Exploring the relationship between financial ratios and created shareholders value: A life cycle perspective

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Abstract

The aim of this research is to discover relationship between financial ratios and created shareholders value, at the different life cycle stages. Therefore, we select dividend pay-out, sale growth, capital expenditure, and firm age as the life cycle descriptors, which are suggested by Anthony and Ramesh (1992) (our sample firms were gathered from the Tehran Stock Exchange over the period 2005 to 2011), thus to identify firms according three life cycle stages, namely growth, maturity and decline, and investigated the impact of corporate life cycle on relationship between financial ratios and created shareholder value. For testing the hypotheses pooled least squares model was used. The results showed that although there is meaningful relation between financial ratios and created shareholders value, but corporate life cycle of different stages can affect the relationship between financial ratios and created shareholder value.

Keywords: Created shareholders value (CSV) , Financial ratios, Life cycle stages

Introduction

The shareholder value concept implies that the ultimate measure of a company's success is to enrich its shareholders. The term in this sense introduced by Alfred Rappaport in 1986 refers to a concept of planned management actions causing returns to shareholders to outperform certain benchmarks such as the cost of capital. For a publicly traded company, SHV is the part of its capitalization that is equity as opposed to long-term debt (Rappaport, 1998). Measuring shareholder value creation has been the subject of discussion all around the world. It has become crucial since companies are increasingly committed to creating shareholders value (Salehi *et al*, 2011). On the other hand, Whit the increasing global competition, companies are focusing their efforts on creating shareholder value in order to survive the intense competition. In view of this, it is becoming important for companies to measure the value they create for their shareholders. Keeping track of the value created year- on- year enables companies to evaluate past decisions and make decisions that will improve shareholder value (Viswandham & Poornima, 2005). Managers must focus on building shareholders value, because, shareholders as owners of business unions try to increase their wealth, and increasing the wealth causes the assessment of business union favorably, which is very important for business owners. On the other hand, the large challenge for management is proper integration value, given to different profit owners in organization. For this, shareholders search a norm which indicates companies value and rate of created value. And, finding an index is necessary by which company's performance is logically explored for assessment of manager's performance and measurement of value give to shareholders (Salehi *et al*, 2011). While, there is a large literature that supports the shareholder value approach, there is often confusion as to how to create value for shareholders and, especially, how shareholder value should be measured. The identification of the best measure for defining shareholder value has become a critical issue (Fiordelisi *et al*., 2010). However, companies are choosing to employ a system of measuring shareholder value for many reasons. First, value is the best metric of performance as it the only measure that is comprehensive and hence is useful for decision –making. By increasing shareholder value, companies can maximize the value for other stakeholders (customers, laboure and government (through taxes paid) and suppliers of capital). Second, shareholders are the only stakeholders of a company who simultaneously maximize everyone's claim

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in seeking to maximize their own. Finally, companies that are unable to create shareholder value will find that capital flows away from them and towards their competitors who are creating shareholder value (Viswandham & Poornima, 2005). To measure the shareholders' value creation there are many ratios such as: return on equity (ROE), earning per share (EPS), return on asset (ROA), total shareholders return (TSR), Economic value added (EVA) (Ngoy, 2008). This paper intend investigate of relationship some financial ratios whit created shareholders value.

On the other hand, the corporate life cycle has attracted increasing attention in the finance literature. Management in the process of creation value for the shareholders has to take into account the firm life cycle. According to Albert (2004) organizations that have leaders who understand how to manage innovations and growth throughout the life cycle stages of an organization are successful year after year while other seemingly extraordinary companies eventually fall by the wayside. Thus, the success of a firm depends not only on the management of firm investment, operation and financing decision throughout the life cycle stages (Ngoy, 2008). Because, at each new stage of development an organization is faced with a unique set of challenge .how well or poorly management addresses these challenges, and leads a healthy transition from one stage to the next, has a significant impact on the success or failure of their organization (Adizes, 2004). Organizational life stage theory offers management some guidelines as to how the characteristics of the firm change over time, and may therefore offer diagnostic tools that indicate how form can reach and maintain their prime life stage. The better managements understanding of the characteristics of the individual life stages, the higher the probability that management will employ capital in such a way that the firm will continue to outperform its peers. Since the objective function of any "for profit" is to maximize the value of the firm (Frielinghaus *et al*: 2005). And value is only created when a firm produces a return on capital that exceeds the cost of that capital (Stewart, 1999), one of management's key objectives is to maximize the life stage during which the firm enjoys superior growth. And, there are optimal mixes of the business as the firm progress through its life stages (Frielinghaus *et al*: 2005). One of these functions that changes from one life stage to the next is corporate finance. Thus the firms financing characteristics change from one life stage to the net. We intend to investigating impact corporate life-cycle stages on the appropriate measure shareholders value. Accordingly, the purpose of this paper is to fill the research gaps described above. We will use a sample of 588

firm—years observations from firms the Tehran Stock Exchange (TSE) during 2005 -2010 to investigate the effects of corporate life cycle on relationship between financial ratios and created shareholder value. Our paper proceed as follows, the next section reviews the related literature. Statements of the hypotheses and a description of the models and variables are presented in section 3. Section 4 present the empirical analysis. Finally, conclusions are discussed in section 5.

Review of Literature

Shareholders wealth

The concept of shareholder value is one of the oldest nostrums in business (Hamilton, 1777; Marshall, 1890): a company creates value for its shareholders when the return on invested capital is greater than its opportunity cost, or than the rate that investors could earn by investing in other securities with the same risk (Fiordelisi, 2007). Maximizing shareholder wealth is a single most important goal for any profit seeking organization and as such it becomes extremely crucial for them to achieve higher profit (Yahaya, & Mahmood, 2011). The theme of creating value constitutes today a growing interest in the fields of management science. This theme is at the root of many researches and has become the new credo of business leaders (Saliha, & Abdessatar, 2011). That makes it important to have a clear definition of shareholder value and the creation of it. To understand value creation, it is important to first define the means of value. According to Black *et al*. (1998) value has existed as a concept as long as humanity has conducted trade and accumulated capital and wealth. It has been the consistence measurement used by those with freedom of choice to trade, invest and preserve capital. The corporate value is the value of the total firm or business unit, it includes three following components:

1. The present value of cash flow from operations during the forecast period.

2. "Residual value", which represents the value of the business attributable to the period beyond the forecast period.

3. The current value of marketable securities and other investments that can be converted to cash and are not essential to operating business (Rappaport, 1998).

One of the most frequently used terms in business today is shareholder value (Nyiramahoro, & Shooshina, 2001). Alfred Rappaport introduced shareholder value in 1986 in the current term, where shareholder value is the equity value of the firm, and can be measured as the residual when the liabilities have been subtracted from the assets. Shareholder value is the market value of the

equity of the firm, so accounting figures cannot be used. The creation of shareholder value is in mathematical term (ROIC-WACC) IC, or the difference between return on invested capital and the cost of capital multiplied by the invested capital (Larsen, 2010). Scott (1998) wrote that shareholder value is another term for the total value of equity of a firm or its "market capitalization "he added that the market capitalization of a publicly traded firm is highly transparent and it is the number of shares listed on the market multiplied by the average price per share. Serve (1999) defines shareholder value as being the market value of a common stock. However, value creation is the primary objective of managers and shareholders of a company (Saliha, & Abdessatar, 2011). Moreover, shareholders are the owners of the corporation and board of directors are their representative and elected by them. The objective function of the corporation is to maximize the shareholder value. Managers in most of the developed world must focus on building shareholder value (Copland *et al.*, 2000). Stewart (1994) has mentioned that EVA stands well out from the crowd as the single best measure of wealth creation and has made claims concerning the merits of EVA which is almost 50% better than its closest accounting-based competitor in explaining changes in shareholder wealth. He further argues that, the adoption of EVA also is a proven and potent way to increase corporate performance, motivation and market value. With increased competition and greater awareness among investors, new and innovative ways of measuring corporate performance are being developed. New tools provide flexibility to managers in their functions, be it in term of operational aspects or evaluation parameters. The EVA is a new flexible tool for measuring corporate performance. Uymura *et al.*, (1996) analyzed the largest 100 U.S. bank holding companies over a period of ten years (1986-95). By regressing changes in standardized Market value added (MVA) against changes in standardized EVA and traditional performance measures, EVA was found to have the highest correlation with MVA. Peterson and Peterson (1996) analyzed traditional and innovative measures of performance and compared them with stock returns.

According to their findings, traditional measures are not empirically less related to stock returns than EVA measures: As a result, they argue that traditional measures should be not eliminated as a means for evaluating performance. Peterson and Peterson (1996) however affirm that EVA measures are worthwhile. They note that since value added measures focus on economic rather than accounting profit, they play an important role in evaluating performance because managers will aim towards value creation rather than mere manipulation of shortsighted accounting figures. Bacidore *et al.* (1997) investigated American's companies from 1982 to 1992.

They concluded that framework for analyzing performance and calculating the shareholder value is by using return on investment, which resulted in dividend and change in share price in a period. They also concluded that economic value added is a suitable measure for performance analysis and calculation of the created shareholder value. Cash flow return on investment of Boston Consulting Group and economic value added are current tools that are applied by financial managers to answer whether measure of economic value added is better or cash flow return on investment is difficult. Cash flow return on investment is an accrue measure, but it is very complicated, whereas economic value added is easy but less popular.

Nyiramahoro and Shooshina (2001) presented a general method on how shareholder value is created as a background to the valuation methods being used for shareholder value creation measurement. The empirical part of this study showed that although the companies in this study have implemented many ways to created shareholder value, little effort is begin made to measure it since the majority of them are still using the traditional accounting measures. The reasons for this may be conservatism and lack of pressure from both the stock market and shareholders

Subsequently, a recommendation was made that the companies should use "value based methods" when measuring shareholder value creation since they are more reliable. Fernandez (2001) defined and analyzed shareholder value creation. To help us understand this concept better, he used the General Electric Company, as an example, between 1991 and 1999. He concluded that in order to obtain the created shareholder value, the firm must first define the increase of equity market value, the shareholder value added, the shareholder return and the required return to equity. He also calculated the crated shareholder value of 142 American companies during the three-year (1997 to 1999) and eight-year (1992 to 1999) period.

Life cycle

In 1950 Kenneth Boulding first suggested the concept of organizational life cycles. Since that time, discussion of the organizational life cycle have taken place within many disciplines, including management, pubic administration, education, sociology, psychology, and marketing (Ionescu, & Negrusa, 2007). The concept of life cycle has roots in different disciplines whit a focus of animal and plants such as biology. As Gardner

(1956) writes "like people and plants, organizations have a life cycle. They have a green and supple youth, a time of flourishing strength, and a gnarled old age. An organization may go from youth to old age in two or three decades, or it may last for centuries" (Hassan *et al.*, 2011). A number of writers have suggested that the design, development and behavior of organizations can be predicted by means of organizational life cycle models. These authors suggest that changes that occur in organizations follow a predictable pattern that can be characterized by developmental stages. There are various multi-stage life cycle models (Table 1), at least seventeen different models of organizational life cycles have been proposed, each of which emphasizes different factors to explain the changing characteristics of organizations over time (Quinn & Cameron, 1983; Gao& Alas, 2010). Quinn and Cameron (1983) presented a review of nine models of organization life cycles. That some authors identified three stages in the life cycle (Downs, 1967; Lippitt *et al*, 1976; Scott, 1976; Katz *et al*, 1978). Some other identified

four stages (Lyden, 1975). In addition, some other five stages (Greiner, 1972) or nine stages (Tolbert, 1974) and ten stages (Adizes, 1979). For example, Scott (1971) proposes a three-stage organizational life cycle model, which predicts that a firm's growth and characteristics will follow different patterns at each stage. Furthermore, firms will adopt different structures and strategies for further growth as they progress from one stage to another. Similarly, Greiner (1972) proposes a growth phase model, which predicts that firms will go through five stages of growth; growth through creativity, direction, delegation, coordination, monitoring and collaboration. Greiner's model describes organizational development as the alternation of quiet periods of growth and moments of crisis that indicate a new stage. A firm reaches a crisis point at the end of each phase and this determines the future growth of the business. Adizes (1979) proposes a more comprehensive corporate life cycle model theorizing that firms eve along ten stages from courtship (where the organization exists only as an idea) to death.

Table 1. Various multi-stage life cycle models.

scholars	Number of stages	Life-cycle model
Downs (1967)	Three stages	Struggle for autonomy stage ,Rapid growth stages , Deceleration stage
Lippitt and Schmidt (1967)	Three stages	Birth, youth, maturity
Greiner (1972)	Five stages	Growth through creativity, growth through direction, growth through delegation, growth through coordination and growth through collaboration
Katz and Kahn (1978)	Three stages	Primitive system stage, the stable organization stage, elaboration of structure
Adizes (1979)	Ten stages	Courtship, infancy, go-go, adolescence, prime, stable, aristocracy, recrimination, bureaucracy, death
Quinn and Cameron (1983)	Four stages	Entrepreneurial, collectivity, formalization, elaboration of structure
Schein (1985)	Three stages	Birth or early growth, middle life, organizational maturity
Smith et al (1985)	Three stages	Inception, high growth, maturity
Flamholtz (1986)	Seven stages	New venture, expansion, professionalization, consolidation, diversification, integration, decline
Scott and Bruce (1987)	Five stages	Inception, survival, growth, expansion, maturity
Kazanjian (1988)	Three stages	Conception and development, commercialization, growth stability
Aanthony& Ramesh (1992)	Four stages	Start-up, growth, maturity, decline
Hanks et al (1993)	Four stages	Creation, commercialization, growth, maturity
Allen (1999)	Five stages	Pre-start up, start up, growth, maturity, rebirth or decline
Smallbone and Wyer (2000)	Five stages	Start-up, survival/development, growth, maturity, decline
Lester et al (2003)	Five stages	Existence, survival, success, revival, decline
Hoy (2006)	Five stages	Birth, growth, maturity, decline/renewal, death

Source: Gao& Alas (2010), Quinn & Cameron: 1983). Other is drafted by the authors.

All above models have a number of differences. The differences between organizational life—cycle models arise for two reasons. First, various authors have analyzed life-cycles of different types of organizations, and, therefore, their research has procured different models. Thus, there are life cycle models of companies, but also life-cycle models of non-profit organizations. Second, authors had set different criteria in differentiating the phases of the life-cycle. Various characteristics and components of organization, its structure, strategy, management systems, etc, have been used as criteria (Janicijevic, & Milikic, 2009). In addition, Economic literature divides a firm's life cycle into four periods: the so-called start-up, growth, maturity and decline or stagnation period. These periods are distinguished by firm-specific characteristics such as the degree of uncertainty that faces the firm, its assets in place and its investment opportunities (Aharony *et al.*, 2006)

However, the enterprise in different stages of the life-cycle has different characteristics. Due to the different stages of life cycle, firms facing different internal and external environments have different goals, so there are different capital structures in the different stages of life cycle. In introducing period, the operation risk of enterprise is high, thus firms often use less debts. In growth period, in order to meet the requirements of development, firms will make more use of debt, but with operation risk still high in this stage, cash flow is very unstable, so corporate debt level is lower.in the mature period, cash flow is stable, so the enterprise can employ more debt, and make full use of financial leverage. In recession, sales of the company fall, and the profits decline drastically, so the debt levels that the firm makes use of will decrease for the purpose of avoiding enterprise crisis. Thus the debt levels of enterprise take on low-high-low characteristics (Yang-Hai, 2010). Miller and Friesen's (1984) model summarizes the earlier works on life cycle models and classifies firms into five key stages of development. Using this conceptual model, Miller and Friesen (1984) performs a longitudinal study of the corporate life cycle by classifying a sample of 161 periods of history from 36 firms into five stages.

They find that firms differ significantly from one phase of history to another, with firms in each stage having distinct characteristics in terms of structure, strategies and decision-making. Anthony and Ramesh (1992) use dividend payout, sales growth, capital expenditure, and age to investigate the relationship between corporate life cycle and stock market response. They find that a monotonic decline exists in the sales growth and capital investment from the growth to the stagnant stages. Park and Chen (2006) have investigated the effect of Accounting conservatism and life —cycle Stages. For the measure of firms' choices of accounting measurement rules, this study uses the conservatism estimate generated using the FO model. Life-cycle stages as defined by Black (1998) are used as a surrogate for firms' economic attributes. Sample firms are classified into two conservatism groups (CONSERVATIVE and AGGRESSIVE) and three life— cycle stages (GROWTH, MATURE and DECLINE). The results of this study show that the equity market processes accounting information differently for firms at different life — cycle stages. Furthermore, the choice of conservative accounting measurements in reporting financial results affects the relationship between life-cycle stages and firm values. Ngoy (2008) investigate on the on the capital structure especially on the external finance source. We also try to find out the correlation between the leverage and the shareholder value creation. This study has used only secondary data from the annual reports of the listed states own enterprises (SOEs) on the Shanghai and Shenzhen Stock during the period 2000-2005. Then followed Anthony and Ramesh (1992) and Black (1998) methodology and classification variables to identify the life cycle stage of each firm-year observation. These produce 100 firms in the start-up stage, 100 firms in the growth stage and 100 firms in the mature stage. We have found that the mean of financial leverage for start-up firm is 0.7764 whereas for growth firms and mature firms it is respectively 0.7954 and 3.3147. The stare-up firms have the lowest leverage while the growth firms' leverage is higher than the start-up firms and lower than the maturity firms. That means the maturity firms have the highest leverage, which means SFL<GFL<MFL. As a result, for the start-up firms there is positive correlation between shareholders' value creation and leverage while for the growth firms and mature firms the relationship turn to the inverse.

Among several corporate life-cycle models suggested throughout the organization literature, we have selected life cycle model the suggested by Anthony and Ramesh.

Hypotheses

The main objectives of this study are:

1. Exploring the relationship between financial ratios and created shareholders value.

2. Exploring the impact of corporate life cycle on the relationship between financial ratios and created shareholders value.

The above objectives would be realized through the following hypotheses:

H1: There is a meaningful relationship between financial ratios and created shareholders value.

H2: there is a meaningful relationship between financial ratios and created shareholders value through the corporate life cycle.

H21: In the growth stage firms, there is a meaningful relationship between financial ratios and created shareholders value.

H22: In the maturity stage firms, there is a meaningful relationship between financial ratios and created shareholders value.

H23: In the decline stage firms, there is a meaningful relationship between financial ratios and created shareholders value.

Methodology

This research is of post event and correlation research .in this study, the goal is to analyze existing relations among variables and data or post events, without interfering with the researchers. To test the hypothesized related, sample firm-years are selected from Tehran Stock Exchange during 2005 through 2011 and classified into three life-cycle stages (growth, mature and decline), in tag end 588 firm-years (98 corporate) selected.

Life Cycle Stage Classification

To classify sample firm-years into life- cycle stage, this study uses the following four classification variables commonly used in prior research on life- cycle (Anthony and Ramesh [1992], Black [1998], and Park and Chen [2006]): age of the firm (AGE), percent sale growth (SG), capital expenditure divided by total value of the firm (CE), and annual dividend payout divided by net income (DP).

In this paper, we identify firms in four life cycle stages (GROWTH, MATURE, AND DECLINE) as follows:

1-The four life–cycle stage descriptors (AGE, SG, CE and DP) are calculated for each sample firm- year.

2-Industry quintiles are calculated for each sample firm –year.

3-The four classification variable observations for each firm – year are assigned to each industry quintile of the same variable and they are given a score as shown in table 2, in the composite score ranges from four to twenty.

4- Each sample firm – year is classified into life-cycle stages using the following procedure:

a. A firm – year is classified as a "GROWTH" stage observation if its composite score is between sixteen and twenty.

b. A firm − years is classified a "MATURE" stage observation if its composite score is between nine and fifteen.

c. A firm − years is classified as a "DECLINE" stage observation if its composite score is between four and eight. (Park and Chen, 2006)

Table 2. Score ranges.

Industry Quintile	Life-Cycle Descriptors			
	AGE	SG	CE	DP
80%-100%	1	5	5	3
60%-80%	2	4	4	3
40%-60%	3	3	3	3
20%-40%	4	2	2	4
0%-20%	5	1	1	5

Operational definition financial variable as following:

$$SG_{it} = \left[1 - \left(\frac{Sale_{it}}{Sale_{it-1}} \right) \right] \times 100;$$

$$DPR_{it} = \left(\frac{DPS_{it}}{EPS_{it}} \right) \times 100;$$

$$CE_{it} = (CEXP_{it} / VALUE_{it}) \times 100;$$

AGE= number of years since the first year firm's data is available

Where:

SALES=net sales; CEXP=capital expenditure; VALUE=market value of equity; DPS=dividend per share, and EPS=earnings per share

The sample for this study will include all firms listed on the Tehran stock Exchange (TSE) between 2005and 2010that using multiple life-cycle stage descriptors (i.e., AGE, SG, CE and DP), this study classifies sample firms into life cycle stages (GROWTH, MATURE and DECLINE).

The Models

This study uses a pooled Least Squares model to test the hypotheses, and uses following model to test the hypotheses.

$$CSV_{jt} = \beta_0 + \beta_1 QR_{jt} + \beta_2 CR_{jt} + \beta_3 DE_{jt} + \beta_4 DA_{jt} + \beta_5 TI_{jt} + \beta_6 TA_{jt} + \beta_7 EPS_{jt} + \beta_8 ROE_{jt} + \beta_9 ROA_{jt} + \beta_{10} ROS_{jt} + \varepsilon_{jt}$$

And, figure 1 presents the conceptual framework to test the impact of corporate life cycle on the relationship between financial ratios and created shareholders value.
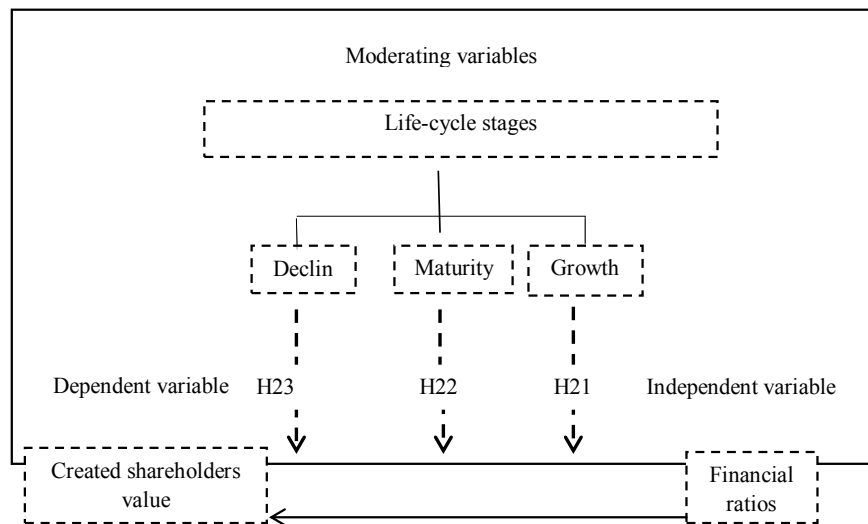
Figure 1. A conceptual model

Variables of the study

Variables for this research are divided in three groups: dependent, independent, and moderating variables.

Independent variable

In this research financial ratios (QR, CR, DE, DA, TI, TA, EPS, ROE, ROA, and ROS) are considered as independent variables, and are calculated as:

Liquidity ratios

Two frequently-used liquidity ratios are the current ratio and the quick ratio.

The current ratio of current assets to current liabilities:

$$\text{Current Ratio}(CR) = \frac{\text{Current Assets}}{\text{Cuernt Liabilities}}$$

The quick ratio is an alternative measure of liquidity that does not include inventory in the current assets. The quick ratio is defined as follows:

$$\text{Quick Ratio}(QR) = \frac{\text{Current Assets} - \text{Inventory}}{\text{Current Liabilities}}$$

Financial Leverage Ratios

The debt ratio is defined as total debt divided by total assets:

$$\text{Debt Ratio}(DA) = \frac{\text{Total Debt}}{\text{Total Assets}}$$

The debt-to-equity ratio is total debt divided by total equity:

$$\text{Debt} - \text{to} - \text{Equity Ratio}(DE) = \frac{\text{Total Debt}}{\text{Total Equity}}$$

Activity Ratios

$$\text{Inventory Turnover ratio}(TI) = \frac{\text{Cost of Goods Sold}}{\text{Average Inventory}}$$

$$\text{Assets Turnover Ratio}(TA) = \frac{\text{Sale}}{\text{Average Total Assets}}$$

Profitability Ratios

$$\text{Earning Per Share}(EPS) =$$

$$= \frac{\text{Net Income}}{\text{Number of Common Shares Outstanding}}$$

Return on equity (ROE) is computed as the net income divided by total equity and is a measure of a firm's profit generating efficiency from every dollar of shareholders' equity:

$$\text{Return on equity}(ROE) = \frac{\text{Net income}}{\text{Total equity}} \times 100\%,$$

Return on assets (ROA) is defined as the net income divided by total assets and is a measure of profit per dollar of assets:

$$\text{Return on assets}(ROA) = \frac{\text{Net income}}{\text{Total assets}} \times 100\%,$$

Return on sales ratio is known as a firm's "operating profit margin". It is calculated using this formula:

$$\text{Return on sales ratio}(ROS) =$$

$$= \frac{\text{Net Income(Before Interest and Tax)}}{\text{Sales}}$$

Dependent variable

In this research, created shareholder value is considered as a dependent variable, and we define created shareholder value following Fernandez (2002). The created shareholder value is quantified as follows:

Created shareholder value = Equity market value (Shareholder return - K_B)

Where:

The equity market value of a listed company is the company's market value, that is, each share's price multiplied by the number of shares.

K_e Is equal to the required return on the investment in the company's share (Fernandez, 2003)

Moderating variable

In this research, life cycle stages (growth, maturity and decline) are considered as moderating variables.

Results and discussion

Tables 2 provides descriptive statistics for the life cycle descriptors and, Table 3 shows the description of the all our independent and dependent variables.

Life cycle descriptors

We use four life cycle descriptors dividend payout (DP), sales growth (SG), capital expenditure (CEV), and firm age (AGE) and cluster analysis to group firms into the growth, the mature, and the decline stages in given year. Table 2 shows the Means and Standard Deviations of the life cycle descriptors and the differences in means and standard deviations between the growth and the mature stages and between the mature and the decline

Table 3. Life cycle descriptive statistics

Life-cycle descriptor	growth Mean std.		maturity Mean std.		decline Mean std.	
SG	0.65	8.43	0.38	16.78	0.091	3.89
DPS	0.14	7.46	0.32	24.57	0.51	8.34
CE	0.16	13.12	0.09	13.67	0.05	6.23
AGE	9	10.52	17	13.84	28	8.25

Life-cycle descriptor	Entire sample Mean std.	
SG	0.485	9.678
DPS	0.356	14.245
CE	0.121	11.567
AGE	19	12.47

Descriptive statistics for independent and dependent variable

Table 3 provides descriptive statistics for all our independent and dependent variables. These statistics are provided for the entire sample of 588 firm- year observations and separately for each life cycle stages.

We have found that the mean of created shareholder value for growth firm is 0.498 whereas for maturity and decline firms it is respectively 0.673 and 0.365 (see table3). The decline firms have the lowest created shareholder value while the growth firms' created shareholder value is higher than the decline firms and lower than the maturity firms. The means the maturity firms have the highest created shareholder value, which means DCSV < GCSV < MCSV where DCSV =

= decline firm created shareholder value, GCSV = growth firm created shareholder value, MCSV = = maturity firm shareholder value. Thus, we can say that growth firms created shareholder value than the decline firm while maturity firms created shareholders' value than growth firms and decline firms. From the table below we have the mean of the quick ratio for the growth firms is 0.621, for the mature firms is 0.785 and the mean of decline is 0.541. we have found that the mean of the quick ratio for the decline firms is lower that the means of the growth firms and maturity firms. The means of quick for the growth firms is lower than the mean of maturity firms, which means DQR < GQR< MQR. Where DQR= quick ratio of decline firms, GQR = growth firms quick ratio.

MQR = maturity firms quick ratio. And, we have the mean of the current ratio for the growth firms is 1.023, for the mature firms is 0.824 and the mean of decline is 1.312. We have found that the mean of the current ratio for the decline firms is higher than the growth and ma-turity firms. The mean of current ratio for the growth firms is higher than the mean of maturity firms, which means MCR<GCR<DCR. Where MCR = current ratio of maturity firms, GCR = growth firms current ratio, DCR= decline firms current ratio.

Table 4. Descriptive statistics for all our independent variables.

Life cycle stage	growth		maturity		decline	
Life cycle descriptor	Mean Std.		Mean Std.		Mean Std.	
CSV	0.4	13.6	0.6	8.6	0.3	5.6
QR	0.6	2.6	0.7	7.4	0.5	4.1
CR	1.0	6.9	0.8	4.6	1.3	1.6
DE	3.8	3.8	4.3	.97	2.6	7.4
DA	0.2	12.2	0.2	5.3	0.1	9.4
TI	0.0	3.8	0.0	5.8	0.02	4.4
TA	0.0	15.2	0.0	8.0	0.01	6.3
EPS	0.03	6.9	0.05	4.01	0.01	7.6
ROE	0.7	0.32	0.1	0.9	0.2	0.3
ROA	0.8	0.34	0.8	0.1	0.4	0.7
ROS	0.3	0.23	0.6	0.1	0.4	0.7

Also, we have found that the mean DDE<GDE<MDE, DDA<MDA<GDA, DTI<MTI<GTI, DTA<MTA<GTA, DEPS<GEPS<MEPS, MROE<DROE<GROE, DROA<MROA<GROA, and GROS<DROS<MROS.

Analysis

Table 4 depicts the correlation coefficients among independent variable and dependent variable. These correlation coefficients are calculated for the sample as a whole and for each of the three life cycle stages.

Testing the hypothesizes
(See table 4)
a. Testing the first hypothesis
There is no meaningful relationship between financial ratio and created shareholders value (CSV).
H0: P(x, y) = 0
There is meaningful relationship between financial ratio and created shareholders value (CSV).
H1: P (x, y) ≠ 0
In the error level of 5%, for the quick ratio, current ratio, assets turnover ratio, return on equity ratio, and return on assets ratio, H0 is rejected and there are meaningful relationship between above financial ratios and created shareholders value.

In the error level of 5%, for the debt ratio, debt-to-equity ratio, inventory turnover ratio, earning per share and return on sales ratio, H0 is cannot be rejected, and there is no meaningful relationship between above financial ratios and created shareholders value.

b. Testing the second hypothesis
H2: there is a meaningful relationship between financial ratios and created shareholders value through the corporate life cycle.

Testing the first sub-hypothesis
H21: In the growth stage firms, there is a meaningful relationship between financial ratios and created shareholders value.
Therefore:
H0: In the growth stage firms, there is no a meaningful relationship between financial ratios and created shareholders value.
H0: P(x, y) = 0
H1: In the growth stage firms, there is a meaningful relationship between financial ratios and created shareholders value.
H1: P (x, y) ≠ 0

In the error level of 5%, for the quick ratio, current ratio, inventory turnover ratio, debt ratio, debt-to-equity ratio, assets turnover ratio, and return on assets ratio, H0 is rejected and in the growth stage firms there are meaningful relationship between above financial ratios and created shareholders value.

And, in the error level of 5 %, for the return on sale ratio, return on equity ratio, and earning per share, H0 is cannot be rejected, which means in the growth stage firms there is no meaningful relationship between above financial ratios and created shareholders value.

Testing the second sub-hypothesis

H22: In the maturity stage firms, there is a meaningful relationship between financial ratios and created shareholders value.

Therefore:

H0: In the maturity stage firms, there is no a meaningful relationship between financial ratios and created shareholders value.

H0: P(x, y) = 0

H1: In the maturity stage firms, there is a meaningful relationship between financial ratios and created shareholders value.

H1: P (x, y) ≠ 0

In the error level of 5%, for the quick ratio, current ratio, inventory turnover ratio, debt -to-equity ratio, assets turnover ratio, return on equity ratio, and return on assets ratio, H0 is rejected and in the maturity stage firms there are meaningful relationship between above financial ratios and created shareholders value.

In the error level of 5 %, for the debt ratio, return on sale ratio, and earning per share, H0 is cannot be rejected, which means in the maturity stage firms there is no meaningful relationship between above financial ratio and created shareholders value.

Testing the three sub-hypothesis

H23: In the decline stage firms, there is a meaningful relationship between financial ratios and created shareholders value.

Therefore:

H0: In the decline stage firms, there is no a meaningful relationship between financial ratios and created shareholders value.

H0: P(x, y) = 0

H1: In the decline stage firms, there is a meaningful relationship between financial ratios and created shareholders value.

H1: P (x, y) ≠ 0

Table 4. Testing the pooled Least Squares model to test the hypotheses

		Entire sample			Growth			maturity			decline		
		Coefficient t-statistic Prob.			Coefficient t-statistic Prob.			Coefficient t-statistic Prob.			Coefficient t-statistic Prob.		
Independent variable	QR	0/09	2/30	0/02	0/15	2/36	0/02	0/26	2/20	0/04	0/14	2/83	0/005
	CR	0/27	3/63	0/01	0/28	2/19	0/03	0/51	-2/06	0/02	0/18	2/97	0/004
	DE	-0/06	1/32	0/18	-0/11	3/10	0/00	-0/14	2/59	0/02	-0/12	1/98	0/048
	DA	0/05	5/67	0/09	0/13	2/21	0/03	0/32	-0/46	0/64	0/13	5/67	0/038
	TI	0/65	1/55	0/12	0/61	2/17	0/03	0/48	-2/32	0/025	0/48	2/03	0/04
	TA	0/89	2/26	0/03	1/87	2/63	0/01	1/21	2/12	0/03	0/85	2/66	0/001
	EPS	126/2	0/28	0/03	16/02	0/28	0/04	3/75	0/86	0/007	6/27	0/32	0/004
	ROE	0/15	2/50	0/01	0/29	1/48	0/01	0/08	2/94	0/004	0/08	-1/98	0/048
	ROA	8/31	3/07	0/00	3/62	2/74	0/00	1/78	-2/12	0/027	2/70	2/29	0/025
	ROS	0/286	0/62	0/003	4/73	3/06	0/40	-0/30	0/62	0/007	0/41	1/43	0/77
R-QUARED		0/57			0/35			0/52			0/45		
Adjusted R-squared		0/49			0/28			0/34			0/31		
Durbin-Watson Stat		1/95			2/32			1/67			1/87		
F-statistic		12/02			8/79			7/53			3/28		
Kolmogorov-smirnov		0/27			0/87			0/33			0/72		

In the error level of 5%, for the quick ratio, current ratio, inventory turnover ratio, debt ratio, assets turnover ratio, and return on assets ratio, H0 is rejected and in the decline stage firms there are meaningful relationship between above financial ratios and created shareholders value.

And, in the error level of 5 %, for the return on sale ratio, debt -to-equity ratio, earning per share, and return on equity ratio, H0 is cannot be rejected, which means in the growth stage firms there is no meaningful relationship between above financial ratio and created shareholders value.

Conclusions

We examined the relationship between financial ratios and created shareholders value, at the different life cycle stages, and find that, although there is meaningful relation between some of the financial ratios and created shareholders value, but, can impact of corporate life cycle on relationship between financial ratios and created shareholder value. However, in the growth firms there is a meaningful relationship between all financial ratios and created shareholders, except, the return on sale ratio, return on equity ratio, and earning per share. And, in the maturity firms there is a meaningful relationship between all financial ratios and created shareholders, except, the debt ratio, return on sale ratio, and earning per share. And, in the decline firms there is a meaningful relationship between all independent variables and created shareholders value, except, the return on sale ratio, debt -to-equity ratio, earning per share, and return on equity ratio.

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