

## BOARD OF DIRECTOR CHARACTERISTICS AND AUDIT REPORT LAG: AUSTRALIAN EVIDENCE

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### Abstract

This study examines whether board of director's independence, financial expertise, gender, corporate governance experience and diligence impact the audit report lag exhibited by Australian publicly listed firms. Using a pooled sample of 500 firm-year observations obtained from the Australian Securities Exchange for the period 2004 to 2008, this study finds evidence that board member independence, board member financial expertise and, to a lesser extent, board member corporate governance experience are the most significant predictors associated with shorter/reduced audit report lag. Main findings are robust to alternative measures of audit report lag, board characteristics and control variables. Findings from this study clearly imply that boards play a substantial role in reducing audit report lag. Results imply that legislative and regulatory requirements, both in Australian and overseas, stipulating board member independence and financial expertise requirements are effective in improving the integrity of financial reporting, a key component of which is timeliness of financial reporting (encapsulated by audit report lag). In addition, an additional board characteristic that regulators should consider promoting among firms is board member corporate governance experience. Results from this study, therefore, have clear implications not only for regulators but also for key stakeholders such shareholders and management.

**Keywords:** Corporate Governance, Audit Report Lag, Board Of Directors And Timeliness Of Financial Reporting

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### 1 Introduction

The overarching objective of this study is to determine whether board of director (board) characteristics impact the audit report lag<sup>9</sup> of Australian publicly listed firms. Importantly, this study seeks to investigate which specific characteristics of boards are effective in reducing audit report lag and, thereby, increasing the timeliness of the audit report. For the purposes of this study, the five board characteristics examined are board independence, financial expertise, gender, corporate governance experience and diligence.

Financial reports are an important medium that provide a wide range of users with quality information which assist users with decision-making processes and investment decisions, a fundamental feature of properly functioning capital markets (Holland and Johanson 2003). Establishing the confidence of users/investors requires financial reports to be both reliable and timely. Apart from other financial

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<sup>9</sup> Audit report lag refers to the number of days from the end of the financial year to the date of the audit report for a firm. The audit report lag actually consists of two components: firm delay in preparing the financial statements for audit; and the audit firm delay in completing the statutory audit (Afify 2009; Habib and Bhuiyan 2011). Being able to measure both firm delay and audit firm delay could lead potentially to more informative analysis but the necessary data is not available given the proposed study's methodology.

information such as periodic announcements, specifically earnings, audited financial reports are likely to be the most reliable source of information available to the market as a whole (Givoly and Palmon 1982; Habib and Bhuiyan 2011). Delayed disclosure of an auditor's opinion on the truth and fairness of financial reports prepared by firms exacerbates information asymmetry and increases uncertainty in investment decisions. In turn, the delayed disclosure can thus adversely affect investor confidence in the capital market.

After the corporate collapses of Enron, WorldCom and global auditing firm Arthur Andersen, the United States of America (US) passed the Sarbanes-Oxley Act (SOX) 2002 in an attempt to increase the quality of financial reporting. Investors in corporate Australia also faced similar large-scale commercial failures namely: HIH Insurance, Harris Scarfe, One.Tel and Ansett. The Australian government also responded to the deterioration in the quality of financial reporting by implementing the Corporate Law Economic Reform Program, specifically CLERP 9 (Audit Reform and Corporate Disclosure) Bill of 2004. The global financial collapses and resulting allegations of accounting impropriety by firms resulted in widespread calls for accounting reform in an attempt to increase the quality of financial reporting by firms. Timeliness of financial reporting is one key component underpinning quality of financial reporting. Givoly and Palmon (1982)<sup>[10]</sup> assert that audit report lag is the single most important determinant of timeliness in earnings announcement affecting the market reaction to earnings announcements. Given the importance of audit timeliness to investors, identifying the determinants of audit report lag is important for two reasons: first, such determinants increase the understanding of the audit process (Bamber, Bamber, and Schoderbek 1993); and second, audit report lag is directly associated with the timeliness of announcements of firm earnings (Givoly and Palmon 1982).

Currently, a limited but growing amount of empirical literature has examined audit report lag. The majority of such literature has concentrated on the influence of firm-specific and audit quality factors hypothesised to impact audit report lag (Afify 2009; Bamber, Bamber, and Schoderbek 1993; Habib and Bhuiyan 2011; Leventis, Weetman, and Caramanis 2005). Other factors pivotal to the timeliness of financial reporting and influencing audit report lag as yet, have received little, if any, attention. The board of directors is one such feature.

A comprehensive review of the literature on boards and financial reporting by Bedard and Gendron (2010) suggests that none of the prior literature has investigated the association between boards and timeliness of financial reporting.<sup>[11]</sup> This gap in the literature provides the motivation for investigating the board-audit report lag linkage in this study. Examining the board-audit report lag linkage is also important given that, under existing regulations both in Australia and in a number of other countries, boards are charged with establishing a system of risk oversight and internal control and laying foundations for management and overall oversight. (ASX Corporate Governance Council 2007). Specifically, Recommendation 7.1 of Principle 7 of the ASX Corporate Governance and Recommendations issued by the ASX Corporate Governance Council stipulates that the board is responsible for identifying, assessing, monitoring and managing risks (ASX Corporate Governance Council 2007). Part of the board's overall responsibility is the need to monitor the audit committee, a sub-committee charged with ensuring the integrity of financial reporting by the firm (ASX Corporate Governance Council 2007). Effective boards, therefore, would reduce audit report lag as part of the board's responsibilities for risk management including the integrity of financial reports produced by firms.

This study makes an original contribution to the existing literature in that this is the first study examining five oft-cited important individual board characteristics and their association with audit report lag within a capital market setting. Results from this study will have important implications not only for regulators in legislating the optimum composition of boards but also more importantly for key stakeholders particularly shareholders who have the responsibility to appoint and discharge directors of the board.

Using a pooled sample of 500 firm-year observations obtained from the Australian Securities Exchange (ASX) for the period 2004 to 2008, this study finds evidence that, in terms of the five board characteristics examined, board independence, financial expertise and, to a lesser extent, corporate

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10 Studies show that the timeliness of an earnings announcement is related to stock prices and that firms that announce their earnings early are viewed positively (Chambers and Penman 1984; Kross and Schroeder 1984).

11 Two exceptions to this are Mohamad-Noir, Shafie and Wan-Hussin (2010) who used Malaysian data and Afify (2009) who used Egyptian data.

governance experience are the most important predictors associated with shorter audit report lag. Board gender and diligence, on the other hand, are not associated with audit report lag. Sensitivity tests fully support main results.

The remainder of the paper is organised as follows. Section Two reviews the literature on the relationship between boards and audit report lag leading to this study's hypotheses. Section Three outlines the data and research methodology, with Section Four reporting descriptive statistics and correlations. Section Five provides details of the main results and sensitivity tests undertaken. Section Six concludes by summarising the findings and discussing the implications from the results. Limitations of this study and suggestions for future research are also provided at the end of Section Six.

## 2 Literature review and hypotheses development

The timely release of financial information by firms is an important aspect of financial reporting by firms. Given the fundamental role that financial reporting plays in the information marketplace and in the investment decisions made by users, audit report lag jeopardises the quality of financial information by not providing such timely information to users. Now more than ever in the face of the Global Financial Crises in 2000 and the current European Credit Crunch threatening to precipitate a global recession, the timely release of financial information, particularly audited information, is paramount. It is for this reason that professional and regulatory authorities are continually looking for ways to increase the circulation of reliable financial information in the capital marketplace (ASX Corporate Governance Council (ASX CGC) 2003; Blue Ribbon Committee 1999; Commonwealth Government of Australia 2004). One such way is to reduce delays in the release of audited financial information.

In Australia, the Statement of Accounting Concepts No. 3 titled "Qualitative Characteristics of Financial Information" prepared by the Australian Accounting Research Foundation and the Accounting Standards Review Board paragraph 39 expressly stipulates that financial information reported by firms (in their financial reports) must be both relevant and reliable (Australian Accounting Research Foundation 1990). Specifically, paragraph 39 indicates that "reliable financial information may lose its relevance to potential users if there is an undue delay in the financial information being reported" (Australian Accounting Research Foundation 1990).<sup>[12]</sup> The Australian Securities and Investments Commission (ASIC) requires all public firms that are not disclosing entities or limited by guarantee to prepare annual audited financial reports and have the reports lodged with ASIC within four months of the firms' financial year-end (Australian Securities and Investments Commission 1994). Since the audit report contains the auditor's opinion regarding the credibility of the financial statements, investors generally prefer shorter audit report lags because the earlier investors receive the audit opinion, the sooner investors can adjust their investment preferences. A long audit report lag suggests a delay in the release of earnings information to investors and therefore decreases the informational efficiency of the market – an issue of considerable concern to regulators. Clearly, therefore, audit report lag is an important component of quality financial reporting.

Corporate governance is a control feature within firms to safeguard against opportunistic behaviour by reconciling the interests and expectations of shareholders and management (Fama and Jensen 1983). Additionally, effective corporate governance mechanisms within firms not only serve as a monitor (of management) but also serve to assure the quality of reported earnings. A large body of prior literature has shown that weak corporate governance structures lead to poor financial reporting quality, earnings manipulation, financial statement fraud and weaker internal control (Abbott et al. 2007; Beasley et al. 2000; DeZoort and Salterio 2001; Van der Zahn and Tower 2005; Xie, Davidson, and DaDalt 2003; Clifford and Evans 1997; DeFond, Hann, and Hu 2005). Corporate governance within firms is underpinned by four main pillars: external and internal auditors, audit committees and board of directors. A firm's board of directors has the ultimate responsibility for accountability matters within a firm and report to shareholders. The board of directors also interacts with key stakeholders such as management, internal and external auditors, shareholders, creditors and regulators. The board, therefore, assumes a stewardship function on all aspects of the firm's operations, including the responsibility to ensure the integrity of financial reporting. Specifically, one of the key responsibilities of the board is to provide

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12 Similarly, the United States of America's (USA) Financial Accounting Standards Board (FASB) views timeliness as a component of relevant financial information; one of the two (the other one being reliable) primary qualities required by Statement of Financial Accounting Concepts No. 2 (Financial Accounting Standards Board 1980).

oversight (using the audit committee as a conduit) over the quality of financial reporting and corporate accountability (Lee and Mande 2005; Pincus, Rusbarsky, and Wong 1989).

Drawing on the tenets of agency theory, prior literature has conclusively maintained that effective boards increase the quality of reported earnings (Chen and Zhou 2007; O'Regan et al. 2005; Pfeffer 1972; Vafeas 2005).<sup>[13]</sup> Given the need for boards to comply with Principle 2 titled "Structure to Add Value" and Principle 4 titled "Safeguard Integrity in Financial Reporting" of the ASX's Corporate Governance Council (CGC) (specifically Recommendations 2.1 and 4.1 which stipulates the need for properly-structured boards to monitor the integrity of the firm's financial reporting), clearly boards play an instrumental role in the quality of reported earnings/financial information produced by firms (ASX Corporate Governance Council 2007). It is apparent, therefore, that boards play a pivotal role in ensuring the integrity of financial reporting by firms. Given that audit report lag is an important component of quality financial reporting, the proposed study seeks to analyse another strand of the corporate governance–earnings quality linkage by investigating the role of the board in the timely release of financial reporting by firms (the latter proxied by audit report lag).

Effective corporate governance mechanisms within firms are expected to reduce audit report lag because of: (1) closer monitoring of management preparing the financial statements; (2) greater interaction with the external auditor charged with the statutory audit of the financial statements; and (3) liaising with an internal audit function also responsible for risk management (including internal controls over the financial reporting process). One noteworthy characteristic of past literature on audit report lag relates to the explanatory power of the audit report lag models which is modest at the 20% - 30% range (given that the predictor variables essentially relate to firm characteristics and audit quality). The low explanatory power of past studies, therefore, provides an opportunity to identify new variables not previously identified to formulate a more complete audit report lag model. Interestingly, Afify (2009), more recently, included corporate governance characteristics of firms in Egypt and reported a significantly higher adjusted  $R^2$  of 57%. Afify's (2009) results, therefore, provide additional motivation to this study seeking to examining a wider range of corporate governance features (specifically board features) postulated to impact audit report lag.

### **2.1 Board characteristics and audit report lag**

It is postulated that specific board characteristics reinforce the effectiveness of that board thereby increasing the timeliness of financial reporting (by reducing the audit report lag exhibited by firms). There is a large quantity of literature which suggests that boards comprising a majority of independent directors are more likely to improve the financial reporting quality of firms by hiring high-quality auditors, employing an internal audit function within the firm, increasing audit committee effectiveness and engaging in higher levels of accounting conservatism (Ahmed and Duellman 2007; Beasley and Petroni 2001; Chen and Zhou 2007; Klein 2002; Vafeas 2005). Prior literature also suggests that the presence of at least one financial expert on boards strengthens the monitoring prowess of the board such that there is a lower incidence of earnings management, better accruals quality and higher regulatory enforcement (Carcello et al. 2006; DeFond, Hann, and Hu 2005; Dhaliwal, Naiker, and Navissi 2006; McDaniel, Marint, and Maines 2002). In a similar vein, the placement of women on boards provides greater risk aversion, ethical conduct, caution, communication and meeting preparation skills to the board as a whole (Gold, Hunton, and Gomaa 2009; Powell and Anisc 1997; Stewart and Munro 2007a). The presence of members on the board with corporate governance experience (represented by members sitting on boards of other firms) is believed to improve the knowledge levels within the board leading to greater support for the external auditor in the event of management-auditor disputes and the employment of high-quality auditors (Beasley and Salterio 2001; DeZoort 1998; DeZoort and Salterio 2001; Gramling, Johnson, and Khurana 2000). Last, firms whose boards meet regularly (a proxy for diligence) have lower cost of equity and lower likelihood of earnings management (Stewart and Munro 2007b; Vafeas 1999; Andersen, Mansi, and Reeb 2003; Bedard, Chtourou, and Courteau 2004; Osma and Noguer 2007). Given, therefore, that board characteristics positively influence the quality of financial reporting by firms, this study's main hypothesis is formulated as follows:

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13 A key aspect of quality relates to both the relevance and reliability of financial information; the former encompassing timeliness of financial reporting.

*H<sub>1</sub>: Firms with boards comprising of a majority of independent members, have at least one financial expert, at least one woman, have members with corporate governance experience and who meet more often will have shorter audit report lag.*

### **3 Data and research methodology**

The following sub-sections provide details of the sample selected, source documentation, measurement details for all the variables in this study and specify the statistical models utilised to formally test the hypothesis of this study.

#### **3.1 Sample selection**

The analysis in this study involves a longitudinal examination covering a five calendar-year period (January 1, 2004 to December 31, 2008). The five-year period is selected to minimize any significant extraneous influences on findings as a result of fallout from the 'Dot.Com Bubble' or the introduction of new International Financial Reporting Standards (IFRS). In addition, the period is also selected to determine the effectiveness of key corporate governance reforms introduced in 2003. Specifically, as the time period is after the introduction of key corporate governance reforms in Australia (i.e., CLERP 9 and ASX 2003), findings may indicate whether recommendations related to boards in CLERP 9 and ASX 2003 impact the board effectiveness/audit report lag linkage.

The initial sample comprises all publicly listed firms listed on the ASX as at January 1, 2004. ASX listed firms are chosen because information on such firms are publicly available. Consistent with prior research, a number of exclusions are made. From the resulting sample pool, 100 firms are randomly selected for each year based on market capitalization.<sup>[14]</sup> Specifically, a stratified-random approach is used to capture the overall picture of the market as a whole, and thereby, to generalize findings by avoiding potential firm size biases. The stratified-random approach will involve stratifying each year into quartiles by market capitalization and randomly selecting a sample of 25 firms within each quartile (Balvers, Cosimano, and McDonald 1990). Each calendar year (i.e., January 1 to December 31) within the observation period is considered an individual firm-year for firms included in the sample. Data is collected for each firm selected from each firm-year covered in this study. The resulting pooled sample, therefore, provides 500 firm-year observations for use as data points in the subsequent testing.

Data used in the measurement of all of the variables are obtained from the Annual Reports Collection (Connect 4 Pty Ltd). Data not available in the Connect 4 Pty Ltd database are gathered from DatAnalysis given DatAnalysis contains the annual reports of all ASX listed firms since 1995.

#### **3.2 Measurement of key variables**

Audit report lag (dependent variable denoted and tabulated as ARL) is operationalized as the difference (in number of days) between the financial year-end of a firm and the date of that firm's audit report. The key predictor board characteristics examined in the study are board independence, financial expertise, gender, corporate governance experience and diligence which are defined as follows: 1) board independence is measured as the percentage of independent directors on the board of the firm (denoted BOD\_%Ind). For the purposes of this study, the definition adopted for board member independence is consistent with Recommendation 2.1 of Principle 2 of the ASX Corporate Governance and Recommendations (ASX Corporate Governance Council 2007); 2) financial expertise is measured as the percentage of directors on the board of the firm who are classified as financial experts (denoted BOD\_%Fin\_Exp). For the purposes of this study, the definition adopted for financial expertise is consistent with (Krishnan and Visvanathan 2007b); 3) gender is measured by the presence of at least one woman on the directors on the board (denoted BOD\_D\_Gender); 4) corporate governance experience is measured as the percentage of directors on the board of the firm who are on the boards of other firms (denoted BOD\_%CG\_Exp); and 5) diligence is proxied by the total number of board meetings held during the year (denoted BOD\_Dil).

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<sup>14</sup> Since one of the major drivers of firm performance is the need to maximise shareholder value, this measure is best reflected by the market capitalisation of a firm (Balvers, Cosimano, and McDonald 1990).

To minimize cross-sectional influences, a number of control variables are incorporated into the analysis.<sup>[15]</sup> Prior research suggests that firm features and audit quality may influence audit report lag (Afify 2009; Habib and Bhuiyan 2011; Leventis, Weetman, and Caramanis 2005). As such, control variables proxying for firm features such as firm size (proxied by assets) and firm risk (proxied by leverage) and audit quality (proxied by a Big4 auditor) are also included in the multivariate testing. Past literature also indicates that the industry a firm is in can also impact the degree of audit report lag exhibited by that firm (Habib and Bhuiyan 2011; Mohamad-Nor, Shafie, and Wan-Hussin 2010). Consequently, firms are categorised into two industries: firms in either the materials or industrials industries and firms in the remaining industries consistent with Stein, Simunic and O’Keefe (1994). Sensitivity analysis is undertaken to determine the validity of the main results. Alternative measures of the dependent, independent and control variables are formulated and regression results re-run.

### 3.3 Statistical tests and models

This study uses Ordinary Least Squares (OLS) regression to analyse the relationship between board features and audit report lag. The hypothesis of this study is tested formally by using a pooled regression model. The main regression model is specified below in Equation 1:

$$ARL = \beta_0 + \beta_1 BOD\_ \%Ind + \beta_2 BOD\_ \%Fin\_ Expt + \beta_3 BOD\_ D\_ Gender + \beta_4 BOD\_ \%CG\_ Exp + \beta_5 BOD\_ Dil + \beta_6 Big4 + \beta_7 LnAssets + \beta_8 Leverage + \beta_9 Industry\_ Mats\_ Ind + \varepsilon \quad (1)$$

Where:

<i>ARL</i>	=	Represents the number of days elapsing between the end of the financial year of a firm and the date of the audit report for that firm.
<i>BOD\_ %Ind</i>	=	Percentage of independent directors on the board of the firm.
<i>BOD\_ \%Fin\_ Expt</i>	=	Percentage of directors on the board of the firm who are classified as financial experts.
<i>BOD\_ D\_ Gender</i>	=	A firm is scored one (1) if during the year at least one of the directors on the board is a woman; otherwise the firm is scored zero (0).
<i>BOD\_ \%CG\_ Exp</i>	=	Percentage of directors on the board of the firm who are on the boards of other firms.
<i>BOD\_ Dil</i>	=	The total number of board meetings held during the year.
<i>Big4</i>	=	A firm is scored one (1) if during the year the incumbent auditor is a Big-4 audit firm; otherwise the firm is scored zero (0).
<i>LnAssets</i>	=	Natural logarithm of total assets for a firm at the end of the financial year.
<i>Leverage</i>	=	Total debt divided by total equity for a firm at the end of the financial year.
<i>Industry\_ Mats\_ Ind</i>	=	A firm is scored one (1) if during the year the firm is either in the materials or industrials industry; otherwise the firm is scored zero (0).
$\beta$	=	Coefficients on variables 0 through 9.
$\varepsilon$	=	The error term.

## 4 Empirical results

### 4.1 Descriptive statistics

Panel A Table 1 presents the sample selection process. The initial sample comprises 2,128 firms. Consistent with prior research (Ball, Kothari, and Robin 2000; Givoly and Hayn 2000; Goodwin 2003; Ruddock, Taylor, and Taylor 2006), financial (133), insurance (10), utilities (30), IPOs (106) and trust (92) firms are excluded. To avoid undue influences of unexpected share price changes, 222 firms are also eliminated for not being continuously listed on the ASX during the observation period (i.e., firms de-

15 Bartov, Gul and Tsui (2000) point out that the omission of control variables could incorrectly result in the rejection of the null hypothesis.

listed then re-listed). Also, consistent with Clifford and Evans (1997), 64 foreign incorporated firms domiciled outside Australia are excluded because their financial statements are not necessarily prepared in accordance with usual disclosure requirements of Australian incorporated and domiciled firms listed on the ASX. Finally, 381 firms are excluded due to missing data during the observation period (Klein 2002). Following the respective exclusions (totalling 1,038 firms), the final sample pool from which the useable sample is selected comprised 1,090 firms. Panel B Table 1 presents the industry breakdown of the pooled sample. Industrials and materials sectors represent 50% of the final sample whereas consumer staples and telecommunication services are the most underrepresented. The spread of industries in the pooled sample is proportionally representative of the ASX market as a whole.

**Table 1.** Sample selection and industry breakdown

<b>Panel A: Sample Selection</b>		
<b>Number firms listed on ASX as at January 1, 2004</b>		<b>2,128</b>
<i>Exclusions:</i>		
Financial institutions	(133)	
Insurance	(10)	
Utilities	(30)	
IPO firms	(106)	
Trust	(92)	
Firms that are not continuously listed	(222)	
Foreign incorporated firms	(64)	
Missing data	(381)	
Total Number Excluded:		(1,038)
Sample pool for random selection		1,090
Number randomly selected after stratifying into Quartiles per year	100*5	500
<b>Final usable sample</b>		<b>500</b>
<b>Panel B: Sample firm break down by industry</b>		
<b>ASX Industry</b>	<b>No. Firm-Year Obs.</b>	<b>% of Sample</b>
Consumer Discretionary	80	16
Consumer Staples	19	4
Energy	35	7
Health Care	70	14
Industrials	128	26
Information Technology	34	7
Materials	121	24
Telecommunication Services	13	2
<b>Total</b>	<b>500</b>	<b>100</b>

Table 2 reports descriptive statistics for the final usable sample. Table 2 Panel A provides the descriptive details for the continuous variables while Panel B provides similar details but for the dichotomous variables utilised in this study. Panel A reports that the pooled firms experience a mean (median) audit report lag of 81 (87) days which is well within the statutory deadline in Australia of 120 days (Australian Securities and Investments Commission 1994). Almost 42% of the firms in the sample have boards with a majority of independent directors with a standard deviation of 29%. In terms of financial expertise, only 24% of firms have at least one board member classified as a financial expert with a standard deviation of 22%. Such results are lower than those in the USA (Carcello, Hollingsworth, and Neal 2006; Krishnan and Visvanathan 2007a) but higher than those in Asia (Van der Zahn and Tower 2004; Fan and Wong 2005). Thirty-nine (39) percent of firms also have at least one member with corporate governance experience with a standard deviation of 26%. The firms in the sample have annual board meetings ranging from a minimum of one to 35 with an average of 11 meetings. Assets of firms in the sample range from a minimum of \$61,000.00 to a maximum of almost \$15 billion with a standard deviation of almost \$1.6 billion suggesting mostly large firms in the sample. Descriptive statistics for leverage indicate a minimum of -10.727 to a maximum of 36.486 with a standard deviation of 2.799. Given that the standard deviation of 2.799 exceeds the median of 1.844, there is a greater concentration of firms with higher debt levels in the sample.

**Table 2.** Descriptive statistics

<b>Panel A: Continuous variables</b>	<b>Mean</b>	<b>Median</b>	<b>Standard deviation</b>	<b>Minimum</b>	<b>Maximum</b>
<i>ARL</i>	81	87	44	9	820
<i>BOD_%Ind</i>	0.418	0.400	0.285	0.000	1.000
<i>BOD_%Fin_Exp</i>	0.237	0.200	0.217	0.000	1.000
<i>BOD_%CG_Exp</i>	0.393	0.400	0.261	0.000	1.000
<i>BOD_Dil</i>	11	10	5	1	35
<i>Assets (\$'000s)</i>	555,325	38,174	1,552,853	61	14,929,000
<i>Leverage</i>	2.229	1.844	2.799	-10.727	36.486
<b>Panel B: Dichotomous variables</b>	<b>Yes</b>	<b>%</b>	<b>No</b>	<b>%</b>	
<i>BOD_D_Gender</i>	113	23	387	77	
<i>Big4</i>	284	57	216	43	
<i>Industry_Mats_Ind</i>	249	50	251	50	

Where:

*ARL* = the number of days elapsing between the end of the financial year of a firm and the date of the audit report for that firm;

*BOD\_%Ind* = A firm is scored one (1) if during the year at least 50% of the directors on the board are independent; otherwise the firm is scored zero (0);

*BOD\_%Fin\_Exp* = Percentage of directors on the board of the firm who are classified as financial experts;

*BOD\_%CG\_Exp* = Percentage of directors on the board of the firm who are on the boards of other firms;

*BOD\_Dil* = The total number of board meetings held during the year;

*Assets* = Total assets for a firm at the end of the financial year;

*Leverage* = Total debt divided by total equity for a firm at the end of the financial year;

*BOD\_D\_Gender* = A firm is scored one (1) if during the year at least one of the directors on the board is a woman; otherwise the firm is scored zero (0);

*Big4* = A firm is scored one (1) if during the year the incumbent auditor is a Big-4 audit firm; otherwise the firm is scored zero (0);

*Industry\_Mats\_Ind* = A firm is scored one (1) if during the year the firm is either in the materials or industrials industry; otherwise the firm is scored zero (0).

Panel B, which reports the descriptive statistics for the dichotomous variables utilised in this study, suggests that, in terms of gender, only 113 firms (23%) have at least one woman on the board. In terms of the type of auditor appointed, 284 (57%) of the firms in the sample employ a Big4 auditor (Big4) and finally, 249 (50%) of the pooled firms in the final usable sample were in either the materials or industrials industry.

#### 4.2 Correlations

Table 3 presents a correlation matrix reporting Pearson listwise correlation coefficients for all the variables utilised in this study. A review of the correlation coefficients indicates that audit report lag is shorter for all of the variables of this study except for firms with high levels of leverage. The latter result is unsurprising given that firms with high levels of debt ordinarily attract greater audit attention and effort by incumbent auditors resulting in longer periods of audit report lag (Andersen, Mansi, and Reeb 2003). Specifically, a review of Table 3 also reveals that, on a bivariate basis, audit report lag is significantly negatively associated with the percentage of independent board members, gender, members with corporate governance experience and firm assets. The correlational relationship between the natural logarithm of firm assets and percentage of independent board members is high at 51.5% but does not approach or exceed the critical multicollinearity limit of 80% (Hair et al. 2006). At this stage, therefore, based on the Pearson listwise correlations, standard interpretations of the univariate coefficients in Table 3 can be made and multivariate testing can be undertaken with confidence.



**Table 3.** Correlation analysis

Variables	ARL	BOD_%Ind	BOD_%Fin_Expt	BOD_D_Gender	BOD_%CG_Exp	BOD_Dil	Big4	LnAssets	Leverage	Industry_Mats_Ind
ARL	1.000									
BOD_%Ind	-0.156**	1.000								
BOD_%Fin_Expt	-0.021	-0.049	1.000							
BOD_D_Gender	-0.105*	0.345**	-0.023	1.000						
BOD_%CG_Exp	-0.126**	0.351**	0.076	0.115*	1.000					
BOD_Dil	-0.011	-0.025	0.245**	-0.123**	0.098*	1.000				
Big4	-0.069	0.337**	0.056	0.095*	0.258**	0.117**	1.000			
LnAssets	-0.261**	0.515**	0.020	0.318**	0.364**	0.094*	0.440**	1.000		
Leverage	0.011	0.053	0.046	0.118**	0.035	-0.049	-0.047	0.012	1.000	
Industry_Mats_Ind	-0.029	0.015	0.045	0.012	0.017	0.034	-0.038	0.134**	0.062	1.000

Where:

ARL = the number of days elapsing between the end of the financial year of a firm and the date of the audit report for that firm;

BOD\_%Ind = A firm is scored one (1) if during the year at least 50% of the directors on the board are independent; otherwise the firm is scored zero (0);

BOD\_%Fin\_Expt = Percentage of directors on the board of the firm who are classified as financial experts;

BOD\_D\_Gender = A firm is scored one (1) if during the year at least one of the directors on the board is a woman; otherwise the firm is scored zero (0);

BOD\_%CG\_Exp = Percentage of directors on the board of the firm who are on the boards of other firms;

BOD\_Dil = The total number of board meetings held during the year;

Big4 = A firm is scored one (1) if during the year the incumbent auditor is a Big-4 audit firm; otherwise the firm is scored zero (0);

LnAssets = Natural logarithm of total assets for a firm at the end of the financial year;

Leverage = Total debt divided by total equity for a firm at the end of the financial year;

Industry\_Mats\_Ind = A firm is scored one (1) if during the year the firm is either in the materials or industrials industry; otherwise the firm is scored zero (0).

Note: \*\*, \* represent correlations significant at the 1% and 5% levels respectively (two-tailed).

Table 4 presents the main results of this study and also the outcomes of the sensitivity testing undertaken. Columns 2 and 3 present the main multivariate results utilising continuous measures (except gender) to capture the board characteristics of interest in this study. Columns 4 and 5 report the results of sensitivity testing utilising entirely dichotomous measures to capture the board characteristics of interest.

**Table 4.** Multivariate analysis

Variables	Main Results* (BoD Continuous Variables)		Sensitivity Results^ (BoD Dichotomous Variables)	
	Coefficient	t-statistic	Coefficient	t-statistic
Intercept	170.776	9.695***	167.692	9.572***
<i>BOD_%Ind</i>	-0.119	-2.705***		
<i>BOD_%Fin_Expt</i>	-0.076	-2.679***		
<i>BOD_D_Gender</i>	-1.163	-0.228	0.493	0.097
<i>BOD_%CG_Exp</i>	-0.080	-1.780*		
<i>BOD_Dil</i>	0.113	0.261		
<i>BOD_D_Ind</i>			-0.226	-4.944***
<i>BOD_D_Fin_Expt</i>			-0.184	-4.774***
<i>BOD_D_CG_Exp</i>			-0.107	-1.815*
<i>BOD_D_Dil</i>			0.508	0.097
<i>Big4</i>	6.458	1.440	6.516	1.471
<i>LnAssets</i>	-4.973	-4.543***	-4.677	-4.272***
<i>Leverage</i>	0.386	0.550	0.416	0.595
<i>Industry_Mats_Ind</i>	1.044	0.194	1.153	0.215
Adjusted R <sup>2</sup>	0.385		0.402	
F statistic (sig.)	12.242 (0.000)		13.446 (0.000)	
Observations	500		500	

Where:

*BOD\_%Ind* = A firm is scored one (1) if during the year at least 50% of the directors on the board are independent; otherwise the firm is scored zero (0);

*BOD\_%Fin\_Expt* = Percentage of directors on the board of the firm who are classified as financial experts;

*BOD\_D\_Gender* = A firm is scored one (1) if during the year at least one of the directors on the board is a woman; otherwise the firm is scored zero (0);

*BOD\_%CG\_Exp* = Percentage of directors on the board of the firm who are on the boards of other firms;

*BOD\_Dil* = The total number of board meetings held during the year;

*BOD\_D\_Ind* = A firm is scored one (1) if during the year at least 50% of the directors on the board are independent; otherwise the firm is scored zero (0);

*BOD\_D\_Fin\_Expt* = A firm is scored one (1) if during the year at least one of the directors on the board is classified as a financial expert; otherwise the firm is scored zero (0);

*BOD\_D\_CG\_Exp* = A firm is scored one (1) if during the year at least one of the directors on the board is on the board of another firm; otherwise the firm is scored zero (0);

*BOD\_D\_Dil* = A firm is scored one (1) if during the year the total number of board meetings held were at least seven; otherwise the firm is scored zero (0);

*Big4* = A firm is scored one (1) if during the year the incumbent auditor is a Big-4 audit firm; otherwise the firm is scored zero (0);

*LnAssets* = Natural logarithm of total assets for a firm at the end of the financial year;

*Leverage* = Total debt divided by total equity for a firm at the end of the financial year; and

*Industry\_Mats\_Ind* = A firm is scored one (1) if during the year the firm is either in the materials or industrials industry; otherwise the firm is scored zero (0).

Note: \*\*\*, \*\*, \* represent correlations significant at the 1%, 5% and 10% levels respectively (two-tailed).

For the purposes of brevity, year-indicator variables have not been tabulated in Table 4.

$$* ARL = \beta_0 + \beta_1 BOD\_ \%Ind + \beta_2 BOD\_ \%Fin\_ Expt + \beta_3 BOD\_ D\_ Gender + \beta_4 BOD\_ \%CG\_ Exp + \beta_5 BOD\_ Dil + \beta_6 Big4 + \beta_7 LnAssets + \beta_8 Leverage + \beta_9 Industry\_ Mats\_ Ind + \varepsilon \quad \text{[Main results]}$$

$$\wedge ARL = \beta_0 + \beta_1 BOD\_ D\_ Ind + \beta_2 BOD\_ D\_ Fin\_ Expt + \beta_3 BOD\_ D\_ Gender + \beta_4 BOD\_ D\_ CG\_ Exp + \beta_5 BOD\_ D\_ Dil + \beta_6 Big4 + \beta_7 LnAssets + \beta_8 Leverage + \beta_9 Industry\_ Mats\_ Ind + \varepsilon \quad \text{[Sensitivity results]}$$

Columns 2 and 3 report results regressing five board characteristics against audit report lag. A number of significant relationships arise on a multivariate basis as a result of the OLS regression completed. Results clearly indicate that firms with boards comprising a majority of independent members, with at least one board member having financial expertise and (to a lesser extent) a majority of board members with corporate governance experience (by being on the boards of other firms) have shorter audit report lags than boards without such board characteristics. It is also noteworthy that firms with boards comprising women members and boards which meet more often do not have any statistical association with audit report lag. On balance, therefore,  $H_1$  is accepted. With respect to control variables, Table 4 indicates that larger firms tend to have shorter audit report lag compared to smaller firms suggesting that larger firms have greater resources enabling formulation and implementation (by such large firms) of procedures, processes and internal control systems to minimise risks/errors thus enabling external auditors to complete their audit quickly. Added to this is reputational capital that large firms value thus necessitating an expeditious audit by such firms. In terms of the adjusted  $R^2$ , main results in Columns 2 and 3 in Table 4 have predictive abilities comparable with past studies. Specifically, past studies concentrating solely on firm and audit-specific characteristics have produced models with predictive abilities in the range of 20% to 30% (Habib and Bhuiyan 2011; Lee and Cheuk 2005; Leventis, Weetman, and Caramanis 2005). Results from this study are a considerable improvement over prior studies in that the main model adopted has an adjusted  $R^2$  of 39%, a significant enhancement over previous studies utilising only firm and audit-specific characteristics. Clearly, boards play a statistical significant role in reducing audit report lag.

## 5.2 Sensitivity testing

Sensitivity analysis was undertaken to validate the main results. Initially, an alternative measure of the dependent variable, audit report lag, was determined and the main regression results re-run. In line with Bamber, Bamber and Schoderbek (1993), the alternative variable, abnormal audit report lag, is calculated as the difference between the firm's audit report lag and the firm's median audit report lag where the latter median is calculated over the observation window. Abnormal audit report lag is then regressed against the five board characteristics examined in this study to determine if the main results are affected by the choice of measure for audit report lag. Results from sensitivity analysis using the alternative measure of audit report lag did not change the directionality and significance of the main results. As indicated in Section 5.1, Columns 4 and 5 of Table 4 report the results of sensitivity testing by utilising entirely dichotomous measures to capture the board characteristics of interest in this study. Results from sensitivity testing continue to highlight similar significant relationships on a multivariate basis. Results clearly indicate that firms with boards comprising more than 50% independent members, with at least one board member having financial expertise and more than 50% board members with corporate governance experience have shorter audit report lags than boards without similar characteristics. It is also salient that firms with boards comprising women members and boards which meet more often continue not to have any statistical association with audit report lag. In terms of the adjusted  $R^2$ , sensitivity results in Columns 4 and 5 in Table 4 have predictive abilities better than main results (40% compared to 39%). In conclusion, comprehensive sensitivity testing completed fully support main results.

## 6 Conclusions

This study investigates whether board features impact the audit report lag of Australian publicly listed firms. The five individual board variables examined in this study are board independence, financial expertise, gender, corporate governance experience and diligence. This study seeks to determine which board characteristics are effective in reducing audit report lag and, thereby, increasing the timeliness of the audit report. Using a pooled sample of 500 firm-year observations obtained from the ASX from 2004 to 2008, this study finds evidence that board member independence, board member financial expertise and, to a lesser extent, board member corporate governance experience are the most important predictors associated with shorter audit report lag. Overall main findings are robust to alternative measures of audit

report lag, the five predictor variables and control variables. Findings from this study, therefore, clearly imply that boards play a substantial role in reducing audit report lag.

In terms of implications, results indicate that existing legislative and regulatory requirements, both in Australian and overseas, requiring board member independence and financial expertise are effective in improving the integrity of financial reporting, a key component of which is timeliness of financial reporting (encapsulated by audit report lag). However, another board characteristic that regulators should consider legislating (as a direct result of findings from this study) is board member corporate governance experience. Given that results suggest board members with corporate governance experience are associated with firms exhibiting shorter audit report lag (and therefore increased timeliness of financial reporting), regulators and legislators should consider recommending/promoting the appointment of directors to firms with multiple directorships and, therefore, increased corporate governance experience.

Results from this study are subject to limitations. This study has examined only five director characteristics hypothesised to impact audit report lag. While the five director characteristics selected are the most commonly used and cited in prior empirical literature (Ahmed and Duellman 2007; Beasley 1996; Kesner 1988; Pfeffer 1972; Zahra and Pearce 1989), other characteristics (albeit of lesser importance) may be associated with audit report lag. Whilst control variables included in the regression models are all validated by prior archival research (Lee and Cheuk 2005; Leventis, Weetman, and Caramanis 2005), there may also be other variables excluded potentially impacting on audit report lag. Future research can examine the impact of other corporate governance mechanisms thought to potentially impact audit report lag such as audit committees and internal auditors. In addition, the association between audit report lag and other financial measures such as earnings management and cost of equity/debt can also be undertaken.

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