

**Comparison the relationship between stock price and earnings quality in firm's life cycle stages**Abdolhosein Rezvani<sup>1</sup>, Jalal jamali<sup>2</sup>, Abolfazl Khabirnia<sup>3</sup>, Naser Chamangard<sup>4</sup><sup>1</sup>Department of Accounting, Parsabad Branch, Islamic Azad University, Parsabad, Iran<sup>2</sup>Department of accounting, payam Noor University, ir.iran<sup>3</sup>Department of Accounting, Jolfa International Branch, Islamic Azad University, Jolfa, Iran<sup>4</sup>Department of Accounting, Mizan University, Tabriz, Iran[rezvani@iaupmogan.ac.ir](mailto:rezvani@iaupmogan.ac.ir)

**Abstract:** The main purpose of this study is to Review the relationship between stock price and earnings quality using barton-simko model in corporate life cycle stages. Analysis of data collected in this study was conducted in two stages. First, firm's samples of member were classified to growth, maturity and decline stages. Then, running pooled cross-sectional regression analysis comparisons. The hypotheses were tested during 2004-2009 the results are shown barton-simko model in growth, maturity and decline stages is significant. In maturity stage, stock price, have the relationship stronger than the growth and decline stages with earning quality. Results demonstrate there is a significant differences relationship between stock price and earning quality in growth, maturity and decline stages.

**Keywords:** stock price, earnings quality, firm's lifecycle, barton-simko model.

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**Keywords:** Species richness; beta-diversity; taxonomic diversity; forest

**1-Introduction**

Financial reports are among the most important outcomes of accounting systems. One of their main goals is to supply the needed data in order to assess performance and profitability of a business entity. One of the accounting items, presented by financial reports, is net profit which has several uses. Usually profit is considered as a factor to establish profit division policies and it is a guideline for investment and decision-making and finally a factor for forecasting (Khosh-tinat & Esmaeeli, 2005). Some researchers have studied the relationship between stock price and earnings quality (Anthony & Ramesh, 1992). But these researchers have not studied the effect of firms' life cycle on the relationship between stock price and earnings quality. According to life cycle theory, firms represent different traits in different periods of life cycle regarding financial and economical issues. In other words, financial and economical characteristics of a firm are affected by the period of life cycle in which it is located (Bixia, 2007). Also the results of the previous researches show that the reaction of capital market to accounting information in different periods of life cycle has had meaningful differences (Aharony & Yehuda, 2006). In fact representing the earnings quality data causes the reaction of investors. It seems that the reaction of investors causes fluctuations in stock price itself. On the other hand, firms show different endurances against the created reaction in different periods of life cycle. Thus, presenting data related to the effect of financial data

quality on investors' reaction (the price of stock market) during the different periods of life cycle includes information contents. In this research, earnings quality criterion will be calculated by using pattern proposed by Barton-simko (2002) and its relationship with stock price during different periods of firms' life cycle will be investigated.

**2-Theoretical bases of earnings quality**

The theory of earnings quality was first posed by financial analysts and Stock Exchange agents. They inferred that the reported profit does not show the firms' profitability as it is imagined. They found out that analyzing firms' financial statements is a difficult task due to the different weak points in assessing accounting information. We should not solely consider the amount reported to announce the profitability in determining the firms' value, but should also consider the quality of the reported profit. By earnings quality, we mean the potential profit growth and the probable amount of realization of future profits. In other words, the value of a share does not depend solely on the profit of each firm share's profit in the current year and it depends on our expectations of our firm's future and future years' profitability and assurance coefficients compared with the future profit gains (Jahankhani, 1995).

The concept of earnings quality considers two characteristics for quality determination: 1) Profitability in decision-making, and 2) The relationship between earnings quality and economical profit. In other words, earnings quality is honest

expression of the reported profit. That is a high earnings quality shows the usefulness of profit information for decision-making by the users and also it is more adjusted with economic profit (Ahhammadpoor & Ahmadi, 2008). The investors' general understanding of the real profit concept is the profit resulted from the common performances which can be repeated in the future years and can create cash flows. Investors consider accounting net profit as the best criterion for determining profitability of a business unit.

Financial analysts generally consider the reported profit different from that of real profit. One of the reasons for it is profit manipulation by managers. Financial analysts try to assess the firms' profit perspective. Profit perspective refers to the desired and undesired net profit features' composition. Firms with repeatable accounting profit have a higher earnings quality in income statement compared with other firms. Thus, analysts can foretell firm's future profitability with more assurance capability (Esmaeeli, 2007).

Regarding the emphasis by those who design financial accounting standards about data usefulness, it is believed that earnings quality and financial reporting quality on the whole is considered more by those who use them for exchange and decision-making goals. Additionally, standard determiners consider earnings quality indirectly as a criterion for assessing the quality of financial reporting standards (Rahimian & Jaafari, 2006).

Revsine (1999) considers a profit to be more qualified which is more consistent. Richardson & et al (2001) introduced earnings quality as the consistency degree of profit gain in future periods. Benish & Wargass (2002) consider earnings quality as consistency probability of current profit gain in the future. Penman & zhang (2002) identify earnings quality as the ability to show future profits. Hodge (2003) introduced earnings quality as the difference degree of the reported net profit of the real profit. Michael & et al (2003) consider earnings quality as a degree of relationship between firm's previous profits and its future cash flow. White (2003) states that earnings quality is the amount of conservancy employed in the reported profit. Schooler (2004) describes earnings quality in a form of a relationship between promissory items and cash flows.

One of the reasons of the diversity in the descriptions above is the fact that earnings quality can consist of different approaches by different researchers. Thus, earnings quality is a complicated issue and there has not any concise description presented for it.

### 3-Theoretical bases of firms' life cycle

One of applied patterns regarding the analysis of the position and status of the company is life cycle pattern of the firm. Firms are created in a period of time, develop, get matured and then enter saturation stage and finally get old and decay. Inefficient programming of the performances and its occurrence with its old ages simultaneously causes the occurrence of the firm's decay to be more probable (Karami & omrani, 2010).

Accounting data and information can affect the firm's main decision-makings. Main decision-makings are considered to be crucial in doing business activities which result in the change of firms' value. Studies of life cycle showed business activities' effectiveness accords with the changes of the firm's value during the different periods of life cycle. Business entities follow a certain policy regarding each period of their economic existence. These policies are somehow reflected in firms' accounting information (Jaafer, 2010).

Researchers have introduced the following 4 main phases as the firm's life cycle:

#### 3-1-Stage one: existence

Known as the entrepreneurial (Quinn and Cameron, 1983) or birth stage (Lippitt and Schmidt, 1967), Existence (Churchill and Lewis, 1983) marks the beginning of organizational development. The focus is on viability, or simply identifying a sufficient number of customers to support the existence of the organization. Decision-making and ownership are in the hands of one, or a few, and the organizational structure is very simple. Organizations in this stage tend to enact or create (Bedeian, 1990) their own environments.

#### 3-2-Stage two: survival

As firms move into the Survival stage they seek to grow (Adizes, 1979; Downs, 1967), develop some formalization of structure (Quinn and Cameron, 1983), and establish their own distinctive competencies (Miller and Friesen, 1984). Goals are formulated routinely in this stage, with the primary goal being the generation of enough revenue to continue operations and finance sufficient growth to stay competitive (Churchill and Lewis, 1983). The Survival stage provides several interesting alternatives: Some organizations grow large and prosper well enough to enter the next stage, some "hit and miss," earning marginal returns in some fiscal cycles, and others fail to generate sufficient revenue to survive. Most organizations in this stage are structured in a functional manner, and decision-making is more decentralized than the Existence stage.

**3-3-Stage three: success**

Commonly called maturity (Adizes, 1979), the Success stage represents an organizational form where formalization and control through bureaucracy are the norm (Quinn and Cameron, 1983). A common problem in this stage is what many businesses have long referred to as "red tape" (Miller and Friesen, 1984), a condition of wading through layers of organizational structure to get anything accomplished. Job descriptions, policies and procedures, and hierarchical reporting relationships have become much more formal. Such organizations have passed the survival test, growing to a point that, at times, they may seek to protect what they have gained instead of targeting new territory. The top management team focuses on planning and strategy, leaving daily operations to middle managers. Organizational structure is varied, but many firms tend to be organized by product or geographic divisions due to the need to serve wide markets.

**3-4-Stage four: decline**

Although firms may exit the life cycle at any stage, the Decline stage can trigger the demise. The Decline stage is characterized by politics and power (Mintzberg, 1984), as organizational members become more concerned with personal goals than they are with organizational goals. Control and decision-making tend to return to a handful of people, as the desire for power and influence in earlier stages has eroded the viability of the organization.

**4-Literature related with earnings quality**

Baroa (2006) has studied the criteria for measuring quality of earnings, using quality characteristics of financial data included in theoretical framework of FASB. The results of studying the components of each dimension of quality of earnings showed that firms with high relatedness and high reliability of profit have higher profits, profit reaction coefficient and descriptive power of value regression than those which benefit lower relatedness and reliability of profit.

Bao and Bao (2004) argue that lower variability of earnings does not guarantee that income smoothers will have higher firm values. They point out that quality earnings smoothers have the highest price-earnings multiple while non-quality non-smoothers have the lowest price-earnings multiple.

Chan & et al (2006) studied the relation between promissory goods (difference between profit and cash flows) and future stocks yields and showed that in firms with high amount of promissory goods in the period after financial data reporting, stock yield will decrease. An interpretation of these results is that firms with low quality of profit (i.e. firms with high

promissory goods) incur a decrease in yield in the period after profit reporting, because stockholders find out about low profit quality of the firms and equilibrate the stocks' value accordingly.

**5-Review of literature in relation with the firm's life cycle**

Park & Chen (2006) studied the effect of conservancy on the reaction of investors towards the net performance assets and unusual performance profit in different stages of the firm's life cycle and found out that in development and maturation stage, it is more important for the investors to know about net yield of performance assets and unusual performance profit of conserving firms in comparison to those firms which use unprecedented accounting approaches. While it is proved that in decay period it is vice versa.

Miller and Friesen (1984) report that firms in the maturity and revival phases put significantly more emphasis on formal cost controls than do firms in the growth stage.

Md. Auzair and Langfield-Smith (2005) use a self-categorization measure based on the firm's own assessment of its life cycle stage and report that organizational life cycle, among other contingent variables, has a significant effect on the design of a firm's management control systems. In this paper, we investigate if the use of the activity-based cost-accounting system differs across life cycle stages of the firm. | the life cycle literature.

**6-Research assumptions**

1-There are significant differences between stock price and earnings quality with Barton-simko model in firm's life cycle stages.

1-1) there is significant differences between stock price and earnings quality with Barton-simko model in growth stage.

1-2) there are significant differences between stock price and earnings quality with Barton-simko model in maturity stage.

1-3) there are significant differences between stock price and earnings quality with Barton-simko model in decline stage.

**7-Research method**

The research method is correlation-descriptive and used market methodology. this study from aim is usage and from data collection is back event.

**8-condition separates the firms in life cycle stages**

To classify sample firm-years into life-cycle stages, this study uses the following four classification variables commonly used in prior

research on life-cycle Anthony and Ramesh (1992): age of the firm (AGE), percent sales growth (SG), capital expenditure divided by total value of the firm (CE), and annual dividend payout divided by net income (DP). In this research we have ignored the emergence period and described life cycle to include 3 periods of development, maturation and decay because stock exchange for the newly established firms was inactive.

In this research the firms' division into development, maturation and decay periods was done by using the four variables mentioned and Park & Jensen's (2006) methodology.

Division phases in Park & Jensen's approach:

- 1- The amount of each variable of each firm was calculated for each year.
- 2- The 4 variables were arranged based on year-firm. Then according to table (1), numbers were appropriated in accordance with the category.

3- An aggregate mark was gained for each year-firm which is categorized regarding the following conditions in one of development, maturation and decay phases:

- a) If the sum of marks is between 16 and 20, growth phase
- b) If the sum of marks is between 9 and 15, maturity phase
- c) If the sum of marks is between 4 and 8, decline phase (Park & Jensen, 2006)

Table 1- life cycle model

-	(AGE)	(SG)	(CE)	(DPR)
0%-20%	5	1	1	5
20%-40%	4	2	2	4
40%-60%	3	3	3	3
60%-80%	2	4	4	3
80%-100%	1	5	5	3

We can be seen operating definition of research variables in table 2

Table 2- operating definition of research variables

frame	symbol	variable
$= [1-(\text{Sale}_{it} / \text{Sale}_{it-1})] \times 100$	$SG_{it}$	sales growth
$= (\text{DPS}_{it} / \text{EPS}_{it}) \times 100$	$DPR_{it}$	annual dividend payout divided by net income
$= (\Delta \text{fa} / \text{vm}) \times 100$	$CE_{it}$	capital expenditure divided by total value of the firm
$\text{EQ} = \text{NOA} / \text{NS}$	$\text{EQ}_i$	Barton-simko model earning quality
$= (\text{SIZE} / \text{NS})$	TOR	Turn over
Eps=earn per share Dps= common stock dividends NS=Net sale SIZE =all of assets $\Delta \text{fa}$ =capital expenditure		Oi=Operating income NI= net income SALE= net sales NOA= Net operating income VM=market value

**9-Pattern presentation**

$$Y_{it} = \alpha_0 + \alpha_1 X_{it} + \alpha_2 \sum \text{control}_{it} + \varepsilon_{it}$$

Multi-variable regression using aggregate data was used to analysis the data.

Table3-regression model variables

definition	symbol
Earning quality index	$X_{it}$
Tor · Size	Control
$\Delta p$	$Y_{it}$

Our statistic society was firms accepted in Tehran Stock Exchange. First library method was utilized to collect data about theoretical literature and then data collection was done through financial income

statements of firms accepted in Tehran Stock Exchange, CDs and [rdis.ir](http://rdis.ir) & [irbourse.com](http://irbourse.com) sites.

Our sampling method was systematic deletion (filtering). Thus, selection requirements included:

- 1-Firms have the same financial periods and end on 29<sup>th</sup> of 12 each year.
- 2-The firm's financial information's for research period was gettable
- 3-There is not any dealing stoppage more than 3 months.
- 4- Firms before year 2002 matriculate in Tehran stock exchange.
- 5-The sample is not among investing industry or brokerage or monetary and banking institutions.
- 6- The research period includes the years between 2004 and 2009.

Table 4-result the regression between stock price and earnings quality with Barton-simko model in firm’s life cycle stages

significant			t-value			beta			Variable name	symbol	Variable type
decline	maturity	growth	decline	maturity	growth	decline	maturity	growth			
0/000	0/000	0/200	11/015	13/571	1/294	103/870	79/980	3/261	Alfa	$\alpha$	Fix value
0.001	0.001	0/043	-4/078	-3/417	-0/776	-0/175	-0/499	-0.026	$\Delta Q$	X1	Dependent Variable
0/010	0/017	0/000	-1/615	-2/388	-0/768	0/299	-0/276	0/093	Tor	Control Variables	
0/235	0/182	0/546	17/622	-1/336	-0/604	-22/084	-0/044	-0/498	SIZE		
-	-	-	-	-	-	1/963	1/987	1/939	Durbin-Watson		-
0/000	0/000	0/000	-	-	-	50/544	45/683	7/963	F		-
-	-	-	-	-	-	0/389	0/366	0/461	R Square		-
-	-	-	-	-	-	0/382	0/358	0/460	Adjusted R Square		-

**10-Result the assumptions test**

There are significant differences between stock return and earnings quality with leuz model in firm’s life cycle stages. As it can be seen in table 4, earnings quality variable with Barton-simko's model has a meaningful relationship with stock price in all tree stage. Earnings quality, flowing rate of assets and firms' size have a meaningful and reverse relationship with stock price. Regarding the amount of F statistics, regression pattern has been balanced and is meaningful. Regarding the Adjusted R Square, Barton-simko's model in growth stage can explain 46 percent, in maturity stage can explain 36 percent and in decline stage can explain 39 percent of stock price changes.

**11-Discussion and Conclusion**

This research was carried out to study the relationship between market price of stock and

earnings quality using pattern posed by Barton-simko during different periods of firms' life cycle stages in 65 firms accepted in Tehran Stock Exchange during the years between 2004 and 2009. The statistical method used in this research is multi-variable linear regression by using aggregate data. The results show that in Barton-simko's model and during all three phases of life cycle (growth, maturity and decline), stock price has a negative and meaningful relationship with earnings quality.

The Barton-simko model in maturity stage has a more strong relationship with stock price in comparison to growth and decline stages. Results shows that there is a meaningful difference between earnings quality with Barton-simko model and stock price relationship in firms life cycle stages.

Table 5: The research model earnings quality coefficients

significance	Decline stage	significance	Maturity stage	significance	Growth stage	earnings quality coefficient
significant	-0/175	significant	-0/499	significant	-0/026	Barton-simko model

**12-Suggestions resulted from this research**

Regarding the information content of earnings quality on stock price which causes differences in purchase and sale exchanges and observing the phases in firms' life cycle, the following proposals are suggested for investors, managers and financial analysts they attention to firms are in maturity stage .

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