**CHAPTER 01**

**Introduction:**

In today’s modern era making investments in common stocks is the most important but at the same time the most difficult, uncertain, complex and daunting undertaking companies and individual investors undergo. A proper and sophisticated analysis (Technical, Fundamental or both) is very much necessary to check out in which stocks to invest and in which not to invest? Initial selection must be made before investing in the stock of any company. It would be ridiculous to blindly invest in any company‘s stocks of New York Stock Exchange (NYSE), Karachi Stock Exchange (KSE), NIKKAI or any other stock market of the world. Investment in common stocks is not to be a taken a blind folded game because a high level of risk is always waiting for investors of the stock market. Therefore initial screening must be done before making a portfolio. Investors whether individuals or institutional search for the companies with proven track records and not simply believe in the analyst recommendation because the recommended stocks by the analysts underperformed in 2000 and 2001.

Unfortunately in our country most of the investors think that profit making from stock market is a matter of luck and they blindly invest in stocks without knowing the basic technicalities of investment as a result they suffer huge capital losses and many of them retire from the field of investment once and forever. This phenomenon negatively affects the economic activity in the country.

The knowledge of winning momentum of the past winners and losing momentum of the past losers is considered to be really important for the investors. This knowledge can help investors to make good selection and as a result good rewards.

This research study would try to analyze the consistency in the performance (Stock Market Returns ROA and ROE) of different 72 KSE based companies and would provide valuable insights to the investors for making their decisions.

**Overview of Management approaches in the field of investment**

To make a well diversified portfolio, investors use different strategies and consider many factors among them the most important is the belief of investors about market efficiency (Efficient market hypothesis).If investors are of the belief that markets are efficient which means that all the relevant information is available to the investors they would perhaps use a “passive management approach

**Passive Management Approach**

Passive management strategies do not strive to outperform the market but definitely strive to perform as well as the overall market itself. Passive management strategies are the production of “Efficient Market Hypothesis”.

The investors’ belief in efficient market hypothesis would lead them to use any of the following passive strategies.

**Buy and Hold Strategy:**

According to Buy and Hold strategy investors buy common stocks and hold it for some good time in the future.

**Advantages:**

* This strategy helps investors to minimize the transaction costs.
* Saves time of investors.
* Investors tries to avoid probable mistakes involved in active management
* Research costs minimization
* Portfolio managers’ fees reduction
* Brokers commissions minimization
* Tax efficiency

However initial selection must be done according to the investor’s risk-return tolerance level.

**Index Fund Strategy/Passive Equity Investments:**

According to this strategy investors design their portfolio in such a manner to replicate the performance of a particular market index (e.g. KSE 30 Index, KSE 100, NYSE etc).

According to Princeton based economist Burton Malkiel “On average the typical actively managed fund underperforms the index by about two percentage points a year. And that calculations ignores the sales charges that are imposed by some actively managed funds and the extra taxes an investor pays on funds that turn over their portfolio rapidly”

According to passive investment managers they think that they cannot beat the market because of the market efficiency therefore making active changes to the portfolio would simply increase their transaction costs and would waste their time for no reward at all.

**Active management approach:**

On the other hand if management does not believe in “Efficient market hypothesis” they would think that they can outperform the market with their superior judgment, information and analysis. Therefore managers with such belief would definitely use active management strategies for making their portfolio decisions. Such as

**Security selection:**

Security selection is one of the most important active management approaches. According to this approach investors despite of the evidence of Efficient Market Hypothesis tries to use fundamental and technical analysis to find out undervalued stocks with better risk return trade off.

Investors following security selection strategy try to select stocks in their portfolios having negative covariance in their returns. Thus trying to outperform the market based on their superior information and analytical skills.

**Sector rotation:**

This is another type of active management approach and in a sense similar to stock selection. In this type of strategy the sector weights are constantly changed in the portfolio in order to take advantage of good performing sectors and avoid the curse of losing sectors.

In the sector analysis investors divide stocks into four board sectors.

* Interest sensitive stocks
* Consumer durable stocks
* Capital goods stocks
* Defensive stocks

All these stocks are expected to perform differently during the different phases of business cycle. But to take advantage of the rotation strategy investors must have superior knowledge of business cycle.

**Market timing:**

Market timers invest high weights of their portfolios in high beta stocks whenever they anticipate that the market is going to experience a bullish trend and act oppositely when they smell bad times in the stock market.

Though this seems to be a very attractive strategy but the problem associated with this strategy is that investors may miss the good time of doing the same and may suffer tremendously.

That is why Charles Ellis says “Market timing is a wicked idea, don’t try it ever”[[1]](#footnote-1)

Any Serwer says “investors need to avoid the negatives of buying fads, crummy companies and time the market”[[2]](#footnote-2)

**Research Statement:**

Our research study would focus on three things.

1. This study would focus on the question that whether restricting investments to the highest quartile stocks truly help investors to avoid losing years?
2. This study would also check out the momentum in stock returns, ROE, ROA (tendency to continue its good or poor performance for some period of time*)* in order to check whether Pakistani stock returns follow the same pattern or somewhat different pattern.
3. The average market returns, ROA and ROE of the winners are more consistent or less volatile than the average market returns, ROA and ROE of the losers?

 **Purpose of the study:**

Assume that market is inefficient and Efficient Market Hypothesis has no existence at all, then how investors could make best use of security selection strategy (active management strategy)?

For stocks selection many approaches are used like

* Technical analysis
* Fundamental analysis
* Momentum approach

The focus of this study is how to make best use of momentum approach and take advantage of the cross sectional variation in common stocks returns. As not too much work has been done on this topic in the context of Pakistani stock market. So it is hoped that this work would open ways to more research on this topic in Pakistan and would ultimately deliver some fruitful results.

The purpose of this research is to provide research based information to the investors about one of the active strategies which is stock selection that how this active strategy can help them avoid downfalls and risks associated with stock market.

Backed with facts and figures and historical data from Karachi Stock Exchange, our aim is to understand the consistency in the performance of stocks in upper quartile and performance of stocks in lower quartile so that they may be encouraged to come forward and invest in the stock market. So that the economic activity in the country can be speed up.

**The limiting factors of the study**

This study could have been made better than it is, in the absence of the following factors

* As this study is an academic requirement for my degree completion. So the time frame (nearly 47 days) given for the completion of this study was the main limiting factor.
* Finding the required data of the companies from 2001 to 2010 was another daunting and cumbersome task. Annual reports of many companies were difficult to find.
* Financial resources were limited for me to visit the companies individually and bring more valuable insights of the companies.
* The work done on this topic is very rare in the context of Pakistan therefore literature review was a problem.

 **Chapter 02 Literature review:**

The myth of investment decisions especially stock selection active approach has long been discussed in academic and business circles and voluminous work has been done on the topic under research in the foreign world. A question which arises is that why I am interesting to do my research on this topic? The answer is that I will take into consideration the accounting measures like ROE and ROA as well along with market returns for investigating its consistency. The very special feature of this research is that we are taking KSE based companies to check its performance consistency and momentum.

Thus we can say that we are taking additional variables into consideration than previous studies. This means scope of our study would be broader than that of the previous studies especially in the context of Karachi Stock Exchange and Pakistani stocks.

A brief detail of the previous work is as follow.

 First of all Latane, Tuttle and Jones found that there is a consistent spread in the performance of upper and lower quartile stocks.

 (Security analysis and portfolio management, 2nd edition New York: Ronald Press, 1975)

Charles P.Jones and Jack W. Wilson (1989) conducted a study using stock prices data (1885 to 1989) to analyze volatility in the prices of stocks. They revealed that there was no increase in the volatility of stock prices of the winners and losers. However consistency in cross prices volatility was revealed. This study also confirmed that the top quartile companies were consistently good performers.

In May-June,1992 “Financial Analysts Journal “volume 48 published a research study of Richard W.McEnally and Rebecca B.Todd for the period 1946 to 1989 with the name “Cross sectional variation in common stock returns”

This study revealed that “investors who confined stock selection to the highest quartile would have avoided losing years and even the bad years showed only modest losses. Conversely the bottom quartile results were negative 55% of the time”

Jagadeesh and Titman (1993) used post 1940 data from New York stock exchange and American stock exchange and conducted a study which revealed that a zero cost momentum approach of buying past winners and selling past losers generates significant average profits.

Vein, Blume, Easley, and O’Hara (1994) argued that traders can obtain valuable information about stock returns by observing past price and past trading volume.

 Rouwenhorst (1998) revealed significant momentum returns from a sample of 12 European countries and his 1999 paper confirmed the existence of momentum strategies in emerging markets.

[Conrad and Kaul (1998)](http://onlinelibrary.wiley.com/doi/10.1111/1475-6803.00025/full#b5) argue that the profitability of momentum strategy is due to cross-sectional variation in expected returns rather than to predictable time-series variation in security returns. They show that the momentum strategy's average profits reflect the result of buying high-mean-return securities and selling low-mean-return securities.

[Barberis, Shleifer, and Vishny (1998)](http://onlinelibrary.wiley.com/doi/10.1111/1475-6803.00025/full#b1), [Daniel, Hirshleifer, and Subrahmanyam (1998)](http://onlinelibrary.wiley.com/doi/10.1111/1475-6803.00025/full#b6), and [Hong and Stein (1999)](http://onlinelibrary.wiley.com/doi/10.1111/1475-6803.00025/full#b13) present theoretical models of investor behavior that suggest price momentum is consistent with biases in the way investors interpret imperfect information

Chan, Hameed, and Tong (2000) reported significant evidence of momentum profits based on 23 stock market indices

Chordia and Shivakumar (2000) investigate the influence of macro economy on momentum and report that momentum strategies perform well during periods in which the macroeconomic state is favorable, while it does not during recessions.

Hameed and Kusnadi (2002) revealed significant momentum profits from Asian markets

In 2003 a study was conducted by Brad Barber, Reuven Lehavy, Brett Trueman and Maureen Me Nichols revealed that in the years of 2000 and 2001 the low priority stocks according to the analysts showed an average annual return of 13% and highly recommended shares according to the stocks analysts performed poorly with an average return of 7%.

Fama and French (1996), using the three-factor model, fail to explain the abnormal returns and concluded that momentum remains a puzzle requiring further investigation

 Menkhoff and Schmidt (2005) describe momentum traders as the least risk-averse professionals, going aggressively with the trend.

Michael J. Cooper, Roberto C. Gutierrez JR., and Allaudeen Hameed in their research study “Market States and Momentum” took data from NYSE and AMEX stocks from January 1926 to December 1995 and concluded that the profits to momentum strategies depend critically on the state of the market. A six-month momentum portfolio is profitable only following periods of market gains (UP market states). They also found that momentum profits increase as the lagged market return increases. However, at high levels of lagged market returns, the profits diminish but are not eliminated

Chapter 03 Methodology

**Sample:**

The importance of the representativeness of the sample can never be ignored in any statistical analysis, therefore keeping this thing in mind this study is taking 72 listed companies of Karachi stock exchange 100 Index a very much important index of the country and a true indicator of economic activity in Pakistan. It must be noted that this is the KSE 100 index as per Feb. 23rd, 20011.

The rest of 28 companies were screened and dropped out because of

* Merger later from the start of the data period (2001)

For example GlaxoSmithKline and Habib Metro Bank’ merger took place after 2001.

* Some of the companies started their operation later than the start of our data

 For example PICIC Growth Fund started its operation on June 25th, 2004 under the Companies Ordinance 1984.

These were some of the reasons that the rest of 28 companies could not qualify for being selecting in our sample.

**Theoretical frame work:**

Our variables of interest would be

* Stocks prices
* Stock prices would result in transformed variable “Market Return”
* Net income available to common stockholders
* Common equity
* Total assets
* Then using net income and total assets would give us transformed variable of ROA
* While net income and common equity would result in another transformed variable of ROE.
* Time

First of all we would find the annual stock returns with the help of capital gain formula

$$Market Stock Return=\frac{Current Stock Price-Previous Stock Price}{Previous Stock Price}$$

In order to find out return on common equity (ROE) we use formula

$ ROE=Net IncomeAvailable To Common Stockholders/Common Equity$

Net income’s figure for all the companies were taken from companies’ income statement and common equity figures would be taken from the balance sheet of the respective companies.

For finding Return on Net worth (RONW) or ROA we would use formula

$$ROA or RONW=Net Income/Total Assets$$

Net income and total assets figure were taken from the annual report of the respective companies.

**Statistical tools:**

In order to check the cross sectional variation in common stocks return we would use IQR

$$ Q1=Size Of \left(\frac{Nth}{4}\right)Item Q2=Size Of \left(\frac{2Nth}{4}\right)Item$$

$$ Q3=Size Of \left(\frac{3Nth}{4}\right)Item$$

$$IQR=Q3-Q1$$

 (Where N is the total frequency or total number of the companies in the representative sample which is 72)

Arithmetic mean = Sum of values / No of values

**Objective of this research study:**

* Whether the spread between upper and lower quartile returns in Pakistani stocks is some what consistent or not?
* From KSE point of view this study would establish a bottom line for investors and researchers.
* This study would help active managers in making their security selections.
* To know about the stocks’ performance consistency and momentum in Pakistan.

 **Research scope:**

The results of the study would be generalized to all KSE listed companies and other stocks markets of the developing economies like our country.

**Data Type:**

 For collecting our data we would solely rely on the secondary data

**Data Collection:**

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* Stock prices data would be collected from [**www.brecorder.com**](http://www.brecorder.com) from the year 2001 to 2010.
* Karachi stock exchange website [**www.kse.com**](http://www.kse.com)
* For net income available to common stockholders we would use annual reports of the respective companies.
* Total assets and common equity figures can also be taken from the annual reports of the respective companies.

**Data Period:**

The data period for checking consistency in Market Returns, ROA and ROE would be from 2001 to 2010.

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**Chapter 04 Data Analysis of Market Returns**

**Data Handling and procedure followed:**

First of all stock returns of all the 72 companies sampled were taken from the KSE and Business Recorder websites. The market returns for all the 72 companies from 2001 to 2010 were calculated in the following method.

For calculating market returns of 2001 we took the stock prices of January 1st, 2001 (previous stock price) and December 31st, 2001 (current stock price) and used the capital gain formula.

$$Market Stock Return=\frac{Current Stock Price-Previous Stock Price}{Previous Stock Price}$$

Similarly the market returns for all the 72 companies were calculated from 2001 to 2010. Then these 72 companies were arranged in the descending order of its market returns. According to the quartile formula mentioned earlier in the statistical tools the top 18 companies with respect to their market returns were selected as winners and the lowest 18 companies were selected as losers. As the main focus of this study is to investigate the consistency and momentum in the winning performance of the winners and losing performance of the losers.

Now the further proceedings would be to take the top 18 winners in the year 2001 with respect to market returns and checking its winning momentum in the subsequent years.

But before going into that detail let’s have a look on table 4.1 which explains the variability in the market returns and share prices of winners.

TABLE: 4.1

|  |  |  |  |
| --- | --- | --- | --- |
| **Winners WRT Returns** |  |  |   |
| years | Av.Returns | St.Deviation in Returns | Coefficient of variation |
| 2001 | 44.10% | 50.82% | 1.15 |
| 2002 | 237.14% | 162.34% | 0.68 |
| 2003 | 216.77% | 176.35% | 0.81 |
| 2004 | 110.61% | 31.95% | 0.29 |
| 2005 | 90.91% | 45.99% | 0.51 |
| 2006 | 45.53% | 32.31% | 0.71 |
| 2007 | 170.37% | 118.98% | 0.70 |
| 2008 | -4.40% | 41.12% | -9.35 |
| 2009 | 110.06% | 45.66% | 0.41 |
| 2010 | 46.93% | 39.50% | 0.84 |

This table shows that the winners performed really well from 2001 to 2007and showed 130.77% average returns during this period. The reasons may be due to the better economic condition of the country and high growth of the services industry. The main point to be noted is that the average market returns of the whole winners was -4.39% in the year 2008 and the reasons may be the aftermath of the assassination of the former prime minister Benazir Bhutto in Liaqat Bagh Rawilpindi, the lawyers movement against military dictator Gen.Musharsf, bomb blasts and the increasing insurgency of the militant groups in the country. It is evident from the above table that average annual returns of winners were negative (4.40%) only once in 2008, hence 90% of the time their average returns were positive and negative returns 10% of the whole data period.

The bar chart shows the average annual returns of the winners.



The standard deviation column shows the standard deviation of the winner group in the data period, which is a good measure of checking variability. But it becomes confusing in cases where we want to compare the variability of two or more than two data sets, therefore a relative measure for checking homogeneity, volatility i.e. coefficient of variation is given in the next column through which we can better compare the winners and losers’ variability in their share price and market returns. The line chart is showing the deviation of market returns of winners from its mean.



The coefficient of variation in the market returns of the winners shows that volatility in the returns and share prices was some what consistent and smooth during years from 2001 to 2007, but a high volatility (negative) in the year 2008 may be due to above mentioned circumstances and prevailing situations in the country that time. Another main reason can be the global down turn started in July 2007 and affected most of the stock markets in the world especially the textile sector of our country, the most important sector of our economy. The next line chart shows the volatility in the annual average returns of the winners.



**Table 4.2 Important indicators of Losers**

|  |  |  |  |
| --- | --- | --- | --- |
| **Losers WRT Returns** |  |  |   |
| Years | Av. Returns | St.Deviation in Returns | Coefficient of Variation |
| 2001 | -41.00% | 11.06% | -0.27 |
| 2002 | 5.18% | 21.05% | 4.06 |
| 2003 | 5.12% | 28.51% | 5.57 |
| 2004 | -6.94% | 9.70% | -1.40 |
| 2005 | -12.37% | 12.03% | -0.97 |
| 2006 | -38.89% | 9.78% | -0.25 |
| 2007 | -7.43% | 9.87% | -1.33 |
| 2008 | -79.83% | 7.04% | -0.09 |
| 2009 | -36.43% | 15.18% | -0.42 |
| 2010 | -40.05% | 12.54% | -0.31 |

This table shows the different parameters of the losers 18 companies for the whole data period. The whole group show negative average annual returns in 2001 and from 2004 to 2010. Hence 80% of the time the average annul returns of losers were negative. However in years 2002 and 2003 losers show average returns of 5.15% or only 20% of the time. This could be due to the better economic conditions in the country that time. Besides that a lot of foreign aid was injected in the country economy for supporting the US led war against terror in Afghanistan, and Musharaf efforts to topple the insurgent groups in the tribal belt of the country.

The bar chart represents the annual average returns of the losers group from 2001 to 2010.



The standard deviation in the returns of losers is represented by the below line chart. As mentioned earlier it is confusing to compare the standard deviation of winners and losers because both have different average returns. So let have a glance on the coefficient of variation in the returns of losers. So that a better comparison can be make.



The coefficient of variation shows high variability in the returns of losers as compared to the winners if the outlier effect in 2008 is adjusted or ignored in the table for the winners.



This shows that the returns and stock prices of the winners were positive most of the time. They were more consistent than that of the losers. In other way round we can say that the returns and share price of the winners are less volatile than the losers. This confirms the results of the study conduced by Charles P.Jones and Jack W. Wilson mentioned in literature review.

By this discussion we conclude that the prices and returns of the winners are more consistent and less volatile than the losers whose prices and returns vary abruptly and hence not suitable for investing in.

**Inter quartile range in the returns:**

Inter Quartile Range is a very good and less biased measure of dispersion as compared to arithmetic mean and standard Deviation which are highly sensitive to extreme values or outliers. Table 4.3 shows the first quartile, median, 3rd Quartile and inter quartile range in the annual average Market Returns from 2001-10 for 72 companies.

Now let’s have a discussion on table 4.3 which shows inter quartile range of the data

**Table 4.3**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Cross Sectional Volatility in Market Returns**  |  |  |  |  |
| Years | 1st Quartile | Median | 3rd Quartile | Inter Quartile Range |
| 2001 | -27.87% | -7.53 | 10.52% | 38.4 |
| 2002 | 34.02% | 77.63 | 123.88% | 89.86 |
| 2003 | 36.43% | 60.52 | 107.96% | 71.52 |
| 2004 | 5.09% | 24.54 | 68.90% | 63.8 |
| 2005 | 0.59% | 23.78 | 48.09% | 47.5 |
| 2006 | -28.68% | -4.5 | 13.64% | 42.31 |
| 2007 | 3.77% | 28 | 78.33% | 74.56 |
| 2008 | -71.58% | -59.82 | -33.46% | 38.12 |
| 2009 | -19.32% | 11.64 | 52.30% | 71.63 |
| 2010 | -24.19% | -4.44 | 10.32% | 34.5 |
| Average |   |   |   | 57.22 |

Table shows over the whole data period of 10 Years the average inter quartile range is 57.22%, this shows that an investor could have earn 57.22% greater returns than bottom quartile companies in a randomly chosen year from 2001-10, thus we can say that the average spread in the returns of winners and losers during the whole data period was 57.22%.

Over the whole data period of ten years the bottom quartile companies were having negative returns five times or 50% of the whole data period. The median stock returns were negative four times or 40% of the whole data periods. The top quartile returns were negative only once during the whole data Period or only 10%.

 So this study conclude that if an investor could have confined his/her investment successfully to the top quartile he could have face an average risk of 10% during the whole data period and could have avoided losing years.

The spread, difference or inter quartile range between the returns of winners and losers has been graphically represented for the whole data period in the following graph.



|  |  |  |
| --- | --- | --- |
| **List Winners with respect to Market Returns from2001-10** |  |  |
| 2001 | 2002 | 2003 | 2004 | 2005 |
| ICI Pak  | Pak Suzuki Motor Co  | Dreamworld  | International Industries  | Javedan Cement  |
| Dreamworld  | PNSC | Pak Services  | Gharibwal Cement  | MCB Bank  |
| International Industries  | Pak Refinery  | Pak Elektron  | Colgate - Palmolive Pak  | Jahangir Siddiqui & Co  |
| Abbott Laboratories Pak  | Indus Motor Co  | Pak Cables  | Nishat Mills  | Adamjee Insurance Co  |
| Mari Gas Co  | PIA | Thal \*\* | Lakson Tobacco Co  | Lucky Cement  |
| Grays of Cambridge Pak  | Pak Telephone Cables  | D. G. Khan Cement Co  | PNSC | Pak Refinery  |
| Atlas Honda  | Sui Northern Gas  | Al-Ghazi Tractors  | Pak Tobacco Co  | D. G. Khan Cement Co  |
| Pak Services  | Kohinoor Energy  | Fauji Cement Co  | Pak Elektron  | Pak Oilfields  |
| EFU Life Assurance  | Pak Elektron  | EFU Life Assurance  | National Refinery  | Indus Motor Co  |
| Clariant Pak  | The Hub Power Co  | Faysal Bank  | Pak Cables  | Thal \*\* |
| Pak Telephone Cables  | Shifa Int. Hospitals  | IGI Insurance  | Attock Refinery  | Faysal Bank  |
| Bata Pak  | D. G. Khan Cement Co  | Indus Motor Co  | Bank of Punjab  | Mari Gas Co  |
| New Jubilee Insurance  | Pak Oilfields  | Shifa Int. Hospitals  | Atlas Honda  | Attock Refinery  |
| Meezan Bank  | Atlas Honda  | Bank of Punjab  | Askari Bank  | Bestway Cement  |
| Rafhan Maize Products  | Pak State Oil Co  | Atlas Honda  | EFU General Insurance  | ICI Pak  |
| Ghani Glass  | Pak Tobacco Co  | Lucky Cement  | Javedan Cement  | Bank of Punjab  |
| Nestle Pak  | Bestway Cement  | Murree Brewery Co  | EFU Life Assurance  | Soneri Bank  |
| Colgate - Palmolive Pak  | Bank of Punjab  | Jahangir Siddiqui & Co  | Murree Brewery Co  | Shell Pak  |
|   |   |   |   |   |
| 2006 | 2007 | 2008 | 2009 | 2010 |
| Pak Services  | Jahangir Siddiqui & Co  | Dreamworld  | Nishat Mills  | Colgate - Palmolive Pak  |
| Pak Suzuki Motor Co  | Pak Telephone Cables  | Bata Pak  | Millat Tractors  | Nestle Pak  |
| Javedan Cement  | Bata Pak  | Gharibwal Cement  | Dreamworld  | Unilever Pak  |
| Colgate - Palmolive Pak  | Pak Reinsurance Co  | Rafhan Maize Products  | ICI Pak  | Shifa Int. Hospitals  |
| Bata Pak  | Attock Refinery  | Grays of Cambridge  | Attock Refinery  | Sui Southern Gas Co  |
| IGI Insurance  | EFU Life Assurance  | Javedan Cement  | Pak Oilfields  | National Refinery  |
| MCB Bank  | Rafhan Maize Products  | KASB Bank  | The Hub Power Co  | Thal \*\* |
| Pak Elektron  | New Jubilee Insurance  | Atlas Honda  | Lucky Cement  | Rafhan Maize Products  |
| EFU Life Assurance  | PNSC | Al-Ghazi Tractors  | Pak State Oil Co  | Millat Tractors  |
| Pak Reinsurance Co  | Adamjee Insurance Co  | Unilever Pak  | Engro Chemical Pak  | Indus Motor Co  |
| EFU General Insurance  | Mari Gas Co  | Pak Services  | Askari Bank  | Pak Oilfields  |
| New Jubilee Insurance Co  | Pak Tobacco Co  | Shell Pak  | National Refinery  | Fauji Fertilizer Co  |
| Nestle Pak  | Meezan Bank  | Lakson Tobacco Co  | Packages  | The Hub Power Co  |
| Rafhan Maize Products  | Lucky Cement  | Clariant Pak  | Fauji Fertilizer Co  | Murree Brewery Co  |
| Siemens (Pak) Engineering  | EFU General Insurance  | Nestle Pak  | MCB Bank  | Bestway Cement  |
| Dreamworld  | Murree Brewery Co  | Pak Tobacco Co  | Kohinoor Energy  | Ibrahim Fibres  |
| Dawood Hercules  | Atlas Honda  | Colgate - Palmolive  | Indus Motor Co  | Lucky Cement  |
| The Hub Power Co  | Nestle Pak  | Ibrahim Fibres  | D. G. Khan Cement  | Bank Al - Habib  |

The following table 4.3 shows the consistency in the returns of winners of 2001. For developing this table we took the winners with respect to market returns in 2001 and checked its repetition as winner in the subsequent years

**Table 4.3**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Winners Consistency in Returns** |  |  |  |  |
| **Winners companies** | **Data**  | **% Consistency**  | **No of**  | **Consistency** |
| **with respect to** | **Period** |  **For** | **Repetitions** | **in Whole** |
| **Returns in 2001** |  | **One Repetition** | **as Winner** | **Data Period** |
| ICI Pakistan | 10 Years | 10.00% | 3 | 30% |
| Dreamworld  | 10 Years | 10.00% | 5 | 50% |
| Int. Industries  | 10 Years | 10.00% | 2 | 20% |
| Abbott Lab | 10 Years | 10.00% | 1 | 10% |
| Mari Gas  | 10 Years | 10.00% | 3 | 30% |
| Grays of Cambridge  | 10 Years | 10.00% | 2 | 20% |
| Atlas Honda  | 10 Years | 10.00% | 6 | 60% |
| Pakistan Services  | 10 Years | 10.00% | 4 | 40% |
| EFU Life Assurance  | 10 Years | 10.00% | 5 | 50% |
| Clariant Pakistan  | 10 Years | 10.00% | 2 | 20% |
| Pakistan Tele Cables  | 10 Years | 10.00% | 3 | 30% |
| Bata Pakistan  | 10 Years | 10.00% | 4 | 40% |
| New Jubilee Insurance  | 10 Years | 10.00% | 3 | 30% |
| Meezan Bank  | 10 Years | 10.00% | 2 | 20% |
| Rafhan Maize Products  | 10 Years | 10.00% | 5 | 50% |
| Ghani Glass  | 10 Years | 10.00% | 1 | 10% |
| Nestle Pakistan  | 10 Years | 10.00% | 5 | 50% |
| Colgate - Palmolive | 10 Years | 10.00% | 5 | 50% |
| Average Consistency in 10 Years |   |   |   | 34% |

This table shows that the average performance consistency of the winners of 2001 was only 34%. Among the winners only Atlas Honda repeated itself 6 times as winner or 60% of the whole data period and hence maintained itself 6 times in the upper quartile. Dreamworld limited, EFU Life Assurance, Rafhan Maize Products, Nestle Pakistan limited and Colgate-Palmolive Pakistan were having 50% consistent in their market returns.

The following bar chart represents consistency in the returns of winners in 2001.



**Chapter 05**

**Data Analysis of ROA**

**Data Handling and procedure followed:**

Forcalculating ROA**/**RONW[[3]](#footnote-3)1 First of all we collected the data from the KSE website and annual reports of the respective companies for its basic inputs which are

* Total assets for all the 72 companies
* Profit after tax

.For calculating ROA the following formula was used.

$$ROA or RONW=Net Income/Total Assets$$

Using the above formula we calculated ROA’s for all the 72 companies from 2001 to 2010. All the 72 companies were arranged in the descending order of their ROA’s the top 18 companies with the highest ROA’s were selected as winners in the top quartile and 18 companies with the lowest ROA’s were selected as losers in the lower quartile.

Table 5.1 explains the variability in the average ROA of winners.

**Table5.1**

|  |  |  |  |
| --- | --- | --- | --- |
| **Winners WRT ROA** |  |  |   |
| years | Av.ROA | St.Deviation in ROA | Coefficient of variation |
| 2001 | 18.69% | 6.08% | 0.33 |
| 2002 | 20.08% | 56.36% | 0.28 |
| 2003 | 21.45% | 5.23% | 0.24 |
| 2004 | 22.32% | 8.44% | 0.38 |
| 2005 | 21.95% | 45.63% | 0.21 |
| 2006 | 25.53% | 12.59% | 0.49 |
| 2007 | 27.80% | 13.69% | 0.49 |
| 2008 | 20.55% | 8.25% | 0.40 |
| 2009 | 17.36% | 5.26% | 0.30 |
| 2010 | 19.56% | 6.20% | 0.32 |

This table shows that the average ROA of winners Increased from 2001 to 2004 gradually but slightly decreased in 2005 and took this losing momentum for the next two years. However in 2008 and 2009 due to political instability when most of the companies were experiencing losses these winners also could not avoid the curse. The point to be noted here is that during the whole data period its average ROA was 21.53%. the average ROA of winners was positive all the years and hence 100% of the time.

The bar chart shows the average annual ROA of the winners from 2001 to 2010.



The next line graph shows the standard deviation in the ROA of winners. But as we want to compare the volatility in the average ROA of winners and losers here, there better the have a look on co efficient of variation of both winners and losers.



The coefficient of variation in the average ROA of the winners was 34.4%. The variation in years from 2001 to 2005 was less as compare to rest of the years.

The following chart shows the variation in the ROA of winners.



Now coming to know about some measures of dispersion in the losers group with respect to ROA.

**Table 5.2**

|  |  |  |  |
| --- | --- | --- | --- |
| **Losers WRT ROA** |  |  |   |
| years | Av.ROA | St.Deviation in ROA | Coefficient of variation |
| 2001 | -4.52% | 7.44% | -1.65 |
| 2002 | -1.29% | 6.96% | -5.42 |
| 2003 | -1.48% | 5.18% | -3.50 |
| 2004 | 2.21% | 1.16% | 0.53 |
| 2005 | 0.89% | 3.27% | 3.67 |
| 2006 | 0.32% | 4.65% | 14.47 |
| 2007 | -1.16% | 5.10% | -4.38 |
| 2008 | -5.45% | 8.39% | -1.54 |
| 2009 | -8.80% | 14.37% | -1.63 |
| 2010 | -7.81% | 13.48% | -1.72 |

 The average ROA of losers was negative 07 times or 70% of the time. Here it must be noted that some companies (e.g. Karachi Electric Supply Company and Pakistan International Airline) extraordinary poor performance due to mismanagement and corruption plays an outlier effect here most of the years under consideration.

The following chart shows the standard deviation in the average ROA of the bottom quartile companies.



The coefficient of variation in the ROA of losers shows very high volatility in the ROA of losers as evident from the table above and line chart given below.



Thus it is concluded here the winners group were more consistent than that of the losers in ROA. In Other words the variation or volatility in losers with respect to ROA was much more than winners. Hence if an investor could not have confined their investment successfully to upper quartile he could have 70% chances of losing his/ her equity.

**TABLE 5.3**

|  |  |  |
| --- | --- | --- |
| **Cross Sectional Volatility in ROA** |  |  |
| Years | 1st Quartile | Median | 3rd Quartile | Inter Quartile Range |
| 2001 | 1.10% | 5.06% | 12.15% | 11.05 |
| 2002 | 2.25% | 7.52% | 12.53% | 10.27 |
| 2003 | 2.66% | 7.84% | 13.22% | 10.56 |
| 2004 | 4.09% | 9.52% | 14.57% | 10.48 |
| 2005 | 4.33% | 10.10% | 15.46% | 11.14 |
| 2006 | 4.37% | 9.10% | 15.87% | 11.5 |
| 2007 | 2.42% | 9.28% | 14.31% | 11.89 |
| 2008 | 0.73% | 6.64% | 11.95% | 11.22 |
| 2009 | 0.45% | 3.80% | 10.52% | 10.09 |
| 2010 | 2.57% | 5.37% | 11.61% | 11.036 |
| Average |   |   |   | 10.9236 |

**Inter Quartile Range in ROA of winners and losers:**

Table shows the first quartile median 3rd Quartile and inter quartile range of the annual Average ROA from 2001-10 for 72 companies. Over the whole data period of 10 Years the average inter quartile range is 10.92%, this shows that an investor could have earn 10.92% greater returns on assets than bottom quartile companies in a randomly chosen year from 2001-10.

Thus we can say that the average spread in the ROA of winners and losers during the whole data period was 10.92%.

The figure of IQR in ROA shows it high consistency and less variation and all the time it is in the range of 10% and 11%.

The graphical representation of the spread between the average ROA of winners and losers is given below.

 .



|  |  |  |  |
| --- | --- | --- | --- |
| **Winners with respect to ROA** |  |  |  |
| 2001 | 2002 | 2003 | 2004 | 2005 |
| Security Paper  | Arif Habib Securities  | Arif Habib Securities  | Arif Habib Securities  | Arif Habib Securities  |
| Pak Oilfields  | Security Paper  | Al-Ghazi Tractors  | Unilever Pak  | Lakson Tobacco Co  |
| Al-Ghazi Tractors  | Pak Telephone Cables  | Ghani Glass  | Lakson Tobacco Co  | Unilever Pak  |
| Ghani Glass  | Unilever Pak  | Thal \*\* | Thal \*\* | Thal \*\* |
| Fauji Fertilizer Co  | Rafhan Maize Products  | Unilever Pak  | Al-Ghazi Tractors  | Pak Oilfields  |
| Pak Telephone Cables  | Ghani Glass  | Pak Oilfields  | PNSC | Abbott Laboratories Pak  |
| Grays of Cambridge  | Pak Oilfields  | IGI Insurance  | Abbott Lab Pak  | Pak Refinery  |
| The Hub Power Co  | Lakson Tobacco Co  | Security Paper  | Rafhan Maize Products  | Dawood Hercules  |
| Unilever Pak  | IGI Insurance  | Lakson Tobacco Co  | PTCL | Javedan Cement  |
| IGI Insurance  | Nestle Pak  | Rafhan Maize Products  | ICI Pak  | Soneri Bank  |
| Rafhan Maize Products  | Al-Ghazi Tractors  | Nestle Pak  | Colgate - Palmolive Pak  | New Jubilee Insurance  |
| Abbott Lab Pak  | Abbott Laboratories Pak  | Abbott Lab Pak  | Security Paper  | Colgate - Palmolive Pak  |
| Nestle Pak  | Dawood Hercules  | PTCL | Pak Oilfields  | PTCL |
| Dawood Hercules  | PTCL | Pak Refinery  | Ghani Glass  | PNSC |
| Lakson Tobacco Co  | Grays of Cambridge Pak  | Colgate - Palmolive Pak  | Nestle Pak  | Rafhan Maize Products  |
| Millat Tractors  | Atlas Honda  | Pak Suzuki Motor Co  | Jahangir Siddiqui & Co  | Fauji Fertilizer Co  |
| PTCL | Colgate - Palmolive Pak  | Atlas Honda  | Fauji Fertilizer Co  | Pak Tobacco Co  |
| Colgate - Palmolive Pak  | ICI Pak  | Dawood Hercules  | Packages  | Engro Chemical Pak  |
| 2006 | 2007 | 2008 | 2009 | 2010 |
| IGI Insurance  | EFU General Insurance  | Jahangir Siddiqui & Co  | Unilever Pak  | Rafhan Maize Products  |
| Javedan Cement  | Pak Reinsurance Co  | Arif Habib Securities  | Pak Tobacco Co  | Unilever Pakistan  |
| Arif Habib Securities  | Dawood Hercules  | Rafhan Maize Products  | Rafhan Maize Products  | Fauji Fertilizer Co |
| Packages  | Arif Habib Securities  | Pak Oilfields  | Al-Ghazi Tractors  | Pakistan Tobacco  |
| Pak Oilfields  | Rafhan Maize Products  | Pak Tobacco Co  | Fauji Fertilizer Co  | Colgate - Palmolive  |
| Lakson Tobacco Co  | Lakson Tobacco Co  | Colgate - Palmolive Pak  | Bata Pak  | Al-Ghazi Tractors Limited |
| Unilever Pak  | Abbott Laboratories Pak  | Bata Pak  | Colgate - Palmolive | Nestle Pakistan Limited |
| Colgate - Palmolive Pak  | Pak Oilfields  | Fauji Fertilizer Co  | Millat Tractors  | Millat Tractors Limited |
| Rafhan Maize Products  | Pak Tobacco Co  | Mari Gas Co  | Abbott Lab Pak  | Bata Pakistan Limited |
| Pak Tobacco Co  | Colgate - Palmolive Pak  | Unilever Pak  | Pak Oilfields  | Pakistan Oilfields Limited |
| Thal \*\* | Adamjee Insurance Co  | Indus Motor Co  | Nestle Pak  | Ghani Glass Limited |
| Abbott Laboratories Pak  | Unilever Pak  | Nishat Mills  | Ghani Glass  | Thal Limited |
| Fauji Cement Co  | IGI Insurance  | Al-Ghazi Tractors  | Kohinoor Energy  | Arif Habib securities  |
| New Jubilee Insurance  | Thal \*\* | Ghani Glass  | Lucky Cement  | Clariant Pakistan  |
| Fauji Fertilizer Co  | Bata Pak  | Thal \*\* | Clariant Pak  | Indus Motor Co |
| Al-Ghazi Tractors  | Al-Ghazi Tractors  | Shell Pak  | Packages  | Ibrahim Fibres Limited |
| Indus Motor Co  | Fauji Fertilizer Co  | National Refinery  | Adamjee Insurance | Abbott Lab Pakistan  |
| Engro Chemical Pak  | Indus Motor Co  | Attock Refinery  | Thal \*\* | Adamjee Insurance  |

The following table 5.3 shows the consistency in the ROA of winners of 2001. For developing this table we took the winners with respect to ROA in 2001 and checked its repetition as winner in the subsequent years

**TABLE 5.3**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Winners Consistency in ROA** |   |   |   |   |
| **Winners companies** | **Data**  | **% Consistency**  | **No of as**  | **Consistency** |
| **with respect to** | **Period** |  **For** | **Repetitions** | **in Whole** |
| **ROA in 2001** |  | **One Repetition** | **as Winner** | **Data Perios** |
| Security Paper  | 10 years | 10.00% | 4 | 40% |
| Pakistan Oilfields  | 10 years | 10.00% | 10 | 100% |
| Al-Ghazi Tractors  | 10 years | 10.00% | 9 | 90% |
| Ghani Glass  | 10 years | 10.00% | 7 | 70% |
| Fauji Fertilizer Co | 10 years | 10.00% | 8 | 80% |
| PakTelephone Cables  | 10 years | 10.00% | 2 | 20% |
| Grays of Cambridge Pak | 10 years | 10.00% | 2 | 20% |
| The Hub Power Co | 10 years | 10.00% | 1 | 10% |
| Unilever Pakistan  | 10 years | 10.00% | 10 | 100% |
| IGI Insurance  | 10 years | 10.00% | 5 | 50% |
| Rafhan Maize Products  | 10 years | 10.00% | 10 | 100% |
| Abbott Lab Pak | 10 years | 10.00% | 9 | 90% |
| Nestle Pakistan  | 10 years | 10.00% | 6 | 60% |
| Dawood Hercules  | 10 years | 10.00% | 5 | 50% |
| Lakson Tobacco Co | 10 years | 10.00% | 7 | 70% |
| Millat Tractors Limited | 10 years | 10.00% | 3 | 30% |
| PTCL | 10 years | 10.00% | 5 | 50% |
| Colgate - Palmolive Pak | 10 years | 10.00% | 10 | 100% |
| Average Consistency in 10 Years |   |   |   | 63% |

This table shows that the average performance consistency of the winners of 2001 was only 63%. Among the winners only Pakistan Oilfields, Unilever, Rafhan maize products and Colgate-Palmolive repeated itself 10 times as winner or 100%% of the whole data period and hence maintained itself all the 10 times in the upper quartile. Al-Ghazi tractors and abbot laboratories were 90% consistent in their ROA. The following bar chart represents consistency in the ROA of winners in 2001.



**Chapter 06**

**Data Analysis of ROE**

**Data handling and procedure followed:**

For calculating ROE, the second accounting measure of profitability in our analysis we collected the two required inputs of profit after tax and total common equity for all the 72 companies from KSE website and annual reports of the respective companies from 2001 to 2010. Then for calculating ROE we used the following equation.

$$ ROE=Net IncomeAvailable To Common Stockholders/Common Equity$$

All the 72 companies were arranged in the descending order of their ROE. The top 18 companies with respect to their ROE were selected in the top quartile list as winners and the worse 18 companies were selected to the bottom quartile as losers.

The following table 6.1 shows the variation in the ROE of the winner group.

**Table 6.1**

|  |  |  |  |
| --- | --- | --- | --- |
| **Winners WRT ROE** |  |  |   |
| years | Av.ROE | St.Deviation in ROE | Coefficient of variation |
| 2001 | 50.88% | 35.84% | 0.70 |
| 2002 | 72.24% | 71.58% | 0.99 |
| 2003 | 51.83% | 27.02% | 0.52 |
| 2004 | 54.59% | 31.49% | 0.58 |
| 2005 | 46.85% | 11.92% | 0.25 |
| 2006 | 48.08% | 16.45% | 0.34 |
| 2007 | 58.74% | 34.34% | 0.58 |
| 2008 | 43.92% | 16.49% | 0.38 |
| 2009 | 39.22% | 20.81% | 0.53 |
| 2010 | 92.90% | 22.30% | 0.24 |

The average ROE of the winners never experienced negative momentum. However its average ROE experienced the lowest trend in the year 2008 and 2009 may be due to the bad economic and political conditions in the country.

The following bar chart represents the average ROE of winners during the whole data period of ten years.



The standard deviation in the average ROE of winners is represented in the following graph**.**

.



The mean variation in the average ROE of winners was 51.10%. The following graph shows the annual variation in the average ROE of the winners



Table 6.2 shows the average ROE of losers its standard deviation and coefficient of variation.

**Table 6.2**

|  |  |  |  |
| --- | --- | --- | --- |
| **Losers WRT ROE** |  |  |   |
| years | Av.ROE | St.Deviation in ROE | Coefficient of variation |
| 2001 | -65.22% | 116.61% | -1.78 |
| 2002 | -0.08% | 17.03% | -203.68 |
| 2003 | -5.74% | 25.36% | -4.42 |
| 2004 | 11.83% | 4.41% | 0.37 |
| 2005 | 0.19% | 26.60% | 142.13 |
| 2006 | -84.37% | 383.31% | -4.54 |
| 2007 | -7.87% | 31.09% | -3.95 |
| 2008 | -36.61% | 68.81% | -1.88 |
| 2009 | -59.71% | 80.50% | -1.35 |
| 2010 | -217.00% | 649.45% | -2.99 |

The average ROE of losers were positive only in 2004 and 2005 or only 20% of the time and 80% of the time the whole losers group were having negative equity.

The following bar chart represents these phenomena.



The standard deviation in the ROE of the losers is represented by the graph below for the whole ten years data period.



The coefficient of variation suggests that average ROE was highly volatile during the whole data period as compared to winners. Again it would be mention worthy that PIA and KESC heavy negative equities caused the whole quartile down and played an outlier role.

The following line chart shows the high variation in the average ROE of the loser group.



Thus this study confirms that the winners were more consistent and less volatile in their ROE as compare to losers

**Inter Quartile Range in ROA of winners and losers:**

Table shows the first quartile median 3rd Quartile and inter quartile range of the annual Average ROE from 2001-10 for 72 companies. Over the whole data period of 10 Years the average inter quartile range is 19.68 %, this shows that an investor could have earn 19.68% greater returns on equity than bottom quartile companies in a randomly chosen year from 2001-10.

Thus we can say that the average spread in the ROE of winners and losers during the whole data period was 19.68%.

The figure of IQR in ROE shows it high consistency and less variation and most of the time it is in the range of 17% and 20%.

**Table 6.3**

|  |  |  |
| --- | --- | --- |
| **Cross Sectional Volatility in ROE** |  |  |
| Years | 1st Quartile  | Median | 3rd Quartile | Inter Quartile Range |
| 2001 | 7.71% | 17.91% | 27.42% | 19.71% |
| 2002 | 14.68% | 22.46% | 30.67% | 15.99% |
| 2003 | 13.23% | 23.81% | 34.40% | 21.17% |
| 2004 | 17.17% | 24.57% | 35.34% | 18.17% |
| 2005 | 16.71% | 26.58% | 34.53% | 17.82% |
| 2006 | 16.14% | 26.32% | 36.15% | 20.01% |
| 2007 | 13.22% | 22.28% | 32.90% | 19.68% |
| 2008 | 3.27% | 14.48% | 26.95% | 23.68% |
| 2009 | 2.02% | 11.66% | 21.26% | 19.24% |
| 2010 | 1.72% | 15.71% | 23% | 21.28% |
| Average |   |   |   | 19.68% |

The graphical representation of the spread between the average ROE of winners and losers is given below.



**List of Winners w.r.t. ROE form 2001-10**

|  |  |  |  |
| --- | --- | --- | --- |
| **Winners with respect to ROE**  |  |  |  |
| 2001 | 2002 | 2003 | 2004 | 2005 |
| Pak Elektron  | PIA | Unilever Pak  | Gharibwal Cement  | Unilever Pak  |
| Pak Telephone Cables  | Unilever Pak  | Pak Refinery  | Unilever Pak  | Nestle Pak  |
| Unilever Pak  | PNSC | Nestle Pak  | Nestle Pak  | Javedan Cement  |
| Nestle Pak  | Pak Telephone Cables  | Arif Habib Securities  | Arif Habib Securities  | Pak Refinery  |
| Pak Oilfields  | Nestle Pak  | Indus Motor Co  | International Industries  | Adamjee Insurance Co  |
| International Industries  | Pak Elektron  | Al-Ghazi Tractors  | Javedan Cement  | Arif Habib Securities  |
| Al-Ghazi Tractors  | Attock Refinery  | Thal \*\* | Lakson Tobacco Co  | New Jubilee Insurance  |
| The Hub Power Co  | Lakson Tobacco Co  | Lakson Tobacco Co  | PNSC | EFU General Insurance  |
| Security Paper  | Clariant Pak  | Clariant Pak  | EFU General Insurance  | Attock Refinery  |
| Clariant Pak  | ICI Pak  | Mari Gas Co  | Pak Refinery  | PNSC |
| Lakson Tobacco Co  | International Industries  | Atlas Honda  | Colgate - Palmoliv | Clariant Pak  |
| Fauji Fertilizer Co  | Rafhan Maize Products  | Pak Suzuki Motor Co  | Indus Motor Co  | Lakson Tobacco Co  |
| Ghani Glass  | Pak Oilfields  | EFU Life Assurance  | Thal \*\* | Fauji Fertilizer Co  |
| Millat Tractors  | Security Paper  | Pak Oilfields  | EFU Life Assurance  | Pak Cables  |
| Rafhan Maize Products  | Arif Habib Securities  | New Jubilee Insurance  | National Refinery  | Pak Oilfields  |
| Grays of Cambridge  | Atlas Honda  | Colgate - Palmolive | Clariant Pak  | MCB Bank  |
| Colgate - Palmolive  | IGI Insurance  | IGI Insurance  | Al-Ghazi Tractors  | EFU Life Assurance  |
| Pak Refinery  | Pak Suzuki Motor Co  | National Refinery  | Atlas Honda  | Pak Tobacco Co  |
| 2006 | 2007 | 2008 | 2009 | 2010 |
| Unilever Pak  | EFU General Insurance  | Unilever Pak  | Unilever Pak  | Nestle Pakistan |
| IGI Insurance  | Pak Reinsurance Co  | Pak Tobacco Co  | Pak Tobacco Co  | Unilever Pakistan  |
| Javedan Cement  | EFU Life Assurance  | Attock Refinery  | Nestle Pak  | Fauji Fertilizer Co |
| Nestle Pak  | Unilever Pak  | Jahangir Siddiqui & Co  | Fauji Fertilizer Co  | Pakistan Tobacco Co |
| Pak Tobacco Co  | Pak Tobacco Co  | Fauji Fertilizer Co  | EFU Life Assurance  | Millat Tractors Limited |
| Packages  | Adamjee Insurance Co  | Pak State Oil Co  | Millat Tractors  | Rafhan Maize Products |
| EFU General Insurance  | Arif Habib Securities  | Rafhan Maize Products  | Rafhan Maize Products  | EFU Life Assurance  |
| Indus Motor Co  | Dawood Hercules  | Mari Gas Co  | Al-Ghazi Tractors  | Clariant Pakistan Limited |
| Pak Oilfields  | Siemens (Pak)  | Shell Pak  | Shell Pak  | Colgate - Palmolive |
| Pak Services  | Nestle Pak  | Nestle Pak  | Bata Pak  | Al-Ghazi Tractors |
| Adamjee Insurance | Fauji Fertilizer Co  | National Refinery  | Colgate - Palmolive  | Sui Southern Gas  |
| New Jubilee Insurance  | Bata Pak  | Arif Habib Securities  | Clariant Pak  | Shell Pakistan Limited |
| Arif Habib Securities  | Rafhan Maize Products  | Pak Oilfields  | Mari Gas Co  | Int. Industries Limited |
| Colgate - Palmolive | Colgate - Palmolive  | Bata Pak  | Abbott Lab Pak  | Pak State Oil Co  |
| Pak Cables  | Indus Motor Co  | Colgate - Palmolive  | MCB Bank  | Bata Pakistan Limited |
| Fauji Cement Co  | MCB Bank  | Pak Refinery  | New Jubilee Insurance  | MCB Bank Limited |
| National Refinery  | International Industries  | MCB Bank  | Bank AL Habib  | Indus Motor Company  |
| International Industries  | National Refinery  | International Industries  | Adamjee Insurance  | Abbott Lab Pakistan  |

The following table 6.4 shows the consistency in the ROE of winners of 2001. For developing this table we took the winners with respect to ROE in 2001 and checked its repetition as winner in the subsequent years

**TABLES 6.4**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Winners Consistency in ROE** |   |   |   |   |
| **Winners companies** | **Data**  | **% Consistency**  | **No of as**  | **Consistency** |
| **with respect to** | **Period** |  **For** | **Repetitions** | **in Whole** |
| **ROE in 2001** |  | **One Repetition** | **as Winner** | **Data Perios** |
| Pak Elektron  | 10 years | 10.00% | 2 | 20% |
| Pakistan Telephone Cables  | 10 years | 10.00% | 2 | 20% |
| Unilever Pakistan  | 10 years | 10.00% | 10 | 100% |
| Nestle Pakistan  | 10 years | 10.00% | 10 | 100% |
| Pakistan Oilfields  | 10 years | 10.00% | 6 | 60% |
| International Industries  | 10 years | 10.00% | 7 | 70% |
| Al-Ghazi Tractors  | 10 years | 10.00% | 4 | 40% |
| The Hub Power Co | 10 years | 10.00% | 1 | 10% |
| Security Paper  | 10 years | 10.00% | 2 | 20% |
| Clariant Pakistan  | 10 years | 10.00% | 7 | 70% |
| Lakson Tobacco Co | 10 years | 10.00% | 5 | 50% |
| Fauji Fertilizer Co | 10 years | 10.00% | 6 | 60% |
| Ghani Glass Limited | 10 years | 10.00% | 1 | 10% |
| Millat Tractors  | 10 years | 10.00% | 3 | 30% |
| Rafhan Maize Products  | 10 years | 10.00% | 6 | 60% |
| Grays of Cambridge Pak | 10 years | 10.00% | 1 | 10% |
| Colgate - Palmolive Pak | 10 years | 10.00% | 8 | 80% |
| Pakistan Refinery  | 10 years | 10.00% | 5 | 50% |
| Average Consistency in 10 Years |   |   |   | 47.78% |

This table shows that the average performance consistency of the winners of 2001 was only 47.78%. Among the winners only Unilever and Nestle Pakistan repeated itself 10 times as winners or 100%% of the whole data period and hence maintained itself all the 10 times in the upper quartile.

. The following bar chart represents consistency in the ROA of winners in 2001.



**Chapter 07**

**Findings and Recommendations**

At the beginning we had asked ourselves queations, like …………….

And we undergone to a cumbersome process of data analysis just to find out answers to thee questions. Now after alenghty process of six chapters we have reached the point where we can answer thes questions and present our findings.

As our study was to investigate the performance consistency in the returns”ROA & ROE : of 72 Selected Companies fron KSE 100 index.

A comparison of Table 4.1 & 4.2 suggests that the annual average returns of the winners wree positive ethroughout the data period, hence 100% positive annual average returns for winners.the annual average returns of losers were negative for 7 years or 70% of the time on the other hand comparing the coefficient of variation in the annual average returns of winners and losers it is concluded that the average returns of winners were less volatile in relation to its average raturns, while the loser coefficient of variation shows high variation in the annual average returns of the losers in relation to its average returns.

The interquartile range table shows that the 1st quartile stocks underperformed 50% of the time. The median stocks under performed 40% and the upper Quartile stocks only 10% of the tme, the average interquartile range in the returns of winners and losers was 57.22%, thus confinding stock selection to the upper quartile could have provided investors a chance to earn 57.22 % greater returns from the bottom quartile in a randomly chosen year from 2001-10

**Recommendations**

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1. Charles Ellis. Winning the loser’s Game (New York: McGraw Hill 3rd  Edition 1998….page 10) [↑](#footnote-ref-1)
2. Andy Serwer. “The Oracle of Everything” ( Fortune, Nov 11,2002 page 71) [↑](#footnote-ref-2)
3. 1 Return On Assets (ROA) is also known as Return On Net Worth (RONW). [↑](#footnote-ref-3)