

**Cairo University**  
**Faculty of Commerce**  
**Accounting department**



**Using the Developed Balanced Scorecard to Design  
Managers' Compensation: An Empirical Study**

A Thesis Submitted in Partial Fulfillment of the Requirement  
for the Degree of  
**Master in Accounting**

**Prepared by**  
**Fatma Ahmed Zaki**  
**Demonstrator in Accounting Department**

**Under supervision of**  
**Prof. Dr. Ibrahim R. Hegazy**  
**Professor of Accounting**

(June, 2009)

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

وَقُلْ اَعْمَلُوا فَسَيَرَى اللَّهُ عَمَلَكُمْ  
وَرَسُولُهُ وَالْمُؤْمِنُونَ وَسَتُرَدُّونَ  
إِلَى عَالَمِ الْغَيْبِ وَالشَّهَادَةِ فَيُنبِّئُكُمْ  
بِمَا كُنتُمْ تَعْمَلُونَ ( 105 )

سورة التوبة

## **Abstract**

This research aims at modifying the managers' compensation by using the developed balanced scorecard (BSC) in profitable organizations within the Egyptian environment, where the profitable organizations have a great effect on the net income of any country.

Due to the importance of BSC, as a tool of improving organizations' performance and their profits as well, where it contains number of related measures to evaluate the performance, many studies were developed to link BSC's measures with managers' compensation, and to improve compensation contract for general (GM)/ chief executive manager (CEO) of the organization.

Survey some literature, in the area of using BSC's measures to design managers' compensation, revealed that; first, some studies in the literature discussed the subjectivity-based and economic-based approaches for linking the compensation system with BSC's measures using case studies. Therefore, the results can be generalized with some restrictions. Second, linking third generation BSC (strategic alignment) with the managers' compensation system, to the best of the researcher knowledge, seems to have been overlooked. Third, there is a lack of the studies that were concerning the circumstances of each country, and the effects of these circumstances on managers' behavior, according to the best knowledge of the researcher. Finally, almost all of the surveyed literature studies can be classified as pure researches, where they integrated the BSC system into linear compensation contracting model, without any application to test its applicability in practice.

Due to the previous conclusion, three gaps were addressed. An empirical study was developed to test the effects of designing managers' compensation due to the BSC's measures (through its different generations) on managers' behavior and organization performance. This empirical study tested the business sector (private and investment) within the Egyptian environment.

To address previous gaps, four main hypotheses were developed to be tested. The required data was collected through a questionnaire.

The population of the empirical study is the GM/CEO of business sector in Cairo and Giza Governorates, where these Governorates have a large amount of invested funds in Egypt. The main variables of the study are: BSC, managers' compensation, and nonfinancial/long-run performance of the organization, in addition to five control variables; managers' experience, managers' duration in managing the organization, managers' qualifications, the organization legal form, and the organizations' activities.

The study sample contains (38) managers; (34.2%) of the sample from industrial organizations and the same percentage applied for the services organizations. While (31.6%) of the sample are from commercial organizations.

The findings of the study can be summarized as follows: First, there is a strong positive relationship between using BSC, through its second and third generations, in the Egyptian environment and the current managers' compensation system. Second, there is a strong positive relationship between using BSC as a strategic alignment tool in the organizations and organizations' non-financial/long-run performance. Third, there is no significant relationship between the current managers' compensation system and nonfinancial/long-run performance of the organization. Finally, the analysis showed that there is no effect of the five control variables on the main three variables of the study except some cases.

**Key words:** balanced scorecard; managers' compensation; agency theory; stock options; financial measures; non-financial measures.

## **Dedications**

To my Mum and Dad, words will never be enough, I owe everything to you. Thank you a lot for your great support and given love during my whole life. I ask Allah to grant you health and happiness.

To my dear brothers and sister, thank you for your encouragement and support. May Allah bless you and keep you safe.

To my best friends and dear relatives, thank you for your encouragement and prayers. Allah bless you all and save you.

## **Acknowledgment**

All gratitude and praise for Allah the most merciful and the most compassionate.

I would like to express my gratitude to all those who gave me the possibility to complete this thesis. First, I would like to express my sincere appreciation and deep thanks to Professor Dr. Ibrahim R. Hegazy, my supervisor, who taught me a lot of things. Thanks a lot Dr. for your continuous encouragement, guidance, support and even strict directions all over the thesis preparation stages.

I would like to thank Professor Dr. Said M. Douban, for accepting to participate in the examination committee, and for his time and efforts to enhance the thesis.

I am also deeply indebted to Professor Dr. Said Y. Daw, for accepting to participate in the examination committee with a great appreciation for his time and efforts.

The researcher wishes to express her deep gratitude to Bassant El-Sharawy, Soaad Mousa and dina El Sayed, Demonstrators in Accounting Department, for their support over all the thesis preparation stages.

I would like also to thank all my Professors and colleagues who supported me in data collection for the empirical study.

## **Examination Committee**

**Dr. Ibrahim Raslan Hegazy**  
**(Committee Chairman and Supervisor)**

Professor of Accounting  
Faculty of Commerce  
Cairo University

**Dr. Said Moufied Douban**  
**(Committee Member)**

Professor of Accounting  
Faculty of Commerce  
Azhar University

**Dr. Said Yehia Daw**  
**(Committee Member)**

Professor of Accounting  
Faculty of Commerce  
Cairo University

## Table of Content

Title	Page
<b>Thesis Title</b> .....	a
<b>Quran Verse</b> .....	b
<b>Abstract</b> .....	c-d
<b>Dedication</b> .....	e
<b>Acknowledgment</b> .....	f
<b>Examination Committee</b> .....	g
<b>Table of Contents</b> .....	h-j
<b>Figures</b> .....	k
<b>Tables</b> .....	l
<b>Introduction.</b> .....	1-5
1. Statement of the Problem .....	3
2. Research Objective .....	3
3. Research Hypotheses .....	4
4. Research Method .....	4
5. Thesis Contents .....	5
<b>Chapter One: Financial Vs. Non-financial Measures to Enhance Managers' Compensation: A Review of Literature.....</b>	<b>6-20</b>
1.1. Introduction .....	6
1.2. Using Financial Measures in Managers' Compensation Contracts .....	6
1.2.1. Wallace (1997) .....	7
1.2.2. Babar et al. (1998) .....	8
1.2.3. Andrew et al. (2006) .....	9
1.3. Using Non-financial Measures in Managers' Compensation Contracts .....	10
1.3.1. Davila and Venkatachalam (2001) .....	10
1.3.2. Sliwka (2002) .....	12
1.4. Using BSC in Managers' Compensation Contracts .....	14
1.4.1 Ittner et al. (1997) .....	14
1.4.2. Ittner et al. (2003) .....	15
1.4.3. Ullrich and Tuttle (2004) .....	16
1.4.4. Daw (2004) .....	17
1.4.5. Budde (2007) .....	18



1.4.6. Fu, et al. (2008) .....	19
1.5. Conclusion of Literature Review .....	20
1.6. Summary .....	21
<b>Chapter Two: Balanced Scorecard and its Linkage with Managers' Compensation: A Theoretical Framework .....</b>	<b>22-44</b>
2.1. BSC Evolution .....	22
2.1.1. BSC as a Performance Measurement System .....	22
2.1.2. BSC as a Strategic Management System .....	24
2.1.2.1. Strategy Maps .....	26
2.1.3. BSC as a Strategic Alignment System .....	28
2.2. Comparison between the Three Generations of the BSC.....	32
2.3. BSC Criticism .....	35
2.4. Performance-Based Compensation .....	36
2.4.1. The Main Plans of Managers' Compensation .....	37
2.5. BSC Linkage to Managers' Compensation .....	39
2.5.1. Compensation Approaches .....	40
2.5.2. Key Principles of Tying BSC to Compensation Contracts .....	41
2.5.3. Designing Managers' Compensation Based on BSC Measures.	42
2.6. Summary .....	43
<b>Chapter Three: The Egyptian Trends in Linking BSC with Managers' Compensation: An Empirical Study .....</b>	<b>45-74</b>
3.1. Introduction .....	45
3.2. Study Hypotheses .....	45
3.3. Population and Sample .....	46
3.4. Data Collection .....	47
3.5. Data Analysis .....	48
3.5.1. Data Reliability and Validity .....	48
3.5.2. Descriptive Statistics .....	49
3.5.2.1. Control Variables Statistics .....	49
3.5.2.1.1. Managers' Experience .....	49
3.5.2.1.2. Managers' Duration in Managing the Organization .....	50
3.5.2.1.3. Manager's Qualifications .....	50
3.5.2.1.4. Organizations' Legal Form .....	51
3.5.2.1.5. Organizations' Activities .....	51
3.5.2.2. Descriptive Statistics for the Main Variables .....	51
3.5.2.2.1. Descriptive Statistics for the BSC .....	52
3.5.2.2.2. Descriptive Statistics for the managers' compensation ....	55
3.5.2.2.3. Descriptive Statistics for Nonfinancial/long-term Performance..	56
3.5.2.3. Compensation Contract Statistics .....	58
3.5.2.3.1. Compensation Contract Time Length .....	58
3.5.2.3. 2. Compensation Contracts .....	59

3.5.2.3. 3. Preferable Compensation Contracts .....	60
3.6. Hypotheses Testing .....	60
3.6.1. First Hypothesis .....	61
3.6.2. Second Hypothesis .....	62
3.6.3. Third Hypothesis .....	64
3.6.4. Fourth Hypothesis .....	64
3.6.4.1. First Sub-hypothesis .....	65
3.6.4.2. Second Sub-hypothesis .....	66
3.6.4.3. Third Sub-hypothesis .....	67
3.6.4.4. Fourth Sub-hypothesis .....	69
3.6.4.5. Fifth Sub-hypothesis .....	70
3.7. Empirical Study Results .....	71
3.8. Recommendations .....	73
3.9. Summary .....	73
<b>Summary and Conclusion .....</b>	<b>75-77</b>
1. Summary .....	75
2. Conclusion .....	77
<b>References .....</b>	<b>78</b>
<b>Appendices .....</b>	<b>84</b>

## Figures

<b>Figure</b>	<b>Figure Title</b>	<b>Page</b>
1/1	Balanced Scorecard Compensation Process .....	15
2/1	Performance Measurement BSC .....	23
2/2	Strategic Management BSC .....	25
2/3	The strategy map .....	27
2/4	Plastics Inc. Destination Statement, Strategy Map, and Strategic Initiatives .....	31
2/5	The Empirical Study Model .....	43

## Tables

<b>Table</b>	<b>Table Title</b>	<b>Page</b>
2/1	Comparison Between the Generations of BSC.....	33
3/1	Subjective Statistics of the Population According to Pilot Study of GM/CEOs of For-Profit Organizations in Cairo and Giza Governorates .....	47
3/2	Data reliability and Validity for the Research Variables..	48
3/3	Frequency table of managers' experience .....	49
3/4	Frequency table of management period .....	50
3/5	Frequency table of managers' education .....	50
3/6	Frequency table of legal form of organization .....	51
3/7	Frequency table of Organizations' Activities .....	51
3/8	Descriptive Analysis for the BSC Indicators .....	52
3/9	Descriptive analysis of the BSC perspectives .....	54
3/10	Descriptive Analysis of the Managers' Compensation ....	55
3/11	Descriptive Statistics for Non-financial/long-term Performance ....	56
3/12	Compensation Contract Time Length .....	58
3/13	Compensation Contracts .....	59
3/14	Preferred Compensation Contracts .....	60
3/15	Spearman's Correlation for the First Hypothesis .....	61
3/16	Spearman's Correlation for the Second Hypothesis .....	63
3/17	Spearman's Correlation for the Third Hypothesis .....	64
3/18	Kruskal-Wallis Test of the First Sub-Hypothesis .....	65
3/19	Kruskal-Wallis Test of the Second Sub-Hypothesis .....	66
3/20	Kruskal-Wallis Test of the Third Sub-Hypothesis .....	68
3/21	Kruskal-Wallis Test of the 4th Sub-Hypothesis .....	69
3/22	Kruskal-Wallis Test of the 5th Sub-Hypothesis .....	70