

# South East Asian Corporate Board Size

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## Abstract

There is few papers that analyse South East Asian firm board size and this paper adds to this literature; focusing on the larger listed firms in Hong Kong, Indonesia, Malaysia, the Philippines, Singapore and Thailand. While it is apparent that large firms have large boards there is also more subtle cross-country variation concerning the impact of leverage and profitability on board size. Finally, there is evidence of decreases in average board size for firms in Hong Kong and Singapore over the sample period, 1999 to 2002, with increases in average board size evident for Indonesian and Malaysian firms over the same period.

**Key Words:** corporate governance, board size.

**JEL Classification:** F02, G32, G34

## Acknowledgements

I Acknowledge RMIT (RIF/VRII grants scheme 2004) and the Melbourne Centre for Financial Studies (MCFS grant 17/2005) for funding research assistance and data. Thanks also go to Bureau van Dijk, the suppliers of OSIRIS; without the pdf copies of annual reports this analysis would not have been possible. I also thank Ami Bobe, Belete Bobe, John Fowler, Paul Holmquist, Vineet Kapour, Atul Kumar, Vineet Tawani and Thanh Truong for their much valued research assistance.

## **1. Introduction**

The choice of the most appropriate number of directors for a firm's board of directors is a difficult decision. Yet, there is little investigation into the determinants of board size (Lehn, Patro, & Zhao, 2003), particularly for South East Asian nations. Further, it has been argued that weak governance contributed to the depth of the Asian crisis (Clarke, 2000; Du & Dai, 2005). This paper provides some insight into post 1997 Asian crisis board size decision made by large firms listed on the stock exchanges of Hong Kong, Indonesia, Malaysia, the Philippines, Singapore and Thailand over the period from 1999 to 2002.

It is common to read in the popular press about the benefits of smaller boards (Yermack, 1996). Smaller boards are said to encourage discussion of important issues rather than compliance with CEO recommendations. It has also been suggested that directors on smaller boards are less risk averse and that they react more quickly to changing market conditions (Lipton & Lorsch, 1992). Indeed, Lipton and Lorsch recommended an optimal board size of 8 to 9 directors with a maximum of 10 directors. Yet, there are arguments to suggest that board size choice is endogenous to the firm (Hermalin & Weisbach, 2003) and recent economic modelling shows that the level of equity agency costs and information asymmetry specific to a firm may explain variation in board size across firms (Harris & Raviv, 2005; Raheja, 2005). Further, while research suggests that one board size need not fit all firms, much of the research dealing with this issue focuses on USA or the UK firms, with little research specifically addressing the Asian firm board size question.

As the focus of this paper is the board of directors, separate director lists are constructed where feasible for each of the firms for each of the years 1999 to 2002. Accounting data and other firm specific data is also collected for control purposes.

Both the accounting data and the director lists are obtained from OSIRIS, supplied by Bureau van Dijk.<sup>1</sup> This database provides information on a range of listed firms around the world and is available in both electronic form for selected accounting numbers and pdf form for copies of the underlying annual reports.

Because board size is essentially a count of the number of directors on the board, ordered logit is used in all multivariate analysis and the results of analysis show that larger firms have larger boards, leverage is also a determinant of board size in some of the countries and industry effect account for a considerable amount of the variation in board size. There is some evidence of time trends in board size across the sample with board size increasing in some countries and decreasing in other countries over the study period. A review of the literature follows in Section 2 and data is described in Section 3. The results of analysis are reported in section 4 and a summary and conclusions are reported Section 5.

## **2. Literature Review**

While there is considerable empirical literature describing corporate boards and proposing possible explanations for what is observed (Yermack, 1996) analytical modelling has been less prominent in the analysis of board size. Recent analytical modelling draws upon the equity agency and information asymmetry theories of corporate finance (Harris & Raviv, 1991; Jensen & Meckling, 1976; Myers & Majluf, 1984) and provides considerable insights into the board size decision (Harris et al., 2005; Raheja, 2005). Further, there has also been some empirical support for the predictions of these models (Boone, Field, Karpoff, & Raheja, 2004; Lehn et al., 2003).

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<sup>1</sup> <http://www.bvdep.com/>

While the Harris and Raviv (1991) model is primarily concerned with the split between inside (manager controlled) directors and outside (owner controlled) directors it does provide insight into the choice of board size. It is shown that in equilibrium there is a balance between inside and outside directors with the number of outside directors being determined by the expertise that each additional director brings to the board compared with the cost arising from free riding that occurs with appointment of an additional director. It is apparent that some firms need a large board to ensure sufficient expertise to adequately monitor management. Other firms function efficiently with quite small boards. Indeed, Harris and Raviv show, under fairly reasonable assumptions, the size of the board of directors is endogenous to the firm. This is supported in the work of Raheja (2005) who provides similar results to those of Harris and Raviv (2005). In their model, board size and board composition are jointly determined by verification costs for outsiders (information asymmetry costs) and the private benefits that arise from the implementation of inferior projects for insiders (equity agency costs). Where closer monitoring is required due to greater levels of potential agency conflicts, the optimal level of outsiders on the board tends to increase. One result, highlighted in this literature, occurs where information asymmetry is so severe that the owners of the firm find it optimal to pass control of the firm to management. Essentially the costs of poorly informed owners running the firm exceed the equity agency costs associated with management control of the firm.

It seems clear that reducing the size of the board will not necessarily improve firm performance. Indeed, firms with substantial equity agency costs and little information asymmetry may optimally select large boards to ensure adequate monitoring of management while severe information asymmetry could result in small manager controlled boards. Recent empirical tests of these models, based on USA

firms, identify a positive relation between equity agency cost proxies and the size of the board of directors and a negative relation between information asymmetry proxies and the size of the board of directors (Boone et al., 2004; Lehn et al., 2003).

Neither of these models deals with the situation where the owner also controls the firm. In this case, equity agency costs and information asymmetry costs are low, because the owner of the firm actually manages the firm. Because there is no monitoring role for the board, the optimal board size is expected to be considerably smaller for shareholder-managed firms, relative to firms with clear separation of ownership and control. While it may be difficult to ascertain why the owner of a firm might choose to also manage the firm, this situation is relatively common with South East Asian firms (Claessens, Djankov, Fan, & Lang, 2002; Claessens, Djankov, & Lang, 2000; La Porta, Lopez-De-Silanes, & Shleifer, 1999; La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 2000). Further, tightly controlled ownership of listed firms (one to three controlling shareholders) is evident throughout world financial markets (La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 1998).

There has been some research into issues important to South East Asian firm governance (Abdullah, 2004; Brewer, 1997; Clarke, 2000; Ong, 2003; Ow-Yong 2000) though there is little reference to the determinants of board size in this literature. One exception is the analysis of Singapore boards (Mak & Chng, 2000; Mak & Yuan, 2001) based on data drawn from the period, 1991 to 1995. It is found that board size is negatively correlated with the proportion of outsiders on the board in this analysis. While this result is at odds with more recent analysis (Boone et al., 2004; Lehn et al., 2003) Mak and Yuan suggest that this arises from the unique features of the Singapore firms at the time of the study. No other variables are found to be statistically significantly related with board size in the Mak and Yuan study and,

given recent developments since the Asian crisis, it is important to revisit this question for Singapore and also to analyse the variation that might exist in board size for firms listed on other South East Asian stock exchanges.

### **3. Data**

Board size and other firm specific data are collected for the largest 150 or so firms listed on the stock exchanges of Hong Kong, Indonesia, Malaysia, Philippines, Singapore and Thailand over the period from 1999 to 2002.<sup>2</sup> For the Indonesian firms we focus only on the board of commissioners and ignore the board of directors who are supervised by the board of commissioners and who are usually entrusted with the day to day management of the firm. The list of directors<sup>3</sup> is manually entered from pdf versions of the original annual reports underlying the OSIRIS database obtained from Bureau Van Dijk (<http://www.bvdep.com/>) while the exogenous accounting data based variables are downloaded from the OSIRIS database in electronic form.

An initial list of the largest firms in each of the markets is compiled for the year ended 2002 (from the 2003 OSIRIS data disk). Where the information is available, director lists are then manually collected for these firms for each of the years, 1999, 2000, 2001 and 2002. There are a number of firms with missing data, particularly missing annual report pdf files and incomplete OSIRIS market values or accounting information. Descriptive statistics for board size are reported in Table 1 for each of the countries and for the years 1999 through 2002. There are some trends evident in the data with increasing average board size over the four-year period for

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<sup>2</sup> The actual number of firms included in the sample depended on availability of data and size of the firm.

<sup>3</sup> The director count is based on the individuals listed on the directors' report appearing in the annual report for each firm. Alternate directors are excluded from the analysis to avoid double counting and the secretary is not included in the count unless the individual is specifically identified as holding the position of director as well as that of secretary.

Indonesia and Malaysia and decreasing average board size for Hong Kong, Philippines, Singapore and Thailand over the same period. The standard deviation in board size varies from around 2 board members for Singapore to around 4 board members for Thailand. Board size ranges from 1 through 26 individual directors in a board across the six countries.

[Insert Table 1 about here]

The variables used to capture equity agency cost and information asymmetry are limited by data availability, particularly for Thailand and Indonesia, though it is feasible to select a set of variables with reasonable coverage of the firms within each of the countries. The empirical literature identifies firm size as a proxy for equity agency costs (Lehn et al., 2003) though this could also proxy for complexity or access to resources (Boone et al., 2004; Coles, Daniel, & Naveen, 2004). Regardless, a positive relation is predicted between board size and firm size. While market value based information is limited for many of the firms in the sample, total assets is available on OSIRIS for virtually all of the firms and so the natural log of total assets ( $LTA_{it}$ ) is chosen as a proxy for size to capture the impact of equity agency costs, complexity or resource access.

The level of equity agency conflicts is also related to shareholder concentration. The more concentrated the shareholding, the lower the equity agency conflicts because as an individual shareholder's stake in the firm increases, eventually the shareholder reaches a stage where they both control and manage the firm. Of course concentrated shareholding can result in entrenchment effects with consequent decrease in the value of the firm. The OSIRIS independence indicator provides one measure of ownership concentration. This indicator focuses on ultimate control of the

firm and may take on values of A, B, C, U<sup>4</sup> or missing. The independence indicator is coded with an A, if there is no shareholder in the firm with a total shareholding (direct or indirect) greater than 24.99%. In this case the ownership of the firm is fairly dispersed with considerable opportunity for equity agency conflicts. The indicator is coded with a B if there is one or more shareholder in the firm with a total shareholding (direct or indirect) exceeding 24.99% but not greater than 49.99%. These shareholders will tend to control the firm and so equity agency conflicts are less likely for this group. If the indicator has a value of C then there is one shareholder in the firm with a total shareholding (direct or indirect) exceeding 49.99%. Equity agency costs would not ordinarily be a problem with this classification as the owner of the firm also controls the day-to-day decisions that govern the behaviour of the firm. Finally, the independence indicator is set equal to U where the level of independence cannot be determined. Each of these independence indicator values is allocated a dummy variable,  $(OSIRIS\_A_i)$ ,  $(OSIRIS\_B_i)$ ,  $(OSIRIS\_C_i)$  and  $(OSIRIS\_U_i)$  with a value of one if this is the independence indicator for the firm and zero otherwise. Holding the level of information asymmetry constant, it is expected that the board size will be smallest where the OSIRIS indicator takes a value of C, consistent with a shareholder owning and controlling the management of the firm. The board size may tend to be larger where the indicator takes a value of B with somewhat more dispersed ownership though it will be greatest with dispersed shareholding and this is most evident with firm classified under the OSIRIS independence indicator value of C.

Information asymmetry is generally highest for firms with growth options because shareholders rarely have sufficient information available to them to

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<sup>4</sup> There are some firms for which an OSIRIS indicator is not allocated and so it is possible for this variable to be missing for some firms.

accurately monitor the management of these options. They must rely on expert management to exercise these options in the most efficient way. While market to book and R&D to sales ratios are often used to capture the level of growth options in a firm this data is not available for most of the firms in the sample. As a result, industry dummy variables ( $IND_j$ ) are included in the model to proxy for information asymmetry effects. There are 10 broad SIC industry groupings used to identify variation in industries across the firms in the sample. For example is expected that manufacturing firms exhibit lower levels of information asymmetry than mining firms, particularly those focusing on mining exploration and development. For this reason the manufacturing industry dummy variable is excluded from analysis to facilitate comparisons with this industry.

Another proxy for information asymmetry is the return on total assets ( $ROTA_{it}$ ). Value firms tend to generate greater levels of cash flow and earnings than growth firms. Further, value firms tend to exhibit lower levels of information asymmetry than growth firms. Thus, measures of profitability may also proxy for the level of information asymmetry that exists within the firm. In this case it is assumed that the greater the profitability the lower the level of growth options and thus the larger the board, all else constant.

Banking and creditor relationships are recognised as being important (Coles et al., 2004), particularly in the management of South East Asian firms (Claessens & Fan, 2002; Clarke, 2000) and so a leverage variable is also included in analysis. Where creditor or banker exposures are particularly large it is possible that boards will include representation from these parties and so board size may tend to be larger the greater the level of debt or creditors. The leverage measure is defined as the ratio of total liabilities to total assets ( $LEV_{it}$ ). A positive relation is predicted between

leverage and board size where higher levels of debt and creditors results in larger boards.

Finally, there has been considerable awareness of governance issues among the South East Asian nations since the Asian crisis with the development of standards and rules dealing with the board design. Considerable attention has been directed to the need for more independent directors, the need for smaller boards and the need for the separation of the functions of chairman of the board and the chief executive officer for example. While year-by-year cross-section analysis is provided in the following discussion, panel data analysis for each of the countries is also reported and this provides the opportunity to test for time variation in the board size over the period from 1999 to 2002 using a time trend variable ( $TIME_t$ ) to identify whether board size is increasing or decreasing in a statistically significant way.

The results from univariate tests for differences in board size are reported across small and large firms, high and low leverage firms and high and low return on asset firms in the last six columns of Table 1. These tests are conducted by first ranking the firms by the variable of interest, splitting the sample in half and then conducting a t-test for difference in board size between the large and the small, high leverage and low leverage and between high and low return on total assets. The size ( $LTA$ ) t-test results provide support for the predicted positive relation between firm size and board size, particularly for Hong Kong, Indonesia and Singapore. There is also some evidence of a size effect in the later half of the study period for Malaysia. Neither the Philippines nor Thailand provide much statistical support for a firm size effects though in virtually all cases the average board size for small firms is less than the average board size for larger firms. There is very little evidence of statistically significant leverage or return on total asset effects other than for Singaporean boards.

These t-tests ignore considerable variation in the data and so multivariate analysis is conducted in the following section.

#### 4. Analysis

Given the nature of the board size variable, ordered logit is used in the following analysis. While the director counts are naturally ordered, the responses are not continuous in nature and so ordinary least squares regression is not the most appropriate method for analysis of this data.<sup>5</sup> We draw on the ordered response model (Greene, 2003) that deals with naturally ordered observations. In this model we define board size ( $BS_i$ ) as a discrete variable. Further, it is assumed that there is a continuous latent variable,  $BS_i^*$ , that underlies the observed ordinal dependent variable,  $BS_i$ . The latent variable is modelled using a linear model,  $BS_i^* = x_i\beta + e_i$ , with coefficient vector,  $\beta$ , explanatory variable vector,  $x_i$ , and residual,  $e_i$ . The latent variable relates to the observed variable as follows:

$$BS_i = \begin{cases} 1 - \text{if } BS_i^* < \mu_2 \\ 2 - \text{if } \mu_2 < BS_i^* \leq \mu_3 \\ \dots \\ 3 - \text{if } \mu_{n-2} < BS_i^* \leq \mu_{n-1} \\ 5 - \text{if } \mu_n < BS_i^* \end{cases} \quad (3)$$

Given the usual assumptions, an ordered logit model can be identified (including the limit points  $\mu_2, \mu_3, \dots, \mu_{n-2}, \mu_{n-1}$  and  $\mu_n$  for a maximum of  $n$  directors on the board) using maximum likelihood (Greene, 2003). Greene notes that interpretation of these models can be quite complex and so we focus our analysis on

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<sup>5</sup> This may provide one explanation for the unusual results reported for Singapore board size using data from the early 1990s (Mak and Yuan, 2001).

the underlying latent variable model (Berman & Fry, 2001). The latent variable linear model takes the form:

$$BS_{it}^* = \begin{cases} \alpha_1 + \alpha_2 BLTA_{it} + \alpha_3 OSIRISB_i + \alpha_4 OSIRIC_i + \alpha_5 OSIRISU_i + \\ \alpha_6 ROTA_{it} + \alpha_7 LEV_{it} + \sum_{j=1, j \neq 4}^{10} \gamma_j IND_j + \varepsilon_{it} \end{cases}$$

A time trend variable ( $TIME_t$ ) is included in pooled analysis to capture the impact of trends in board size over the period of the study. This gives the second model used specifically in pooled analysis.

$$BS_{it}^* = \begin{cases} \alpha_1 + \alpha_2 BLTA_{it} + \alpha_3 OSIRISB + \alpha_4 OSIRISC_i + \alpha_5 OSIRISU_i + \\ \alpha_6 ROTA_{it} + \alpha_7 LEV_{it} + \alpha_8 TIME_t + \sum_{j=1, j \neq 4}^{10} \gamma_j IND_j + \varepsilon_{it} \end{cases}$$

#### 4.1 Cross-sectional analysis

The results from ordered logit analysis for the individual countries are reported in Table 2. It should be noted that there were not enough firms with complete data sets in the Thailand data set for separate analysis for the years, 1999 and 2000. Further, industry parameters, while estimated as part of the model, are not reported separately due to the variation across the sample both in terms of parameter sign and significance.

The main result reported for the year-by-year cross-sectional analysis for each of the countries is the consistency in the positive relation observed between firm size and board size (See Table 2). Larger South East Asian firms have larger boards. This is consistent with the USA results (Boone et al., 2004; Lehn et al., 2003). Further, the firm size parameter is statistically significant for each of the four years for firms listed on the Hong Kong, Indonesia, Malaysia, and Singapore stock exchanges. Exceptions include firms listed in the Philippines, where the estimated positive parameters are not

statistically significant in any of the four years, and in Thailand, where the positive firm size parameter is not statistically significant in the year 2002.

[Insert Table 2 about here]

The OSIRIS independence indicator parameter estimates vary considerably across the sample. There are few statistically significant parameters. The exceptions concern those firms listed in Indonesian, and to a lesser extent firms listed in the Philippines, where the firms with concentrated shareholding (OSIRISC or OSIRISB) tend to have statistically significantly larger boards the firms with more diversified shareholding. This may be linked to the importance of political and military ties in Indonesian business dealings, particularly where the owner of the business chooses to allocate board positions to protect their business interests. The OSIRISU dummy variable is included to adjust for the impact of those firms where there is no OSIRIS independence indicator calculated.

The estimated parameter for the return on total assets is generally positive and often statistically significant for Indonesia, Malaysia, Singapore and the Philippines. Thus, for these countries, more profitable firms tend to have larger boards. Profitable firms tend to be value firms, rather than growth firms, with low levels of information asymmetry. Thus for value firms it is expected that directors are better able to monitor management and so, given this greater monitoring ability, more profitable firms will optimally select larger boards to facilitate management monitoring (Harris et al., 2005; Raheja, 2005)

Leverage parameters are often statistically significant, particularly for Malaysia, Singapore and Thailand where the parameters are generally negative and for the Philippines where the parameters are positive. Consistent with initial expectations firms in the Philippines with greater levels of debt tend to have larger

boards. Yet, the predicted positive relation between leverage and board size is not common amongst the countries in this sample. There is little evidence of statistically significant leverage parameters for either Hong Kong or Indonesia. Further, for Malaysia, Singapore and Thailand, board size is actually decreasing in leverage; the greater the level of debt the smaller the board. It is difficult to explain this dichotomy. Perhaps, due to political unrest, in the Philippines lenders choose board positions as a more direct method of surveillance while in the more stable countries this is not necessary. Further analysis of this question is left to future research.

#### *4.2 Pooled analysis*

The pooled ordered logit country analysis appears in Table 3. The positive relation between firm size and board size is now statistically significant at the 5% level for each of the countries. The board independence results are also clearer with a negative relation between board size and shareholder control in Hong Kong and Thailand where one shareholder controls more than 25% of the shares in the firm. While this is also true for shareholders in Singapore firms, with shareholders having more than a 50% stake in the firm, is not apparent for shareholders with a 25% to 50% stake in the firm. Both Indonesia and the Philippines tend to have larger boards the more concentrated the shareholding in the firm and this effect is statistically significant. With more concentrated ownership it is expected that the owners of the firm would prefer smaller boards yet in Indonesia and the Philippines the reverse relationship is observed over the period from 1999 to 2002. Perhaps there is a further element required for board size modelling in emerging markets, particularly during periods of severe economic and political unrest. It is possible that these boards are larger because the dominant shareholder group uses board positions to foster political

and business connections in economies where markets are not functioning effectively or perhaps have failed completely.

[Insert Table 3 about here]

For all the countries except for Thailand there is a positive relation between profitability and board size and this is statistically significant at the 10% level or better for Indonesia, Malaysia and the Philippines. More profitable firms tend to have larger boards. Further, except for the Philippines, the greater the leverage the smaller the board. Again, it is possible that important lenders and creditors take on board positions as a method of protecting their investment in countries though this result is not replicated in Thailand or in Indonesia over the period.

It is also important to note the change in the average size of the board of directors over the study period. The time trend variable is negative for Hong Kong, Malaysia, the Philippines and Singapore and statistically significantly so for the Philippines and Singapore, suggesting a decrease in board size over the period from 1999 to 2002. Yet, for Indonesia this variable has a positive sign. Apparently Indonesian boards of commissioners have tended to increase in size over the four years from 1999 to 2002. This increase in board size for Indonesian firms is evident both in the descriptive statistics (Table 1) and the multivariate analysis (Table 3). Thus, while there is a general trend towards smaller boards in the sample over the study period, Indonesia is an important exception. There is also variation in the board size across the various industry groupings within each country though there is little consistent pattern in the incidence of statistically significant difference in board size between the manufacturing sector and other sectors. One exception is the Philippines where there is no statistically significant difference between the board size in the manufacturing industry and other industries represented in the sample.

## **5. Conclusions**

The average board for all the firms included in the sample consists of nine directors and there is considerable variation in board size across the countries included in the sample. There is also some variation in the average board size of South East Asian firms over the period from 1999 to 2002 with an increase in board size for Indonesia and a decrease for the Philippines and Singapore.

Thus there is some evidence to support the prediction that larger firms have larger boards. Further, firms tend to have larger boards where they earn higher returns on assets. Yet, the impact of concentrated shareholding and leverage varies across the countries in the sample. For example, Indonesian Boards of Commissioners tend to be larger where the firm is large, shareholding is concentrated and return on assets is high. Further, the boards of directors in Singaporean firms tend to be smaller where the dominant shareholder holds over 50% of the shares in the company, where no shareholders own 25% to 50% of the shares and where leverage is high. While not reported separately board size also varies across industry groupings for each of the countries except for the Philippines.

## References

- Abdullah, S. N. 2004. Board composition, CEO duality and performance among Malaysian listed companies. *Corporate Governance*, 4(4): 47-61.
- Berman, G., & Fry, T. R. L. 2001. A charitable ranking. *Economic Papers*, 20: 67-80.
- Boone, A. L., Field, L. C., Karpoff, J. M., & Raheja, C. G. 2004. The determinants of corporate board size and composition: An empirical analysis, *University of Arkansas*: 31. Arkansas.
- Brewer, J. 1997. The state of corporate governance in Hong Kong. *Journal of corporate Governance*, 5(2): 77-82.
- Claessens, S., Djankov, S. D., Fan, J. P. H., & Lang, L. H. P. 2002. Disentangling the incentive and entrenchment effects of large shareholdings. *The Journal of Finance*, 52(6): 2741-2771.
- Claessens, S., Djankov, S. D., & Lang, L. H. P. 2000. The separation of ownership and control in East Asian Corporations. *Journal of Financial Economics*, 58(1-2).
- Claessens, S., & Fan, J. P. H. 2002. Corporate governance in Asia: A survey. *International Review of Finance*, 3(2): 71-103.
- Clarke, T. 2000. Haemorrhaging tigers: the power of the international financial markets and the weakness of Asian modes of corporate governance. *Journal of Corporate Governance*, 8(2): 101-116.
- Coles, J., Daniel, N. D., & Naveen, L. 2004. Boards: Does one size fit all? *Working paper*: 1-55.

- Du, J., & Dai, Y. 2005. Ultimate corporate ownership structures and capital structures: evidence from East Asian economies. *Corporate Governance*, 13(1): 60-71.
- Greene, W. H. 2003. *Econometric Analysis* (5th ed.): Prentice Hall, Upper Saddle River, NJ.
- Harris, M., & Raviv, A. 1991. The Theory of Capital Structure. *Journal of Finance*, 46(1): 297-355.
- Harris, M., & Raviv, A. 2005. A theory of board control and size, *University of Chicago Working Paper*: 1-41. Chicago.
- Hermalin, B. E., & Weisbach, M. S. 2003. Boards of directors as an endogenously determined institution: A survey of the economic literature. *Economic Policy Review*, 9(1): 7-26.
- Jensen, M. C., & Meckling, W. H. 1976. Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3(4): 305-360.
- La Porta, R., Lopez-De-Silanes, F., & Shleifer, A. 1999. Corporate ownership around the world. *The Journal of Finance*, 54(2): 471-517.
- La Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R. 1998. Law and Finance. *Journal of Political Economy*, 106(6): 1113-1155.
- La Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R. 2000. Investor protection and corporate governance. *Journal of Financial Economics*, 58(1-2): 3-27.
- Lehn, K., Patro, S., & Zhao, M. 2003. Determinants of the size and structure of corporate boards: 1935-2000, *University of Pittsburgh, Joseph M Katz Graduate School of Management, Working Paper*: 44. Pittsburgh.

- Lipton, M., & Lorsch, J. W. 1992. A modest proposal for improved corporate governance. *Business Lawyer*, 48(1): 59-77.
- Mak, Y. T., & Chng, C. K. 2000. Corporate governance practices and disclosures in Singapore: an update: 1-44. Singapore.
- Mak, Y. T., & Yuan, L. 2001. Determinants of corporate ownership and board structure: evidence from Singapore. *Journal of Corporate Finance*, 7(3): 235-256.
- Myers, S. C., & Majluf, N. C. 1984. Corporate financing and investment decisions when companies have information that investors do not have. *Journal of Financial Economics*, 13(2): 187-221.
- Ong, C.-H., Wan David, Ong Kee-Sing. 2003. An explanatory study on interlocking directorates in listed firms in Singapore. *Blackwell Publishing*, 11(4): 322-334.
- Ow-Yong, K., Guan Cheah Kooi. 2000. Corporate governance codes: a comparison between Malaysia and the UK. *Journal of Corporate Governance*, 8(2): 125-132.
- Raheja, C. G. 2005. Determinants of board size and composition: A theory of corporate boards. *Journal of Financial and Quantitative Analysis*, 42(2): 283-306.
- Yermack, D. 1996. Higher market valuation of companies with a small board of directors. *Journal of Financial Economics*, 40(2): 185-211.

**Table 1, Board size descriptive statistics**

Board size consists of a count of the number of individual directors that occupy a position on the board at the end of the calendar year. Directors that hold more than one position are counted only once. The company secretary is only included in the count if they are also a director. The statistics are grouped by country and year. NOBS is the number of firms (country and year). Mean is the average board size for the classification. Std. dev. is the standard deviation in board size. Min is the minimum number of directors in a firm. Max. is the maximum number of directors in a firm. Three t-tests are conducted for difference in board size across size (LTA), leverage (LEV) and profitability (ROTA). The sample is sorted by the variable of interest and the average board size for the firms in the upper 50% are compared with the board size of firms in the lower 50% of the sample. The difference between in board size between the top 50% firms and the bottom 50% firms for the variable as well as the probability associated with this test is reported for each of the three variables, t-test prob (LTA), t-test prob (LEV) and t-test prob (ROTA). \* (+) statistically significant at the 5%(10%) level of significance

|                    | <i>NOBS</i> | <i>Mean</i> | <i>Std. dev.</i> | <i>Min.</i> | <i>Max.</i> | <i>Brd. diff. t test prb. (LTV).</i> | <i>Brd..diff. t test prb. (LEV)</i> | <i>Brd. diff. t test prb. (LEV)</i> | <i>Brd. diff. t test prb. (ROTA)</i> | <i>(ROTA).</i> |       |
|--------------------|-------------|-------------|------------------|-------------|-------------|--------------------------------------|-------------------------------------|-------------------------------------|--------------------------------------|----------------|-------|
| <b>Hong Kong</b>   |             |             |                  |             |             |                                      |                                     |                                     |                                      |                |       |
| 1999               | 68          | 11.41       | 3.37             | 4           | 19          | -3.18                                | 0.00*                               | 0.82                                | 0.33                                 | -0.25          | 0.76  |
| 2000               | 109         | 10.92       | 3.34             | 5           | 19          | -3.32                                | 0.00*                               | -0.24                               | 0.71                                 | 0.64           | 0.32  |
| 2001               | 145         | 10.54       | 3.56             | 4           | 19          | -3.69                                | 0.00*                               | -0.63                               | 0.29                                 | 0.39           | 0.51  |
| 2002               | 149         | 10.13       | 3.56             | 4           | 19          | -3.38                                | 0.00*                               | -0.54                               | 0.36                                 | -0.14          | 0.82  |
| <b>Indonesia</b>   |             |             |                  |             |             |                                      |                                     |                                     |                                      |                |       |
| 1999               | 180         | 5.54        | 2.78             | 1           | 18          | -1.34                                | 0.05+                               | -0.90                               | 0.20                                 | -0.35          | 0.62  |
| 2000               | 179         | 6.68        | 3.66             | 2           | 20          | -3.99                                | 0.00*                               | 0.06                                | 0.95                                 | -0.84          | 0.39  |
| 2001               | 179         | 6.79        | 3.69             | 2           | 21          | -2.79                                | 0.00*                               | 0.87                                | 0.27                                 | -1.47          | 0.06+ |
| 2002               | 180         | 6.80        | 3.64             | 2           | 20          | -2.74                                | 0.00*                               | -0.20                               | 0.71                                 | -0.65          | 0.23  |
| <b>Malaysia</b>    |             |             |                  |             |             |                                      |                                     |                                     |                                      |                |       |
| 1999               | 167         | 8.44        | 2.55             | 1           | 16          | -0.51                                | 0.23                                | 0.12                                | 0.78                                 | 0.35           | 0.41  |
| 2000               | 167         | 8.35        | 2.43             | 1           | 16          | -0.58                                | 0.15                                | 0.22                                | 0.58                                 | -0.15          | 0.71  |
| 2001               | 167         | 8.54        | 2.45             | 1           | 19          | -0.90                                | 0.02*                               | -0.30                               | 0.45                                 | -0.27          | 0.49  |
| 2002               | 167         | 8.63        | 2.17             | 1           | 16          | -0.58                                | 0.10+                               | -0.42                               | 0.24                                 | -0.39          | 0.27  |
| <b>Philippines</b> |             |             |                  |             |             |                                      |                                     |                                     |                                      |                |       |
| 1999               | 145         | 10.19       | 3.49             | 1           | 20          | -1.76                                | 0.04*                               | -1.05                               | 0.21                                 | -1.33          | 0.11  |
| 2000               | 146         | 10.03       | 3.52             | 1           | 20          | -0.58                                | 0.34                                | -0.43                               | 0.48                                 | 0.06           | 0.92  |
| 2001               | 146         | 10.01       | 3.46             | 1           | 20          | -0.45                                | 0.43                                | -0.49                               | 0.40                                 | -0.53          | 0.36  |
| 2002               | 146         | 9.53        | 2.95             | 1           | 19          | -0.76                                | 0.15                                | -0.65                               | 0.22                                 | -0.84          | 0.11  |
| <b>Singapore</b>   |             |             |                  |             |             |                                      |                                     |                                     |                                      |                |       |
| 1999               | 70          | 8.26        | 1.91             | 3           | 12          | -1.97                                | 0.00*                               | -0.47                               | 0.32                                 | 1.03           | 0.03* |
| 2000               | 117         | 8.09        | 1.97             | 4           | 13          | -1.58                                | 0.00*                               | -0.67                               | 0.07+                                | 0.71           | 0.06+ |
| 2001               | 156         | 7.50        | 2.14             | 3           | 15          | -1.40                                | 0.00*                               | -0.87                               | 0.01*                                | -0.39          | 0.24  |
| 2002               | 159         | 7.51        | 2.11             | 3           | 14          | -1.47                                | 0.00*                               | -0.66                               | 0.05+                                | -0.03          | 0.94  |
| <b>Thailand</b>    |             |             |                  |             |             |                                      |                                     |                                     |                                      |                |       |
| 1999               | 17          | 13.59       | 3.48             | 9           | 22          | -3.23                                | 0.18                                | -0.30                               | 0.91                                 | -1.40          | 0.55  |
| 2000               | 20          | 12.75       | 3.73             | 7           | 21          | -0.64                                | 0.76                                | -1.26                               | 0.56                                 | 1.52           | 0.46  |
| 2001               | 37          | 12.46       | 3.94             | 7           | 24          | 0.83                                 | 0.56                                | 0.42                                | 0.77                                 | 0.97           | 0.51  |
| 2002               | 42          | 12.55       | 3.96             | 8           | 26          | -0.59                                | 0.69                                | 1.29                                | 0.38                                 | 0.00           | 1.00  |

**Table 2, Ordered logit analysis: cross-section analysis by country and year**

The total directors on the board is expressed as a function of the natural log of total assets ( $LTA_{it}$ ), the OSIRIS dummy variables for codes C ( $OSIRISC_i$ ), B ( $OSIRISB_i$ ) and U ( $OSIRISU_i$ ), the return on total assets ( $ROTA_{it}$ ), the natural log of leverage ( $LLEV_{it}$ ) and up to nine industry dummy variables, included in the regression to test for significant difference between the industry parameter and the manufacturing industry dummy variable, ( $IND_j$ ). Robust standard errors are used in statistical tests and probabilities from these tests are reported in parentheses below parameter estimates. \* (+) statistically significant at the 5%(10%) level of significance.

| <i>Country</i> | <i>Year</i> | <i>LTA</i> | <i>OSIRISC</i> | <i>OSIRICB</i> | <i>OSIRISU</i> | <i>ROTA</i> | <i>LLEV</i> | <i>NOBS</i> | <i>Rsquare</i> |
|----------------|-------------|------------|----------------|----------------|----------------|-------------|-------------|-------------|----------------|
| Hong Kong      | 1999        | 0.965*     | -0.024         | -1.003         | 0.565          | 0.048*      | -1.396      | 67          | 0.16           |
|                |             | (0.00)     | (0.98)         | (0.16)         | (0.42)         | (0.01)      | (0.43)      |             |                |
|                | 2000        | 0.823*     | -0.774         | -1.154*        | -0.204         | -0.002      | -0.568      | 109         | 0.11           |
|                |             | (0.00)     | (0.14)         | (0.03)         | (0.68)         | (0.90)      | (0.50)      |             |                |
| Indonesia      | 2001        | 0.737*     | 0.055          | -0.368         | 0.117          | -0.007      | -0.368      | 145         | 0.09           |
|                |             | (0.00)     | (0.91)         | (0.46)         | (0.80)         | (0.37)      | (0.15)      |             |                |
|                | 2002        | 0.635*     | -0.102         | -0.146         | 0.132          | 0.002       | 0.431       | 149         | 0.09           |
|                |             | (0.00)     | (0.84)         | (0.76)         | (0.75)         | (0.74)      | (0.62)      |             |                |
| Indonesia      | 1999        | 0.404+     | 2.927*         | 0.457          | -0.159         | -0.016      | -0.543      | 73          | 0.09           |
|                |             | (0.07)     | (0.03)         | (0.62)         | (0.75)         | (0.62)      | (0.76)      |             |                |
|                | 2000        | 0.612*     | 2.153*         | 1.015          | 0.461          | 0.025       | 0.559       | 75          | 0.11           |
|                |             | (0.01)     | (0.00)         | (0.35)         | (0.49)         | (0.12)      | (0.60)      |             |                |
| Indonesia      | 2001        | 0.472*     | 1.946*         | 1.359+         | 0.745          | 0.034*      | 0.172       | 106         | 0.07           |
|                |             | (0.00)     | (0.02)         | (0.07)         | (0.15)         | (0.00)      | (0.54)      |             |                |
|                | 2002        | 0.599*     | 1.732*         | 1.040          | 0.568          | 0.009+      | -0.686*     | 178         | 0.08           |
|                |             | (0.00)     | (0.05)         | (0.18)         | (0.32)         | (0.10)      | (0.01)      |             |                |
| <i>Country</i> | <i>Year</i> | <i>LTA</i> | <i>OSIRISC</i> | <i>OSIRICB</i> | <i>OSIRISU</i> | <i>ROTA</i> | <i>LLEV</i> | <i>NOBS</i> | <i>Rsquare</i> |
| Malaysia       | 1999        | 0.358+     | 0.044          | -0.055         | -0.597         | 0.010       | -0.573      | 139         | 0.03           |
|                |             | (0.09)     | (0.94)         | (0.93)         | (0.27)         | (0.49)      | (0.53)      |             |                |
|                | 2000        | 0.458*     | -0.261         | -0.299         | -0.768         | 0.007       | -1.473+     | 139         | 0.04           |
|                |             | (0.00)     | (0.64)         | (0.55)         | (0.13)         | (0.75)      | (0.07)      |             |                |
| Malaysia       | 2001        | 0.821*     | -0.172         | -0.617         | -0.189         | 0.033*      | -1.525+     | 146         | 0.04           |
|                |             | (0.00)     | (0.76)         | (0.27)         | (0.74)         | (0.03)      | (0.07)      |             |                |
|                | 2002        | 0.724*     | -0.262         | -0.250         | -0.463         | 0.032*      | -2.056*     | 147         | 0.04           |
|                |             | (0.00)     | (0.66)         | (0.67)         | (0.40)         | (0.02)      | (0.02)      |             |                |
| Philippines    | 1999        | 0.287      | 0.694          | 2.171+         | 0.688          | 0.023+      | 2.012*      | 84          | 0.06           |
|                |             | (0.11)     | (0.46)         | (0.08)         | (0.38)         | (0.08)      | (0.01)      |             |                |
|                | 2000        | 0.149      | 0.880          | 1.661          | 1.126          | 0.006       | 1.307*      | 138         | 0.02           |
|                |             | (0.11)     | (0.34)         | (0.12)         | (0.16)         | (0.68)      | (0.03)      |             |                |
| Philippines    | 2001        | 0.037      | 1.814*         | 2.220*         | 1.062          | 0.006       | 2.283*      | 101         | 0.05           |
|                |             | (0.75)     | (0.02)         | (0.03)         | (0.20)         | (0.16)      | (0.00)      |             |                |
|                | 2002        | 0.172      | -0.243         | -0.501         | -1.016         | 0.007*      | 1.278*      | 102         | 0.04           |
|                |             | (0.21)     | (0.91)         | (0.83)         | (0.63)         | (0.00)      | (0.01)      |             |                |

|           |      |        |        |        |        |         |         |     |      |
|-----------|------|--------|--------|--------|--------|---------|---------|-----|------|
| Singapore | 1999 | 0.702* | -0.373 | 0.363  | -0.577 | 0.069   | -0.010* | 64  | 0.11 |
|           |      | (0.00) | (0.59) | (0.55) | (0.49) | (0.10)  | (0.00)  |     |      |
|           | 2000 | 0.617* | -0.458 | 0.601  | -0.163 | 0.005   | -0.010* | 110 | 0.11 |
|           |      | (0.00) | (0.40) | (0.22) | (0.73) | (0.74)  | (0.00)  |     |      |
|           | 2001 | 0.752* | -0.717 | 0.619  | -0.206 | 0.011   | -0.011* | 151 | 0.12 |
|           |      | (0.00) | (0.16) | (0.18) | (0.61) | (0.40)  | (0.00)  |     |      |
|           | 2002 | 0.638* | -0.361 | 0.424  | -0.046 | 0.004   | -0.023  | 152 | 0.09 |
|           |      | (0.00) | (0.48) | (0.34) | (0.91) | (0.58)  | (0.99)  |     |      |
| Thailand  | 2001 | 1.150* | 0.347  | -0.104 | 2.965  | -0.155* | -6.370* | 29  | 0.16 |
|           |      | (0.01) | (0.91) | (0.98) | (0.33) | (0.05)  | (0.04)  |     |      |
|           | 2002 | 0.068  | 0.250  | -0.340 | -0.978 | 0.088   | -0.976  | 34  | 0.09 |
|           |      | (0.88) | (0.89) | (0.92) | (0.41) | (0.29)  | (0.75)  |     |      |

**Table 3, Ordered logit analysis: pooled analysis by country**

The total directors on the board is expressed as a function of the natural log of total assets ( $LTA_{it}$ ), the OSIRIS dummy variables for codes C ( $OSIRISC_i$ ), B ( $OSIRISB_i$ ) and U ( $OSIRISU_i$ ), the return on total assets ( $ROTA_{it}$ ), the natural log of leverage ( $LLEV_{it}$ ), a time trend ( $TIME_t$ ) with values 1999, 2000, 2001, 2002 and up to nine industry dummy variables, included in the regression to test for significant difference between the industry parameter and the manufacturing industry dummy variable, ( $IND_j$ ). Robust standard errors are used in statistical tests and probabilities from these tests are reported in parentheses below parameter estimates. \* (+) statistically significant at the 5%(10%) level of significance.

| <i>Country</i> | <i>LTA</i>       | <i>OSIRISC</i>    | <i>OSIRICB</i>    | <i>OSIRISU</i>    | <i>ROTA</i>       | <i>LLEV</i>       | <i>YEAR</i>       | <i>NOBS</i> | <i>Rsquare</i> |
|----------------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------|----------------|
| Hong Kong      | 0.723*<br>(0.00) | -0.194<br>(0.46)  | -0.545*<br>(0.03) | 0.117<br>(0.62)   | 0.000<br>(0.99)   | -0.304<br>(0.23)  | -0.122<br>(0.13)  | 470         | 0.09           |
| Indonesia      | 0.529*<br>(0.00) | 1.832*<br>(0.00)  | 0.929*<br>(0.01)  | 0.417+<br>(0.10)  | 0.009+<br>(0.05)  | -0.307<br>(0.23)  | 0.210*<br>(0.01)  | 432         | 0.07           |
| Malaysia       | 0.523*<br>(0.00) | -0.111<br>(0.68)  | -0.282<br>(0.30)  | -0.490+<br>(0.06) | 0.015*<br>(0.04)  | -1.178*<br>(0.00) | -0.013<br>(0.85)  | 571         | 0.03           |
| Philippines    | 0.158*<br>(0.01) | 0.883+<br>(0.10)  | 1.432*<br>(0.02)  | 0.665<br>(0.18)   | 0.005*<br>(0.00)  | 1.274*<br>(0.00)  | -0.197*<br>(0.02) | 425         | 0.03           |
| Singapore      | 0.640*<br>(0.00) | -0.476+<br>(0.07) | 0.482*<br>(0.04)  | -0.238<br>(0.30)  | 0.007<br>(0.20)   | -0.009*<br>(0.00) | -0.171*<br>(0.03) | 477         | 0.10           |
| Thailand       | 0.645*<br>(0.02) | -1.723+<br>(0.07) | -2.223*<br>(0.04) | -0.492<br>(0.53)  | -0.073+<br>(0.06) | -3.388+<br>(0.09) | 0.044<br>(0.84)   | 87          | 0.07           |