



## **Managerial Ability, Firm Performance and CEO Remuneration: Evidence for Malaysian Listed Family Firms**

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### **ABSTRACT**

We examine whether managerial ability is an essential factor that determine CEO remuneration, and as means in resolving both Type I and Type II agency conflicts. Our sample is based on Malaysian family listed companies over 2009-2015, and our results show that, apart from being a crucial determinant of professional CEO remuneration, managerial ability also plays an important role in enhancing the pay-performance sensitivity of outsider manager of Malaysian family firms. Our results also show that the positive association between managerial ability and remuneration of family CEO only helps to mitigate the risk of Type II agency conflict. This agency risk is further heightened by the existence of a significant negative effect of managerial ability on CEO pay-performance sensitivity in firms which appoint family CEO as board chairman; and firms with CEO who serves on the remuneration committee. These results are robust to alternative measures of firm performance as well as tests of endogeneity.

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## INTRODUCTION

The birth of New Malaysia on 9 May 2018 has not only brought unprecedented changes in the political arena, the issue of excessive remuneration being paid to CEO of Malaysian government-linked companies (GLCs) has also hogged the limelight of the media (The Edge, 2018a). Although the allegation of excessive pay was not hurled directly towards the private companies, two renowned Malaysian family firms (which involve in gaming and trading and services sector) had been cited with very high board compensation (BOD compensation/profit after tax and minority interests) but low return on capital employed (The Edge, 2018a). When the CEO of one of these family firms announced a 20% pay cut, it was well received by the minority shareholders during the annual general meeting (The Edge, 2019). In fact, in its inaugural Corporate Governance (CG) Monitor 2019, Securities Commission Malaysia (SC) reported that half of the top 20 listed companies on Bursa Malaysia with the highest CEO paid in 2018 were family-controlled firms. The SC report further revealed that “listed companies which are ranked high in terms of CEO remuneration, may not necessarily be ranked high in terms of returns on equity (ROE) and returns on asset (ROA), and vice versa”. Previous literature reveals that higher executive director remuneration in Malaysia lowers the expropriation risk (Rahmat, et al. 2019). However, the question remains whether higher executive remuneration is closely related to firm performance as well as the productivity of the CEO.

The pay structures of top executives of Malaysian firms are smacked with news of expropriation. A large portion of these top executives' compensation was based on base salary or allowances that were guaranteed regardless of the performance of the company (Norsiah and Seelen, 2003). Their compensation was driven by position and market value rather than results. The 2006 Total Reward Survey conducted by Watson Wyatt (Nath and Lee, 2007) showed that for the top management in Malaysia, about 66% of their compensation were comprised of guaranteed pay, and only about 20% were variable pay. Towers Perrins 2005/2006 Worldwide Total Remuneration Report also reported that variable bonus and long-term incentives given to Malaysian CEO were only 32% and 80% of their base salary, respectively.

While most of the family firms are managed by the founder or their heir or family members, some of the family firms in Malaysia also employ professional CEO to hold the helm. Thus, is there any distinction between professional and family CEO in their managerial skills of generating revenues, and subsequently, is there any difference in terms of pay-managerial ability relation between these two categories of family firm CEOs?

Changes in the pay structures of Malaysian firms were slow to come by and only some firms were found moving towards performance-linked incentives and long-term rewards for the compensation mix of CEO and top management staff. Even when long-term incentive plans were proposed to reward and retain key management, it might face objection from major shareholders because of its equity dilution effect. It is particularly true for firms that are tightly held and voting blocs existed among major shareholders (Lee, 2013). Recently, The Edge (2018b) even reported that the median compensation of Malaysia's 40 highest-paid CEO of non-GLC of RM10.4 million was higher than that of their Singapore peers, whose median remuneration was S\$5.13 million (without taking into account the currency exchange conversion). On the other hand, the CEO performance index of Malaysian CEO was lower than their Singapore's counterparts (1.14 versus 2.41). Due to this lack of transparency on how Malaysian CEO's compensation is determined, particularly of its relation to firm performance, Tong (2019) advocates that the board of directors have to provide a clearly defined performance metric that serves as a comprehensive, transparent and quantifiable benchmark to justify any adjustments or changes made to CEO pay.

In this paper, we examine panel data of Malaysian family firms over the 7-year period from 2009 to 2015, which consists of 2,534 firm-year observations. The findings of this study reveal that generally, CEO remuneration of family firms are significantly related to better book-based performance measures and stock returns but the opposite for market-based performance measures. CEO's managerial ability has significant effect on this pay-performance sensitivity (PPS) using book-based performance measures. We further found that managerial ability has even higher impact on pay-performance measures in family firms managed by professional CEO in regards of book-based or market-based performance measures, but not stock returns. The effect of managerial ability, however, has negative effect on PPS when CEO is also holding the post as board chairman and presence on the remuneration committee. These regression results show that Malaysian family firms does utilize labour productivity (managerial ability) and other economic variables such as firms

profitability and growth as the important means to mitigate Type I agency conflicts that exist between the principals (family controlling shareholders) and their agents (professional CEO). On the other hand, minority shareholders in Malaysian family firms are not able to shield themselves from Type II agency conflicts as family CEO chairing the board and presence on remuneration committee does have the effect of ratcheting up the remuneration of family CEO.

This paper offers at least three contributions. First, the findings theoretically contribute to the agency theory by indicating the possibility for the occurrence of Type II agency conflicts in Malaysian family firms. This possibility is theoretically supported by the non-alignment of family CEO remuneration to their managerial ability and firm's performance. Second, this study used a different approach in examining the issue of excessive remuneration. We delve straight into the ability of CEO in generating revenues for the firm with the help of DEA analysis (Data Envelopment Analysis). It is a more direct and comprehensive measure of labour productivity of CEO which is construed as an important determinant of executive compensation. DEA is used to estimate the unobservable or latent managerial ability of CEO in generating revenues for family firms which entrusted them with such important job function and responsibility. This managerial ability serves as an important reference in setting the optimal level of remuneration but is elusive for use because of its unobservable nature. Third, Malaysian Code of Corporate Governance (MCCG) always emphasizes the importance of linking directors' pay to their skills, knowledge, expertise, and experience. MCCG 2012 stresses that remuneration of the board should reflect the board's responsibilities, expertise and complexity of the company's activities. Indeed, Azar et al. (2018) found that Malaysian firms with better CG setting would have better firm performance. The managerial ability estimated in this study helps to establish this important linkage as it encapsulates these unobservable qualities of skills, knowledge and expertise or the so-called managerial talent which CEO essentially rely on to generate firm's revenues and subsequently its profits.

The remaining paper is organized as follows. Section 2 reviews the relevant literature and formulate the hypotheses. Section 3 outlines the research methodology. Section 4 discusses the statistics and empirical results. Section 5 concludes.

## LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

### CEO Ability and Pay-Performance Sensitivity

Concerning the relationship between individual ability and pay-performance sensitivity, Lazear (1986) postulates that high-ability workers sort into jobs with performance pay while low-ability workers are given fixed wages by their employers. For the case of highly talented worker like a company's CEO, Murphy (1999), Aggarwal (2008) and Fryman and Jenter (2010) further argue that CEO earn high levels of compensation primarily because of their high-powered performance incentives. Using the general equilibrium framework, Lucas (1978) posits that individuals are sorted based on managerial ability into production workers, small business owners, salaried managers whose pay does not vary with managerial ability, and managers whose pay varies with ability and with firm profits. Based on Lucas's framework, Wu (2017) has developed the economic theory which says that firms employ managers to improve productivity; and more-talented managers create greater value for firms, which then use incentive contracts that incur higher costs to motivate managers. When the effort of a high-talent manager yields sufficiently large surplus, the owner will optimally offer a rent-sharing contract. Thus, our first deduction is:

*Hypothesis 1: CEO's managerial ability is positively correlated with pay-performance sensitivity.*

### Further Issue I: Family Firms with Professional CEO

Jaskiewicz et al. (2017) theorize that family owners will offer higher incentive and pay to attract nonfamily CEO, signal good governance, and achieve better firm performance. The primary reason for family-owned firms to do so is because family owners (other than founder owners) might have broad socioemotional goals which are regularly detracted from firm performance (Gómez-Mejía et al., 2007, 2011). Examples of these goals are preserving the family's reputation for good deeds and employing family members (Chrisman et al., 2012; Deephouse and Jaskiewicz, 2013). In order not to derail the attainment of these socioemotional goals

which require financial resources, family owners need to align the interests of owners and professional managers (CEO) through high incentive pay to ensure sufficient financial resources are generated from better firm performance.

In line with the theoretical postulation of Dutta (2008), professional managers would have higher pay-performance sensitivity as their managerial expertise is the crucial factor that drives firm performance. At the same time, outside CEO are more mobile than family CEO in the managerial labour market. Professional managers are employed as CEO primarily to professionalize and modernize family firms and they are able to do that because they come from a larger and superior pool of talent (Carney, 2005; Sirmon and Hitt, 2003). As a result, with the importance given to the managerial skills of professional managers they should merit high-powered incentives. Comparatively professional managers have higher mobility than family CEO as the latter might be tied down by familial relationship. Job security in their own family firms might also reduce the mobility of family CEO; while this impediment to mobility does not occur to professional managers whose employment is mainly dependent on their managerial skills which are non-firm specific or transferable. Thus, high pay-performance sensitivity serves to attract and retain these talented outside CEO in family firms. Based on these theoretical arguments and reasoning, the following hypothesis is suggested:

*Hypothesis 2: For family firms with professional CEO, managerial ability has even higher positive correlation with pay-performance sensitivity.*

### **Further Issue II: Family CEO Presence on Remuneration Committee**

When firms are owned by family shareholders, Type I agency conflict is mitigated as family shareholders have both the motivation to maximize company's wealth (Shleifer and Vishny, 1997); and the means in gathering information to monitor the behaviour of managers (Shleifer and Vishny, 1986). This motivation and means come from the "psychological ownership" of the founders on their firms (Wasserman 2006; Villalonga and Amit, 2010); and family executives serving as internal monitors who could improve monitoring (Harris and Raviv, 2008). Firm-specific knowledge of family members and stronger commitment to the firm (Bertrand and Schoar, 2006) also help family firms to rely less on performance-based compensation to resolve agency conflict between shareholder and manager.

Despite diminution of Type I agency conflict in family firms, high ownership concentration and adoption of pyramidal structure might cause expropriation of minority or atomistic shareholders (non-family or outside owners) by major or controlling shareholders (family owners) – Type II agency problem in family firms. Existence of private benefits of control in family firms creates the agency problem which arises from the conflicts of interests between opposing shareholder groups – family members versus non-family shareholders. Private benefits of control include utility derived from preserving the family legacy for future generations or ensuring the well-being of other family members (Becker 1981; Bertrand and Schoar, 2006).

High ownership concentration enables family firms to keep a tight rein on the company via appointment of owner-managers and family members' involvement or representation in the board. Appointment of family members to managerial positions might not base on abilities and expertise of the appointees. Favoritism in terms of employment and promotions towards heirs and siblings of family firms could lead to family perquisites and resentment by non-family managers (Schulze et al., 2001). Company board which has high family representation might not be able to carry out its fiduciary duties effectively towards the minority shareholders. It might turn a blind eye to the "mischievous" (Dalton et al., 2007) or opportunistic conduct of owner-managers which is detrimental to the interest of minority shareholders for the sake of entrenching private benefits of control.

When Malaysian firms are less transparent in disclosing executive directors' remuneration (including the CEO), minority shareholders are being deprived of an essential piece of information to evaluate the link between remuneration paid to top executive and his or her contributions to firm performance. This lack of transparency provides the opportunity for controlling family who hold the position of company director or its involvement in the remuneration committee to maximize their private benefits of control at the expense of minority shareholders. In accordance with the managerial power view, CEO membership of the remuneration committee is an open invitation to rent extraction by self-serving executives (Boyle and Roberts, 2013). We tested on a sub-sample basis whether the moderating role of managerial ability on PPS differ in firms with such family involvement:

*Hypothesis 3: For firms with the presence of family CEO in the remuneration committee, managerial ability is negatively correlated with pay-performance sensitivity.*

### **Further Issue III: Family Firms with CEO Duality**

A common trait of family firms is their board of directors (BODs) are filled with family members who take up or being appointed important positions such as board chairman, non-executive directors, chairman and members of remuneration committee of the companies. Also, these family members normally hold significant amount of the company's outstanding shares. This perpetuation of family power and influence into the main board and its subcommittees is expected to have a significant impact of ratcheting up CEO pay with less correlation with firm performance. Thus, our next hypothesis is:

*Hypothesis 4: For firms with family CEO appointed as the chairman of the board (family CEO duality), managerial ability is negatively correlated with pay-performance sensitivity.*

## **RESEARCH METHODOLOGY**

### **Data and Sample**

The samples of Malaysian family firms used in this study are the public companies listed in the Main Board of Bursa Malaysia during 2009 to 2015, and their business activities are involved in five main sectors namely consumer products, construction, industrial products, properties and trading and services. Similar to Mazur and Wu (2016), this study identifies family firms based on two dimensions, i.e., family affiliation of board members (control) and of CEO (management). Following Anderson and Reeb (2003) and Villalonga and Amit (2006), we classify a firm with family control when one of the following criteria is met: (1) the founder or a descendant of the founder sits on the board and/or is a substantial shareholder; (2) at least two board members are related by blood or marriage. According to Section 136 of the Companies Act 2016, a substantial shareholder is defined as: "A person who has an interest in one or more voting shares in a company and the number or the aggregate number of such shares is not less than 5% of the total number of all the voting shares included in the company".

In this study, the compensation measure focus on the cash component of CEO annual total compensation. This cash component is estimated as the median value of the highest band of remuneration paid to company's directors reported in the annual reports of family firms. The actual CEO remuneration could not be obtained as most of the annual reports only provide aggregate remuneration paid to all executive directors or non-executive directors. This estimated CEO pay comprises of both incentive and non-incentive cash components. It includes salary, allowances, company contribution to pension funds, and short-term cash incentives such as bonuses. Other studies utilizing a comparable compensation measure include Boyd (1994), Levinthal (1988), Merhebi et al. (2006), and Capezio et al. (2011).

Although this study does not include equity-based compensation, from Agency Theory perspective, CEO pay-for-performance is a necessary requirement for managing information asymmetry and moral hazard irrespective of compensation mix and CEO-agent equity ownership (Aggarwal and Samwick, 1999; Jensen and Meckling, 1976). Consistent with this argument, several researchers suggest that it is reasonable to expect CEO cash compensation to co-vary with firm-level performance outcomes (Abowd, 1990; Jensen and Murphy, 1990; Makri et al., 2006). Ellig (2003) also opined that incentive plans that focus on short-term firm performance are primarily cash-based. Thus, it could be surmised that this study which only focus on CEO cash compensation does not limit the extent to which we are able to draw legitimate inferences regarding managerial ability and firm performance and their relation with CEO pay of Malaysian family firms.

We employed five popular measures of firm performance in our regression analysis which comprised of Return on Assets (ROA), Return on Equity (ROE), Tobin's Q (TOBINQ), Market-to-book value (MTBV), and the Stock Returns (RET). To avoid confounding effects, we include several control variables that have been found to influence the pay-performance relationship (e.g. Coles et al., 2006; Kale et al., 2009). These include firm size, firm age, firm risk, leverage, sales and the tenure of the CEO.

Data for variables such as ROA, ROE, stock return (RET), MTBV, firm size, firm risk, leverage, sales and firm age are obtained from the database of Data Stream; whereas information on CEO tenure, CEO pay and corporate governance (CG) proxies such as CEO duality, status of CEO (family member or professional manager), and the involvement of CEO as the serving member of the remuneration committee are manually checked from the annual reports of the sample firms under the sections of directors profile and the Statement of CG. Managerial ability, which is the focal variable in this study, is estimated by using the methodology of Demerjian et al. (2012) which utilizes DEA analysis within specific sectors (e.g., Leverty and Grace 2012). We provide detailed definitions for all variables used in the regression analysis in Table 1.

Table 1 Variable definitions

Variable	Definition
CEOPAY <sub>i,t</sub>	Natural log of the cash compensation of the highest paid director which comprises of salary, bonus, fees, allowances and contributions to retirement funds. It is estimated as the median of the highest band of remuneration paid to director as reported in the company's annual report.
ROA <sub>i,t</sub>	Annual return on assets.
ROE <sub>i,t</sub>	Annual return on equity.
TOBINQ	Market value of all outstanding shares and the firm's debts, divided by book value of total assets.
MTBV <sub>i,t</sub>	Market value of firm equity divided by book value of equity.
RET <sub>i,t-1</sub>	Lagged annual stock returns which represent the stock performance.
ABILITY <sub>i,t</sub>	Managerial ability estimated by using the methodology of Demerjian et al. (2012).
SIZE <sub>i,t</sub>	Natural log of total assets.
AGE <sub>i,t</sub>	Number of years since the firm incorporated.
LEVERAGE <sub>i,t</sub>	Financial leverage which is long-term debt divided by total assets.
RISK <sub>i,t</sub>	Standard deviation of firm's daily stock market returns over the previous 12-month period.
SALES <sub>i,t</sub>	Sales growth of the firm which computed by using the formula, (Net sales <sub>i,t</sub> – Net sales <sub>i,t-1</sub> ) / Net sales <sub>i,t-1</sub> .
TENURE <sub>i,t</sub>	Number of years the director has been appointed to the position of CEO.

### Empirical Model and GMM Estimation

In the pay-performance context, firm performance produced by a CEO is not only postulated to have an influence on their pay, in turn, the amount of pay or income received by CEO will affect their managerial and firm performance. It is based on the postulation of Kőszegi and Li (2008) that besides talent or managerial ability, an agent's output also depends on his/her unobservable level of effort or drive to achieve better result or performance when an effective incentive system (e.g. performance-contingent pay) that could elicit such drive or motivation is being put in place. For professional manager whose remuneration is significantly contingent upon the interaction between managerial ability and firm performance, it might become the impetus or drive for achieving better managerial or firm performance. Thus, there is a two-way relationship which runs from performance to CEO pay and vice versa.

When CEO pay and firm performance is simultaneously determined, we need to address the endogeneity issue to produce unbiased and consistent estimates. This endogeneity issue is further constrained by the difficulties of conducting natural experiments and the paucity of strictly exogeneous external instruments. As a result, we are employing the generalised method-of-moments (GMM) dynamic panel model to overcome this endogeneity problem with persistence in CEO pay. Persistence in CEO pay arising through adjustment costs or learning in pay setting, is captured by including a lagged dependent variable ( $CEOPAY_{it-1}$ ). Similar methodology has been adopted by Conyon and He (2012) for their study on CEO compensation and corporate governance in China. Wintoki, Linck, and Netter (2012) also advocate dynamic panel GMM as a reasonable remedy for endogeneity in corporate finance research. In this study, the GMM estimation is achieved by the Arellano-Bond method (Arellano and Bond, 1991) as extended in Blundell and Bond (1998) to construct an appropriate IV and generalized method of moments estimator as recommended by Roadman (2009a,b). In addition, GMM estimation technique produces consistent and efficient estimates in the presence of non-i.i.d. errors (Baum 2006).

In estimating the relations between PPS and the effect of managerial ability, we estimate the following models in GMM setting.

$$CEOPAY_{it} = \beta_0 + \beta_1 CEOPAY_{it-1} + \beta_2 SIZE_{it} + \beta_3 AGE_{it} + \beta_4 LEVERAGE_{it} + \beta_5 RISK_{it} + \beta_6 SALES_{it} + \beta_7 TENURE_{it} + \beta_8 PERFORMANCE_{it} + \beta_9 ABILITY_{it} + \beta_{10} (PERFORMANCE_{it} \times ABILITY_{it}) + \varepsilon_{it} \quad (1)$$

The estimation is first conducted for the whole samples which comprises of all 362 family firms. This is followed by conducting separate regression analysis for 3 sub-samples i.e., firms with family involvement as board directors, family CEO presence on the remuneration committee, and finally the sub-sample of professional managers who are hired to run Malaysian family firms. The classifications of these sub-sample are deduced from and premised on the intentions of testing hypothesis 2, 3 and 4.

## RESULTS AND ANALYSIS

This section discusses the descriptive statistics for the variables included in this study and the panel regression results.

### Descriptive Statistics and Variable Correlation

Table 2 presents the descriptive statistics and variable inflation factor (VIF) results for the variables included in this study. The descriptive statistics of the dependent and independent variables employed in this study are presented in Panel A in Table 2. Variables such as return on assets (ROA), return on equity (ROE), Tobin's Q (TOBINQ), market-to-book value (MTBV), annual stock returns (RETURN) and sales growth (SALES) are winsorized to avoid the effect of extreme values on the accuracy of the following model estimations. Based on the statistics, the logged CEO pay are in the range of 9.852 to 18.920 and average at 13.528. Furthermore, the proxies of firm performance (ROA, ROE, TOBINQ, MTBV and RETURNS) are all having a positive mean which indicate that the performance of public listed family-owned firms in Malaysia from year 2009 to 2015 are performing well. Among the five proxies, TOBINQ contains the highest mean of 0.950, while ROA has the lowest mean of 0.048. On the other hand, the managerial ability showing a wide range from -0.601 to 0.496 with an average ability of -0.014. It indicates that there is a wide variation of managerial ability in generating revenues using company resources among founder, descendant and professional CEOs of family firms in Malaysia.

The pairwise correlation matrix of the variables are presented in Panel B in Table 2. The magnitude of the correlation among the variables are, in general, low except the correlation between ROA and ROE with a value of 0.9251. The correlation between MTBV and TOBINQ is high as well at the value of 0.9009. It is not surprise that these four variables have high correlation value as they are common variables used to proxy the firm performance, therefore they may have similar characteristics and very close data value.

Table 2 Descriptive statistics and correlation

Panel A – Descriptive Statistics								
Variable	Obs.	Mean	Std. Dev.	Min	Max	P25	Median	P75
CEOPAY	2,534	13.571	0.956	9.852	18.920	13.017	13.528	14.097
ROA	2,534	0.048	0.064	-0.196	0.288	0.017	0.046	0.079
ROE	2,533	0.063	0.120	-0.480	0.555	0.017	0.065	0.122
TOBINQ	2,533	0.950	0.515	0.359	4.537	0.679	0.821	1.038
MTBV	2,534	0.873	0.735	0.150	5.710	0.440	0.670	1.030
RETURNS	2,534	0.218	0.539	-0.609	3.412	-0.100	0.087	0.369
ABILITY	2,534	-0.014	0.130	-0.601	0.496	-0.093	-0.002	0.068
SIZE	2,534	12.741	1.231	10.092	18.305	11.893	12.602	13.396
AGE	2,533	23.156	14.646	2.000	95.000	13.000	18.000	32.000
LEVERAGE	2,534	0.083	0.092	0.000	0.664	0.017	0.050	0.119
RISK	2,534	0.032	0.023	0.003	0.457	0.019	0.026	0.037
SALES	2,533	0.086	0.383	-0.708	3.140	-0.076	0.041	0.163
TENURE	2,534	8.174	2.411	1.000	45.015	4.998	10.004	14.999

  

Panel B – Variable Correlation							
	CEO PAY	ROA	ROE	TOBIN-Q	MTBV	RETURNS	ABILITY
CEOPAY	1						
ROA	0.2282	1					
ROE	0.2555	0.9251	1				
TOBINQ	0.1611	0.4688	0.3962	1			
MTBV	0.1795	0.4529	0.405	0.9009	1		
RETURNS	0.0136	0.275	0.2687	0.2947	0.1886	1	
ABILITY	-0.0225	0.2651	0.2348	0.1432	0.1352	0.0831	1
SIZE	0.5893	0.1252	0.1871	0.0754	0.1039	-0.0305	-0.0495
AGE	0.1232	-0.0588	-0.0336	-0.0286	-0.0174	-0.0353	0.0085
LEVERAGE	0.1633	-0.0588	-0.0136	0.0181	0.0239	-0.0436	-0.112
RISK	-0.3135	-0.2644	-0.256	-0.1841	-0.2256	0.0455	-0.0916
SALES	0.0034	0.187	0.206	0.0751	0.0729	0.0684	0.0541
TENURE	0.1218	0.0945	0.0884	-0.0398	-0.0403	0.0052	-0.0207

Table 2 Cont.

Panel B Cont.						
	SIZE	AGE	LEVERAGE	RISK	SALES	TENURE
CEOPAY						
ROA						
ROE						
TOBINQ						
MTBV						
RETURNS						
ABILITY						
SIZE	1					
AGE	0.3359	1				
LEVERAGE	0.3977	0.1038	1			
RISK	-0.3501	-0.0957	-0.0299	1		
SALES	0.0861	0.0574	0.0752	-0.0771	1	
TENURE	-0.0034	0.024	-0.0567	-0.0476	-0.0424	1

We conducted a series of sample mean tests on CEO pay and the list of five performance measures to see whether the further issues that we aim to investigate, i.e. professional manager, CEO duality and CEO presence on the remuneration committee do matter on the pay and performance variables. Table 3 reports the results of the test of equal mean for these different sample of firms where firms with professional managers have higher performance but firms with duality and CEO presence on the remuneration committee have significantly lower performance. Firms with professional manager deliver statistically higher ROA and ROE, while firms with CEO duality have statistically lower ROA but statistically larger TOBINQ. For firms with CEO presence on the remuneration committee, the ROA performance is also statistically lower. These test results show that family firms managed by professional CEO financially outperformed those managed by family CEO. It seems to suggest that concentration of board power (governance and executive) onto a single individual and family CEO having substantial influence on remuneration matters do have undesirable effects on firm performance. These observations open up concerns to be answered in our further issue's investigations.

Table 3 Test of Equal mean between different types of firms

	Professional vs Family Manager	Duality vs Non-Duality	Presence vs Absence of CEO on Remuneration Committee
CEOPAY	0.1624*** (0.0003)	-0.1952** (0.0015)	-0.1397*** (0.0004)
ROA	0.0101** (0.0041)	-0.0059* (0.0692)	-0.0046* (0.0797)
ROE	0.0121* (0.0730)	-0.0033 (0.5622)	-0.0078 (0.1090)
TOBINQ	0.0214 (0.3352)	0.0428* (0.0734)	0.0099 (0.6461)
MTBV	0.0084 (0.8052)	0.0482 (0.1386)	-0.0196 (0.5311)
RETURNS	0.0169 (0.5401)	0.0489 (0.0654)	-0.0021 (0.9263)

### The Effect of Firm Performance on CEO Pay

Table 4 reports panel regression of the baseline model where managerial ability and its interaction is excluded. This is the baseline model with year effects to control for unobserved time heterogeneity. The AR(2) test shows that there is no second order serial correlation (or higher orders) in the underlying sample data, and the Sargan test of instrument validity indicates that the model is appropriate as the instrument set used to identify the endogenous variables is valid.

The regression results show that lagged CEO pay is positive and significant across the five firm performance measures. It shows that pay is highly persistent and takes time to adjust to its long-run equilibrium. This finding is in line with the postulation of Conyon and He (2012) that wage setting for employees like the CEO is both a stationary incentive model and a dynamic learning process. CEO pay not only depends on a static explicit pay-for-performance contract, it is also influenced by the CEO's innate/unobservable time-invariant capability or talent. Thus, the CEO pay is a dynamic learning process (it is serially correlated) where the board has to gradually learn about CEO's capability (Conyon, 1997) and cannot quickly adjust to the target levels due to the existence of adjustment costs (Oi 1962). The regression coefficients obtained for lagged CEO pay in this study (0.6741 – 0.6845) are even higher than that obtained by



Canyon and He (2012) for firms in China (0.27 – 0.30). Hence faster CEO pay adjustments are taking place in Malaysia than their counterparts in China.

CEO pay is positively related to firm performance for the book-based performance measures such as ROA and ROE, but for market-based performance measures like TOBINQ and MTBV, the coefficient of firm performance is negative and significant. It is positive significant for stock return. In short there is a mix-result for PPS using different performance measures. However, for firms in China, CEO pay is found positively and significantly related to both book-based and market-based firm performance measured by stock returns (and its lagged), returns on assets and market-to-book (Canyon and He, 2012). On the contrary, CEO pay of S&P 500 companies is positively related to stock return and MTBV but not return on asset (Song and Wan, 2019).

In terms of the controlled variables, SIZE, AGE, RISK, and TENURE are all statistically significant, but not firm LEVERAGE and SALES. The significant negative relationship between firm age and CEO pay of Malaysian family firms is less comprehensible as younger firms have neither the ability nor willingness to pay their CEOs more. The possible exception is either these younger firms have better financial performance or are employing CEO with higher managerial ability than the older firms. Nevertheless, the regression coefficients show that the magnitude of the increase in CEO pay with the decrease in firm Age is rather small. Leverage does not in any significant manner relate to CEO pay of Malaysian family firms. It might be due to the fact that these sample firms are lowly leveraged with a median and mean value of 5% to 8.3% respectively. Thus, these minimal obligations of servicing external long-term debts do not have much bearing on the ability of family firms to pay their CEOs.

We estimated the full model with managerial ability and its interaction with firm performance and reported the results in Table 5. The results are basically consistent with Table 4, so the focus is on ability and its interaction with various measures of firm performance. Ability alone does not relate to CEO pay for all five firm performance measures for this whole sample set. On the contrary, coefficient for the interaction term between managerial ability and firm performance is positive and significantly related to CEO pay for the two book-based but not market-based performance measures. The coefficients of interaction term for ROA and ROE measures are 3.6111 and 2.1748, respectively. The results imply that for every 1% increase (decrease) in managerial ability, the slope of the firm performance (ROA/ROE) with respect to PPS of CEO increases (decreases) by 3.61% and 2.17% respectively. In other words, it shows the incremental effect of managerial ability on PPS and a positive coefficient indicates that PPS is steeper for the more able CEOs (Gan and Park, 2016).

This finding validates Hypothesis 1 as managerial ability is found positively associated with the CEO pay-for-performance sensitivity (PPS) where the latter is captured by the regression coefficients related to the PPS. The significant regression coefficient of this interaction term conforms to the suggestion of Darrough and Melumad (1995) and Milbourn (2003) that to maximize firm value, firm needs to give higher incentives to the high-ability manager to induce him/her to exert more effort. Darrough and Melumad (1995) further showed that firms were using PPS in compensation contracts to attract better managers and thus compensating them according to their ability. Gan and Park (2016) also reported a positive and significant interaction between ability and firm performance on total CEO compensation but it is for interaction between ability and stock return.

### **Further Analysis with Professional CEO**

Table 6 report the results for managerial ability on PPS when the CEO is a professional CEO. Managerial ability of professional manager is positively and significantly related to his/her pay for all but one measure of firm performance of Malaysian family firms. On the other hand, the regression coefficients between CEO pay and firm performance are negative and statistically significant across all measures of firm performance.

These results reveal that Malaysian family firms are practicing behaviour-based rather than outcome-based criteria when structuring the pay of professional CEO. It happens when family firms are able to monitor the behaviour and effort of the recruited professional CEO by linking the CEO pay to his/her decisions and actions which are closely associated with his/her managerial skill or talent. This is supported by the significant positive association between ability and CEO pay of professional CEO. Gan and Park (2016) have also reported a significant positive relationship between ability and total CEO compensation.

On the other hand, family firms may resort to outcome-based criteria to reward professional CEO by linking CEO pay to firm performance. It happens when family firms are unable to closely monitor the

behaviour and effort; and also do not know the CEO's ability without exerting great effort and incurring large amount of resources. This argument does not seem to gain support here as there is a significant negative relationship between professional CEO pay and firm performance. Indeed, it is more in line with the comments made by Securities Commission Malaysia (2019) that "Malaysian listed companies which are ranked high in terms of CEO remuneration, may not necessarily ranked high in terms of returns on equity (ROE) and returns on asset (ROA), and vice versa".

For the interaction term between professional CEO ability and PPS, the regression coefficient is positive and statistically significant. Furthermore, it can be seen that the magnitude of coefficient is higher than the full sample model. For the sub-sample of professional CEO, the coefficient of the interaction term is 4.4889 (ROA) as compared to the coefficient of 3.6111 for full sample model. Similarly, the coefficient of the interaction term for professional CEO (ROE) is 2.5260 as compare to the coefficient of 2.1748 for the full sample model. This implies that professional CEOs who are able to generate better revenues (and thus better firm performance) due to their higher ability tend to get higher pay as compared to family CEOs. In other words, higher PPS is given to more able professional CEOs to attract such talented managers and induce them to exert more effort. Thus, Hypothesis 2 which predicts a positive correlation between professional CEO managerial ability and PPS is supported.

### **Further Analysis with Family CEO Presence on the Remuneration Committee and CEO Chairing the Board (Duality)**

A popular channel where agency problem arises is when family CEO is present in the remuneration committee (RC). It provides the idea setting for opportunistic CEO behaviour where favourable pay structures and packages are being formulated even when such CEOs are excluded from discussions relating to their own remuneration (Boyle and Roberts, 2013). Table 7 reports the result where the coefficients of the interaction term across all the five performance measures are also negative and statistically significant. Nevertheless, the values of these coefficients for all but one of the firm performance measures are smaller when compared to those firms with family member duality (Table 8).

From our data, approximately one quarter of the remuneration committee members in active family firms are constituted of family members. It goes against the recommendation of MCCG 2012 that majority of the RC members should comprise of independent directors. In some of these active Malaysian family firms, family CEO is even found chairing the RC. This is in great contrast to the situation in Australia that compensation committees are stipulated to be composed of a minimum of three members, with a majority of independent directors, and chaired by an independent director (Kanapathippillai et al., 2019).

The regression results showed that the presence of family CEO on RC does have a significant negative influence on the incremental effect of managerial ability on the PPS. Family CEO's presence on RC has disorientated the positive incremental effect of managerial ability in aligning remuneration scheme of CEO with firm performance as depicted by the case of professional CEO. Nevertheless, the negative effect on interest alignment resulting from the presence of family CEO on RC is lesser in magnitude compared to when family CEO is also appointed as the board chairman. This finding is expected as 45% of active Malaysian family firms has family CEO as the serving committee member of RC. With such CEO's influence on the pay-setting process, Anderson and Bizjak (2003) predicted that the CEO will act opportunistically by extracting high levels of performance insensitive pay such as cash remuneration. However, this prediction is not supported by the regression results of Table 7. The pay of family CEO is still significantly related to book-based and market-based firm performance despite his/her presence on the RC. From corporate governance perspective, the significant undesirable outcome (which arises from family CEO presence on RC) is it reverses the positive role of managerial ability in CEO pay-performance alignment.

Anderson and Bizjak (2003) also found that the presence of CEO on RC does not lead to opportunistic pay structure or more specifically RC which consists of insiders or the CEO does not award excessive pay. Boyle and Roberts (2013) and Kanapathippillai et al. (2019) even found a significant negative association between CEO pay and CEO presence on RC. This negative association is viewed by Boyle and Roberts (2013) as the greater restraint displayed by CEO despite the open invitation for CEOs to behave opportunistically.

Table 8 reports the results on the sample where firms are having family CEO appointed as the chairman of the board. The managerial ability of family CEOs is positively and significantly related to their pay for almost all measures of firm performance with the exception of ROA. Similar significant positive

association is also found between two book-based (ROA and ROE) and one market-based (MTBV) firm performances and CEO pay. These results indicate that Malaysian family firms are utilizing both behaviour-based and outcome-based criteria to reward their own CEOs. Nevertheless, the emphasis is inclined more towards managerial ability than firm performance as there are two instances of significant negative relationship between firm performance (Tobin's Q and Returns) and CEO pay.

The coefficient of the interaction term between managerial ability and pay-performance is negative and consistently for all the five cases. The result implies that when the family CEO has duality role, there is a negative relationship between PPS and managerial ability. The negative coefficient of the interaction term is consistent with our Hypothesis 4 where managerial ability is predicted to be negatively correlated with PPS when there is family CEO duality. From the perspective of corporate governance, the negative coefficient of the interaction term might indicate the possibility of agency issue. Firstly, a negative coefficient implies that family firms do not give stronger incentives to attract and retain those family members with high ability to become CEOs in their companies and continue to maintain their position. The absence of incentive pays also do not induce those with high ability to exert more effort to improve firm performance. It goes against the interest alignment proposition of agency theory in resolving agency conflict. Secondly, those CEOs that remained might have mediocre ability and their pays are being ratchet up irrespective of firm performance. This phenomenon is evident from the significant negative association between market-based firm performance (e.g. Tobin-Q and Returns) and CEO pay.

In fact, the presence of family chairman in company board is rather common in Malaysian family firms where 50% of active family firms (e.g. those family firms which are managed by family CEOs) in the samples have appointed a family member to hold such important position. Nonetheless, with the fact that 20% of these active family firms' CEO is also the board chairman, the positive impact of managerial ability on the PPS observed for professional CEOs is being reversed. This reversal indicates expropriation of minority shareholders' interests by major shareholder who is vested with both the managerial power of running the firm; and the supervisory power of seeing the proper functioning of the firm's board.

Table 4 GMM regression of CEO pays on firm performance measures

	ROA	ROE	TOBIN-Q	MTBV	RETURNS
Constant	1.6278*** (0.3348)	0 (.)	1.4572*** (0.3068)	0 (.)	0 (.)
SIZE	0.2106*** (0.0282)	0.2067*** (0.0285)	0.2365*** (0.0289)	0.2395*** (0.0306)	0.2190*** (0.0268)
AGE	-0.0073*** (0.0025)	-0.0071*** (0.0025)	-0.0063** (0.0027)	-0.0066** (0.0026)	-0.0077*** (0.0026)
LEVERAGE	0.0883 (0.2238)	0.0941 (0.2234)	-0.0955 (0.2372)	-0.0979 (0.2389)	0.1214 (0.2252)
RISK	1.8032** (0.8144)	1.7407** (0.8162)	1.4441* (0.8266)	1.3398* (0.8043)	1.4748* (0.8109)
SALES	0.0353 (0.0301)	0.0402 (0.0297)	0.0590* (0.0313)	0.0534* (0.0306)	0.0258 (0.0303)
TENURE	0.0962*** (0.0180)	0.0955*** (0.0179)	0.1111*** (0.0188)	0.1086*** (0.0184)	0.0987*** (0.0176)
PERFORMANCE	0.4508* (0.2695)	0.2485* (0.1325)	-0.1077* (0.0636)	-0.0728* (0.0435)	0.1142*** (0.0412)
Lag(CEO PAY)	0.6801*** (0.0246)	0.6845*** (0.0247)	0.6752*** (0.0258)	0.6748*** (0.0260)	0.6741*** (0.0250)
N	2171	2171	2171	2171	2171
J	115	115	115	115	115
AR(1)	-5.7005*** (0.0000)	-5.7341*** (0.0000)	-5.66*** (0.0000)	-5.7367*** (0.0000)	-5.7636*** (0.0000)
AR(2)	-1.2375 (0.2159)	-1.2283 (0.2193)	-1.25 (0.2113)	-1.305 (0.1919)	-1.1058 (0.2688)
Sargan	111.4884 (0.1842)	111.418 (0.1854)	105.9824 (0.2973)	105.6796 (0.3045)	109.6344 (0.2185)
Hansen	97.3385 (0.5284)	96.751 (0.5452)	96.1206 (0.5632)	94.3025 (0.6147)	93.7173 (0.6311)

Table 5 GMM regression of CEO pays on firm performance measures and managerial ability

	ROA	ROE	TOBIN-Q	MTBV	RETURNS
Constant	1.6216*** (0.3559)	0 (.)	0 (.)	1.3475*** (0.3529)	1.5171*** (0.3328)
SIZE	0.2028*** (0.0291)	0.1981*** (0.0288)	0.2329*** (0.0309)	0.2403*** (0.0330)	0.2037*** (0.0278)
AGE	-0.0068*** (0.0025)	-0.0067*** (0.0025)	-0.0055** (0.0028)	-0.0054** (0.0027)	-0.0056** (0.0027)
LEVERAGE	0.117 (0.2468)	0.1201 (0.2475)	-0.1776 (0.2641)	-0.2376 (0.2646)	0.0695 (0.2433)
RISK	1.9860** (0.9660)	2.0237** (0.9235)	1.3603 (0.9514)	1.2715 (0.9418)	1.2404 (0.9251)
SALES	0.0348 (0.0327)	0.0303 (0.0327)	0.0432 (0.0329)	0.047 (0.0323)	0.0241 (0.0323)
TENURE	0.0943*** (0.0193)	0.0888*** (0.0195)	0.1127*** (0.0204)	0.1137*** (0.0200)	0.0952*** (0.0190)
PERFORMANCE	0.3724 (0.3031)	0.2647* (0.1541)	-0.0983 (0.0712)	-0.0855* (0.0468)	0.1068** (0.0436)
ABILITY (A)	0.0739 (0.1921)	0.1119 (0.1872)	0.7226 (0.4876)	0.2407 (0.3161)	0.0668 (0.1722)
PERFORMANCE *A	3.6111* (1.9701)	2.1748* (1.1214)	-0.6073 (0.5047)	-0.1004 (0.2922)	-0.0921 (0.3518)
Lag(CEO PAY)	0.6868*** (0.0265)	0.6947*** (0.0264)	0.6827*** (0.0287)	0.6769*** (0.0289)	0.6929*** (0.0271)
N	2171	2171	2171	2171	2171
J	115	115	115	115	115
AR(1)	-5.7643*** (0.0000)	-5.7860*** (0.0000)	-5.6091*** (0.0000)	-5.8461*** (0.0000)	-5.6337* (0.0000)
AR(2)	-1.3178 (0.1876)	-1.2530 (0.2102)	-1.2100 (0.2263)	-1.3344 (0.1821)	-1.1241 (0.2610)
Sargan	109.7677 (0.1771)	109.6341 (0.1794)	100.0122 (0.3967)	96.8039 (0.4865)	107.9164 (0.2108)
Hansen	93.8154 (0.5727)	92.3241 (0.6153)	95.2358 (0.5317)	90.1403 (0.6760)	90.0001 (0.6798)

Table 6 GMM regression of CEO pays on firm performance and managerial ability for family firms with professional manager

	ROA	ROE	TOBIN-Q	MTBV	RETURNS
Constant	3.9508*** (0.1521)	0 (.)	0 (.)	0 (.)	4.0508*** (0.1456)
SIZE	0.2168*** (0.0103)	0.2116*** (0.0093)	0.2360*** (0.0084)	0.2241*** (0.0090)	0.1998*** (0.0147)
AGE	-0.0029*** (0.0004)	-0.0033*** (0.0004)	-0.0042*** (0.0005)	-0.0036*** (0.0005)	-0.0026*** (0.0004)
LEVERAGE	-0.1960** (0.0761)	-0.1857** (0.0728)	-0.4743*** (0.0826)	-0.3224*** (0.0837)	-0.151 (0.0925)
RISK	-1.1414*** (0.3979)	-1.2430*** (0.3577)	-3.7725*** (0.4491)	-2.7440*** (0.5023)	-0.7633* (0.4104)
SALES	0.1250*** (0.0145)	0.1468*** (0.0151)	0.1049*** (0.0177)	0.0892*** (0.0160)	0.0984*** (0.0136)
TENURE	0.0558*** (0.0065)	0.0582*** (0.0079)	0.0238*** (0.0075)	0.0397*** (0.0072)	0.0567*** (0.0058)
PERFORMANCE	-0.1856** (0.0833)	-0.1809*** (0.0560)	-0.3254*** (0.0418)	-0.1341*** (0.0113)	-0.0303** (0.0133)
ABILITY (A)	0.2991*** (0.0525)	0.3239*** (0.0641)	-0.9381*** (0.1627)	0.2950*** (0.0550)	0.5159*** (0.0543)
PERFORMANCE *A	4.4889*** (0.9554)	2.5260*** (0.4996)	1.8514*** (0.1946)	0.5062*** (0.0484)	-0.0136 (0.0935)
Lag(CEO PAY)	0.4984*** (0.0074)	0.5157*** (0.0073)	0.4762*** (0.0076)	0.4851*** (0.0067)	0.5144*** (0.0103)
N	389	389	389	389	389
AR(1)	-2.8178*** (0.0048)	-2.8427*** (0.0045)	-2.7178*** (0.0066)	-3.0933*** (0.0020)	-2.6236*** (0.0087)
AR(2)	-1.6065 (0.1082)	-1.6333 (0.1024)	-1.5615 (0.1184)	-1.5303 (0.1259)	-1.6409 (0.1008)
Sargan	109.6135 (0.3094)	110.2163 (0.2954)	88.2313 (0.8498)	98.2836 (0.6130)	111.2916 (0.2712)
Hansen	77.2089 (0.9730)	81.5642 (0.9412)	72.2838 (0.9907)	75.0614 (0.9825)	75.4212 (0.9812)

Table 7 GMM regression of CEO pays on firm performance and managerial ability for family firms with family CEO presence on the remuneration committee

	ROA	ROE	TOBIN-Q	MTBV	RETURNS
Constant	0 (.)	2.9442*** (0.1927)	0 (.)	2.9060*** (0.2309)	2.4569*** (0.2198)
SIZE	0.2011*** (0.0155)	0.1825*** (0.0153)	0.1899*** (0.0183)	0.1959*** (0.0179)	0.1841*** (0.0178)
AGE	-0.0012 (0.0009)	-0.0013 (0.0009)	-0.0016* (0.0009)	-0.0021** (0.0010)	-0.0014 (0.0009)
LEVERAGE	0.1441 (0.0980)	0.1018 (0.0972)	0.0181 (0.0937)	0.0198 (0.0961)	-0.0138 (0.1079)
RISK	0.1646 (0.6329)	0.1619 (0.6927)	-0.7911 (0.5470)	-1.4565** (0.6462)	-1.5916*** (0.5882)
SALES	0.0065 (0.0099)	0.0085 (0.0104)	0.0309*** (0.0114)	0.0437*** (0.0104)	0.0651*** (0.0118)
TENURE	0.0312*** (0.0083)	0.0287*** (0.0081)	0.0385*** (0.0099)	0.0312*** (0.0093)	0.0127 (0.0084)
PERFORMANCE	1.6286*** (0.1520)	0.8403*** (0.0782)	0.1910*** (0.0256)	0.0885*** (0.0171)	-0.0334*** (0.0123)
ABILITY (A)	0.2765*** (0.0734)	0.2597*** (0.0711)	1.6267*** (0.1913)	0.9780*** (0.1518)	0.7618*** (0.0779)
PERFORMANCE *A	-2.6478*** (0.9529)	-0.9858* (0.5645)	-1.2967*** (0.1973)	-0.6392*** (0.1506)	-1.3777*** (0.1077)
Lag(CEO PAY)	0.5930*** (0.0140)	0.6116*** (0.0133)	0.6161*** (0.0144)	0.6055*** (0.0163)	0.6579*** (0.0155)
N	805	805	805	805	805
AR(1)	-3.9983*** (0.0001)	-3.9801*** (0.0001)	-3.8460*** (0.0001)	-3.8965*** (0.0001)	-4.1632*** (0.0000)
AR(2)	1.2926 (0.1962)	1.3361 (0.1815)	1.1939 (0.2325)	1.1216 (0.2620)	0.9348 (0.3499)
Sargan	81.5213 (0.9416)	82.6169 (0.9304)	83.6976 (0.9181)	83.9673 (0.9148)	85.6171 (0.8925)
Hansen	95.4655 (0.6885)	94.0628 (0.7240)	98.7126 (0.6012)	101.8342 (0.5140)	97.1961 (0.6426)

Table 8 GMM regression of CEO pays on firm performance and managerial ability for family firms with family CEO chairing the board.

	ROA	ROE	TOBIN-Q	MTBV	RETURNS
Constant	0 (.)	0 (.)	2.4628*** (0.1425)	2.0945*** (0.0804)	0 (.)
SIZE	0.1492*** (0.0120)	0.1340*** (0.0083)	0.1627*** (0.0087)	0.1292*** (0.0101)	0.1676*** (0.0042)
AGE	0.0014 (0.0008)	0.0009 (0.0008)	-0.0017** (0.0007)	-0.0012* (0.0007)	-0.0036*** (0.0007)
LEVERAGE	1.2484*** (0.0921)	1.0810*** (0.0720)	0.7891*** (0.0890)	1.3340*** (0.0702)	0.8762*** (0.0854)
RISK	0.8664* (0.5182)	0.4486 (0.4029)	-3.1042*** (0.4804)	0.8818** (0.3482)	-2.6977*** (0.5921)
SALES	-0.0405*** (0.0081)	-0.0407*** (0.0060)	0.0613*** (0.0094)	0.0233** (0.0109)	0.0558*** (0.0056)
TENURE	0.0405*** (0.0068)	0.0368*** (0.0083)	0.0488*** (0.0058)	0.0685*** (0.0063)	0.0437*** (0.0076)
PERFORMANCE	2.9749*** (0.0821)	1.6780*** (0.0534)	-0.0498*** (0.0107)	0.2904*** (0.0223)	-0.1420*** (0.0105)
ABILITY (A)	0.2089*** (0.0447)	0.0925 (0.0625)	2.0433*** (0.2260)	1.4445*** (0.0794)	0.3093*** (0.0395)
PERFORMANCE *A	-10.4043*** (0.8322)	-2.1953*** (0.3838)	-2.2463*** (0.2474)	-1.7888*** (0.1032)	-0.5025*** (0.0825)
Lag(CEO PAY)	0.6626*** (0.0083)	0.6838*** (0.0071)	0.6770*** (0.0086)	0.7001*** (0.0103)	0.6785*** (0.0073)
N	343	343	343	343	343
J	121	121	121	121	121
AR(1)	-2.3221** (0.0202)	-2.3494** (0.0188)	-2.1894** (0.0286)	-1.8915* (0.0586)	-2.0998** (0.0357)
AR(2)	-0.2796 (0.7798)	-0.0451 (0.9640)	-0.3308 (0.7408)	0.0538 (0.9571)	-0.5902 (0.5551)
Sargan	80.2536 (0.9527)	85.9777 (0.8871)	81.3249 (0.9434)	73.7064 (0.9870)	92.3711 (0.7645)
Hansen	66.0682 (0.9982)	65.8587 (0.9984)	62.6522 (0.9994)	66.2439 (0.9981)	66.1274 (0.9982)

## CONCLUSION

This study examines whether the remuneration of professional and family CEO of Malaysian family firms is related to firm performance and managerial ability as an effective means to resolve agency conflicts. We provided empirical evidence that Malaysian family firms are utilizing behaviour-based approach in paying professional CEOs where their remuneration is closely related to managerial ability. We also documented that agency issue is effectively dealt with as professional CEO with higher ability is accorded with larger pay-performance sensitivity. On the other hand, the remuneration of family CEOs who are appointed as board chairman and presence on remuneration committee is found positively associated with book-based but negatively related to market-based firm performance. Minority shareholders are facing Type II agency conflict arising from this negative association between family CEO pay and market-based firm performance. This risk of minority shareholders' expropriation is further heightened by the presence of a significant negative sensitivity between managerial ability and PPS of family CEO. Nevertheless, this expropriation risk has been mitigated as family CEOs' pay is positively associated with their managerial ability of generating revenues. In short, we show that minority shareholders of Malaysian family firms are facing the risk of Type II agency conflict where family CEO managerial ability is negatively correlated with the PPS. While the positive impact of managerial ability of professional CEO on PPS not only mitigates Type I agency conflict, it might also provide the motivational and incentive effect to further enhance firm performance. On the contrary, the entrenchment effect associated with the negative correlation between managerial ability of family CEO and the PPS might be detrimental to future performance. Arising from this theoretical postulation, a future study could be conducted to examine the relation between CEO remuneration and future performance of Malaysian family firms.

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