# EFFECTS OF DEMUTUALIZATION ON FINANCIAL PERFORMANCE OF THE STOCK EXCHANGES IN DEVELOPING ECONOMIES

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**ABSTRACT:** *Stock exchange is traditionally considered as "Broker's club" which inconsequence tarnishes the images of this market in the mind of the people. The advancement of the technology and media explosion have broader the wisdom of business in the field of the stock markets. The demutualization is process where any shareholders become the member of company and receiving a mark able response in some countries of the world. The purpose of the study was to investigate whether demutualization lead to better performance of the stock exchanges in emerging economy? Sample of the study was comprised of three stock exchanges; Bombay Stock Exchange, National Stock Exchange of India and Tehran Stock Exchange respectively. The data of the study was collected from annual reports of these stock exchanges each two years before and after demutualization. A Paired Sample T-test and Wilcoxon sign rank were used to evaluate the empirical data regarding the financial performance of the stock exchanges and nominal data about itself changes in stock exchanges after demutualization. Paired Sample T-test results about the financial performance showed significant difference in all dimensions except the fixed assets turnover ratio difference. Similarly, Wilcoxon sign rank test showed that most of the stock exchanges are performing better after the demutualization in many dimension except in fixed assets utilization. The recommendations of the study are quite helpful for formulating policy of demutualization in Pakistan. The scope of the study can be extended to the other countries of the region and especially the developed countries where demutualization is being exercised.*

**KEYWORDS**: Demutualization, Financial Performance, Stock Exchanges, Developing Economies

## INTRODUCTION

There have been rapid changes in business policies and functioning structure due to globalization. Corporations can easily runs operations of its branches around the world effectively and efficiently from a single office located in one corner of the world. The competition among the corporations is increasing swiftly day by day due to expansion of markets and interaction among the investors from all around the world. Globalization eventually results in expanded business due to mergers and acquisitions.

Traditionally, stock exchanges all over the world were run as mutual or member owned organizations raising capital from members and providing them services. Mutual or member owned stock exchanges are those exchanges which collect the funds from the members and provide services to them. Advancement in information technology in capital markets like introduction of the computerized trading platform, joint clearing system and evolution of share's bank Central Depository Company (CDC in Pakistan) offering of online trading to investors while staying at home that even the physical existence of stock exchanges became questionable.

With the begging of 1990, most of the stock exchanges all over world initiated to take the steps toward the demutualization due to advancement in information technology and changes in the pattern of trading of stock markets. The researchers have examined the reasons or factors behind demutualization and they are agreed on two main factors: globalization and information technology (Williamson, 1999, Akhtar, 2002 &Serifsoy, 2005). Technically, demutualization is a process in which the stock exchanges convert their status from mutual or member-owned organization to shareholder-owned company or public limited company. Akhtar (2002) argued that Demutualization refers to the change in legal status of the exchange from a mutual organization, with one vote per member into a company limited by shares, with one vote per share. This alteration also denotes that trading and ownership are two different things. In Demutualized stock exchange shareholders have a preference to maximization of the profit and management focus on the best services to customer and also wealth maximization of the shareholder. Thus decision of management should be in the best concentration of financial performance of the stock exchanges and ultimately in interest of its owners  (Aggrawal, 2002, Hughes &Zargar, 2006).

Demutualization can assist stock exchange to enhance the performance by updating its technology, improving governing body which is more responsive and flexible to market signals, avoiding from broker monopoly, ensuring the appropriate decisions making and increasing the value of its shareholders (Aggrawal, 2002,  Lee, 2002 and Mosry&Rwegasira,2010). They also argued that "formation of new business entity in merging and developing economies is difficult process and attraction of investors toward the new comer business is more difficult than the creation".

Previous studies in the literature regarding the impact of demutualization on the performance of stock exchanges focused on only a few financial and markets measures. These studies did not distinguish among the developing economies' stock markets, or only examined their financial performance with other Initial public offering companies or with Stock exchanges of all over the world economies' stock markets without differentiating developing and developed economy. As a result, the issue of demutualization has remained controversial and open to be further investigated. This study examines whether or not the demutualization enhances financial performance of demutualized stock exchanges of developing and merging economy that are members of the World Federation of Exchanges that have undergone the demutualization program over the 1990-2010 period.

The study takes into account the academic research as well as practical life to suggest the factors and causes which influence the successful implementation of the demutualization plan and performance of the demutualized stock exchanges in Pakistan. The study is also to assess the impact of corporate ownership structure/ demutualized structure on the financial performance of stock exchanges in term of Short Term Liquidity, long term liquidity,

profitability, capital Assets and earning capacity as shown in Figure 1.Therefore, the study distinguishes in particular mutual versus demutualized ownership and sets the one major determined objective to contribute in academic literature of investment portfolio management.

### Objective of the study

1. To compare the effectiveness of the Stock Exchanges financial performance in developing and emerging economy before and after demutualization;
2. To examine significant indicators of performance of the stock exchanges of developing and emerging economies;

### Research Questions

1. Is there a significant difference in mean total scores of financial performance of the stock exchanges of developing and emerging economy before and after demutualization?
2. Is there significant difference indicator of performance of the stock exchanges of developing and emerging economy?

## LITERATURE REVIEW

Review of literature witnessed that operationally stock exchanges were working as a "club of brokers" services and were offered as monopoly operators serving largely under a mutual governance structure. In typical stock exchanges the "members of the club enjoyed rights of ownership, decision-making (one member, one vote), and trading. Value enhancement of the exchange was achieved by restricting access" (Akhtar, 2002).According to Aggarwal (2002) demutualization can be simply defined as the procedure that involves conversion from a not-for-profit member-owned organization to a shareholder-owned organization, which is likely to be a for-profit corporation. Akhtar(2002) argued that demutualization, in the strictest sense, "refers to the change in legal status of the exchange from a mutual association with one vote per member (and possibly consensus-based decision making), into a company limited by shares, with one vote per share (with majority-based decision making)".Due to globalization theme or policy of business world has changed dramatically. Globalization eventually results in expanded business due to mergers and acquisitions. Company can easily run operations of its branches around the world effectively and efficiently from a single office located in one corner of the world (Aggarwal, 2002). Akhtar (2002) exposed that this situation has limited stock exchanges around the world to become a public limited company operating for making profit. This refers to the amendment in legal standing of the exchange from a mutual association with one vote per member, where decision making is consensus based, into a company limited by shares, with one vote per share with majority-based decision making.

According to Elliott (2002) demutualization in its many forms has become a pervasive authenticity, with growing demand in emerging market countries, There are also some corns of demutualization apart from the benefits that demutualized exchanges face conflict of interest is the biggest challenge as separation of ownership and management can result in such conflict. Also, management takes decisions which are not in conflict with their position in the organization (Hughes &Zargar, 2006).

According to Scullion (2001) demutualization is not only merely converting into for profit organization owned by its members. An exchange is truly demutualized when it maximizes its potential profit and it also increases its shareholders value. Karmel (2000) observed that profit of exchanges, return on assets/equity and financial soundness perks up when the stock

exchanges become for profit organizations. Ames (2002) found that those who have better management skills should also own then assets required for production. Management is viewed as an asset to the firm. It is variable by nature and affects the bundle of assets it seeks to complement and the quality of their usage. Thus, financial firms are heterogeneous in nature. Different financial firms produce different financial products as products are produced from different bundles of assets.

Shareholders (equity capital providers) provide money in return for a claim on profits. Since the return on the assets they provide (capital) is the residual earnings or profit of the firm, then their return cannot be guaranteed without ensuring that the firm's financial performance is strong. In other words, the firm's wealth must be created before it can be distributed to the various stakeholder groups (Boatright, 2006).
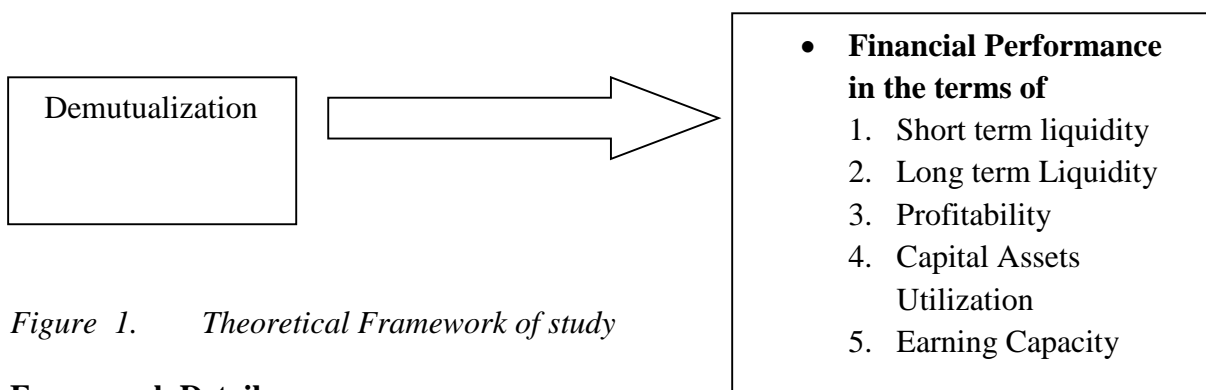
| Demutualization | | • **Financial Performance in the terms of**<br>1. Short term liquidity<br>2. Long term Liquidity<br>3. Profitability<br>4. Capital Assets Utilization<br>5. Earning Capacity |
|---|---|---|

*Figure 1.      Theoretical Framework of study*

**Framework Detail**

**Short Term Liquidity**
Current ratio for the short term liquidity is used as one of the basic financial performance indicators. Current ratio is defined as the ability of the firm to meet the short term financial obligation through short term resources. It also shows that how much amount of current assets (cash or easily converted to cash) are available in a firm to meet the current obligation of that firm. If the firm is fail to meet the short term liabilities then it becomes the technical insolvent. Brigham and Daves (2004) argued that current ratio shows the firm short term solvency which means how much degree a firm is sound to meet the short term obligations. If the current ratio is high, it shows the firm is overcapitalizing and if the current ratio is low then it shows that firm is overtrading. Therefore it must be in average ratio (CIMA study text book, 2012). Current ratio is measured through following formula.
"Current Ratio = Current Assets / Current Liabilities"

**Capital Assets Utilization.**
The capital assets utilization ratio shows that how effectively firm is utilizing its capital assets in a proper way. This ratio has two main indicators like fixed assets turnover ratio and total assets turnover ratio. The fixed asset turnover ratio measures how Firm effectively utilize capital assets like plant and machinery etc. The formula of fixed assets turnover ratio is used as "Fixed Assets turnover Ratio = Net Income / Total fixed assets"
The total asset turnover ratio evaluates total assets. It measures the turnover of all firm's assets through the formula: "Total Assets Turnover Ratio = Net Income / Total Assets".

**Long term Liquidity.**
The long term liquidity of the firm shows that how much amount of the debt is include in

overall assets. It shows that how much mount is financed from the debt equity like bond, debenture and interest bearing finance. Two indicators of the long term liquidity were used for the data analysis of the study and they are; "Debt Ratio = Total Long term Debt / Total assets". The debt ratio shows that how much amount of the total assets of the firm is financed through the debt equity or debt financing. "The Debt Equity Ratio = Total debt / Shareholders' Equity". The debt to equity ratio shows that how much amount of capital is financed through debt equity or debt financing. It also shows that how much degree of the control on the firm is owned by the shareholder and debt financer.

**Profitability.**
The Profitability of the firms showed that firm efficiency and earring capability, and formulated as under
  i.   "Profit margin = Net Income available to common stockholders / Operating Revenue"
 ii.   "G.P margin = Gross profit /Sale"
iii.   "ROE = Net Income Available to common stockholders / Common Equity"
 iv.   "ROA= net income available to common stockholders / total assets"
These ratios show that how much amount of profit is earned by the firm and how much amount is available for the investors of the company. It shows that return of the company which the company provides to its shareholder.

**METHODOLOGY**

**Population**
The population of the study comprised of thirteen demutualized stock exchanges which are members of the World Federation of Exchanges. The World Federation of Exchanges has sixty members' stock exchanges but only thirteen stock exchanges are fully demutualized and are listed on their own plate form. Theses stock exchanges have experienced of the initial public offering after the demutualization.

**Sample**
Three stock exchanges namely Bombay Stock Exchange, National Stock Exchange of India and Tehran Stock Exchange out of thirteen stock exchanges were selected as a sample for the study. These three stock exchanges belong to the developing economy of Asia and all of these were demutualized in the year 2005.

**Data collection**
Pre-Post design was used for this study. For this purpose, data was collected from four years annual reports of selected stock exchanges. These four years annual reports data were comprised of two years before the demutualization and two years after demutualization. The data was collected from the website of World Federation of the Exchanges regarding selected sample.

**Data Analysis Techniques**
Skewness and Kurtosis were used for measuring data normality whereas the S-W and K-S tests were also used for deep normality. Paired sample T-test was used for analysis of the empirical data of performance of the stock exchanges before and after the demutualization. Wilcoxon match paired Test was also applied on data before and after demutualization for measuring the Stock exchanges itself difference.

## FINDINGS

### Normality

The Skewness, Kurtosis, Kolmogorov-Smirnov and Shapiro-Wilk tests were applied for determination of the data normality. These test showed that data as non-normal. Therefore, natural log was used to convert the data into homogeneous form and again same tests were applied. The results of process this time (Table 1) showed the data as normal which helped in proceeding for applying other tests for the measurement of the difference between pre and post data of demutualization.

### Short Term Liquidity

In order to examine progress of short term liquidity of demutualized stock exchanges in developing economy, improvement in Current Ratio was checked. Figure 2 shows the comparison of total mean score of current ratio before demutualization (1.54) and after demutualization (1.58) of three selected stock exchanges. Table 2 shows that there is a significance difference in current ratio before and after the demutualization in developing economy when paired sample T-Test is applied at 10 % confidence level. The Wilcoxon sign rank test shows that 55 % sample stock exchanges improved the current ratio at negative sign rank at 5 % significance level for 5 years. Whereas, 36 % stock exchange could not improve the current ratio performance at positive rank

### Capital Assets Utilization

For the purpose to examine progress of Capital assets utilization of the demutualized stock exchanges in developing economy, improvement in fixed assets turnover ratio and total assets turnover ratio were worked out. Figure 3exhibits a comparison of total mean score of fixed assets turnover ratio before demutualization is (9.78) and after demutualization (10.05) of three selected stock exchanges. The paired sample T-Test shown in Table 2 gives insignificance difference of fixed assets turnover ratio and total assets turnover ratio. The Wilcoxon sign rank test shows that 23 % sample stock exchanges for 5 years improved the fixed assets turnover ratio at negative sign rank at 5 % significance level and 67 % stock exchange could not improve the fixed assets turn over at positive rank. Total mean score of total assets turnover ratio before demutualization is (2.32) and after demutualization (2.64) exhibit a significance difference by using paired sample T-Test at 01 % significance level. The Wilcoxon sign rank test shows that 76 % sample stock exchanges for 5 years improved the total assets turnover ratio at negative sign rank at 05 % significance level and 20 % stock exchange could not improve the total assets turn over at positive rank.

### Long term Liquidity of Demutualized Stock exchanges

Long term liquidity of the firm shows that how much amount of the debt is include in overall assets. Figure 4 shows comparisons of total mean score of debt to equity ratio before demutualization is (0.41) and after demutualization (0.45) of three selected stock exchanges. The results of paired sample T-Test given in Table 2 shows a significant difference. The Wilcoxon sign rank test shows that 65 % sample stock exchanges for 5 years improved the fixed assets turnover ratio at negative sign rank at 5 % significance level and 30% stock exchange could not improve the fixed assets turn over at positive rank. In this case Equity ratio is (0.22) to (0.23) significance difference is 0.066 at 10 % significance level. The Wilcoxon sign rank test show that 66 % sample stock exchanges for 5 years improved the Equity ratio turnover ratio at negative sign rank at 5 % significance level. And 32% stock exchange could not improve the Equity ratio at positive rank.

**Profitability.**
Profitability of the firm shows that firm efficiency and earning capability. Figure 5exhibits a comparison of the mean score before demutualization: ROA (0.14), ROE (0.12), GP Margin (0.36) and N.I margin (0.12) and after demutualization: ROA (0.15), ROE (0.13), GP Margin (0.38) and N.I margin (0.14). Of three selected stock exchanges. The result of the Paired T-test is .007, .000, .000and 0.001which show the significant change in profitability of the stock exchanges after the demutualization. The Wilcoxon sign rank test show that 78.00 %, 45.00%, 91.00% and 91.00% sample stock exchanges for 5 years improved the earning capacity at negative sign rank at 5 % significance level. Whereas, 21.00 %, 52.00%, 00% and 00% stock exchange could not improve the Equity ratio at positive rank

**CONCLUSION**

The study was conducted to see whether this advancement changes in stock exchanges business lead to better performance of demutualized stock exchanges? The performance of the stock exchanges is measured through short term liquidity, long term liquidity, assets utilization, earning capacity and profitability. Result of the performance of the stock exchanges is significant and only in fixed assets utilization is insignificant. Its shows that demutualization is useful and lead to better performance in emerging economy. Results of the study conducted by Morsy and Rwegasira (2010) about the demutualization and financial performance in developed economies stock exchanges were not significant. This is because of competitions in developed economies which is very high. The result of present study shows performance's indicators as significant. Probably, this is due to the general acceptable behavior of shareholders of developing countries. The stock exchanges of the Pakistan decided to convert their status from mutual to demutualize firm. The demutualization Act is under process in parliament since year 2012 for the legal procedure. The present study results strongly support the efforts being made by Government of the Pakistan toward this particular advancement in stock market working constitution. This study has gone a step further to analyze the financial performance of the demutualized stock Exchange which may also be fruitful in emerging economy to re- investigate the performance of financial stocks demutualized Exchanges when we have longer periods before and after the demutualization.

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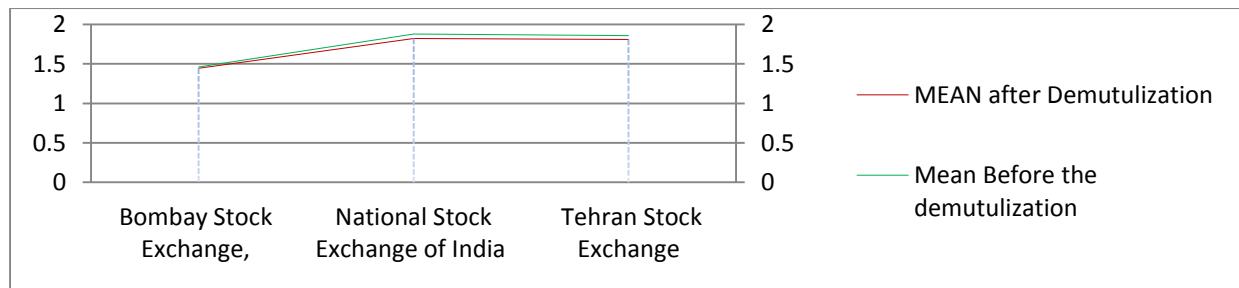
*Figure 2.      Comparison of Total Mean score of short Term Liquidity of Stock exchanges beforeand after               the Demutualization.*
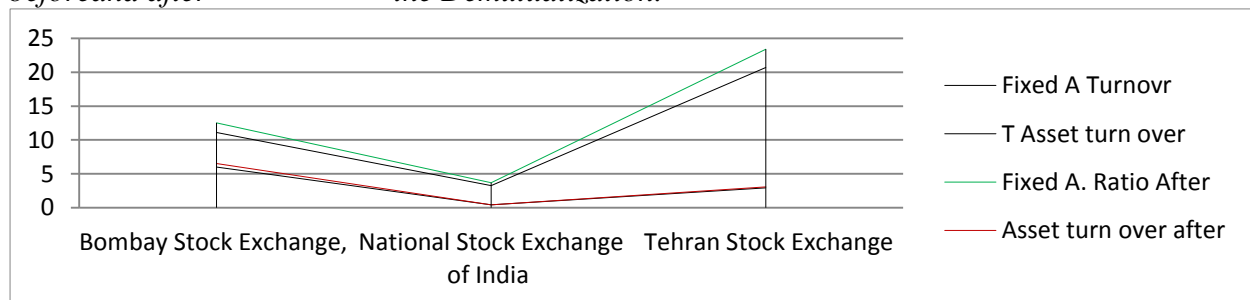


*Figure   3.      Mean score of Assets utilization of Stock exchanges beforeand after the Demutualization.*
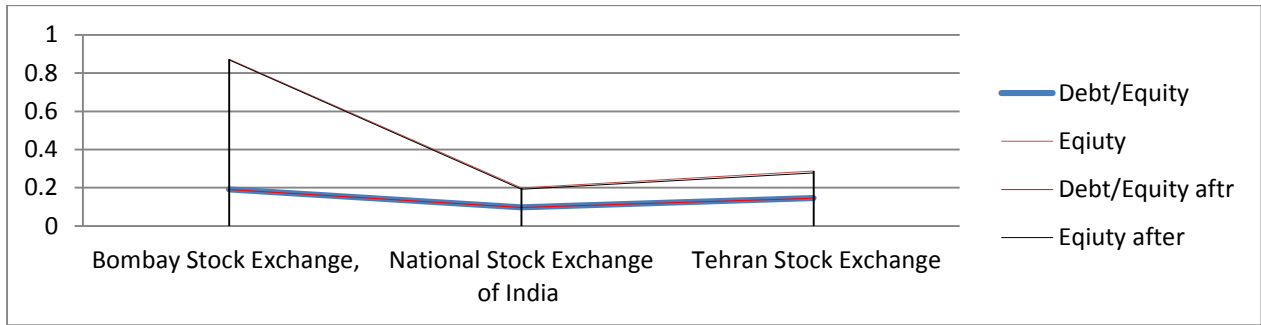
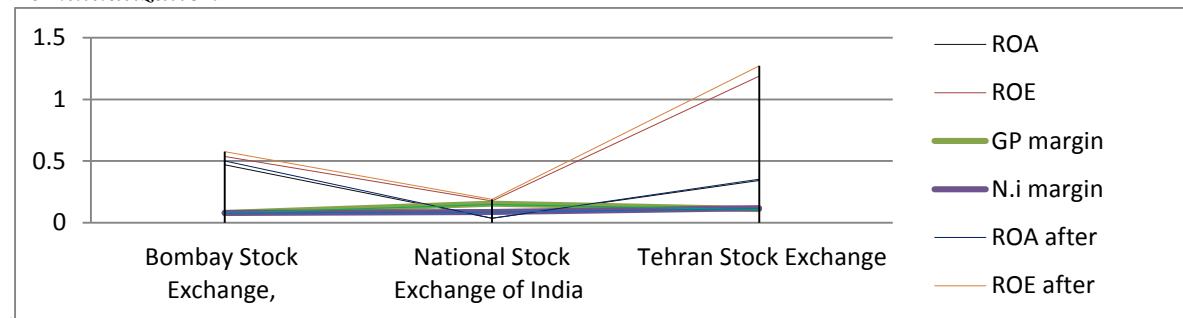*Figure 4.    Mean score of long term liquidity of Stock exchanges before and after the Demutualization*



*Figure 5.    Mean score of earning capacity of Stock exchanges before and after the Demutualization*

*Table 1: Result of the Normality Test for the sample data*

| Variable | Mean | Std. Div | Skewness | Kurtosis | S-W | K-S |
|---|---|---|---|---|---|---|
| Current Ratio | 1.572 | 0.2643 | -0.674 | -0.899 | 0.012 | 0.015 |
| Fixed A. Ratio | 0.3806 | 0.29523 | 0.78 | -0.82 | 0.064 | 0.028 |
| Asset turn over | 2.4581 | 1.68971 | 0.708 | -0.047 | 0.2 | 0.133 |
| Debt/Equity | 0.1402 | 0.13095 | 0.368 | 0.782 | 0.036 | 0.06 |
| Eqiuty | 1.093 | 0.84232 | 0.72 | 0.607 | 0.017 | 0.027 |
| ROA | 0.2769 | 0.15237 | -0.616 | -1.057 | 0.151 | 0.035 |
| ROE | 0.3721 | 0.30623 | 0.948 | 2.442 | 0.007 | 0.024 |
| GP margin | 0.1489 | 0.04099 | -0.771 | 0.1214 | 0.0032 | 0.384 |
| Net Profit Margin | 0.1214 | 0.02645 | 0.297 | -0.237 | 0.02 | 0.066 |

*Table 2 : Result of Paired Sample T-Test and Wilcoxon Sign Rank Test*

| Variable | Mean Before | Mean After | 95% Confidence Interval of the Difference | | Std. Div | Sig. (2-tailed) | Sum of Ranks | |
|---|---|---|---|---|---|---|---|---|
| | | | Lower | Upper | | | Positive | Negative |
| Current Ratio | 1.53 | 1.59 | -.143962 | .011335 | 0.2643 | .087*** | 36 | 55 |
| Fixed A. Ratio | 0.37 | 0.38 | -.006783 | .014077 | 0.29523 | 0.461 | 67 | 23 |
| Asset turn over | 2.3 | 2.45 | -.416965 | -.136926 | 1.68971 | .001* | 20 | 76 |
| Debt/Equity | 0.21 | 0.24 | -.000104 | -.000028 | 0.13095 | .003* | 30 | 65 |
| Equity | 0.79 | 0.76 | -.486529 | .017813 | 0.84232 | .066*** | 32 | 66 |
| ROA | 0.23 | 0.27 | -.045924 | -.009179 | 0.15237 | .007*** | 21 | 78 |
| ROE | 0.16 | 0.17 | -.012547 | -.004099 | 0.30623 | .001* | 52 | 45 |
| GP margin | 0.13 | 0.15 | .001722 | .002426 | 0.04099 | .000* | 0 | 91 |
| Net Profit Margin | 0.11 | 0.12 | .002539 | .003326 | 0.02645 | .000* | 0 | 91 |

- 1% * ,  5% ** , 10% ***
- **<u>Negative ranks:</u>**

- 
  Variables for which the after-demutualization value is greater than the before-demutualization one.
- **Positive ranks:**
  Variables for which the after-demutualization value is less than the before-demutualization one.