IPO RETURNS, BOARD COMPOSITION AND COMMITTEE CHARACTERISTICS: SOME AUSTRALIAN EVIDENCE OF SIGNALLING ATTRIBUTES

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Abstract

This study considers the association between corporate governance attributes and IPO return behaviour in the Australian share market. Strong, significant associations are reported between IPO initial returns and board size, board independence and leadership structure. The board size effect appears contextual and increases with larger entity size. Audit committee formation per se was not a discriminating factor but committee conformity with exchange guidelines was of marginal significance. Overall, the results are consistent with the premise that governance attributes can offer signals to investors concerning the likely effectiveness of management actions in serving shareholder interests and enhancing firm prospects.

Keywords: Committee, Governance, IPO, Pricing, Returns, Signal

JEL Classification: G12, G39, M41

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1. Introduction

The association between corporate governance attributes and firm value has been considered in the literature yet there appears good scope to further clarify the relationship within particular contexts that provide a contrast with the more conventional research. This paper investigates corporate governance attributes disclosed during the initial public offer (IPO) process and the extent to which such attributes may be associated with the perceived value of the firm as reflected by pricing and return behaviour at the time of listing. Information about board size, composition or other governance attributes may serve to signal firm qualities not otherwise readily observable with unseasoned share floats and thus provide a mechanism for investors to better gauge the underlying uncertainties or future prospects of such firms. Other things being equal, differences in the perceived quality of governance amongst firms should be reflected into differential effects upon share price, firm value and returns.

Corporate governance attributes and IPO return behaviour are investigated using a sample of IPO firms listing on the Australian Securities Exchange (ASX). A number of governance attributes are modelled to investigate their possible association with IPO initial returns. The size of the board of directors, the proportion of independent directors on the board, the relationship between chief executive officer (CEO) and board chairman, and the nature of audit committee constitution are the key indicators of governance reported upon in this study.

Using a multiple linear regression modelling framework with controls for other key factors of potential IPO pricing relevance described previously in the literature, the results indicate that particular corporate governance features are associated with IPO initial returns. Strong, significant associations are reported between IPO initial returns and board size, board independence and separation of CEO/chairman. Board size effects increase with firm size. Audit committee existence is not shown to be a relevant factor *per se*, but the results do suggest that audit committee propriety is relevant in the broader context of compliance with stock exchange guidelines regarding audit committees.

Overall, the results are consistent with the premise that particular corporate governance attributes serve to mitigate information asymmetries and are perceived by investors to offer signals concerning the likely effectiveness of management actions in serving shareholder interests and enhancing the future prospects of the firm. Consequently this study contributes to the

literature by (i) documenting a contemporary analysis of corporate governance attributes disclosed in a particular institutional context, namely the corporate primary equities market in Australia (ii) offering further insight into the IPO mispricing phenomenon by reporting the relevance of certain corporate governance attributes to the IPO valuation process as reflected through initial returns at listing and (iii) informing the generality or otherwise of various research outcomes reported in the prior corporate governance literature but within settings distinguishable from the present study of IPOs, such prior studies involving seasoned share issues or the ongoing performance of mature firms.

The remainder of the paper has four main sections. First, the background literature is reviewed and hypotheses formulated. Second, data and methodology are explained. Third, the study's results are presented and discussed. Finally, limitations and conclusions are summarised.

2. Background and Hypotheses

Various economic models have proposed that firms with news considered favourable to market value will publish and emphasise such information when the perceived benefit exceeds the cost and a net upward value revision is expected. Lesser-disclosing firms will be judged of lower quality and valued downwards (Verrecchia, 1983; Trueman, 1986). Theoretical models pertaining to the signalling role of specific types of information have been explored, such as the positive signal of higher retained equity by owners floating a firm (Leland and Pyle, 1977; Hughes, 1986) and the possible role of earnings forecast disclosure in reducing information asymmetries during the IPO process (notably Verrecchia, 1983; Trueman, 1986; Clarkson et al., 1992; Firth, 1998; How and Yeo, 2001; Jog and McConomy, 2003; Hartnett, 2010). Further empirical evidence of the association between disclosure levels, reduced information asymmetry and equity returns can be observed in the literature across a range of contexts, such as with Marquardt and Wiedman (1998), Lang and Lundholm (2000), Healy and Palepu (1993, 2001), Zhang and Ding (2006) and Eaton et al. (2007).

Information asymmetry and signalling phenomenon have also been linked to the nature of firms' corporate governance structures, whereby information about the board of directors, audit committee, CEO role or other elements of governance has been posited to signal a range of underlying company characteristics of relevance to investors and thereby help to reduce such asymmetry. For example, associations have been reported between board and audit committee attributes and the underlying quality of financial reporting (Haniffa and Cook, 2002; Felo et al., 2003; Peasnell et al., 2005), reliability of earnings forecasts (Karamanou and Vafeas, 2005), risk of earnings manipulation (Dechow et al., 1996; Klein, 2002b; Koh et al. 2007), propensity towards company fraud (Beasley, 1996; Farber, 2005) and level of debtholder risk (Anderson et al., 2004).

The relationship between corporate governance attributes and a company's economic wellbeing is not overly clear and the literature has documented conflicting research findings. Regarding the relevance of board size, Yermack (1996), Eisenberg et al. (1998) and Mak and Kusnadi (2005) report a negative association between board size and firm performance as measured through various financial ratios, supportive of the notion that larger boards may actually hinder a director's effective contribution to firm governance because they become more cumbersome, they reduce individual opportunity to discuss matters during the limited time available at meetings and they increase the likely dominance of executives (notably the CEO) when key resolutions are required. Nevertheless, others have concluded a positive or neutral relationship between board size and the firm's economic wellbeing. A positive association is inferred from the observed link between board size and lower propensity towards financial statement fraud (Beasley, 1996). Also, Klein (2002a) indicates that larger boards should permit more optimal board and sub-committee work allocation and thus better monitoring, whilst Xie (2010) reports a positive association between board size and return on assets for 'moderate'-sized boards of Tokyo-listed firms.[15] No significant relationship could be found between board size and abnormal share returns associated with seasoned issues of USA-listed firms (Becker-Blease and Irani, 2008), nor between board size and return on assets for Dhaka-listed firms studied by Rouf (2011). Other research has suggested that board size 'optimality' may be contextual and perhaps contingent upon such things as advising or monitoring needs of the firm so that, for example, larger boards might tend to benefit rather than hinder larger or more highly levered firms in need of greater advisory support from their boards (Coles et al., 2006; Raheja, 2005).

Regarding board independence and economic performance, the reported evidence is again mixed. Some studies have found support for the premise that greater independence signals better

[15] Xie distinguished 'moderate' and 'larger' board sizes, with 'moderate' modelled as less than 25 members and thus these boards are of an order consistent with the studies of Yermack (1996), Eisenberg et al. (1998) and Mak and Kusnadi (2005) noted above [with maximum board sizes 24, effectively 9 (maximum not reported), and 14 members, respectively in those three studies]. For larger boards (greater than 25 members), Xie reports a negative association between board size and return on assets.

management and company performance (Byrd and Hickman, 1992; Beasley, 1996; Cotter et al., 1997; Farber, 2005; Becker-Blease and Irani, 2008) yet others have reported either a negative relationship (Klein, 1998; Kiel and Nicholson, 2003) or no relationship (Hermalin and Weisbach, 1991; Bhagat and Black, 2002).

Leadership structure has been considered in the literature via the 'duality' of chief executive officer (CEO) and board chairman roles (that is, separation of leadership as distinct from a unitary leadership structure). Some researchers have reported a positive association between separation of the roles, reduced agency conflicts and thus likely better firm performance (Yermack, 1996; Collier and Gregory, 1999; Farber, 2005; Rouf, 2011). Other research has not been able to confirm an association (Daily and Dalton, 1992; Kajola, 2008).

The possible relevance of audit committee attributes has also been explored in the literature. Notably, Becker-Bleese and Irani (2008) report a significant association between audit committee size and abnormal returns of equity during seasoned share issues, but no association with committee independence. Rouf (2011) reports no significant association between a firm's financial performance and the existence of an audit committee. The studies by McMullen (1996), Klein (2002b), Anderson et al. (2004), Davidson et al. (2005) and Farber (2005) each provide evidence to support the premise that audit committee propriety (via independence) can signal the lower likelihood of earnings manipulation, fraudulent behaviour and/or lower debtholder risk.

This literature has focussed predominantly upon firms that possess an established trading history and the research has been conducted in the context of their annual or other periodic financial performance and the nature of the corporate governance structures in place. Some other studies have investigated the incidence of corporate governance features in the context of IPOs but they do not address pricing or valuation, such as Mak and Roush (2000) and Dimovski and Brooks (2004). Of the apparent few studies considering corporate governance and value relationships in the context of the equity issuance process, the focus has been upon seasoned issues, not IPOs. For example, Becker-Blease and Irani (2008) find governance attributes such as board independence and audit committee size to be relevant in mitigating the negative effects of equity offering announcements in seasoned-offer firms.

Thus the literature appears far less informed about the possible relationship between corporate governance attributes and firm value in the context of unseasoned (IPO) equity issues. The broader IPO pricing literature has sought to resolve questions associated with information asymmetry and float valuation and it is generally accepted that the ex-ante uncertainty surrounding an unseasoned share float is closely associated with the extent to which float market values differ from the firm's prospectus pre-listing subscription or 'book' value (i.e. the mispricing of the float), with market values at listing generally materially higher than subscription book values where ex-ante uncertainty is relatively high (Ritter, 1984; Rock, 1986; Beatty and Ritter, 1986). Numerous studies have investigated a range of firm characteristics and potential signalling behaviours that may help to discriminate differential float uncertainty and so help to explain cross-sectional variation in IPO mispricing. These factors have not included conventional corporate governance attributes such as those discussed earlier in this section, but have usually included IPO features such as firm size, business age, listing delay, vendor retained ownership and growth prospects, amongst others. This broader IPO pricing literature is acknowledged more fully in the next section during our discussion of modelling control variables and associated methodology in our study.

Our paper investigates the possible association between IPO mispricing (and thus a float's first-day returns upon listing) and five attributes of corporate governance discernible from the firm's offer document published during the issuance process. These attributes are: the size of the board of directors, the duality (separation) of CEO and board chairperson roles, degree of board independence, audit committee formation and audit committee propriety (i.e. whether the committee accords with stock-exchange guidelines[16]).[17] Stated in null form the hypotheses are as follows:

H1: There is no association between float returns and board size.

[16] The ASX recommends all firms admitted to the list should establish an audit committee and that committee composition should preferably comprise at least three members, only non-executive directors, a majority of independent directors and an independent chairman who is not chairman of the board (ASX Corporate Governance Principles and Recommendations 4.2 and 4.3). If the firm ultimately forms part of the top-500 listed entities after admission, it will be required to establish an audit committee and will be required to comply with composition requirements if part of the top-300.

[17] A number of other governance attributes were considered for investigation during the preliminary stages of this research yet they proved unremarkable in their associations with float pricing and for brevity have not been elaborated upon. Such attributes include audit committee size and the type and number of audit committee departures from stock exchange guidelines. These attributes are simply noted here and do not form part of the more detailed modelling or analyses.

H2: There is no association between float returns and the duality of CEO and board chairman roles.

H3: There is no association between float returns and board member independence.

H4: There is no association between float returns and existence of an audit committee.

H5: There is no association between float returns and propriety of audit committee formation.

3. Data and Method

IPO financial data was derived in the first instance from a 2003-2004 IPO data set compiled by Hartnett and Crawford (2011).[18] This data records IPOs registering with the Australian Securities and Investments Commission over the two year period from 2003 to 2004. The financial data was then augmented with corporate governance data for the purposes of this study. Database providers Connect4, Aspect FinAnalysis and Bridge DFS were used to source prospectus and share price data.

Consistent with many studies of IPO pricing behaviour in the Australian context (such as How and Yeo, 2001; Lee et al., 2003; Chapple et al., 2005; Hartnett, 2010), only companies ultimately listing on the ASX were included. Also, mining and utility firms were excluded from the sample for they typically supply little financial or trading data and their pricing behaviour is often determined by quite specific commodity-market factors (42 firms). Exchange-traded trusts, previously listed firms, foreign-listed firms and debt or hybrid issues were excluded for they did not truly represent corporate, unseasoned, equity issues (28 entities). A number of other firms with incomplete or otherwise anomalous data were also excluded (24 firms where financial or governance features were alluded to, yet were not ultimately verifiable, such as the age of the underlying business, audit committee formation or composition, etc). Thus from an overall 196 IPOs initially identified, 102 IPOs were studied here. This sample is not large yet the data was revealed to be well-distributed across the categories or values for each variable and a number of diagnostic tests corroborated the veracity of modelling assumptions. These are discussed in more detail later in this section. The period of study also benefits from its natural filtering effects (for example, the sample positioned outside periods of broader market aberrations that might otherwise unduly influence return behaviour, such as the dot.com bubble of 1999-2000 and the global financial turmoil observed since 2008).

A number of control variables were considered for inclusion to assist with better isolating the return effects peculiar to the governance factors modelled in this study. IPO listing returns might be driven by a number of specific factors affecting the subscription 'book' price and/or the actual listing price achieved on the day. Reasons for differences between the two prices have been explored and a number of theories or propositions discussed in the literature. For example, higher returns might result from a lower subscription price orchestrated by float promoters to compensate investors for risk, or from heightened listing price pressure brought about by an unexpectedly high confidence or popularity in the float deriving from other signals of quality perceived to be relevant by investors. A discussion of the key control variables follows.

It is generally accepted that ex-ante uncertainty is associated with float pricing (Ritter, 1984; Rock, 1986; Beatty and Ritter, 1986) and in this study key proxies for ex-ante uncertainty include growth potential (Lee et al., 1996; How and Yeo, 2001) and length of trading history (How et al., 1995; Chapple et al., 2005). In addition and consistent with Downes and Heinkel (1982), Clarkson et al. (1992), How and Yeo (2001) and Chapple et al. (2005), float 'book value' (i.e. total shares on issue after the float *x* subscription price) is included as a control for issue size. Auditor reputation (Titman and Trueman, 1986; Beatty, 1989; Lee et al., 2003; Micahely and Shaw, 1995; How and Yeo 2001), underwriting the float (Beatty and Ritter, 1986; How et al., 1995) and proportions of vendor/management retained ownership (Clarkson et al., 1992; Hughes, 1986; Lee et al., 2003; Li and McConomy, 2004) have been posited in the prior literature to signal float quality and thus controls were included here when formulating the model. Industry type has also proxied for float uncertainty in prior studies (Jog and McConomy, 2003) and so controls were initiated for the major industry groups in the sample: Industrials, Discretionary Consumables, Financials, and Information Technology. A control for float motive was also included for we posit that the purpose of the capital-raising (e.g. funding new ventures or simply a capital restructure) should help to inform investors as they assess the risk associated with the business' future revenue and earnings streams (Jog and Riding, 1987; Hartnett and Römcke, 2000; Jog and McConomy, 2003).

Listing delay between prospectus lodgement date and the firm's actual listing date serves to proxy subscription demand, for shorter listing times imply higher-demand and potentially higher initial market valuation whereas the reverse is posited for longer listing times (Rock, 1986; Lee et al., 1996; How and Yeo, 2001). This control also serves to

[18] The data derives from material compiled by them for other unpublished share float research in progress. Access to this financial data subset is acknowledged and appreciated.

proxy shorter-term 'hot issue' styled effects that may be present. We also model a dummy variable to control for the treatment of possible oversubscriptions, as floats not permitting oversubscription should, ceteris paribus, experience higher upward pricing pressures than those floats where oversubscriptions are permitted and additional shares are issued. Finally, the study also controls for market sentiment effects by modelling an adjustment for market rates of return observed over the period from prospectus lodgement date to end of trade on the first day of listing, (How et al., 1995; Hartnett, 2010).[19]

Multiple linear regression techniques were used to test the hypotheses. Preliminary analyses revealed several of the selected control variables to be unremarkable contributors to the explanatory power of the regression model in this study and so effectively had no bearing upon the associations reported for the corporate governance variables or remaining control variables. Further analyses via step-wise and other alternative regression models indicated these variables could be omitted from the final regression modelling reported in Table 4, thereby reducing the number of variables, tightening the regression and enabling a more succinct explication of results. To this end, the auditor, underwriter and industry variables were omitted. The regression output remained qualitatively the same yet offered a more concise 'parsimonious' account of the study and with a higher adjusted-R^2. Specification of the final regression model variables is provided in Table 1 and univariate, descriptive statistics for the reported regression models are summarised in Table 2.[20]

Table 2 shows the mean and median IPO first-day market-adjusted returns were 12.9% and 8.1% respectively, indicating that the floats were generally underpriced and so exhibiting the mispricing behaviour commonly documented in the IPO literature. Whilst the sample is not particularly large in this study, Table 2 reveals the variables to be well-distributed across categories or values, facilitating confidence in a robust regression model amenable to serviceable regression output. Further, *p*-values are reported after using heteroskedasticity-corrected 'robust' standard errors to derive Student-t statistics (White, 1980). Diagnostic tests also confirmed the tenability of assumed residual normality. Multicollinearity problems were not indicated, with pair-wise correlations only low to moderate and well within thresholds of acceptability. These are reported in Table 3.[21]

4. Regression Results and Discussion

Table 4 summarises the regression output. Regression coefficients and two-tailed *p*-values are shown for the variable included in each model. The results for six alternative models are shown, starting with a basic model where no corporate governance attributes are explicitly modelled (Model 1). The first regression model's F-statistic is statistically significant. The adjusted-R^2 of 0.275 is not immaterial but the lowest of the six models. Regression coefficients for the size of the issue (SIZE), business age (AGE), listing delay (DELAY), provision for oversubscription (OVER) and float motive (MOTIVE) are all statistically significant. The retained ownership (RETAIN) and growth prospects (GROW) variables are not significant. The intercept term is statistically significant in this model (i.e. inferring the intercept is different from zero) and thus represents a material, fixed component of IPO returns not 'explained' through cross-sectional variation in that particular regression.

[19] In the absence of trading data and thus beta proxies for each float prior to listing, unadjusted market returns are applied rather than risk-adjusted returns.

[20] A number of other variations to the model were tested. The modelling of the auditor reputation, underwriter and industry variables were noted earlier. In addition, alternative regressions included controls for forecast publication, float tendering (e.g. book-building approaches versus set price) and leverage effects. Statistical significance was not observed amongst these variables and the key regression outcomes remained qualitatively the same as those reported in this paper.

[21] Regarding multicollinearity, low variance inflation factors and correlation eigenvalues corroborated the robustness of the model here. For more on these multicollinearity tests, see Chatterjee and Price (1977, pp.155-163, 182-183, 199-200) and Bowerman et. al. (1986, pp. 300-315).

Table 1. Specification of Variables

Variable	Denoted by	Specification
Dependent Variable		
Market-adjusted Rate of Return of the Equity Offering at Listing	RETURN	Float firm's ordinary equity rate of return modelled from offer price and first-day listing closing price, adjusted for market rate of return from prospectus date to listing date as proxied by All Ordinaries Accumulation index and assuming continuous compounded returns.
Independent Variables		
Issue size	SIZE	Natural log of [(Total number of shares x offer price per share) i.e. 'book value' of the floated company equity in $m].
Operating history	AGE	Natural logarithm of number of years from the commencement of the underlying business to lodgement of the prospectus.
Listing delay	DELAY	Natural logarithm of number of days between prospectus date and listing on ASX.
Provision for oversubscription	OVER	Categorical variable of value 1 if the float permitted oversubscription (otherwise 0).
Float motive	MOTIVE	Categorical variable of value 1 if primary purpose of float was expansion (otherwise 0 e.g. capital restructure).
Retained ownership	RETAIN	1 - (Total shares offered to the public ÷ Total shares post-listing).
Growth prospects	GROW	1 – (Net tangible assets per share ÷ Offer price).
Board size	BOARD	Number of directors on the firm's board.
Relationship between CEO and board chair	CEO	Categorical variable of value 1 if chief executive officer also board chairman at listing (otherwise 0).
Independence of directors	INDEP	Proportion of board of directors deemed independent (as reported or otherwise proxied by non-executive status).
Audit committee exists	CMTEE	Categorical variable of value 1 if audit committee has been formed (otherwise 0).
Audit committee propriety	CMPLY	Categorical variable of value 1 if audit committee constituted according to ASX guidelines (otherwise 0).

Table 2. Descriptive Statistics*

Variable	Mean	Median	Std Dev
RETURN	0.129	0.0813	0.280
SIZE	130.111	36.000	351.784
AGE	20.587	9.000	31.410
DELAY	49.402	45.000	19.911
OVER (1=22, 0=80)	0.216	0.000	0.413
MOTIVE (1=13, 0=89)	0.127	0.000	0.335
RETAIN	0.573	0.631	0.264
GROW	0.194	0.049	0.287
BOARD (<5 = 44, 5-6 = 48, >6 = 10)	4.863	5.000	1.267
CEO (1=8, 0=94)	0.078	0.000	0.270
INDEP (1=28, 2=37, 3=30, 4=7)	0.460	0.500	0.200
CMTEE (1=74, 0=28)	0.735	1.000	0.448
CMPLY (1=27, 0=75)	0.265	0.000	0.443

* The independent variables in this table are summarised before any logarithmic transformations (notably SIZE, AGE and DELAY). Categorical variables display count data (counts of when the variable code = 1 as described in Table 1, otherwise 0) as well as code category distribution data. For specification of variables, see Table 1.

Table 3. Pair-wise Correlations amongst Variables*

Variable	SIZE	AGE	DELAY	OVER	MOTIVE	RETAIN	GROW	BOARD	CEO	INDEP	CMTEE	CMPLY
RETURN	-0.173 (0.082)	0.060 (0.548)	-0.186 (0.062)	-0.262 (0.008)	-0.371 (<0.001)	-0.008 (0.940)	-0.005 (0.959)	0.037 (0.714)	0.171 (0.086)	0.108 (0.278)	-0.070 (0.487)	-0.107 (0.284)
SIZE		0.460 (<0.001)	-0.344 (<0.001)	-0.242 (0.014)	0.027 (0.790)	-0.314 (0.001)	0.148 (0.137)	0.505 (<0.001)	-0.103 (0.301)	-0.096 (0.335)	0.472 (<0.001)	0.416 (<0.001)
AGE			-0.081 (0.417)	-0.110 (0.271)	-0.055 (0.582)	-0.327 (<0.001)	0.193 (0.052)	0.281 (0.004)	-0.108 (0.280)	-0.050 (0.621)	0.354 (<0.001)	0.258 (0.009)
DELAY				0.347 (<0.001)	0.071 (0.478)	0.238 (0.016)	-0.189 (0.057)	-0.315 (0.001)	0.080 (0.427)	0.132 (0.187)	-0.208 (0.036)	-0.253 (0.010)
OVER					0.014 (0.889)	0.167 (0.094)	-0.236 (0.017)	-0.094 (0.346)	0.113 (0.258)	-0.097 (0.331)	-0.265 (0.007)	-0.099 (0.325)
MOTIVE						0.261 (0.008)	-0.070 (0.482)	0.088 (0.378)	-0.002 (0.983)	-0.068 (0.499)	0.169 (0.089)	0.037 (0.710)
RETAIN							-0.208 (0.036)	0.024 (0.810)	0.050 (0.620)	-0.229 (0.021)	-0.179 (0.073)	-0.192 (0.053)
GROW								0.103 (0.304)	-0.104 (0.297)	0.123 (0.218)	0.061 (0.542)	0.109 (0.276)
BOARD									-0.113 (0.259)	-0.357 (<0.001)	0.404 (<0.001)	0.365 (<0.001)
CEO										0.027 (0.787)	-0.066 (0.512)	-0.092 (0.356)
INDEP											-0.111 (0.267)	0.175 (0.078)
CMTEE												0.369 (<0.001)

* Pearson pair-wise correlations reported, corroborated by Spearman rank correlations (not reported). Probability shown in brackets. For specification of variables, see Table 1.

Table 4. Multiple Regression of IPO Returns at Listing*

Variable	MODEL 1 (Control variables only) Coefficient *(p-value)*	MODEL 2 (All primary variables, no interactions) Coefficient *(p-value)*	MODEL 3 (MODEL 2, but excluding CMPLY) Coefficient *(p-value)*	MODEL 4 (MODEL 2, but excluding CMTEE) Coefficient *(p-value)*	MODEL 5 (MODEL 4, plus interaction BOARD x SIZE) Coefficient *(p-value)*	MODEL 6 (MODEL 5, but excluding RETAIN & GROW) Coefficient *(p-value)*
Intercept	0.675 *(0.032)*	0.372 *(0.261)*	0.436 *(0.188)*	0.375 *(0.254)*	0.379 *(0.231)*	0.384 *(0.226)*
SIZE	-0.072 *(0.001)*	-0.080 *(<0.001)*	-0.086 *(<0.001)*	-0.081 *(<0.001)*	-0.098 *(<0.001)*	-0.103 *(<0.001)*
AGE	0.038 *(0.036)*	0.041 *(0.020)*	0.040 *(0.025)*	0.041 *(0.019)*	0.049 *(0.005)*	0.042 *(0.013)*
DELAY	-0.153 *(0.031)*	-0.164 *(0.022)*	-0.147 *(0.039)*	-0.165 *(0.021)*	-0.151 *(0.029)*	-0.125 *(0.064)*
OVER	-0.098 *(0.002)*	-0.098 *(0.002)*	-0.104 *(0.001)*	-0.097 *(0.002)*	-0.107 *(<0.001)*	-0.101 *(<0.001)*
MOTIVE	-0.155 *(<0.001)*	-0.154 *(<0.001)*	-0.155 *(<0.001)*	-0.155 *(<0.001)*	-0.155 *(<0.001)*	-0.133 *(<0.001)*
RETAIN	0.134 *(0.195)*	0.128 *(0.224)*	0.128 *(0.227)*	0.130 *(0.213)*	0.109 *(0.279)*	-
GROW	-0.100 *(0.256)*	-0.118 *(0.165)*	-0.116 *(0.176)*	-0.117 *(0.166)*	-0.114 *(0.165)*	-
BOARD	-	0.061 *(0.014)*	0.052 *(0.033)*	0.060 *(0.014)*	0.052 *(0.028)*	0.054 *(0.021)*
CEO	-	0.102 *(0.019)*	0.105 *(0.017)*	0.102 *(0.019)*	0.070 *(0.102)*	0.073 *(0.092)*
INDEP	-	0.309 *(0.026)*	0.233 *(0.074)*	0.311 *(0.024)*	0.286 *(0.032)*	0.229 *(0.077)*
CMTEE	-	-0.006 *(0.858)*	-0.015 *(0.629)*	-	-	-
CMPLY	-	-0.049 *(0.121)*	-	-0.050 *(0.105)*	-0.050 *(0.099)*	-0.049 *(0.106)*
BOARD x SIZE	-	-	-	-	0.031 *(0.008)*	0.032 *(0.006)*
Adj R^2	0.275	0.341	0.331	0.349	0.392	0.383
F-Stat	6.465	5.364	5.539	5.912	6.428	7.261
p-value	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*

* For specification of the dependent variable (market-adjusted rate of return) and independent variables, see Table 1.

The introduction of the governance variables for Models 2 to 6 again results in statistically significant regression models, but with higher measures of adjusted-R^2 than those reported in Model 1 and with intercept terms that are not significantly different from zero. Model 2 includes each of the five governance variables and reports statistically significant associations between IPO initial returns and board size (BOARD), leadership structure (CEO) and degree of board independence (INDEP). Null Hypotheses 1 to 3 are able to be rejected. Whilst non-directional (two-tailed) hypotheses and *p*-values are reported upon, the direction of coefficient signs is certainly consistent with propositions that larger and more independent boards enhance the attractiveness of share floats (manifested here through higher market share price vis-à-vis subscription price), and that the potentially unfavourable signals conveyed by a combined 'unitary' CEO/chairman leadership structure (vis-à-vis separation of roles) are actively managed by float promoters through a greater underpricing of the subscription price to help placate investors.

Existence of an audit committee (CMTEE) *per se* was not shown to be a discriminating factor and thus Hypothesis 4 could not be rejected. However, resolution of Hypothesis 5 was more equivocal and compliance with ASX recommendations regarding audit committee constitution (CMPLY) approached the 0.10 significance threshold in Model 2 (as well as in Models 4 and 6 and achieved significance in Model 5).

It is noted that with regards to the CMPLY variable, 'non-compliance' was defined to include non-existence of an audit committee as well instances where committees had been formed yet did not fulfil all recommendations contained in the ASX guideline (as outlined earlier in footnote 2). Statistical significance is consistent with audit committee propriety rather than committee existence *per se* (i.e. not simply committee existence but whether it complies with best practice guidelines) being perceived as an important, favourable signal to investors. Acknowledging that the CMPLY variable is based partially upon audit committee existence (and thus CMTEE), Models 3 and 4 provide alternative modelling treatments for the audit committee variables CMTEE and CMPLY, with only one of each variable included in turn. The non-significance of CMTEE is maintained and the significance of CMPLY improves marginally.

Model 5 adds an interactive term (BOARD x SIZE) to Model 4 with the purpose of revealing any evidence of whether the relevance or optimality of board size changes with context, as proposed in the prior literature (discussed earlier, see Yermack, 1996; Eisenberg et al., 1998; Mak and Kusnadi, 2005; Raheja, 2005; Coles et al., 2006; Xie, 2010). The coefficient is statistically significant and is interpreted as indicating that the positive elements of a larger board are heightened for larger entities. This provides some support for the notion of contextual board size optimality. Model 6 reiterates these findings using a more parsimonious regression model of only 10 independent variables by omitting RETAIN and GROW.

5. Limitations and Concluding Comments

Corporate governance attributes and IPO pricing behaviour are investigated using a sample of IPO firms listing on the Australian Securities Exchange (ASX). A number of governance attributes are modelled to investigate their association with IPO initial returns. The size of the board of directors, the proportion of independent directors on the board, the relationship between chief executive officer and board chairman (leadership structure) and audit committee formation and constitution propriety are investigated. Strong, statistically significant associations are observed between returns and each of the variables board size, board independence and leadership structure. The board size effect increases with firm size, consistent with the notion that optimal board size will vary amongst firms and thus is contextual. Marginal significance is observed for the broader test of audit committee propriety yet not for audit committee existence *per se*.

The study sample was regarded as sufficiently large and varied to facilitate a robust modelling environment and statistical tests and controls were employed to corroborate the tenability of key statistical assumptions. Nevertheless, the conventional caveats regarding statistical sampling and inference are acknowledged. It is also acknowledged that the period and institutional setting within which this study was framed may not reflect the behaviour of IPO returns or corporate governance activity in other contexts. In the absence of evidence to the contrary the study certainly maintains its relevance and contributes to the quest for better understanding IPO valuation behaviour and the possible signalling attributes of corporate governance practice. Future research may wish to consider whether these results are indeed context-specific or more broadly applicable. It is only with such further research that IPO pricing, governance signalling and information asymmetry issues will be more clearly resolved.

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