

**Extended Abstract****A Study of Influential Factors in Stock Returns and Profitability in the Tehran Stock Exchange (TSE): GMM & GLS Models****Dr. M. Meshki**

University of Payame Noor

**Introduction**

The capital asset pricing model (CAPM) of Sharpe (1964) and Lintner (1965) was the most widely recognized explanation of stock prices and expected returns. It gives a prediction of risk of an asset or a portfolio and its expected return which thereby helps in evaluating potential returns of investments.

Fama and French (1992) found that the cross section of average stock returns for the period 1963-1990 for US stocks is not fully explained by the CAPM beta and that stock risks are multidimensional. Two of these dimensions of risk, they suggest, are proxied by size and the ratio of book value of common equity to its market value (BE/ME). Fama and French (1993) came up with a model for explaining stock returns using three factors: market, book to market, and size. This model was supportive of Banz (1981) who claimed that 'size effect' was present for more than 40 years and that the CAPM was misspecified.

Lakonishok, Shleifer and Vishny (1994) suggest that sorting firms on high and low B/M ratios exposes the investor to overreact in good and bad times. This cause them to over estimate stock prices for low B/M firms and underestimate them for high B/M firms, i.e. distressed firms. The ultimate result after the correction of the overreaction is high returns for high B/M stocks (value stocks) and lower returns for low B/M stocks (glamour stocks). This investor reaction leading to determination of stock

returns is not explained by the CAPM.

### **Hypotheses**

In this paper, we investigate of factors affecting stock returns and profitability (such as size, beta, leverage, return of market and book-to-market equity ratio) among Iran's listed companies in Tehran Stock Exchange using panel data. The hypotheses

tested in this study are the following :

Hypothesis 1: There is a significant relationship between Size and Stock Return.

Hypothesis 2: There is a significant relationship between BV/MV and Stock Return.

Hypothesis 3: There is a significant relationship between two variables Size and BV/MV with Stock Return.

Hypothesis 4: There is a significant relationship between Size and profitability.

Hypothesis 5: There is a significant relationship between BV/MV and profitability.

Hypothesis 6: There is a significant relationship between two variables Size and BV/MV with profitability.

### **Estimation method**

We use panel data method to estimate the parameters of return and profitability. The panel data approach has several advantages compared to the cross-sectional approach often used in financial research.

1. Due to an increase in the number of data points, degrees of freedom are increased and multicollinearity problem is reduced thus the efficiency of econometric estimates is improved.

2. Panel data can control for individual heterogeneity due to hidden factors, which, if neglected in time-series or cross-section estimations lead to biased results. Heterogeneity is captured by firm specific fixed effects or random effects components based on the characteristics of the data set.

Panel data follows a given sample of individuals over time, and thus

provides multiple observations on each individual in the sample. Panel data combines the features of time series and cross-section. Panel data usually provides the researcher a large number of data points, increasing the degrees of freedom and reducing the collinearity among explanatory variables; hence improving the efficiency of econometric estimates. Therefore two main models are tested:

- 1) the static panel data with fixed effect and
- 2) the dynamic panel data.

However, the fixed effects model may give biased and inconsistent estimators because the error term may be correlated with the lagged variable. To deal with variables that may be correlated with the error term, we use instrumental variables. We use the Arellano and Bond (1991) two-step GMM (Generalized Method of Moments) estimator for our dynamic model which allows for heteroskedasticity across firms. The GMM estimator is consistent if there is no second order serial correlation between error terms of the first-differenced equation.

### **Discussion of the Results**

This paper contains significant and consistent results. Using two variants of panel data analysis, we attempt to find the determinants of stock return and profitability in the Tehran Stock Exchange for the period 1381-1388. The results of testing hypotheses for each of the eight years and the pooled sample show that the size of companies, Beta and Return of market are positively related to Stock Return. Lewellen (1999), Allen and Cleary (1998), Mukherji et al (1997), Barber and Lyon (1997), Fama and French (1992), and Chan et al (1991) found a positive and remarkably great relationship between BV/MV and the Stock Return. Surprisingly the findings of the research did not confirm the existence of any positive relationship between the two variables. This study also shows that the size and leverage is positively related to profitability but book-to-market equity ratio is negatively correlated with it. This study suggests that there is no existence of a linear relationship between profitability and return of market.

**Keywords:** Stock Return, Profitability, GMM & GLS Models, Instrumental Variables.

Archive of SID