

FACTORS AFFECTING RISK AND RETURN OF FINANCIAL STOCKS IN STOCK EXCHANGE

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Abstract

More research has been done in the field of the stock market (stock exchange), is about stock pricing and the factors affecting it. However stock market includes aspects like other markets that their analysis is main issue to understand tasks of stock market. This study sought to find a relationship between systematic risk of stocks in Tehran Stock Exchange and several important variables. These variables include the operating leverage, financial leverage and firm size. The results show that relationship between variables of independent and dependent has some extended opposed to the theory of investment in securities. Thus it can be concluded that stock systemic risk does not accept significant impact studied variables in the Tehran Stock Exchange.

Keywords: Stocks, Bonds, Operating Leverage, Financial Leverage, Risk, Size, Efficiency

1. INTRODUCTION

The economy is composed several departments in every country that how relationships between departments is identified the country's economy direction. Capital markets also constituent the currency markets with the financial markets.

Today, throughout the world, particularly in industrial countries, stock exchange is the most important element in capital markets. The study of country financial markets and also identifying other factors that are associated with capital markets and money is essential. Financial markets play a vital role in achieving economic growth and development, because markets provide the necessary resources to produce goods and services. Accordingly, all economic enterprises need to know the financial markets in competitive dynamic environment. In fact, understanding the different types of securities and knowledge of how to evaluate them in terms of risk and return, It provides for financial managers to choose the most appropriate method of financing through securities.

According to article 1 law of establishing securities exchange, Tehran stock exchange can be defined as a specific market that it bargains securities (stocks, government bonds, businesses and municipalities) is done by brokers of stock exchange and law.

Modern management theory, which was released in 1950, is expressed that Individuals and organizations of investors often to reduce risk and achieve certain return selected a set of securities or invest in different companies. Diversification of assets and purchase a variety of stocks will cause that further reduce the risk versus return. Nevertheless, this study intended that provide a more accurate Image of the stock market and will analysis factors affecting the stock risk that is the most fundamental concepts in investment management.

2. LITERATURE REVIEW

Financial market refers to wide range of market where exchange financial assets (such as shares, bonds, money and other commercial paper) and in a general classification including money and capital markets (Karami.2010).

Securities traded in the money market funds are deposit at central bank, treasury bills, guaranteed documents by the bank, business documents and other short term debt documents. Tradable financial assets in money market should have risk close to zero for buyers (Shabahang, 2012). Considering that, in Iran the formal market sector of money is substantially limited to banking

networks, since continue, capital market that are the main sources of financing company, are considered. Capital market that the medium and long term securities to individuals, businesses and government are usually classified into three main groups: (Shabahang, 2012)

A) The bond market b) mortgage debt market and c) the stock market. The second group means the mortgage debt market that has created in some of industrial country in the past two decades, there is still in Iran. But the stock market is part of the capital market association that suppliers and clients of stock facing each other, provides ease of exchange and access to two groups and in terms can help to acquire funding efficiency.

Shaping philosophy of the stock market should seek in two factors "production risk" and "liquidity risk". Securities market prior to the release can be divided into both primary and secondary markets: (Abdollahzadeh, 2011).

(1) Primary market:

The primary market is where companies can exchange their financial assets with finance long-term. In other words, the company sell new bonds issued to investors (Jahankhani, Parsian, 2012). The primary market has two distinct characteristics and major (Neveu, Raymond, 2011):

- A market occurs formation investment in it.
- Stock of bonds issued by companies is offered for the first time in this market.

(1) Secondary Market

It is a place where are traded stocks that have already been marketed, Secondary markets include organized markets like stock exchange and market out of stock exchange. These markets are caused to facilitate the transfer of ownership of securities (Jahankhani & Parsian, 2012).

2.1. Investments in Securities:

An investment is the purchase of goods that are not consumed today but are used in the future to create wealth (usually the size or quality is unknown). In other words, the investor now has to sacrifice the value specified for the particular value of the future that is intended to obtain (Abdollahzadeh, 2008).

There are two different investment characteristics, including time and risk. Mentioned two issues are important because in investment is done to spend money at the present time and its value is determined, however, the rewards can be obtained in the future and is usually associated with uncertainty. In some cases, the time feature is dominant (such as government bonds) and in some cases, the risk is primary importance (such as common stock options paper) and at other times both are important (eg common stock) (Abzari, 2009).

Because content of this research is to invest in financial assets, so try the core concepts of investment such as risk and return is described in this section.

2.2. Return on Investment:

(A) Common stock Return

Return can be defined to change value of an asset during a specified time period. This change is due to the price change plus interest or payments benefits. In other words, the return on investment in the common stock is achieved at a certain period according to price of the first and last time and benefits of ownership. Economically, the purpose of people from buying shares of companies and businesses is to obtain efficiency (Karami, 2001).

(2) Return on portfolio

In overall definition, portfolio is combination of risk and risk-free assets held by investments or legal and natural person investor individuals and organizations (such as retirement funds and mutual fund investments) to reduce their investment risk; tend to be the owner of variety of securities. Rate of return on the investment portfolio is a set weighted average of return rates of different securities contained in mentioned set (Shabahang, 2012).

2.3. Investment Risk

Risk of an asset is the potential change of future returns due to its assets (Weston & et al, 2008). Investors always face the risk that their rates of return asset may be lower than value of expected. So the "risk" is likely to be different the real rate of return with investor's desired rate. The risk of a

financial asset is a function of one or more factors that cause changes securities prices in market. These factors are:

A) Market Risk

Market risk consists of devaluation of principal investment due to changes in the price of the common stock of the company. This risk is associated with the purchase and maintenance of the company's common stock and depends on investor expectations about the future the stock.

B) Business risk

Business risk is related to insufficient likely to achieve less benefit from expected or losses in a certain financial period that its cause is unfavorable situation of a particular action. Business risk is part of total company risk that arises from the combination of assets and operational decisions of the company (Neveu , 2003).

C) Financial Risk

Financial risk is part of total risk that is related to capital structure and decisions that are taken at this interval (Neveu , 2003). Financial risk is acquired from the use of debt in financing assets of a company.

D) Interest Rate Risk

Risk of interest rate means risk loss of principal investment or the possible losses prior to maturity (due to high interest rates) according to the holder of securities or selling securities.

E) Risk of Inflation.

Inflation risk is a major concern from investors. Inflation rate risk means risk loss of principal and interest on capital, due to reduce purchasing power of money. Inflation can reduce actual return of common stock.

2.4. Method of Investment in Securities:

Investment in financial assets (securities) is done generally three method that include: (Jahankhani & Parsian, 2008)

1. Principal Method:

The application of principal method is based on this assumption that an investor for buying stock should analyze the economic situation of country, the situation of relevant industry and the situation of company. Thus investors should keep stock until stock has high return and they sell them when its price be more than the actual value.

In this regard, the probability holding their period (stocks) is a relatively high. In this direction, some fundamentalist investors buy high stocks and hold it for a long period. The research conducted in this regard shows that principal method achieves best results and most financial institutions will follow this procedure.

2. Graphical Method:

Basis of graphical method has been on the assumption that through the study of past price behavior and trading volume of stock can determine their future prices. In implementation of this method is drawn change curve of desired share price and according to movement select the desired stock and buy it. Indeed, goal of graphical method offender is to gain return through increased share price in short term.

3. Method Based on Modern Portfolio Theory

By assuming an accept portfolio theory and its assumptions, the relationship between expected risk and return of different assets, by risk and return balance model can be expressed that their most famous is capital asset pricing model (CAPM). CAPM theory proposed originally by Sharp (1964), Lintner (1965) and Mucin (1966) (Quoted from Haugen, 2001)

Securities portfolio theory is based on two assumptions: A) the capital market is efficient. B) Information about the market and every one stocks is available to all individuals. Considering that the new information is transferred quickly to market, as a result, stock prices are determined based on new information. Given these two assumptions, namely market efficiency and changing stock prices at moment and so the stock price is completely independent, it is impossible to predict future

prices. Therefore nobody could obtain excess returns regularly. Moreover return on stocks that have a similar risk, is similar in a market.

Sharp by proposing capital asset pricing model provided excellence model that assets with more beta will be more expected returns. In fact, Sharp model is a single-factor model with factor of the market return, is trying to ease in calculation to determine risk and return on asset. When CAMP was raised researchers were concerned this issue that risk cannot be measured only by the market index. Reinganum & Banz found that size (enterprise market value, ME) has significant impact on stock returns; companies with smaller size have more returns compared to the larger firms (Reinganum & Banz, 1981).

Investor that applied and accepted portfolio theory, they believe that cannot overcome the market. So try to buy and maintain varied collection of securities so that is achieved the desired rate of return, which is close to the market rate of return.

2.5. Firm Size

Firm size is one of the factors internal and structural of companies that affect the efficiency and profitability. Size and its impact on the efficiency and profitability has considered by many scholars such as Burke (1986) Kim Bamberd (1986). There are differences of opinion among scholars about smaller and larger corporate profitability. Some researchers know that larger companies have more profitability for the following reasons:

First, large firms have more diversified activities that this diversity activity helps to more profitable. Second, large firms because of the credit in the world market capitalization can provide needed funds with lower interest. Third reasons for higher returns in firms with low market value include that they have discount rates than larger firms. In other words, they are more risky.

In a study is done comparing the predicted systematic risk by variables accounting with systematic risk measured through market model. He found that there is significant correlation between three variables growth, size and variability of profits with systematic risk. Eskew Kim based on the research performed about the relationship between accounting variables associated with the profit and systematic risk, It concluded that fourth variables of interest to common shareholders, interest to common shareholders plus depreciation, interest to common shareholders plus depreciation and deferred tax and cash flow from operations has a significant relationship with the systematic risk (Eskew, 1979). Brimble examined the relevance of accounting information for valuation and risk. Selected samples consist of 123 firms in the period 1991-2000 (Brimble, 2003). Variables were included beta accounting changes income, growth, size, income payout ratio, current ratio, financial leverage, and operation leverage and interest coverage ratio. The results indicate that mentioned accounting variables can explain more than 57% change in the systematic risk. Ahmadpour & Namazi studied leverage effects of operation, financial and firm size on systematic risk of common stock listed companies in tehran stock exchange for a period of five years (1991-1995) (Ahmadpor & Namazi, 2003). They concluded that financial leverage and firm size has respectively, direct and reverse effect on the level of systematic risk, but operation leverage has no effect on the level of systematic risk. Norvash & Vafadar examined usefulness of accounting information in evaluating the market risk of firms in Iran (Norvash & vafadar, 2009). The result shows that there is significant relationship between Net Income ratio to equity and systematic risk that this ratio can be predicted about 15 percent of the variation in systematic risk. Sinaei & khoram studied relationship between financial leverage on systematic risk of common stock of public corporations. The result indicated that there wasn't significant and positive relationship between financial leverage and systematic risk. Moreover, they showed that there isn't significant variation in systematic risk of companies after increasing debt than before its increasing (Sinaei & Khoram, 2003).

In figure 1 is showed leverage ratio & beta stocks that are considered in the framework of contingent claims both descending functions model from operating profit.

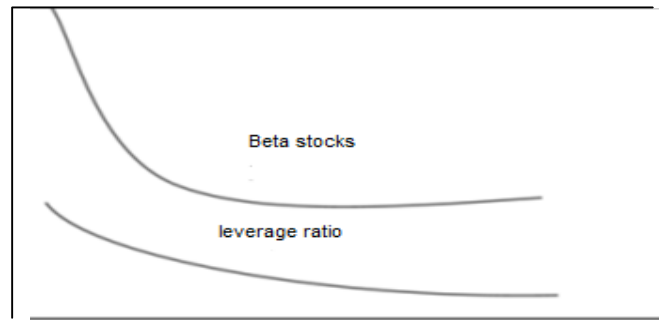


Figure 1: The leverage ratio and beta stock is functions of operating profit

Despite the many studies conducted in different countries (whether developed or developing countries) about the relationship between risk and stock returns, studies conducted in this regard in capital market of Iran is less. Furthermore, the results reported have conflict in this regard. This study has two purposes. The first purpose is testing validity through relationship between systematic risk and stock return and the second purpose, CAPM model to study the relationship between risk factors and stock returns in Tehran Stock Exchange in the time domain by using the methodology of Fama and French 1997-2004 (Fama and French, 1992). In table 1, the findings of the research in national and international study about firm size and the effective factors in return and risk are briefly presented.

Table 1) the findings of researches

Researcher /country	Title of research	result
Fama and French (1993) USA 1963-1992	Firm size and B / M as factors in efficiency gains	Size and market factors in profit help to describing size and market factors available at returns but the return associated with factor B /M available at profits does not react
Charitou and constantis, japan/1992-2001	Relationship between size and ratio of book value to market value (B / M) on the average return	Market factor, size factor comprising upon portfolios small stocks and book value-to-market value consisting of portfolios major stock has more power in explanation return
Berk 1997-USA1967-1987	Is size really matter?	There isn't significant relationship between size and return
Ball/1987- Basoo1977-1983	Relationship between firm size and systematic risk	Reported that, in addition to firm size and systematic risk, income ratio to price, in explaining the variation of stock returns is effective.
Eyvani/1999 iran/1990-1998	The relationship between common stock returns and risk ratio (market value to book value of shares) firms listed in Tehran Stock Exchange	Their research is based on the assumption that portfolio with the lowest B / M has a more return. The results show that the research hypothesis is rejected and the portfolio with the lowest B / M and returns are not linearly related to each other.
Shariat Panahi,Khosravi/2008	Relationship between shares returns with firm size, the ratio of market value to book value benefit ratio stock prices in Tehran Stock Exchange	There is significant and negative relationship between firm size and stock return with 99% confidence

3. DEFINITIONS AND TERMINOLOGY

Systematic risk: Expected risk premium in CAPM model is a direct function of beta (β) indicates "systemic risk" indices of securities and measures sensitivity of return volatility of securities

against market portfolio volatility. Statistically, beta is the covariance of securities returns by portfolio return of market divided on the variance of market portfolio return (Copeland et al, 1992)

$$\beta_i = \text{Cov}(R_i, R_m) / \text{Var}(R_m)$$

Operation leverage is defined as the "percentage change in profit before interest and taxes divided by the percent change in volume sales". Degree of operation leverage is computed as follows:

$$\text{DOL} = \frac{\text{percentage change in profit before interest and taxes}}{\text{percentage change in volume sales}} = \frac{Q(p-v) - f_0}{Q(p-v) - f_0 + \text{EBIT}}$$

While the Q is the amount of sales, p, a unit selling price, v, unit variable cost, f₀, operating fixed costs and EBIT, operation profit (profit before interest and taxes).

Financial leverage shows percentage change in net income or profit per share in return for a percentage change in profit before interest and taxes:

$$\text{DFL} = \frac{\text{Ratio the percent change in profit per share}}{\text{ratio percent in operating profit}} = \frac{Q(p-v) - f_0}{Q(p-v) - f_0 + \text{EBIT}}$$

While the Q is the amount of sales, p, a unit selling price, v, unit variable cost, f₀, fixed operating costs, f_r, financial fixed cost, f, total fixed costs, and EBIT, operating profit (profit before interest and tax).

Firm size is amount of the company's total assets, total sales or number of employees in the company.

4. DISCUSSION AND CONCLUSION

The final results obtained from analysis of data indicate that relationship between the independent variables (leverage - the size of the company) with the dependent variable (systemic risk) is largely against the idea of investing in securities. Thus it becomes clear that systematic risk of stocks in Tehran Stock Exchange does not significantly affect the variables discussed. It may be due to the problems facing the Tehran Stock Exchange and its poor performance. Thus suitable infrastructure for economic activity reasonably companies have considered a set of macro socio - economic and cultural that is effective in established risk stock and provided to eliminate or control them.

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