# TOP MANAGEMENT TEAM PAY, FIRM SIZE AND PERFORMANCE RELATIONSHIP IN SAUDI ARABIAN FIRMS

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OPEN ACCESS

**How to cite this paper:** Altuwaijri, B., & Kalyanaraman, L. (2017). Top management team pay, firm size and performance relationship in Saudi Arabian firms. *Corporate Board: role, duties and composition, 13(1),* 21-27. http://dx.doi.org/10.22495/cbv13i1p2



**ISSN Online:** 2312-2722
**ISSN Print:** 1810-8601

**Received:** 23.11.2016
**Accepted:** 25.01.2017

**JEL Classification:** M12, M52, L25, J33, J24
**DOI:** 10.22495/cbv13i1p2

## Abstract

We study the relationship of top management team's (TMT) pay with firm performance with a sample of 80 firms listed on Saudi stock market. We find that firm performance and firm size emerge as significant variables in explaining TMT compensation. This is in line with many of the earlier studies which proxy the firm performance as the ability of the firm to pay higher compensation and firm size as a proxy for complexity of operations. We find that large firms and firms with better financial performance pay higher compensation to their TMT. When we group the firms into large firms and small firms, we find that firm size and firm performance are significant variables that influence TMT pay only in case of large firms. Our results show that firm size does not influence TMT pay and only firm performance impacts TMT pay.

**Keywords:** Top Management Team, Compensation, Firm Performance, Firm Size

## 1. INTRODUCTION

Existing literature focuses on the study of chief executive officer's (CEO) compensation and how their level of compensation affects their tendency to assume risk (Werner & Ward, 2004) and impacts firm performance. (See for example, Sun et al., 2010) Research on compensation paid to top management team (TMT) is limited. The lack of attention paid to TMT compensation can be attributed to the implied assumption that the findings of CEO compensation analysis can be generalized to include the TMT compensation. However, existing theory and research findings suggest contrary. (See for example, Henderson & Fredrickson, 2001) The primary responsibility and the required skill set for the job are entirely different for the CEO and TMT, though their organizational roles are supplementary to each other. Tournament model suggests considerable variation in compensation among the top executive and the rest of the team. This is to motivate the executives who have not still arrived at the top to compete for the top position. The compensation gap between the CEO and the TMT will prove to be an incentive to motivate them to align their goals with that of the strategic goals of the firm and with the interests of the owners of the firm. (Jensen & Murphy, 1990) In the process higher levels of firm performance is achieved. (Baysinger & Hoskinsson, 1990) It may be argued that the complexity of operations of modern large corporations warrants corroborative efforts by all the executives. Delegation and interdependence are the integral part of the management strategy. Besides, the upper echelon theorists show that a firm's strategies are the result of the effort of the TMT as a whole and not just the CEO. (Hambric, Cho & Chen, 1996) Changes in the TMT composition can influence the strategy of the firm. (Yokota & Mitsuhashi, 2008) Finkelstein and Hambrick (1996) show that TMT play a pivot role in the strategic management of the firm. Compensation can be used to attract and retain TMT. (Wade, Proac & Pollock, 1997). Pay can affect the manager's sensitivity to the environment (Gomez-Mejia, 1994), willingness to assume risk (Jensen & Murphy, 1999), TMT unity and dynamics. (Hambrick, 1995) In a competitive market, firms compete for the best talents. Firms with complex operations and growth are compelled to pay more for hiring managers with high caliber. Similarly, the ability to pay a higher compensation comes from the financial performance of the firm. Agency theory suggests the use of pay to mitigate the agency problems (See for example, Jensen & Meckling, 1976). That pay-performance relationship can be

used for agency cost reduction is the focus of many earlier works. (See for example, Buck et al., 2003) In addition to this, we also expect the complexity of the firm's operations to impact the TMT pay. (See for example Fatemi et al., 2003). We study the relationship of TMT pay with firm performance and firm size.

Our study contributes to the existing literature at least in three significant ways: (1) As the previous literature that analyze the relationship between TMT compensation and firm performance is limited, our study contributes to fill this gap in literature; (2) Saudi Arabia has a compensation structure for the top executives which is not similar to that of many of the western countries in the world. Managers in Saudi Arabia are paid a fixed salary with only around 5% of the compensation as variable. Hence, study of the relationship between TMT compensation and firm performance in a country where pay for performance is not practiced will add an important dimension to the existing literature; (3) We group the firms into large firms and small firms and study the link between TMT compensation and firm performance. Previous works show that firm size is one of the important determinants of executive compensation. But we study TMT compensation and firm performance relationship in large firms and small firms and show that firm size as a determinant of TMT compensation becomes insignificant in case of small firms which shows that TMT pay is a function of the firm's performance and not its size in small firms. This finding suggests that the strong association between executive compensation and firm size found by the previous studies may have limitations if generalized as it may not be true for firms of all sizes.

The paper is organized in five sections. This first section introduces the topic and outlines the contribution of this study to the existing literature. Section 2 presents the theoretical background and existing works on the topic. Section 3 discusses the TMT compensation structure and its growth over the study period, 2010-2015 for the sample firms. Section 4 describes the sample, defines the variables studied and the models tested. Section 5 presents the results of the analysis and interprets them.

## 2. THEORETICAL BACKGROUND

### 2.1. Agency theory

The theory assumes that managers will not work towards shareholders' wealth maximization unless motivated by the incentives in the compensation design. Agency theory argues that managers pursue their self-interests at the cost of shareholders' interests. (See for example, Shleifer and Vishny, 1997). For instance, managers may not distribute cash flows generated from the business even in the absence of profitable projects for investment. (Jensen, 1986) or focus on empire building (Jensen, 1976). Problem of entrenched managers who do not deliver good performance may also persist in some firms. (Shleifer and Vishny 1989) Bebchuk and Fried (2003) argue that managers may focus on protecting personal power rather than concentrating on the profit-maximizing goal. Executive compensation structuring can offer solution to these problems. Compensation can motivate the executives to deliver good performance and may include sufficient incentives to align the interests of the managers in line with the strategic goals of the firm and the interests of the shareholders of the firm. (Core, Guay and Larcker, 2001). The optimal contracting may mitigate the agency problem. However, due to the cap that exist on the maximum compensation, regulatory or otherwise, that can be paid to the executives, compensation design alone cannot provide a solution to the agency problem. (Jensen and Murphy, 1990)

Managerial power approach to executive compensation has assumed importance in recent years. (See for example, Bebchuk and Fried, 2004) Managerial influence on the compensation negotiation may extract high costs from shareholders and may impact the performance of the firm. (Bertand and Mullainathan, 2001). Compensation may not be an incentive offered to the managers to mitigate the agency problem, but the result of the rent extraction negotiations carried out by the powerful managers. This can actually prove to be a cost to the shareholders.

However, executive compensation can be viewed as the outcome of both the strategy aimed at delivering value-maximizing efforts by the executives and also impacted by the negotiations carried out by the powerful managers. While agency theory shows how TMT pay can be designed to align their interests with the interests of the shareholders, the tournament theory and the behavioral theory show how pay dispersion among the members of TMT pay should be structured.

### 2.2. Tournament theory

This theory assumes that the managers can be motivated by rewards associated with promotions. Many managers in a firm work hard for promotion to a single job at a higher level that offers higher pay. This will forcefully extract higher productivity from mangers who compete for the promotion which enhances the performance of the firm. In order to decide the winner of the competition, the relative performance of all the contestants are considered rather than their absolute performance. The theory also argues that the administrative control forces hard work on managers. (Jensen & Meckling, 1976) The theory argues that the rewards increase with the level of the position from promotion. By extracting maximum possible efforts from the managers by relating the criteria for the promotion to the maximization of firm performance. Managers are forced to align their goals and efforts in line with those of the shareholders. Because of the requirement of increased efforts from managers who strive for the promotion, the competition provides incentive for acquiring the right skills for the higher position before getting appointed to that position. This theory argues that the pay gap will widen at the higher levels of the firm and the highest pay is paid to the CEO of the firm. Managers at the lower levels are remunerated not for their present job but also for being productive over their tenure. Bognanno (2001) provides evidence to the tournament theory by describing the conditions in the firm that support the theory like the possibility of promotions within the firm and increase in pay with the levels of the firm.

### 2.3. Behavioral theory

Competition is the basis of tournament theory while collaboration is the basis of behavioral theory. The underlying assumption of tournament theory is the monetary rewards associated with the promotions that motivate the managers to strive for higher productivity through enhanced efforts. But behavioral theory assumes that monetary incentives along cannot provide sufficient incentive as they are driven by sociopolitical factors. The behavioral theory argues that manages tend to compare their pay with that of their colleagues and may get an impression that they are paid less than what they deserve. Cowherd and Levine (1992) put forth the relative deprivation theory which argues that the employees in a firm compare their remuneration with the employees at a higher level and conclude that they are deprived of their due pay. This will push the employees to focus on self and put in efforts to impress manages at higher levels and concentrate on elevating their reputation while hampering the reputation of the peers. (Milgrom and Roberts, 1988) Hence the pay should be more or less equal in spite of the differences in the individual productivity.

All the theories discussed above outline the strategies for pay structure of the managers. Agency theory argues that the TMT pay design can be used to mitigate the agency problem by aligning the goals of the managers with those of the shareholders. While the tournament theory propagates for a wide gap between the CEO pay and the pay of the rest of the executives, the behavioral model supports less disparity between the CEO pay and the TMT pay as perception of justice in pay is a prerequisite for a collaborative team work by the managers at the top. Hence, the existing vast literature on CEO pay may not be applicable to TMT pay. Hence, there is a need for research on TMT pay and its determinants. We study the pay-performance relationship in Saudi Arabian listed firms.

## 3. PREVIOUS WORKS

The existing literature that evaluate the relationship of CEO pay and firm performance is abundant but works that relate TMT pay and firm performance are extremely limited. Carpenter and Sanders (2002) show a positive association between TMT compensation and CEO compensation. They produce evidence that bring out that the influence of CEO pay on firm performance is impacted by TMT pay. They argue that the TMT pay can be used to forecast firm performance when it is aligned with shareholder interest. Studies also support tournament theory which argues that pay gap in compensation results in competition among managers and can be used to enhance firm performance. (See for example, Kale, Reis and Venkateswaran, 2009) Behavioral theory which calls for less dispersion among managers pay also finds support from empirical research. (See for example Drago and Garvey, 1998) Less pay dispersion is found to extract better teamwork and cooperation and thus impacts firm performance. Auden, Shackman and Onken (2006) find that TMT demographic factors influence the firm performance. Hambric and D'Aveni (1992) show the link between TMT characteristics and failure of firms.

This study will fill the gap in literature by analyzing the pay-performance relationship in Saudi Arabian firms where around 95% of TMT pay is a fixed component.

## 4. TMT PAY GROWTH

According to corporate governance regulations in Saudi Arabia, the board of directors should constitute the mandatory remuneration committee that should consist of three members. The committee should exclude the executive board members from its membership. The remuneration committee has the responsibility of finalizing the remuneration policy for the directors and executives. The policy should be approved by the general assembly. The committee should report the pay dispersion with regard to executives and directors. The committee meets at least once in every six months. Typically the TMT pay is made up of 55% to 65% as basic salary, 20% to 30% as guaranteed allowances like housing and transportation and around 5% to 15% as short-term incentives. Saudi Arabian firms do not pay any variable component and stock options.

The year on year TMT pay growth rate was at a double digit namely 14.42% and 13.98% during the first two periods, 2010-2011 and 2011-2012 respectively. The growth rate has fallen to a single digit of 2.9%, 7.63% and 6.58% in the last three periods, 2012-2013, 2013-2014 and 2014-2015 respectively after the fall of oil prices. Though the TMT pay growth rate has recovered from its lowest level in 2013, in the subsequent years it has not reached its earlier levels as the oil price impact continue to impact the firms in Saudi Arabia.

## 5. DATA AND STUDY PERIOD

We study a sample of 80 firms listed on Saudi Arabian stock market. These 80 firms belong to 12 sectors namely agriculture & food industries, building & construction, cement, energy & utilities, hotel & tourism, media & publishing, multi-investment, petrochemical industries, real estate development, retail, transport and telecommunication & information technology. The data analyzed relates to the period, 2010-2015. TMT pay data is the total compensation paid to the top 5 managers of the firm. This data is extracted from the annual report of each firm for each year by the researchers. Data on financial performance and other control variables are taken from Compustat global fundamentals provided by Wharton research data services.

### 5.1. Variables defined

PAY is the TMT pay, which is the total compensation paid to the top 5 executives of the firm which includes CEO. The variables is in logarithmic form.

Firm performance is measured by the accounting measures namely return on assets (ROA) which is the ratio of earnings before interest and taxes to the total assets and the return on equity (ROE) computed as the ratio of net income to book value of equity. We do not include any market related measures of performance as many stock listed on Saudi stock market are not traded actively on a regular basis.

As suggested by previous works (See for example, Smith and Watts, 1992), we assume that larger firms will enjoy higher levels of growth and may have complex operations which require executives with higher caliber at the top. Highly talented executives demand a higher pay. We measure firm size (SIZE) by the size of the firm's investment in total assets in logarithmic form.

Firm risk (RISK) is included as one of the control variables in line with the earlier works that study executive compensation. Cyert et al. (1997) show that executive compensation increases with firm risk while Banker and Datar (1989) argue that the direction of correlation between executive compensation and firm risk is uncertain. We adopt the beta as the risk measure.

Leverage (LEV) is the ratio of long-term debt to total assets.

The Pearson correlation matrix presented in Table 1 below shows the correlation coefficients for the study variables.

**Table 1.** Pearson Correlation Matrix

| *Variable* | *PAY* | *ROA* | *ROE* | *SIZE* | *LEV* | *RISK* |
|---|---|---|---|---|---|---|
| PAY | 1 | 0.298** | 0.281** | 0.622** | 0.314** | 0.153** |
| ROA | | 1 | 0.802** | 0.100* | -0.204** | -0.467** |
| ROE | | | 1 | 0.111* | -0.121** | -0.355** |
| SIZE | | | | 1 | 0.615** | -0.069 |
| LEV | | | | | 1 | 0.212** |
| RISK | | | | | | 1 |

Descriptive statistics is presented in Table 2.

**Table 2.** Descriptive Statistics

| *Variable* | *N* | *Minimum* | *Maximum* | *Mean* | *Standard deviation* |
|---|---|---|---|---|---|
| TMT pay SAR million | 475 | 0.0235 | 72.0950 | 8.2502 | 9.0271 |
| EBIT SAR million | 478 | -1,163.5810 | 48,838.3710 | 1,050.8399 | 4,656.4465 |
| Total assets SAR million | 473 | 53.4870 | 358,029.9490 | 15,934.8230 | 49,181.4298 |
| Net profit SAR million | 480 | -2,358.4370 | 45,285.1910 | 944.8953 | 4,306.1263 |
| Book value of equity SAR million | 474 | 33.4820 | 162,532.5700 | 6,345.7943 | 18,693.3482 |
| Long term debt SAR million | 404 | 0.0000 | 97,198.9260 | 4,958.6420 | 13,500.0297 |
| Beta | 478 | 0.5154 | 1.7435 | 1.0356 | 0.2274 |

## 6. RESULTS

We find a positive relationship between financial performance and TMT pay. Firms with higher return on assets pay higher TMT compensation. Similarly, larger firms are found to pay a higher compensation than smaller firms. We find that none of the other control variables have any influence on financial performance. Main, Bruce and Buck (1996) study the association between total board compensation and firm performance in UK firms. They a nalyze the dynamic aspects of remuneration by including the past pay as a study variable. The past pay is found to be statistically significant. Boschen and Smith (1995) produce similar results. They show a dynamic response of CEO compensation to firm performance. It is quite normal for the remuneration committees to negotiate the current pay with the past pay as a reference. We find pay lagged by one period has a positive association with the current TMT pay.

**Table 3.** Regression results on the relationship between TMT pay and ROA on all firms sample

| *Variable* | *Model 1* | *Model 2* |
|---|---|---|
| Constant | 11.9193**<br>37.4492 | 5.0743**<br>8.4798 |
| PAY(-1) | | 0.5629**<br>12.8910 |
| ROA | 3.7060**<br>7.7473 | 2.2870**<br>4.7310 |
| SIZE | 0.8545**<br>14.3140 | 0.3684**<br>5.5409 |
| LEV | 0.2806<br>1.0081 | 0.2223<br>0.8604 |
| RISK | 0.1306<br>0.7516 | 0.1712<br>1.0267 |
| Year effects | Yes | Yes |
| Industry effects | Yes | Yes |
| R-squared | 0.4979 | 0.6530 |
| Adj. R-Squared | 0.4857 | 0.6429 |
| F statistic | 40.9207** | 64.5097** |

*Dependent variable: Pay; t-statistic in parenthesis; * Significant at 1% level; ** Significant at 5% level*

We group the sample firms into large firms and small firms to evaluate if the TMT pay and firm performance relationship varies between the two groups of firms. Grouping of firms is done on the basis of the firm's investment in total assets as it is defined as the size variable in this study. We divide the sample firms into four quartiles on the basis of their total asset investment. Firms in the first

quartile are the small firms and the firms that fall into the fourth quartile are large firms. We run the panel regression with the study variables separately for each group of firms. The results are presented in table 4. We show that TMT pay and firm performance are positively related in case of both the large firms and small firms as is the case with the all sample firms analysis finding. However, we come up with an important finding with regard to the impact of size on TMT pay that differs across the two groups of firms. While firm size has positive association with TMT pay in case of large firms, the two variables are found to have no statistically significant relationship in case of small firms sample. This finding probably supports the arguments put forth by the earlier studies. (See for example, Tosi et al., 2000) Pay negotiations are influenced by the amount of investment in the assets of the firm. (Kole, 1997) Hence, large firms increase their TMT pay with increases in their size of total assets investments. As the size of the firm increases, it is argued that the complexity of the firm's operations increases which results in an increased level of employment risk for the executives. This compels the firm to pay higher pay for the TMT. Allocation theory of control argues that the firm size impacts the managerial productivity of TMT's decisions. As a large number of employees are affected by the decisions of the TMT in large firms, their marginal productivity increases with the size of the firm and hence large firms should pay more according to their size. However, small firms link their TMT pay only to their firm performance and not to the size. This finding supports the arguments put forth by the power theories. Studies that evaluate pay-for-performance (See for example, Hall and LIebman, 1998) show that managers focus on leading the firm to good performance which results in enhanced power and pay for them. As mentioned earlier, the variable components of TMT pay is just 5%. This can also mean that small firms negotiate their TMT pay based on their ability to pay that comes from their financial performance and not just sheer size.

**Table 4.** Regression results on the relationship between TMT pay and ROA on large and small firms

| | *Large firms* | | *Small firms* | |
|---|---|---|---|---|
| **Variable** | **Model 3** | **Model 4** | **Model 5** | **Model 6** |
| **Constant** | 13.2421**<br>17.4720 | 4.1178**<br>3.2492 | 13.3811**<br>15.2130 | 2.3356**<br>2.5378 |
| **PAY(-1)** | | 0.6572**<br>8.4435 | | 0.8134**<br>13.5114 |
| **ROA** | 1.1915**<br>5.8895 | 2.0268**<br>2.3610 | 3.8458**<br>4.0615 | 1.7630**<br>2.8309 |
| **SIZE** | 0.5949**<br>4.5580 | 0.4707**<br>2.5282 | 0.4113<br>1.7424 | 0.0773<br>0.5666 |
| **LEV** | -0.1351<br>-0.7461 | 0.3098<br>0.7903 | 3.8745<br>1.9135 | -0.0320<br>-0.0276 |
| **RISK** | 0.4425<br>1.7479 | 0.1723<br>0.7566 | -0.1742<br>-0.3949 | 0.0390<br>0.1615 |
| **Year effects** | Yes | Yes | Yes | Yes |
| **Industry effects** | Yes | Yes | Yes | Yes |
| **R-squared** | 0.4444 | 0.6863 | 0.3175 | 0.8289 |
| **Adj. R-Squared** | 0.3878 | 0.6467 | 0.2446 | 0.8053 |
| **F statistic** | 7.8519** | 17.3056** | 4.3557** | 35.2241** |

*Dependent variable: Pay ; t-statistic in parenthesis; ** significant at 1% level; * significant at 5% level*

## 6.1. Robustness tests

We repeat the tests to check if our results are altered by varying the definition of firm performance. We substituted firm performance measure, return on assets, with return on equity to check the consistency of our results. We find results are replicated and not affected by the change in the firm performance proxy. We find firms with higher performance and larger in size pay higher compensation to TMT. Like the results in the previous models, we find none of the other control variables have any influence on firm performance.

**Table 5.** Regression results on the relationship between TMT pay and ROE on all firms sample

| *Variable* | *Model 7* | *Model 8* |
|---|---|---|
| Constant | 12.4017**<br>39.9064 | 5.0432**<br>8.2786 |
| PAY(-1) | | 0.5926**<br>13.5824 |
| ROE | 1.4261**<br>6.0037 | 0.7139**<br>3.0957 |
| SIZE | 0.8624**<br>14.0999 | 0.3526**<br>5.2281 |
| LEV | -0.0211<br>-0.0758 | -0.0090<br>-0.0355 |
| RISK | -0.1380<br>-0.8188 | -0.0192<br>-0.1195 |
| Year effects | Yes | Yes |
| Industry effects | Yes | Yes |
| R-squared | 0.4733 | 0.6416 |
| Adj. R-Squared | 0.4605 | 0.6311 |
| F statistic | 37.0868** | 61.3439** |

*Dependent variable: Pay; t-statistic in parenthesis; ** significant at 1% level; * significant at 5% level*

The robustness test carried out with the small and large sample firms with the ROE as the proxy for the firm performance bring out exactly the same results as before when ROA was the measure of firm performance. This shows that the use of a specific measure of firm performance does not impact the study results.

## 7. CONCLUSION

We study the TMT pay-performance relationship with a sample of 80 listed firms in Saudi Arabia. We find that the firm performance and firm size influence the TMT pay positively. Firms with better performance and firms with larger size pay higher TMT compensation. This finding is important in the context of Saudi Arabia where almost 90% to 95% of the total compensation paid to the top managers is made of fixed component. TMT compensation is decided by the firm's ability to pay compensation. As firms with higher financial performance have a better ability to pay they fix TMT compensation at a higher level. Since TMT pay is a fixed commitment and not linked to the firm's financial performance as the variable pay is just around 5%, it is found to be determined by the firm's ability to pay. We find firm size is a statistically significant variable explaining the TMT pay variations. However, firm size is not a determinant of TMT pay in case of small firms when we tested the model by grouping the sample firms according to their size. Additionally, the previous period TMT pay influences the current period pay as it is expected that the negotiations of compensation has the previous period pay as the starting point.

We group the firms according to their size and study the first quartile and the last quartile firms to check if there are any significant differences in the determinants of TMT pay between the large firms and small firms. Firm size is found to influence executive pay in the existing literature. (See for example, Finkelstein & Hambrick, 1989) Large firms generally have complex operations which may require the executives to perform multiple tasks. (Bergo & Smith, 1978) Hence, large firms are compelled to hire managers with higher caliber to enhance firm's productivity. (Merhebi et al., 2006) This results in a demand for a higher pay by the mangers. (See for example, Firth et al., 2006) and the large firms have more funds generated internally. They can pay a higher compensation. However, smaller firms do not command the same level of funds like the larger firms. The capacity of the smaller firms to pay a higher compensation is limited. Additionally, the operations of a smaller firm is less complex and does not warrant the managers with very high caliber from the market. Since, the ability of the small firms to pay compensation to TMT is a function of its ability to pay which is decided by its performance. We find financial performance of the firm influences the TMT pay and not the size in case of small firms. This is an important contribution to the existing literature.

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