong, L., Chourou, L., & Ni, Y. (2017). On the association between strategic institutional ownership and earnings quality: Does investor protection strength matter? *Journal of Accounting and Public Policy, 36,* 429–450.