The Relationship between Earnings Quality and Cost of Capital of the listed companies in Jordan: An Agency Theory perspective

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Abstract

The study aimed to provide empirical evidence derived from the reality of the Jordanian environment about the earnings quality and the cost of capital using Asymmetric Information Model, and how this relationship is affected by other variables that are related to agency theory such as the administrative equity ratio and the degree of unsystematic risk.

The population of the study consisted of all public shareholding companies in the industrial, service and real estate sectors. Data was collected from a sample of 102 companies during the period (2008–2012). The study variables were calculated based on Jones scale that was developed by Dechow et al.(1995) to measure earnings quality and the model relative effectiveness of the price in the scale of Asymmetric Information Model. The dependent variable represented in the cost of the capital was calculated based on the capital costing model.

The results of the study supported the hypothesis of the reverse impact of earnings quality weighted by asymmetric information in the cost of the capital. The results have shown an improvement in the interpretative value of the model when entering the auditing variable represented by the administrative equity ratio or the degree of unsystematic risk, also of the controversial results of the study the emergence of an impact of equity of debt in the cost of the capital.

The scientific value characterizing this study represented in the

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selection of two auditing variables that have been used in this study and the emergence of an impact of equity of debt on the cost of the capital.

الملخص:

هدفت الدراسة إلى تقديم دليل تجريبى مستمد من واقع البيئة الأردنية حول العلاقة بين جودة الأرباح وتكلفة رأس المال باستخدام نموذج المعلومات اللاتناظرية وكيفية تأثر هذه العلاقة بمتغيرات أخرى تتعلق بنظرية الوكالة كنسبة العدالة الإدارية ودرجة المخاطر غير المنتظمة.

يتألف مجتمع الدراسة من جميع الشركات المساهمة العامة فى القطاعات الصناعية والخدمية والعقارية. تم جمع البيانات الاولية من عينة تألفت من (102) شركة خلال الفترة (2008-2012). تم حساب متغيرات الدراسة على أساس مقياس جونز الذى تم تطويره من قبل ديشو وآخرون (1995) لقياس جودة الأرباح والفعالية النسبية النموذجية للسعر فى مقياس نموذج المعلومات اللاتناظرية. تم احتساب المتغير التابع الممثل فى تكلفة رأس المال على أساس نموذج التكلفة الرأسمالية.

وأيدت نتائج الدراسة فرضية التأثير العكسى لجودة الأرباح الموزونة بالمعلومات غير المتماثلة فى تكلفة رأس المال. وقد أظهرت النتائج تحسنا فى القيمة التفسيرية للنموذج عند إد خال متغير التدقيق ا لذى يمثله نسبة حقوق الملكية الإدار ية أو درجة المخاطر غير المنتظمة، كما اظهرت نتائج الدراسة وجود أثر لحقوق الملكية للدين على تكلفة رأس المال.

وتمثلت القيمة العلمية المميزة لهذه الدراسة فى اختيار متغيرين للتدقيق تم استخدامهما في هذه الدراسة وظهور تأثير حقوق الملكية على الدين على تكلفة رأس المال.

Introduction

The importance of disclosure has increased during the past two decades especially regarding earnings, due to the administrative practices represented in the exploitation of the freedom area available to the administration to choose between the accounting alternatives and policies in a smart disclosure of performance, so that earnings transparency became one of the main characteristics of the quality of the financial reports.

The studies made on the field of market efficiency have shown that the commitment to the rules of earnings transparency and its quality fill all the gaps that allow the intrusion of financial market in a way that protects it from the illegal practices to gain abnormal earnings. Moreover it participates in achieving the best allocation of resources and maintains the stability of the cost of capital in the light of

structural changes in the nature of the dealers in the financial markets and their strategies in a way that makes the stock exchanges closer to situations of speculation rather than investment yards (20).

Several studies have demonstrated the importance of earnings in reflecting the performance of the firms. For instance, (1) and (15) have clarified that the content analysis of the earnings quality helps investors especially those with limited technical abilities understand and perceive the content of accounting information as well as helps them to predict the future cash flows of the firm so that their decisions will be rationalized in distributing the resources on the efficient portfolios that limit the negative consequences of using formulas and methods known as financial engineering in the evaluation of risk level and expected return.

Several researchers have tried to investigate the impact of earnings quality on the cost of capital either through lack of information model or the model of liquidity impact or the model of information discrepancies (8). In extension of the efforts of the researchers in this vital track of accounting theory, this study provides evidences from the Jordanian environment about the relationship between earnings quality and the cost of capital using the model of asymmetric information and the extent to which this relationship is affected by some variables related to agency theory such as ratio of equity and unsystematic risk.

Importance of the study

The importance of this study emerges from the followings:

(9) described that the earnings quality forms a starting point to evaluate the performance and the risks of the firm consequently the rise of earning quality will disseminate good signals to the investors to leave investing in inefficient portfolios and to direct their resources towards successful investments.

The pursue of study to examine the impact of administrative equity ratio and the unsystematic risk of the firm on the relationship between earnings quality and cost of capital means investigating in the content of the efficiency of the executive council in packing its benefits with

the benefits of stockholders especially the level of unsystematic risk reflects the span of the suitability of the financing structure so its participation in maximizing the market value of the firm (19).

Theoretical framework of the study

First: the theoretical background of the agency theory, earnings quality and the cost of the capital: based on the phenomenon of the absent equity, the agency theory has emerged as one of the theories that interprets the company as a set of explicit or implicit contractual relationships between two sides: stockholder (principals) and administration (agents), through which the second part is authorized to perform certain activities for the advantage of the first part and to make decision instead of the principals. Jensen and Meekling (10) has indicated in their explanation of the behaviors of the stockholders and administration that the role of the administration in its being authorized by the stockholders to manage the available financial resources of the company and negotiating on the behalf of the stock-holders with all other stakeholders, this role should be in the form that achieves positive results that exceed the alternative opportunity cost.

Perhaps one of the most important unethical practices of the mangers in this direction is earnings management that are based upon gaining chances by choosing between different accounting policies and methods, either for improving the image of the company or to give negative signals about its future cash flows in an intelligent discloser in order to affect the prices of the costs of the company in the financial market in the direction to evaluate it more or less than its just value.

Many researchers attempted to test the impact of earnings quality on the cost of capital either using the model of lack of information or the model of impact of liquidity or model of information difference (8).This comes as an extension to the efforts of the researchers in this vital field of accounting theory, to provide evidences emerged from Jordanian environment about the relationship between quality of earnings and the cost of capital through the model of asymmetric information, and to what extent is this relationship affected by some

variables associated to agency theory such as the ratio of administrative equity and unsystematic risk. Based on this understanding, the gap in information or what is known as asymmetry of information is a result of the difference between the quantity and the quality of information available to both stockholders and administration. there is no doubt that the difference in that information will absolutely lead to differences in the estimations of the investors about the expected cash flows due to their disagreement in risk estimation, so if the ratio of information asymmetry is increased, the accompanying risk will also be increased (4,9,12).

According to Scott (21), there are two kinds of information asymmetry: The first is the reciprocal choice which means that the quantity and the quality of information that is known to the administration and the major stockholder is more than that is available to the investors in the financial market, this kind leads to reciprocal choice risk for liquidity performance henceforth increase the cost of liquidity and the trade in the capital market, consequently increasing the investment cost. The second type is the unethical risk that forms due to lack of sufficient information that makes the investors lacks the understanding of the state of the company and its future as well as the estimation of the expected flows of their investment portfolios. This kind will lead to information risk that could not be avoided by diversification since the investor who has less information is always vulnerable to mistake when allocating his resources.

In this context, Lamber et al. (13) has clarified that the impact of earnings quality and information asymmetry on the cost of the capital has three different sides, two of them are direct and the other is indirect. The first direct side is represented in information while the second direct side is represented in administration. In addition, he clarified that the decrease in earnings quality and the increase in information asymmetry will increase the state of uncertainty of investors in estimating the expected cash flows due to their inability to determine the deviation degree between the expected cash flows from the company's activity and the expected cash flows from their investment portfolio, consequently they could not be able to judge

whether the investment is good or bad which will be reflected in and increase in the cost of the capital.

The impact of administration is represented in the additional cost burdened by the investors to get additional information contribution to accumulate their benefits in the advantage of administration due its opportunistic behavior in the field of selective disclosure that lead to an increase in asymmetry of information, which will increase the problem of reciprocal choice faced by trade and liquidity provider in the financial market. This situation increases the dealing cost that makes investors claim returns that are higher than the cost of capital to substitute this additional cost. The indirect impact is represented in not affecting of information asymmetry on (β) of the market that is built on the basis of estimation risks that are based primarily on earnings information so the company that is characterized by high information gap, will have higher (β) and higher cost of capital.

By reviewing the accounting literature, one could notice that the reciprocal relationship between the earnings quality and the cost of capital is formed due to the direct impact of information asymmetry that emerged from earnings quality creating systematic risk, no matter whether this risk is related to informed investors or non-informed investors or whether it is related to the risk of special information or concerned with the quality of the accounting information.

Second: Previous studies

The subject of the relationship between earnings quality and the cost of the capital has gained much investigation by the researchers in the western world. In this study, the researcher will tackle the most recent studies focusing on that were performed in Arab world and Asian context due to the much similarity in the application environment with the field of this study.

Core et al. (5) conducted a study entitled Mandatory Disclosure quality, inside ownership, and cost of capital. The study examined whether and how inside ownership mediates the relation between disclosure quality and the cost of capital. Employing a large global sample of (50201) companies across 35 countries over the 1990 to

2004 period. The researchers have tested (3) main hypotheses, from which it has been shown that country-level disclosure regulation is negatively related to (i) inside ownership, and (ii) firms implied cost of capital and realized returns. Also, it was found that ownership is negatively related to the cost-of-capital. The results of the study have supported its hypotheses, which means that when inside ownership is increased, the earnings quality will be decreased leading to differing information so the cost-of-capital will be increased, the matter that makes the informed dealers inside the company achieve abnormal earnings through their trading in the company's stocks compared to the earnings achieved by non-informed outside the company. This study has described ownership as an important element in creating information risk in the market and as one of the main variables impacting the cost-of-capital.

A study for Sa'adaddin (18) entitled “Analyzing the relationship between accounting conservatism in financial reporting and cost of capital and its influence on firm value”. This study investigated the relationship among accounting conservatism and cost of capital as one of the most economic effects resulting from applying conservatism in financial reporting and its influence on firm value in capital markets. The study was conducted on a sample of (32) listed Egyptian companies during the period from 2008 to 2012. The study incorporate four major sections, conservatism concept in both accounting thought and practice, the conceptual framework of cost of capital, the relationship between accounting conservatism and cost of capital. The study measured accounting conservatism as one of the most important indicators of earnings quality that affects the market returns of the stocks and increases the authenticity of information using the model of market value to book value of ownership, whereas it expressed the cost of capital by the weighted average of cost of capital. The study has revealed that there is a negative association between the degree of conservatism in financial reports and cost of capital; whereas significant positive association between conservatism and firm value exists.

Study of Artiach and Clarkson (2) entitled “Conservatism,

Disclosure and the cost of equity capital". This study seeks insights into the economic consequences of accounting conservatism by examining the relation between conservatism and cost of equity capital. The study posited an inverse relation between conservatism and cost of equity capital although this relation is diminished for firms with low information asymmetry.

Study of Nuryaman (16) entitled "The influence of Asymmetric information on the cost of capital with the earnings management as intervening variables" was performed using data from the year 2010 of a sample of 150 manufacturing companies listed in Indonesia Stock Exchange. The analysis of data showed that profit management negatively impacts information asymmetry and there was a statistically significant positive relationship between information asymmetry and the cost of capital. Moreover, earnings management is not proven to have effect on the cost of capital, and earnings is not proven to be acting as an intervening variable on the relationship between asymmetric information and cost of equity capital.

Study Methodology

First: Population of the study and its sample

The population of the study is composed of all real-estate service and industrial companies registered in Amman stocks Market in the year (2012) accounted 165 companies. A sample was drawn from this population according to the following conditions:

The availability of all data required to calculate the variables of the study for (5) sequential years period for minimum, as well as the availability of a year before the period of the study and a year after the study in order to calculate some variables that require this.

The company should trade its stocks in Amman Stocks Market during the period of the study (2005-2012) in addition it is necessary that the stocks of the company should traded for a minimum of 60 months against each year for calculating (β) coefficient required to measure the cost of the capital.

The company should not be merged with another company during the period of the study (2005-2012)

Its financial year should be ended 13/12 each year, during the period of the study.

Based on the sample selection criteria mentioned above, (63) companies were excluded since they do not meet the requirements of the sample of the study making the sample of the study to consist of (162) companies distributed on the (3) economic sectors as shown in table (1).

Table (1) the population and the sample of the study

Description	Industrial sector		Service sector		Real-estate sector		Total	
	No.	%	No.	%	No.	%		
Listed companies	72	43.6	60	36.4	33	20	165	100
Excluded companies	33	52.3	22	35	8	12.7	63	100
Sample of study	39	38.2	38	37.3	25	24.5	102	100

Second: Problem of the study

The environmental factors that characterized the thought and the behavior of the investors in Amman financial Market and the negative trends of the trainers toward agency relationship could damage the validity of the hypothesis of considering the mechanisms of the governance of companies an important case in maximizing the wealth of stockholders and accumulating their benefits with the benefits of the managers to limit the problem of advantage conflict.

This test was performed in Amman financial market during (2008-2012) where it was indicated that 82.35 % of the companies had practiced earnings management in positive and negative direction, but the negative direction was more dominant in order to minimize its political costs by minimizing the return which eligible to tax since most of these companies are characterized by the high concentration of stocks in it executives councils or they are family companies, the matter that paved the way to the emergence of the problem of low quality of earnings and so the phenomenon of information asymmetry in the market consequently the opportunities of informed investors to achieve up normal returns compared to non-informed investors which

is reflected in the cost of the capital on the basis of its, the researcher summarized the problem of his study in the following two questions:

Does the quality of earnings has an important role in the emergence of the phenomenon of information asymmetry, in a way that makes the second is weighed by first, has a statistical significant impact in the cost of the capital in Amman financial market?

Does the impact of the weighted earnings quality by information asymmetry in the cost of the capital according to the difference between the administration equity ratio and level of unsystematic risk of the company?

Third: study hypothesis

In the light of the two questions of the study, the researcher has formulated the two following hypotheses:

H1: there is a statistically significant negative impact of forestalled earning quality by information asymmetry on the cost of the capital

H2: the statistical significant impact forestalled by information asymmetry on the cost of the capital according to administrative equity ratio and unsystematic risk degree

Fourth: the variables of the study and their measurement

The statistical test of the two hypotheses of the study determining and measuring the variables that were included by these two hypotheses as the following:

a) The independent variables

Measuring the variable of earnings quality: there are many models to measure Earnings quality. The most two common models are: first is the measure of earnings persistence developed by (17), second is the absolute value of discretionary accruals from (11) developed by (6). for the purposes of this study the second measure was used since it reflects how much is the administration involved in measuring earnings the discretionary accruals are estimated according to the following steps:

estimation of the total accruals which is the difference between net income and operating cash slope estimation ($\beta1$, $\beta2$,$\beta3$) in the

following regression model:

$$[TACC]_{(i,t)}/A_{(i,t-1)} = \alpha + \beta_1 (1/A_{(i,t-1)}) + \beta_2 (([\Delta REV]_{(i,t)} - [\Delta REC]_{(i,t)})/A_{(i,t-1)}) + \beta_3 ([PPE]_{(i,t)}/A_{(i,t-1)}) + l_{(i,t)} \text{-------- (4)}$$

Where:

TACC i,t: total operating accruals in years t1

Ai,t-1: total assets at the beginning of year t-1

ΔREVi,t: the balance between main business revenues of current period (T) and last period (t-1) I the company i

ΔREC i,t: changes in the amount of accounts receivable of company at the end of year t

PPE I,t: means the total assets of the last period (t) end of company i

L i,t: the error term

the estimation of normal accrual (non-discretionary) using expected (β1, β2,β3) that were extracted in equation (4) as follows

$$[NACC]_{(i,t)} = \beta_1 (1/A_{(i,t-1)}) + \beta_2 ([\Delta REV]_{(i,t)} - [\Delta REC]_{(i,t)}) + \beta_3 ([PPE]_{(i,t)}) \text{ --------- (5)}$$

NACCi,t: normal accruals of the company in the year t

after estimating total accruals and the non-discretionary accruals, the abnormal discretionary accrual will be calculated that is result for following earnings management

$$[ANCC]_{(i,t)} = [TACC]_{(i,t)} + [NACC]_{(i,t)} \text{.....(6)}$$

Where ANCCi,t: discretionary accruals of the company i in the t

Using the previous model, the researchers calculate the absolute value of discretionary accruals of the companies -the sample of the study- during the period (2008-2012) despite the absence of a standard value of the model that could be compared to the calculated values to determine whether these values are high or low, but in the light of the administration's practices and the results of t-test standard deviation and depression coefficient of the tabulated values in table (2), these values could be considered high and indicates that the

earnings quality of the listed companies in Amman stock Exchange are low especially if it is compared with it similar values in some neighboring countries such as Saudi Arabia, Kuwait and Iran.

Table (2): The Statistical Description of the Earnings Quality of the Sample of the Study

Statistic	The whole sample	Economic type		
		Industrial	Service	Real-estate
Earnings quality average	3.426	4.293	4.088	1.897
t-test	1.789*	1.682**	1.684*	1.677**
Standard deviation	0.648	0.664	0.629	0.538
Depression coefficient	0.693	0.652	0.638	0.601

*significance level less than 0.03

**significance level less than 0.05

Measuring the Information Asymmetry variable: the previous studies indicated that there are various approaches to measure the phenomenon of information asymmetry. In this study, the market theory approach was adopted, which includes two measures: the price span and the trading volume of the desired prices. this approach is considered one of the most popular approaches in measuring the information asymmetry phenomenon as it reflects the problem of the reciprocal selection result form information variation (14), and so it will be used in this study, especially in determining the scale of price span or what is known as the relative effectiveness of the price (effective spread) which is represented by twice of the absolute value of the difference between the trade price and the midpoint of the national best bid and offer divided by the best average of buying and selling price as the following:

Effective spread=2[Price-Midpoint]/(((Bid+Ask))/2)

Using the model of the relative effectiveness of price, the researcher measured information asymmetry of the sample of the study. In order to determine whether these values form a phenomenon in Amman stock Exchange or not, the researcher performed the t-test for these values. The results supported the hypothesis stating the existence of

information asymmetry in Amman Stock Exchange, also the strength of this phenomenon varies between the economic sectors, as the industrial sector holds the first rank by and arithmetic average of 0.946 while the real-estate sector was in the third rank with an arithmetic average of 0.919.

In order to identify whether the low earnings quality has a role in the existence of this phenomenon that the researcher could not determine whether it, value low or high due to the absence of a standard value of the model needed for comparison, which is the same of earnings quality model. the researcher found it suitable to measure the correlation between the values of this variable and the values of earnings quality using spearman correlation coefficient which measures the association or the correlation between variables transformed into sets (ranks), the results of this test support the hypothesis of the existence of a statistically significant reversed correlation between the two variables, which means that earnings quality has related to the existence of information asymmetry.

Table (3) Statistical Description of information asymmetry of the study sample

Statistic	The whole sample	Economic type		
		Industrial	Service	Real-estate
Average of information asymmetry	0.944	0.946	0.928	0.919
t-test	1.679*	1.823*	1.819*	1.903*
Spearman correlation coefficient	0.358*	0.383*	0.375*	0.342*

*Significance level 3-5%

b- The dependent variable: represented in the cost of capital. The cost of capital in the accounting literature is defined form two perspectives; the first perspective represents the investor's point of view while the second represents the company's point of view.

According to the first perspective, the cost of capital is defined as the minimum required return to be achieved from investing resources in projects or the return on investment profile, sometimes it is known

as the opportunity cost of investment. The cost of capital is defined form the second perspective as the weighted cost of the financial structure. For the purposes of this study the perspective of the investor will be adopted to calculate the cost of capital. In this context, there are two approaches. The first is based on the pre-estimation of the cost of capital depending on the expectations of the financial analysts of the accounting profits; one of these measures is the measure of (7), which connects between the closing price of the stock and its expected profitability. When this indicator is high it indicates that the cost of capital is low. The second approach is based on the market returns of the stock; one of its mostly used models is the capital pricing model represented in the following equation:

$$⟦CEC⟧_it=R_it+β(R_m-R_it)$$

Where:

⟦CEC⟧_it=the cost of the capital of the company i for the year t

R_it=risk free return

β=of beta coefficient the company i

R_m=the market return of the company i

The beta coefficient is calculated using market model based on the following equation:

$$R_it=a_j+⟦BR⟧_(i,t)+e_i$$

Where:

aj=the constant term of the equation which represent that part of the return that is achieved regardless of the relationship between market return and the company's stock return (i)

BRm= Return of the market portfolio

B: The slope rate of the relationship between returns of companies stock R it and market return Rm.

R it = the return of companies stock which is calculated s the different between opening price and closing price divided by the opening price of the stock of the company (i).

For the purposes of this study, the capital pricing model was used

to calculate the cost of capital depending on the market data of the sample of the study for 60 successive months during the period (2008-2012) as shown in the table (4).

Table (4) The Statistical Description of the cost of capital of the sample

Statistic	The whole sample	Economic level		
		Industrial	Service	Real-estate
The average of the cost of capital	0.2987	0.2635	0.3115	0.3211
Standard deviation	0.3211	0.3453	0.3597	0.3645
Dispersion coefficient	0.3548	0.3877	0.3877	0.4012

the relatively high average of the cost of capital in Amman stock Exchange during the period (2008-2012) which make it necessary to perform the study

the variation of the average of the cost of capital across the three economic sectors which supports the possibility of the impact of the variation of the earnings quality across sectors in the cost of the capital

C. the control variables: which include administrative equity ratio, unsystematic risk as follows:

1. the administrative equity ratio: by the administrative equity it means the percentage of the shares of the members of executive council in the company's capital, it reflects the concentration of the stocks of the company in administration whose effect on earnings quality is under much debate by the researchers.

(22) considered the administrative equity ratio from agency theory perspective as one of the important tools for controlling the advantages of the different parties in agency relationship to limit its problems and costs, due to the role of this ratio in limiting of the motives of the administration to choose between the alternative accounting ways and policies that help to manage the profit, on the other hand it motivate mangers to use reservation policy to increase earnings quality consequently to maximize the market value of the company.

Due to that variation in the impact of this variable, it is very important to investigate it in this study because it is considered as a control variable, as the ratio of administrative equity calculated for the sample of the study was a high percentage (36.73%) so it could be one of the reasons of profit management phenomenon in the sample of the study, consequently the low earnings quality.

Table (5): The statistical description of the control variables

Variables	The whole sample	Economic level		
		Industrial	Service	Real-estate
Administrative equity ratio	36.73	38.9	31.9	29.6
Unsystematic risk degree	1.118	0.979	1.109	1.269

2. The unsystematic risk degree: which means the risk that is specific to a company, i.e., the resulted fluctuation in its profits is attributed to reasons related to the company itself, this risk is independent on the market portfolio, that is it correlation coefficient with the portfolio equals zero. two common sources of unsystematic risk are operation unsystematic risk which refers to the fluctuations in operational profits due to operational factor that could be controlled such the efficiency of the management in making good decisions and the operational efficiency of the workers and operational quality of resources and its availability...etc, the second source is the unsystematic financial risk resulted from financial leverage.

The unsystematic risk is calculated by the variance in the rate of return on equity right as shown in the following mathematical formula (3)

$$[\![CV]\!]\_ROE=\sigma\_ROE/ROE$$

Where: $[\![CV]\!]\_ROE$=the variance coeffindard deviaticient of the unsystematic risk

σ_ROE=standard deviation of the rate of return on equity

ROE=the average of the rate of return on equity

Based on this mathematical formula, the unsystematic risk of each company in the sample during the investigated period was calculated following the two steps:

the average of the rate of return on equity right of each company during the investigated period was calculated by adding the rate of return on equity and dividing it by the number of years in the period

the standard deviation of the rate of return on equity for each company according to the mathematical formula of the standard deviation

The reason for selecting this control variable is that it could be avoided through diversification. when the investor utilizes diversification to reduce the of his future retune no doubt this will lead to achieve a kind of balance on the demand the stocks of the companies in the financial market which in turn will create a state of stability in prices, the matter that may limit the importance of low earnings quality in creating a gap of information consequently impacting the cost of capital.

The researchers measure the degree of the unsystematic risk of the companies (sample of the study) during the period of (2008-2012) and it was found that it was relatively characterized as of a high degree where its average reached (1.0118) and that the highest risk among the three economic sector was the real-estate sector with an average of (1.269) which the industrial sector was the lowest risk of all the three sectors. This is no doubt means high depression of the return on equity of the companies during the study period which could be one of the results of the practices of profit management in the companies, especially as its diminishes in the companies that do not practice profit management that are characterized by low administrative equity ratio compared to those that practice profit management as shown in table (6).

Table (6): The Statistical description of the control variables according to the practice of profit management

Variables Description	Companies not practicing earnings management	Companies practicing earnings management
The average of administrative equity	13.45%	37.72%

The average of degree of unsystematic risk 0.352 1.479

Fifth: The Statistical method used in testing the study hypotheses

before selecting the suitable statistical method to test the study hypotheses, one should test whether the original population for the sample was drawn, has a normal distribution or not, for this purpose the researchers used Lillefors test for Normality that depend on the arithmetic average and standard deviation of the individual sum of the assets of the sample of the study, where the following hypothesis was tested:

H0: the data of the sample of the study drawn from the original population has a normal distribution at significance level 5% or less.

The test was performed on the basis of the following model

T=Sup*|F^* (X)-S(X)|

Where:

Sup=the maximum difference or vertical distance betweenF^* (X) and S(X)

F^* (X)=standard normal distribution function

S(X)=experimental distribution of the sample

After performing the test the calculated T was found less than tabulated W.95, so the null hypothesis will be accepted, which means the companies consisting the sample of the study have normal distribution at significance level less than 5% so the statistical parametric test should be used since non-parametric test are not convenient. In the light of this, the researchers will use the variance analysis to test the study hypotheses.

Sixth: the study Model

In the light of the used statistical method, the study model

Based on the above model the researcher builds the following test equation: first hypothesis testing equation

⟦CEC⟧_it=a_j+⟦RB⟧_it [⟦ES⟧_it*⟦EQ⟧_it]

Where:

⟦CEC⟧_it=the cost of the capital of the company i for the period t

⟦ES⟧_it=information asymmetry of the company i for the period t

⟦EQ⟧_it=Earnings quality i for the period t

the impact of the two control variables testing equation

testing the impact of the administrative equity

⟦CEC⟧_it=a_j+β_1 [⟦ES⟧_it*⟦EQ⟧_it]+β_2 ⟦MO⟧_it

Where, ⟦MO⟧_it=adminstrative equity ratio

⟦CEC⟧_it=a_j+β_1 [⟦ES⟧_it*⟦EQ⟧_it]+β_2 ⟦CV⟧_it

Where, ⟦CV⟧_it=the variance coefficient of unsystematic risk

Study results

First: the result of the test of the first hypothesis:

The results of the regression test of the study model listed in table (7) indicates to the acceptance of the hypothesis of the impact of the earnings quality weighted by information asymmetry in the cost of capital at the whole level of the sample with high impact as R2 –value of the model has reached 72.6% of the cost of capital, which was an expected result by the researcher due to two reasons: the first is related to the culture of Jordanian investors that concentrates on the accounting profit not the other indicators that are related to future cash flows and the evaluation of investment risks. The result of spearman test between the ratio extracted from the future operational cash flows and the cost of capital illustrated in table (8) indicate to non-existence of the relationship between these ratios and the cost of capital. The second reason is related to the statistical description of both earnings quality and the level of the cost of capital.

Table (7): The results of first hypothesis test

Statistic	The whole sample	Economic level		
		Industrial	Service	Real-estate
Properties of the independent variable Eit*EQit: mean of Eit*EQit	3.234	4.061	3.794	1.743
Standard deviation of Eit*EQit	0.682	0.639	0.614	0.589
Regression coefficient	(0.298)	(0.312)	(0.312)	(0.189)

Calculated t value	1.845*	2.114**	1,969**	1.231
Decision rule	Accept Hypothesis	Accept Hypothesis	Accept Hypothesis	Reject Hypothesis
Properties of model				
Standard error	0.123	0.109	0.113	0.154
Determination factor R2	72.4	71.8%	74.6%	33.3%
Constant term value	0.268	0.184	0.167	0.171
D.O.F	509	194	189	124
F calculated	1.65*	1.452*	1.391*	1.22

* 3.5% ≤significance level≤5%

** 2% ≤significance level≤3.5%

The researchers divided the companies comprising the sample into two groups: the first consists of the companies that have high earnings quality and the second consists of low earnings quality companies. The researchers noticed that the first group is characterized by low cost of capital, which lead the researchers to assume that there is a reciprocal relationship between the earnings quality and the cost of capital.

Table (8): Spearman correlation coefficient

Financial indicators	The whole sample	Economic level		
		Industrial	Service	Real-estate
The correlation between cost of capital ....Ratio of sufficiency of operational cash flows	0.205	208	0.213	0.211
Operational cash indicator	0.117	0.194	0.188	0.203
Cash flow ratio	0.209	0.227	0.218	0.221
Cash cover percentage	0.197	0.216	0.207	0.218
Necessary cash flow indicators	0.215	0.223	0.209	0.231

The analysis at economic sectors level shows what the researchers concluded in his interpretation of the result at the whole sample level in relation to the interpretation of the results of the industrial and service sectors while the real-estate sector showed that the earning quality weighted by information asymmetry has no impact on the cost

of capital in this economic sector which is certainly coincident with what this sector have of contradiction represented high earning quality and at the same time high cost of capital, but the researcher believes that this result refers to the indirect impact of the earning quality in the cost of capital, as the earnings quality means the absence of profit management practices or at least being its minimum limits.

This, no doubt gives the management the chance to have external financing with light constraints, the matter that lead to high debt ratio of what supports the researchers opinion, the high debt ratio in this sector compared with the two other sectors and the positive relationship between debt ratio and cost of capital that reached (0.312) at percentage level 3.2% according to spearman test. Based on this, the high cost of capital in this sector is due to the high debt ratio that was caused by pursuit of the management to borrowing to benefit from its high earnings quality. On this basis, one can conclude that the impact of the earnings quality on the cost of capital is not necessarily direct but it could have an indirect impact. It is deserved to notice in this context the results of (3) that support the impact of the debt ratio on the cost of capital.

Table (9): Statistical description of the two variables based on the two divisions of the study

Variable	High quality firms n=114	Low quality firms n=396
The average quality	2.453	3.648
The average of cost of capital	0.2671	0.3078

Second: the results of the second hypothesis test

the hypothesis of the administrative equity ratio:

The results of the results of the statistical test when entering the variable of administrative equity ratio within the model of the study the improvement of the value of the determination coefficient of the model R2 as it was increased from 72.4% to 74.8%. Also, the regression factor of the administrative equity is inversely proportional with the cost of capital. The researchers attributed this result to the role of the administrative equity ratio in sending negative signals to

uninformed investors about the performance of its future cash flows. it is obvious that the increase in the administrative equity ratio is accompanied in general unethical practices that impact the prices of the stocks of the company in the financial market in a way that motivate uniformed investors to leave out their investment in the advantage of the informed stock holders for many purpose and firstly their pursuit of a acquisition of the company and turn it to a family business

Table (10): The statistical test of the impact of the administrative equity ratio

sample	Arithmetic average		Standard deviation		regression coefficient		Calculated t-value		Decision rule
	ESit*Qit	MOit	ESit*Qit	MOit	ESit*Qit	MOit	ESit*Qit	MOit	
Whole sample	3.234	.473	0.672	0.471	(0.302)	(0.241)	1.743**	1.932**	Accept Hypothesis
Industrial sector	4.061	38.9	0.698	0.524	(0.235)	(235)	2.101	2.106*	So
Service sector	3.794	31.9	0.603	0.891	(0.337)	(0.254)	2.016*	2.079*	So
Real-estate sector		1.743	29.6	0.478	0.434	(0.216)	(0.216)	1.784**	1.893**	So

Properties of experimental model

	Standard error	Determination coefficient R2	Constant term	D.O.F	Calculated F
Whole sample	87%	74.8%	176%	509	2.049**
Industrial sector	102%	68.7%	145%	194	2.301**
Service sector	0.096	70.3%	0.133	189	2.213*
Real-estate sector		0.094	39.6%	0.167	124	2.113*

*significance level≤3%, ** 3% ≤significance level≤5%

This was clear from the high percentage of family companies in Amman stock Exchange. According to the economic theory in this

case, the prices of the stock will decrease due to the increase in the after over the demand, which will be reflected positively on the cost of capital. The high average of the cost of capital in the companies that have high equity ratio supports the researchers opinion, as it is shown in table (11) in which the M-W test of the cost of capital for high and low equity ratio companies, is listed showing statistically significant differences between the two layers at the whole sample level or sectors level.

Table (11): M-W test results of the cost of capital between the two layers of the administrative equity ratio

Description	The whole sample	Economic level		
		Industrial	Service	Real-estate
% high administrative equity	63.53	57.95	53.68	34.4
% low administrative equity	36.47	42.05	46.36	56.6
Mann Whitney value	166.7**	169.4	165.7**	127.6**

** Significance level is higher than 2.5% and less than 5%

the hypothesis of the degree of unsystematic risk

it is obvious from the results of the regression analysis of the test model where the unsystematic risk is included and listed in table (12), that this control variable has a reciprocal impact on the cost of capital as the same as administrative equity ratio.

Table (12): The results of the statistical test of the impact of the unsystematic risk

sample	Arithmetic average		Standard deviation		regression coefficient		Calculated t-value		Decision rule
	ESit*Qit	MOit	ESit*Qit	MOit	ESit*Qit	MOit	ESit*Qit	MOit	
Whole sample	3.234	1.118	0.763	0.547	(0.317)	(0.267)	1.739**	1.791*	Accept Hypothesis
Industrial sector	4.061	0.979	0.869	0.569	(0.365)	(0.289)	2.189*	1.756**	So
Service sector	3.794	1.106	0.804	0.681	(0.328)	(0.319)			

1.676**	1.713**	So					
Real-estate sector	1.743	1.269	0.647	0.643	(0.317)	(0.277)	1.867*
1.685**	So						

Properties of experimental model

	Standard error	Determination coefficient R2	Constant term	D.O.F	Calculated F
Whole sample	0.104	74.2%	0.187	509	2.088**
Industrial sector	0.898	73.6%	0.167	194	2.311**
Service sector	0.102	74.8%	0.142	189	2.127*
Real-estate sector	0.097	40.8%	0.156	124	2.127*

*significance level less than 3%

**significance level greater than 3% and less than 5%

Where the interpretative value of the model has raised about 1.8% of what it was before including this variable in the model. The researchers attributed this result due to the inefficiency of the financial policies of the companies consisting the sample of the study, especially in the field of investment structure, the high debt ratio never the less of what accompanies it positive things especially in the field of improving the rate of return on equity due to the achieved tax excess for interest on debts, this high ratio will lead to distortions in the investment structure that have negative impacts represented in high cost of capital. in the light of unethical administrative practices, these distortion will no doubt lead to fluctuations in the market value of the stocks of the companies whose effect will be reflected on the cost of capital from investors perspective. The support of this interpretation lies both in the remarkable rise of the explanatory value of the model in the real estate and service sectors compared with the industrial sector and in the strong correlation between the debt ratio and the unsystematic risk in these sectors which was calculated by the researchers suing spearman correlation coefficient listed in table (13).

Description	The whole sample	Economic level		
		Industrial	Service	Real-estate

Debt ratio	38.57	31.7	36.6	47.4
Spearman test of correlation between debt ratio and degree of unsystematic risk	0.294*	0.267*	0.278*	0.293*
Mann Whitney test				
% high unsystematic risk	58.4	56.8	51.6	62.5
% low unsystematic risk	41.6	43.2	48.4	37.5
Mann Whitney value	168.4*	171.2*	169.4*	135.9*

*significance level greater than 3% and less than 5%

On the other hand the substantial difference recognized by the researchers in the cost of capital between companies according to it unsystematic risk when the researcher applied M-W test of the cost of capital in the high unsystematic risk companies and the low unsystematic risk companies. Based on this analysis, one could say that the unsystematic risk is considered one of the factors that could explain the changes in the cost of capital.

Conclusions and Recommendations

I. Conclusions

Based on the statistical analysis of the data collected from the study sample, the following study conclusions were derived as follow:

Analysis of the study data revealed that most of companies in the sample practiced profit management negatively that can be seen in most countries as tax evasion. This could lead the national economy to disaster

The low earnings quality in most listed companies in Amman stocks Exchange is one of the most significant findings resulting from the fact that practicing profit management is dominated by family ownership and the high administrative equity ratio.

The emergence of information asymmetry in Amman stock exchange that affect the prices of the stocks that can lead to remarkable rise in the cost of capital

Due to debt ratio, the earning quality influenced the cost of capital

indirectly in the real-estate sector. This makes debt ratio imperative when studying the relationship between earning quality and the cost of capital

The administrative equity ratio and the unsystematic risk should be considered when explaining the relationship between earnings quality and the cost of capital due to their role in the explanatory value of the model.

II. Recommendations

In light of the conclusion of the study, the researchers recommend to investigate the followings:

The impact of the earning quality in the cost of debt rather than the cost of capital using the qualitative characteristics of the accounting information

The relationship between earnings quality and the cost of capital or cost of debt in the light of the efficiency of companies governance mechanisms

The relationship between earnings quality and cost of capital in light of debt ratio

The impact of the difference between the estimation part and the experimental parts of the characteristics of accounting profits on the cost of capital or the cost of debt.

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