COMPANY FUNDAMENTALS AND RETURNS IN THE NIGERIAN STOCK MARKET

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Abstract
The paper examines the impact of company fundamentals on equity returns in the Nigerian stock market, using the panel regression technique which also incorporates two effects (the fixed effects and the random effects). The distinction between fixed and random effects is whether the unobserved individual effect embodies elements that are correlated with the regressors in the model, not whether these effects are stochastic or not. The result shows that all the coefficients have positive signs in line with a priori determination. However, only the coefficient of BMV (book to market value) passes the significance test at the 1 percent level. The coefficient of LEV manages to pass the test at the 10 percent level, while all the other coefficients firm size (SIZE), price earnings ratio (PER) failed the significance test. This indicates that the book to market value of the firm is the main company fundamental that can predict stock returns of the firms in the Nigerian stock market. The result also reports the fixed effects of each firm on the constant term in the model. It shows that only Julius Berger stocks returns tend to fall below the mean value over time. All the other returns failed to rise, CAP having the biggest tendency; while that of the random effects shows that none of the coefficients passed the significance tests at the 5 percent level. Thus, the hypothesis of a random effect in the specified relationship cannot be accepted and the random effect model does not portray the expected relationships.

Keywords: Fundamentals, equity, stock, firms.

Introduction
The Nigerian Stock Exchange is still evolving. Research showed that it ranks third among the emerging markets of Africa, closely following that of South Africa and Egypt (Osaze, 2007). The goal of every well meaning, seasoned financial analysts as well as investor today is to continuously search for such investment strategies that can outperform the market in order to earn extra normal returns as against the Efficient Market Hypothesis proposition advocated by Fama (1970), Fama and French (1996, 2004) which rule out the possibility by an investor to consistently earn extra normal returns in an efficient stock market, adding that securities are correctly priced and returns are mainly determined by the amount of risk one assumes (with respect to the traditional CAPM) developed by Sharpe (1964), Lintner (1965), Black (1972) and Tripathi (2009).

Indeed, the above proposition by Fama (1970) was regarded as a sweeping statement and thus it continues to stimulate insight and controversy by many finance experts today. For instance, Friedman (1963) refers to it as a ‘‘credo’’, a statement of faith and not a scientific proposition, while Buffett (1992) who is regarded as the most successful investor of our times sees it as a ‘‘slough of fear and greed untethered to corporate realities’’ (Hagstrom and Robert, 1994, Chandra, 2008). Furthermore, Tripathi (2009) also noted that there are other several empirical evidences commonly cited as anomalies to CAPM, doubting such a phenomenon (efficient market hypothesis), and documents the availability of extra normal returns by using investment strategies based on firm specific variables or fundamentals such as size Banz (1981), Leverage Bhandari (1988), Price earnings ratio Basu (1977), Book equity to market equity ratio Stattman (1980), Rosenberg, Reid and Lanstein (1985). He submitted further that with respect to size effect (small capitalization stocks outperformed large capitalization stocks), Leverage effect (high debt-equity stocks outperform low debt-equity stocks), Price earnings effect (low P/E stocks outperform high P/E stocks) and Value effect (high book-equity to market equity stocks outperform low book to market equity stocks).

Nevertheless, for most financial economists, the Efficient Market Hypothesis still remains a central idea of modern finance that has profound implications, and a clear-cut understanding of it will help one to ask the right questions and save...
one from a lot of confusion that dominates popular thinking in the field of finance (Chandra, 2008).

Although numerous studies have been conducted in this area, but much has not been done in the area of company fundamentals and equity returns in the emerging market of Nigeria. This study in essence seeks to complements the existing literature on the subject matter by empirically examining the impact of company fundamentals or variables on equity returns in the Nigerian stock market. More specifically therefore, the study seeks to examine; (i) the relationship between four company’s fundamentals (size, Leverage, P/E ratio and Book to market equity ratio) and equity returns in Nigeria, (ii) whether company’s fundamentals can explain variation in average stock returns in a better way than market factor in Nigeria context.

Hence, the study is an extension of Tripathi (2009) study in the India context, Witkowska (2006) in Poland context and Pandey (2001) in Malaysia context.

Methodology

Panel data regression

In this paper, the panel regression technique is applied in the empirical analysis. A variety of different models for panel data are used in studies where heterogeneous effects are noticed within time series across space. In the panel regression method, if \( z_i \) contains only a constant term, then ordinary least squares provides consistent and efficient estimates of the common \( \alpha \) and the slope vector \( \beta \). In this estimation, two effects are highlighted.

Fixed effects

If \( z_i \) is unobserved, but correlated with \( x_i \), then the least squares estimator of \( \beta \) is biased and inconsistent as a consequence of an omitted variable. However, in this instance, the model

\[
y_i = x_i' \beta + \alpha_i + \epsilon_i \]

that is, as a linear regression model with a compound disturbance that may be consistently, albeit inefficiently, estimated by least squares. This random effects approach specifies that \( \alpha_i \) is a group-specific random element, similar to \( \epsilon_i \) except that for each group, there is but a single draw that enters the regression identically in each period.

The crucial distinction between fixed and random effects is whether the unobserved individual effect embodies elements that are correlated with the regressors in the model, not whether these effects are stochastic or not. We will examine this basic formulation, and then consider an extension to a dynamic model.

Model specification

The model in this study follows Tripathi (2009). Specifically, stock return is hypothesized to depend on company fundamentals including its capital structure (LEV), size, price earnings ratio and book-market value. Each of these fundamentals represents major aspects of the company that are likely to affect its performance. The model is therefore specified as:

\[
\text{Return} = a_0 + a_1 \text{LEV}_{it} + a_2 \text{SIZE}_{it} + a_3 \text{PER}_{it} + a_4 \text{BMV}_{it} + u_i \]

Where:

\[
\text{Return} = \frac{\text{stock return measured as}}{\text{PRICE}_{(t)} - \text{PRICE}_{(t-1)}} \]

\[
\text{LEV} = \frac{\text{assets}}{\text{total assets}} \times 100
\]

\[
\text{SIZE} = \text{firm size (measured as the log of total assets)}
\]
PER = price earnings ratio
BMV = firm book to market value

Both the fixed effects and random effects panel data estimation techniques are employed in the estimation for the purpose of comparison and to provide a more robust investigation. The data used in the study was obtained from the Nigerian Stock Exchange and various issues of the annual reports for the sampled companies.

**Empirical results**

The relationship between returns and company fundamental is estimated using the panel data analysis method. The models with fixed effects as well as random effects are used for the analysis.

Table 1 shows the model with fixed effects. The diagnostic statistics in the model performed fairly well. The R-squared valued of 0.491 indicates that the model explains over 49 percent of the systematic variations in stock returns across the firms and for the estimation period. Moreover, a look at the overall goodness of fit (using the F-statistics) reveals that the model has a high degree of overall fit. The F-value of 23.8 is very high and easily passes the significance test at the 1 percent level. Indeed, the purported relationship between stock returns and company fundamentals cannot be denied.

Table 1: Stock Returns and company Fundamentals (Fixed Effects Model)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coefficient</th>
<th>T – statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEV</td>
<td>0.0001</td>
<td>1.717</td>
</tr>
<tr>
<td>SIZE</td>
<td>0.0581</td>
<td>0.278</td>
</tr>
<tr>
<td>PER</td>
<td>0.0001</td>
<td>0.409</td>
</tr>
<tr>
<td>BMV</td>
<td>0.0128</td>
<td>3.608</td>
</tr>
</tbody>
</table>

Fixed effects

- Guinness 0.807
- Nigerian 0.609
- Julius Berger -0.599
- CAP 1.015

Unilever 0.616
Presco 0.850
First Bank 0.471
Allco 0.524

R² = 0.491
F = 23.8
DW = 2.18

In the individual analysis for each variable or fundamental in the model, the result shows that all the coefficients have positive signs in line with a priori determination. However, only the coefficient of BMV passes the significance test at the 1 percent level. The coefficient of LEV manages to pass the test at the 10 percent level, while all the other coefficients failed the significance test. This indicates that the book to market value of the firm is the main company fundamental that can predict stock returns of the firms. Apparently, firm size and earnings level as well as its debt structure do not affect the returns. It is shown in this return that stock market investors tend to consider the value of a firm in relation to the market performance in making investment decisions. The higher the book market value of a firm, the higher will be the returns on its stock.

The result also reports the fixed effects of each firm on the constant term in the model. It shows that generally, only Julius Berger stocks returns tend to fall below the mean value over time. All the other returns have failed to rise, CAP having the biggest tendency.

In table 2, the result of the model with random effects is reported. In the model, the R-squared value is very low at about 0.003. The overall fit of the model did not perform well. In terms of the individual performance of the variables in the model, the result shows that none of the coefficients passed the significance tests at the 5 percent level. Thus, the hypothesis of a random effect in the specified relationship cannot be accepted and the random effect model does not portray the expected relationships.
Table 2: Stocks Returns and Company Fundamentals (Random Effects).

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coefficient</th>
<th>T – statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEV</td>
<td>0.0005</td>
<td>0.445</td>
</tr>
<tr>
<td>SIZE</td>
<td>0.0568</td>
<td>-1.974</td>
</tr>
<tr>
<td>PER</td>
<td>0.0001</td>
<td>1.982</td>
</tr>
<tr>
<td>BMV</td>
<td>0.0023</td>
<td>0.620</td>
</tr>
</tbody>
</table>

**Random effects**

<table>
<thead>
<tr>
<th>Company</th>
<th>Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guinness</td>
<td>-0.548</td>
</tr>
<tr>
<td>Nigerian Brewery</td>
<td>0.155</td>
</tr>
<tr>
<td>Julius Berger</td>
<td>0.167</td>
</tr>
<tr>
<td>CAP</td>
<td>-0.164</td>
</tr>
<tr>
<td>Unilever</td>
<td>0.457</td>
</tr>
<tr>
<td>Presco</td>
<td>-0.068</td>
</tr>
<tr>
<td>First Bank</td>
<td>0.125</td>
</tr>
<tr>
<td>Allco</td>
<td>-0.154</td>
</tr>
</tbody>
</table>

R² = 0.003
DW = 1.75

**Conclusion**

In this study, we have considered the effects of company fundamentals on stock returns in the Nigerian Stock Exchange. Using a sample of eight companies with 11 years observations, the panel data analysis method was employed in estimating the relationships. The company fundamentals selected in this study following Tripathi (2009) were firm’s debt (capital structure) as measured by its leverage (LEV), the size of the firm as measured by the log of its total assets, firm Price-earnings ratio and the Book to Market Value of the firm. Based on the econometric analysis, it was found in the study that firms’ book to market value plays the most significant role in determining a firm’s stock returns. This suggests that the value of the firm’s fixed asset after depreciation is considered critically by investors in their decisions to invest in a given stock. A firm that performs creditably well in asset management is likely to be more stable over time in terms of profitability and dividend policy. Hence, higher level of activities seems to occur on firms with higher book values.

**References**

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