Institutional Shareholdings and Financial Characteristics of Malaysian Listed Companies

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ABSTRACT

This study attempts to investigate the extent to which the financial characteristics of firms are related to institutional shareholdings. The primary motivation to carry out the study comes from an earlier paper by Hassel and Norman (1992), which showed that seven financial ratios discriminated between strongly-held and institutionally-neglected firms. As an extension of the study, the present study seeks to investigate the seven financial ratios among Malaysian companies by identifying differences in the means of the seven ratios between a group of companies with substantial institutional shareholdings against another group of companies with negligible institutional shareholdings. The findings, from a sample of KLSE listed companies, broadly support the findings by Hassel and Norman (1992), in which firms with significant institutional shareholdings exhibited a significantly higher profitability ratio against firms that were neglected by institutional investors. This suggested that institutional investors placed greater emphasis on a firm's short-term results. Our evidence also did not indicate institutional shareholders' direct involvement in ensuring a firm's long-term growth and competitiveness, as shown by the insignificant differences in the mean of growth ratio between firms that had significant institutional shareholdings and those that were neglected by institutional investors.

ABSTRAK


INTRODUCTION

The issue of institutional shareholders focusing on short-term performance has been discussed on a number of occasions (e.g., Drucker, 1986; Dobrzynski, Schiller, Miles, Norman and King, 1986; Hassel and Norman, 1992). Hassel and Norman, for example, argue and provide empirical evidence that, among others, a firm's profitability was one of the deciding factors that discriminates between firms whose shares are institutionally-held and non-institutionally-held. Dobrzynski et al. (1986), in an earlier paper, also expressed their concern about institutional shareholders' emphasis on current earnings. The paper cited George Keller of the Chevron Corporation as saying that money managers are "traders, not investors" who are merely interested in making short-term gains without regard for the consequences to the firms.
The issue of institutional shareholdings is important because the potential impact of a institutional shareholders' decision on acquiring or disposing of a firm's shares is usually very significant. Given the magnitude of their shareholdings, any move to dispose of the shares will depress the price and the consequences can be disastrous. This is due to the fact that institutional shareholders account for as much as seventy percent of total trading volume (Hessel and Norman, 1992) and they are likely to divest themselves of shares following a firm's weakening performance (Nussbaum and Dobrzynski, 1987).

Taken together, the above studies suggest that institutional investors are "myopic" in that they value short-term benefits more than long-term gains. Other studies have also been carried out to confirm whether institutional investors are "myopic", "superior" or "active" shareholders. For instance, Kochhar and David (1996) showed that institutional investors were neither myopic nor superior, but that they were active investors. This latter study, which examined the influence of an institutional investor on a firm's product innovations, suggested that such influence actively participates in the firm's future survival. Nonetheless, the positive influence of the active institutional investor on product innovation might also indicate that its investments were being "locked" so that it had no other alternative but to influence the management to increase the value of the firm's equity through product innovations.

Given the existing contentions and evidence, it may be of interest to pursue such a study in the Malaysian setting. To that end, we sought to examine whether differences exist between the identified financial characteristics of firms that had substantial institutional shareholdings and firms that had negligible institutional shareholdings. The findings could therefore provide evidence from a developing country regarding institutional shareholdings and show whether such shareholdings have a significant association with the firm's financial indicators. In addition, the findings of the study would, thus, shed light on the primary motivation of an investment by an institutional investor. Because of the differences in regulatory settings between Malaysia and the US, it was thought that the study might yield results not found in the US.

The present paper is divided into four major sections. First, a literature review section is presented with the objective of discussing the studies pertaining to the present research. The following section discusses the methods adopted to determine the sample, to measure the variables involved and to analyse the data. Subsequently, the findings are presented and discussed. The final section offers conclusions along with suggestions for further research.

LITERATURE REVIEW

The role of institutional investors in disciplining management has become an important topic in the 1990s, especially in the US and UK. Given the magnitude of their shareholdings in a particular firm, they are expected to play an important role in monitoring and disciplining the management so that the interests of the other shareholders are also protected. Nonetheless, it has been argued that institutional shareholders are interested mainly in making quick profits (i.e., short-term gains) (e.g., Drucker, 1986; Dobrzynski et al., 1980). Thus, instead of taking a leading role in monitoring the management on a long-term basis, institutional investors are seen only to make the management constantly focus on reporting "high" annual earnings. Thus, in connection with this contention, it is predicted that the management's tendency to report high earnings is positively associated with the magnitude of institutional shareholdings in a firm. Therefore, a substantial ownership level would cause a higher tendency to report higher earnings, and vice-versa. Institutional investors with large interests are seen to be important as their decision to dispose of their interests would, inevitably, lead to a sharp decline in the firm's share price.

Reporting higher earnings could be achieved through real earnings manipulation (e.g., timing of discretionary expenditures) or accrual-based manipulation (Schipper, 1989).

In their paper, Hessel and Norman (1992) attempted to identify the characteristics of firms (using financial ratios) which allowed discrimination between the firms with institutionally-held shares and those without. Using a discriminant analysis approach, they found that seven variables (e.g., financial ratios) segregated firms into those with a high proportion of institutional shareholders and those without. The seven ratios, (with the direction of influence are): return on equity ratio (+), return on assets ratio (+), dividend payout ratio (+), research and development expenditure (+), current assets to total assets ratio (-), short-term debt to total assets ratio (-), firm size (+). The first three ratios prove institutional shareholders' preference for a firm's short-term profitability. Their findings also show that institutional shareholders dislike a high gearing ratio. Given that they have large sums of money to be used for investments, their preference for firms that are large in size and that place stress on R&D are understandable.

Though preference for high R&D firms contradicts their preference for short-term achievements, it is, however, conceivable as they may go for high-tech firms which obviously require a large amount of R&D to enable them to stay in the forefront of their respective businesses. Evidence of institutional shareholders' preference for large firms is consistent with the evidence offered by Cready (1994), who shows that they have a high tendency to invest in large and S&P 500 firms. Basuinger, Kosnik and Turk (1991) also offered evidence consistent with that of Hessel and Norman (1992) with respect to R&D expenditures. Perhaps there is a positive relationship between a firm's size and R&D expenditure, which has, thus far, been left untested.

In the agency theory, the separation between managers and owners resulted in the agency costs being a consequence of the divergence of interests (Jensen and Meckling, 1976). Nonetheless, it has been argued that the management will be monitored more closely if the leverage in the firm is high. In such cases the management would be forced to meet the various financial constraints (e.g., Gopalakrishnan and Parkash, 1995), which serve as debt covenants, as well as to maintain the firm's ability to service the debts periodically, as required.

Mehran (1992), for example, postulates that high leverage is associated with high interest in monitoring management. The rationale is that a high leverage ratio indicates that the management will be closely monitored by the debt providers with respect to its ability to service debts. Satisfying debt covenants will enable the firm to avoid defaulting on the debts. Institutional investors might, therefore, use leverage as a proxy for close monitoring of the management. Thus, the paper argued that there would be a positive relationship between the institutional investor and leverage. However, the paper showed that there was no relationship between the institutional investor and leverage, which therefore does not support the idea of institutional investor interests in monitoring the management. The evidence was also not in agreement with that of Hessel and Norman (1992), who found a negative association between the institutional investor and leverage. However, neither of the papers provided direct evidence showing the institutional investor's interests to be closely involved in monitoring the management. Perhaps the evidence from Eakin (1993) may be interpreted as supportive of the lack of interest of institutional shareholders in monitoring the management and of their emphasis on short-term gains, since the study showed that institutional investors rapidly sold their shareholdings in the target firms for quick gains in the event of tender takeovers.

It has been argued (Ball, 1991, p. 21) that institutional investors' short-term orientation "... takes the form of an assertion that excessive emphasis is placed on current profit performance and dividend payments." Perhaps the criterion on by which fund managers are being evaluated, which is on the basis of a quarterly review of rewards (Graves, 1988) has driven their "myopic" attitude. Anecdotal evidence obtained from an interview with corporate finance officers by Hessel and Norman (1992) who "... have claimed that institutions prefer firms with strong short-term performance." (p. 314) further supported the myopic orientation.

It has also been argued that the emphasis of institutional investors on short-term results deters the management's tendency to invest in R&D activities, as these would depress the current earnings. The focus on R&D activities in determining institutional investors' short-term orientation arises from the discretionary nature of the former and their subsequent influence on earnings through writing off in the profit and loss account. The findings by Graves (1988) support the contention of the myopic attitude of institutional investors. In other studies, evidence not supporting the "myopic" theory has also been offered. For instance, Kochhar and David (1996) attempted to test three competing hypotheses of institutional investors, namely the "myopic investor", the "superior investor" and the "active investor". Under the "myopic" theory, institutional investors were argued to focus on short-term gains at the expense of long-term benefits. On the other hand, the "superior" hypothesis pos- tulates that large shareholders, including institutional investors, make better investment decisions as they tend to assess the options available more carefully (Aoki, 1984). Under the third hypothesis (i.e., the "active investor"), institutional investors were argued to closely influence themselves in monitoring the management actively (Jensen, 1991 and 1993) as it is difficult for them to make an "exit" without a substantial loss in the share price (Aoki, 1984). Moreover, opportunities for new profitable investment would be scarce, as their portfolio would have already been well diversified (Gibson and Kraakman, 1991) prior to the exit.

The evidence from Kochhar and David (1996), using a multiple regression analysis on a sample of publicly-traded manufacturing firms of several industries, did not suggest that institutional investors were "myopic" or "superior". Instead, their findings showed that institutional investors were active in influencing the number of new products introduced by a firm, as a proxy for short-term or long-term orientation. In another study by Hansen and Hill (1991), the "myopic" hypothesis was also not supported, as their evidence, from a multiple regression analysis using pooled-data from four research-intensive industries, showed that institutional shareholdings positively and significantly influence R&D expenditures.

Thus, existing evidence, to some extent, supports the contentions by both Drucker (1986) and Dobrzynski et al. (1986) of the "myopic" hypothesis (e.g., Graves, 1988). Nonetheless, evidence not supporting the contention has also been documented (e.g., Hansen and Hill, 1991; Kochhar and David, 1996). Therefore, the present study does not offer any direction about the association between institutional shareholdings and a firm's financial performance. Moreover, to our knowledge, no such study has ever been carried out in the Malaysian setting. Given the differences that exist in both the regulatory frameworks and the accounting pronouncements and practices, we could expect there might be deviations in the orientations and emphasis of institutional investors.

Thus, the existing evidence regarding the role of institutional investors generally supports their short-term orientation. Since Malaysia is considered as a developing country, it is of utility to investigate whether similar findings, as found in developed markets, prevail. Moreover, the corporate governance system of Malaysian companies, which is not yet as established as it is in the developed countries, could also influence the findings. Thus, similar findings may not be revealed. Furthermore, in contrast to the US markets where institutional investors are mainly from private concerns, major Malaysian institutional investors are still very much under the caretaker of the government (e.g., Permodalan Nasional Berhad (PNB) and Kumpulan Wang Simpanan Pekerja (KWSP)).

METHODS

As indicated earlier, the present study attempts to investigate the relationship between institutional shareholdings on a firm's performance by extending the study by Hessel and Norman (1992). The rationale for examining only the relationship between institutional shareholdings and several financial characteristics is that we are only interested in determining whether institutional shareholdings exhibit

a particular preference when making investment-related decisions. The financial ratios that were found to segregate firms significantly into those with a high proportion of institutional shareholders and those without, as found in Hessel and Norman (1992), were used in this study. The ratios used attempted to gauge a firm’s short-term results, efficiency and long-term indicators.

Sample Selection and Variables

Sample firms were derived from companies listed on the Kuala Lumpur Stock Exchange (KLSE). Companies listed on the KLSE were chosen as their data were readily available and they are subject to various mandatory requirements, such as periodic earnings announcements (i.e., half-yearly earnings). Thus, the shareholders as well as the public are informed of the current performance of the management through the periodic earnings announcements. The KLSE Annual Handbook for the financial years 1992 to 1994, inclusive, were thus examined for the purpose of determining the sample companies by examining details of the shareholders of each firm. Institutional shareholders for each firm were found by aggregating all the institutional interests in the respective firms. To be included in the sample, the companies’ shares would need to be held consistently by institutional investors for the years 1992 to 1994, inclusive.

To arrive at the sample companies, we ranked all the companies listed on the KLSE Main Board in the order of institutional investors’ shareholdings, over the three-year periods. In the initial investigation, we found that institutional shareholders did not collectively hold a high percentage of the firms’ equity. Nonetheless, the distribution of the collective shareholdings was skewed. Thus, we included the top thirty companies as our first subsample, with twenty percent being the cut-off point. Collective shareholdings by institutional investors of twenty percent were used in determining the cut-off point as these shareholdings represent significant influence on the invested firms. This sub-sample was then identified as firms with significant institutional shareholdings. A second sub-sample was derived by taking the bottom thirty companies, which served as firms neglected by institutional shareholders. Each of the remaining variables were defined as follows:

Institutional investors. Institutional investors were operationally defined as publicly-owned bodies.

Leverage ratio. Total debts/total assets.

Profitability ratio. Net income/funds available to common stocks.

Payout of earnings ratio. Common stock dividends/funds available to common stocks.


Current asset management ratio. Current assets/total assets.

Liquidity ratio. Current assets/current liabilities.

Efficiency of assets. Net operating income/long term assets.

Size. Market value of common shares outstanding.

Data Analysis

Sample firms were segregated into two groups according to their proportion of institutional shareholdings. For the purpose of analysing the data, the means of each ratio were compared between the two groups of companies and the significance of differences of the means were calculated using a t-test (the detailed formula of the test is contained in the Appendix). The t-test was utilised to identify whether there existed any significant differences in the mean of each of the ratios between firms that had significant institutional shareholdings and firms that had negligible institutional interests.

RESULTS AND DISCUSSION

A total of 114 companies were found to be consistently held by institutional investors over the period of 1992-1994, inclusive. Out of these, we selected sixty companies to be included in our sample, representing the top thirty companies and the bottom thirty companies with respect to institutional shareholdings. These two groups, therefore, represented two sub-samples. The average percentage of shareholdings for companies with significant institutional interests, for pooled data, was 45.57 percent and the associated standard deviation was 23.16 percent. For the institutionally-neglected companies, the average percentage of institutional shareholdings was 1.55 percent and the standard deviation was 1.02 percent.

Table 1 shows the results and the respective t-test for each of the ratios using pooled-data.

The results in table generally showed that they were consistent with the findings of Hessel and Norman (1992). The positive and significant t-ratio between institutional shareholdings and a firm’s profitability suggests that the profitability ratio for firms with significant institutional shareholdings was significantly higher than the profitability ratio of firms with negligible institutional shareholdings. Thus, the findings suggest that firms with significant institutional shareholdings perform better than firms with negligible institutional shareholdings.

Though the analysis did not involve investigating the relationship between institutional shareholdings and a firm’s profitability directly, the positive and significant t-ratio suggests that there is a direct association between institutional shareholdings and a firm’s profitability. In other words, the evidence suggests that institutional shareholdings were directly related to a firm’s short-term results. This, therefore, supports the “myopic” hypothesis and the contentions of Drucker (1986) and Dobrzynski et al. (1986) and to some extent the findings by Graves (1988). The evidence, thus, was not supportive of the “active” participation of institutional shareholders as found by Kochhar and David (1996) and by Hansen and Hill (1991).

Perhaps our findings were generally in agreement with those of Hessel and Norman (1992) due to the nature of the study, in that our study examined the accounting numbers. The study by Kochhar and David (1996), on the other hand, investigated product innovations. It may remain true that institutional investors emphasise short-term achievements of the firms, i.e., profitability. However, investments related to product innovations may not necessarily depress the accounting figures in one hit. Rather, the management may effectively adjust the timing of the expenditure over a certain number of years so that the effects on earnings are not sudden and the management can smooth the earnings out over the period. Alternatively, the management can also adjust the periodic earnings through accrual manipulations of “other” accounting items.

Table 1 also shows that there was a positive and significant t-ratio of means between institutional shareholdings and institutionally-neglected firms and a firm’s size. Thus, firms with significant institutional shareholdings were significantly larger than institutionally-neglected firms. In other words, we would expect a positive and significant association between institutional shareholdings and a firm’s size. The evidence was, therefore, consistent with the findings by Hessel and Norman (1992) and Cready (1994). Perhaps institutional investors prefer companies that are large in size because these companies may be interpreted as mature, stable, established and leaders in their respective markets.

Our evidence also showed a negative and significant t-ratio between institutional shareholdings and a firm’s leverage, which signalled that firms with significant institutional shareholdings had significantly less leverage than firms that were neglected by institutional investors. The negative t-ratio also indicates a negative association between institutional shareholdings and a firm’s leverage, which was also in agreement with the findings by Hessel and Norman (1992). Perhaps, leverage is not an indicator of high agency costs of debts, which precipitate the need to monitor the management closely. Rather, leverage might indicate a firm’s risk of becoming bankrupt in the event of not being able to service its debts.
<table>
<thead>
<tr>
<th>Ratios</th>
<th>Mean*</th>
<th>Standard Deviation*</th>
<th>Mean†</th>
<th>Standard Deviation†</th>
<th>t-ratio</th>
<th>p-value **</th>
</tr>
</thead>
<tbody>
<tr>
<td>Profitability</td>
<td>1217</td>
<td>.1103</td>
<td>-.015</td>
<td>1.001</td>
<td>2.24†</td>
<td>&lt;.02</td>
</tr>
<tr>
<td>Leverage</td>
<td>3356</td>
<td>2318</td>
<td>.4929</td>
<td>2620</td>
<td>-3.27†</td>
<td>&lt;.01</td>
</tr>
<tr>
<td>Payout</td>
<td>.0619</td>
<td>.1922</td>
<td>.0531</td>
<td>.0738</td>
<td>.7037</td>
<td>insignificant</td>
</tr>
<tr>
<td>Current</td>
<td>.5176</td>
<td>.2895</td>
<td>.4865</td>
<td>.2445</td>
<td>1.355</td>
<td>insignificant</td>
</tr>
<tr>
<td>Efficiency</td>
<td>.5013</td>
<td>.5297</td>
<td>.4582</td>
<td>1.635</td>
<td>-1.31</td>
<td>insignificant</td>
</tr>
<tr>
<td>Size</td>
<td>1870M</td>
<td>3085.4M</td>
<td>789M</td>
<td>960M</td>
<td>5.52†</td>
<td>&lt;.01</td>
</tr>
<tr>
<td>Growth</td>
<td>5.40</td>
<td>5.319</td>
<td>1.398</td>
<td>22.6717</td>
<td>1.441</td>
<td>insignificant</td>
</tr>
<tr>
<td>Liquidity</td>
<td>1.765</td>
<td>1.015</td>
<td>1.356</td>
<td>.9478</td>
<td>2.48†</td>
<td>&lt;.02</td>
</tr>
</tbody>
</table>

* Significant institutional shareholdings group
† Negligible institutional shareholdings group
** Two-tailed significance
# p<.01
+ p<.05
The positive t-ratio of dividend payout and institutional shareholdings was as predicted, but it was not statistically significant. Hessel and Norman (1992), in a discriminant analysis, also showed a positive influence of dividend payout on the institutional shareholdings, but the influence was not statistically significant. Thus, the dividend payout ratio is not significantly different between firms with significant shareholdings and institutionally-neglected firms. Perhaps the ratio was not a very important deciding factor, as dividends declared by Malaysian firms are not substantial.

We also documented a positive and insignificant t-ratio between institutional shareholdings and the current asset management ratio. The insignificant t-ratio was consistent with the insignificant influence of current asset management on institutional shareholdings reported by Hessel and Norman (1992). Perhaps the insignificant differences in the means between firms with significant institutional shareholdings and firms with negligible institutional interests was due to the fact that the ratio did not reflect significantly the firm's performance or efficiency. Rather, the ratio may simply indicate a firm's management and restructuring of the assets within the firm.

The growth ratio, which attempted to gauge institutional investors' long-term commitments, was positively related to institutional shareholdings. Nonetheless, the t-ratio was not statistically significant. Thus, the growth ratio was not significantly different between firms that had significantly institutional shareholdings and firms that had negligible institutional interests. Thus, the insignificant relationship between the growth ratio and institutional shareholdings could be interpreted as the institutional investors' lack of long-term commitment to the firms, which could also be interpreted as not supporting the "active" hypothesis.

Finally, our evidence showed a positive and significant relationship between institutional shareholdings and a firm's liquidity ratio. This finding indicates that the institutional investor prefers firms that own current assets that can subsequently cover their current liabilities satisfactorily. Moreover, a higher liquidity ratio indicates a firm's ability to adjust to the environment more ably as the need arises.

We also ran a data analysis, for each of the three-year periods for the ratios that were found to be insignificant. The results are shown in Table 2, which presents the ratios.

For the payout ratio, we found mixed results. In the financial year 1992, the negative and significant t-ratio suggested that firms with significant institutional shareholdings had a lower payout ratio as opposed to firms with negligible institutional interests. The negative t-ratio persisted in the financial year 1993 but it was not statistically significant. Nonetheless, it became positive and significant for the financial year 1994. Thus, the instability in the direction of the influence caused the pooled data analysis to show insignificant findings.

With regard to growth, our evidence showed mixed results over the three-year period. For the financial year 1992, the t-ratio was negative and statistically significant, suggesting that firms with significant institutional interests had lower growth compared with firms with negligible institutional shareholdings. Contrastingly, in the financial year 1994, the t-ratio was statistically significant with a positive sign. This evidence thus suggested that firms with significant institutional shareholdings experienced a greater degree of growth than firms with negligible institutional shareholdings, which contradicted the findings for 1992. However, in the financial year 1993, we noted a positive, but insignificant, t-ratio between growth and institutional shareholdings. Therefore, the mixed findings during the three year period drove the t-ratio in the pooled data analysis towards insignificance.

Our evidence broadly, therefore, supports the "myopic" hypothesis for the institutional investors in Malaysia. Our results did not suggest that institutional investors were committed to a firm's growth potential. Therefore, their presence may be perceived as "short-term" and their interest is primarily in the profitability of the firms rather than in being directly involved in ensuring firm's survival and competitiveness.

Table 2
Mean, standard deviation and the t-test for individual years

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Profitability</td>
<td>2.718*</td>
<td>3.3279*</td>
<td>-0.5681</td>
</tr>
<tr>
<td>Leverage</td>
<td>-4.6498*</td>
<td>-2.679*</td>
<td>-2.544*</td>
</tr>
<tr>
<td>Payout</td>
<td>-4.5681*</td>
<td>-2.2570</td>
<td>2.997*</td>
</tr>
<tr>
<td>Current</td>
<td>-1.0951</td>
<td>1.442</td>
<td>3.809*</td>
</tr>
<tr>
<td>Efficiency</td>
<td>-5.150</td>
<td>0.4371</td>
<td>-2.406*</td>
</tr>
<tr>
<td>Size</td>
<td>5.355*</td>
<td>5.055*</td>
<td>6.076*</td>
</tr>
<tr>
<td>Growth</td>
<td>-5.9398*</td>
<td>1.6553</td>
<td>2.958*</td>
</tr>
<tr>
<td>Liquidity</td>
<td>3.3519</td>
<td>1.1056</td>
<td>3.1358*</td>
</tr>
</tbody>
</table>

** Two-tailed significance  
# p<.01  
+ p<.05
CONCLUSIONS AND SUGGESTIONS FOR FURTHER RESEARCH

The major objective of the study was to determine whether there were differences in the financial ratios as found by Hassel and Norman (1992) between firms with substantial institutional shareholdings and firms with negligible institutional shareholdings in the Malaysian context. The findings in this study generally support the earlier findings by Hassel and Norman (1992). Institutional shareholdings were found to be: positively and significantly related to firm’s profitability, negatively associated with the firm’s leverage, and positively associated with the firm’s size. The study also showed that institutional shareholdings were positively associated with the firm’s liquidity. The findings generally held for both pooled data analysis and individual year analyses.

One major conclusion emerging from the present study is that institutional investors seem to focus heavily on a firm’s short-term results when making their investment decisions. It is therefore inferred that the emphasis of institutional shareholders’ on short-term results, as found in developed markets, is also prevalent in Malaysia. The implication is that firms with institutional shareholdings might be unwilling to make investments that could benefit the other shareholders in the long term. Thus, spending on research and development activities may become less important as they can diminish short-term results. In other words, the management will become short-sighted (i.e., myopic). This emphasis would likely result in Malaysian companies not being able to compete successfully in the global market as they would only be concentrating on keeping their institutional investors satisfied.

Several limitations are, nonetheless, noted in the present research. First, the study used cross-sectional data. Perhaps, identifying the sample firms according to their respective industrial sectors could also improve the findings. Secondly, the study examined only the financial ratios, which are only one of the determinants of institutional shareholdings. Perhaps, using other variables such as product innovations might be of utility in understanding further the influence of institutional shareholdings on other indicators of a firm’s performance.

APPENDIX

\[ t = \frac{(X_{\text{mean}} - X_{\text{med}} - (\mu_1 - \mu_0))/S_p}{(1/n_1^{1/2} + 1/n_2^{1/2})} \]

where:

- \( X_{\text{mean}} \) = mean score of companies with significant institutional shareholdings,
- \( X_{\text{med}} \) = mean score of institutionally neglected companies,
- \((\mu_1 - \mu_0)\) = the difference between the two sub-population means, and
- \( S_p^2 = (n_1 - 1)S_1^2 + (n_2 - 1)S_2^2 / (n_1 + n_2 - 2) \).

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