

Corporate life cycle, risk-taking and investor sentiment: Evidence from Tehran Stock Exchange

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Introduction

One of the most important economic features of companies is the life cycle. According to the life cycle theory, the importance of risk and performance indicators varies over the life cycle stages. This research studies the impact of life cycle stages and investor sentiment on risk-taking behavior of managers and shareholders. The company's risk-taking is the uncertainty about the prediction of future cash flow and the company's future interest in new investments (Wright et al., 1996). Risk-taking has impact on firm's growth, performance and survival (Bromiley, 1991), on the other hand, in research, risk-taking is considered as a serious agency problem (Low, 2009).

Hypotheses

H1: *Risk-taking at the start and growth stages is more than the stages of mature and decline stages of life cycle.*

H2: *Investor sentiment has a direct and significant impact on risk-taking in the life cycle stages.*

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Methods

We base our sample selection on all of the firms listed on the TSE (Tehran Stock Exchange) during 2005-2016. The sample consists of 170 TSE firms. Our basic methodology involves multiple regressions using Panel Data method. The models are estimated with OLS and GLS. Main models are:

$$\begin{aligned} \text{Risk}_{i,t} = & \alpha_0 + \beta_1 \text{LCS}_{i,t} + \beta_2 \text{Size}_{i,t} + \beta_3 \text{MTB}_{i,t} + \beta_4 \text{Lev}_{i,t} & (1) \\ & + \beta_5 \text{CapEx}_{i,t} + \beta_6 \text{SG}_{i,t} + \beta_7 \text{Age}_{i,t} + \beta_8 \text{PM}_{i,t} \\ & + \sum_t \alpha_t \text{Year}_t + \sum_i \alpha_i \text{IND}_i + \varepsilon_{i,t} \end{aligned}$$

$$\begin{aligned} \text{Risk}_{i,t} = & \alpha_0 + \beta_1 \text{LCS}_{i,t} + \beta_2 \text{Sent}_{i,t} + \beta_3 \text{LCS}_{i,t} \times \text{Sent}_{i,t} & (2) \\ & + \beta_2 \text{Size}_{i,t} + \beta_3 \text{MTB}_{i,t} + \beta_4 \text{Lev}_{i,t} + \beta_5 \text{CapEx}_{i,t} \\ & + \beta_6 \text{SG}_{i,t} + \beta_7 \text{Age}_{i,t} + \beta_8 \text{PM}_{i,t} + \sum_t \text{Year}_t \\ & + \sum_i \text{IND}_i + \varepsilon_{i,t} \end{aligned}$$

Variables definitions are coming below:

The dependent variable is the risk-taking (Risk). For calculation of risk-taking, two indexes are used, one is standard deviation of return on assets (corporate risk-taking measure) over the past three years as the main criterion and the other is standard deviation of stock returns (investor risk-taking measure) over the past three years as benchmark.

Independent variable of the research is the stages of the company's life cycle and the moderator variable are also investor sentiment. The approach of Hassan et al. (2015) and DeAngelo et al. (2006) (ratio of retained earnings to asset) was used for categorizing companies into the life cycle stages. The smaller this ratio is, it implies firm in start and growth stages of life cycle, and vice versa, the larger ratio implies firm at the mature and decline stages of life cycle.

Investor sentiments following Baker & Wurgler (2002), Polk and Sapienza (2009), Alzahrani and Rao (2014), and Hasan & Habib (2017) through rate of stock turnover (average of daily trading volume adjusted based on the percentage of free float shares) are measured; the smaller this ratio is, the longer investor sentiment (due to the low volume of transactions) is.

There are seven control variables as Habib and Hasan (2017) propose in the models:

Size: Size is calculated through the natural logarithm of the total assets.

Market-to-book (MTB) Ratio: The ratio of market value to book value of equity.

Leverage: Leverage is equal to the total debt divided by total assets.

Capital expenditure (CapEx): In terms of gross investment expense for dividends, interest and purchases of fixed assets, less the funds received for the sale of fixed assets and then divided by the total assets.

Sales growth (SG): is equal to annual sales changes over two consecutive years, divided by the base year sales volume, to calculate sales growth.

Age: The purpose of the company's life is the number of years of membership in the stock exchange, which is used to calculate this variable from the natural logarithm of number one plus the number of years of membership in the stock exchange.

Profit Margin (PM): The margin is equal to the net profit before tax divided by sales.

Discussion and Conclusion

The results of the first hypothesis showed that the risk-taking of managers in the stages of emergence and growth is more than the stages of mature and decline, which is consistent with the results of Hassan and Habib (2017). Generally, it is believed that corporate risk-taking should be a response to the company's life cycle. It is expected that companies at the stage of the emergence take more risks for the development of the company according to the corporate strategy. The manager's curriculum stimulates the company to carry out the initial investment thus forcing competitors to enter the capital market (Spence, 1977, 1979, 1981; Porter, 1980; Jovanovich, 1982).

The results of the second hypothesis also showed that increasing investor sentiment cause increases in the risk-taking of managers in the life cycle stages. The result of the second hypothesis is also consistent with the results of Hassan and Habib (2017). Companies in the emergence stage are more vulnerable to market mispricing with high or low investor sentiment, since the initial investment of the company, especially in the field of research and development, leads to an increase in ambiguity and uncertainty due to the inherent information asymmetry

surrounding the company. The discrepancy of pricing uncertainty with its constituent elements takes longer in research and development costs of other investments (Poluk and Sapienza, 2009).

Keywords: *Corporate Life Cycle, Risk-Taking, Investor Sentiment, Behavioral Finance, Tehran Stock Exchange.*