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**An Analysis of Accrual Anomaly in
Case of Karachi Stock Exchange**

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ABSTRACT

This study investigates the existence of accrual anomaly by using a sample of 340 non-financial firms listed at Karachi Stock Exchange. The objective of the study is to examine the persistence of the accruals and cash flow components and their respective effect on future stock prices and a hedge portfolio returns. The results indicate that the continuity and durability in earnings turns out to be dependent on the accrual and cash flow components of earnings' magnitudes. Therefore, the efficient market hypothesis which states that all publicly available information is reflected in stock prices fails to hold. In addition, the failure of stock prices to comprehend the different properties of the constituents of earnings looks like investors inability to differentiate between the two components. The non-existence of market efficiency does not qualify that investors are irrational or the opportunities of earning profits are not exploited. But normal returns can be earned by opting for an active investment strategy which fully utilises the analysis of financial statements. The study concludes that accrual anomaly exists in Karachi Stock Exchange.

Keywords: Earning, Accruals, Cash Flows and Persistence of Accruals

1. INTRODUCTION

The never ending day of globalisation starts with a never ending day of investing in stocks of the globalised world corporations, starting with the ups and downs of New York Stock Exchange in the West through the London Stock Exchange to the Tokyo Stock Exchange in the East. As hundreds and thousands of people around the world are related to the trading of stocks of their respective stock markets, as their bread and butter is associated with it, so a lot of research is done to identify the problems and their respective corrective measures. One of such problems is determinants of average stock returns. From Graham, *et al.* (1934) to ground breaking work of Fama and French (1992), a lot of people have tried to ascertain, but the very important issue which is complementary to the average stock returns is of earning abnormal stock returns that is how investors are able to earn abnormal stock returns.

The average stock returns show some patterns that are deemed as anomalies as they cannot be rationalised with the help of Capital Asset Pricing Model (CAPM) of Sharpe (1964) and Lintner (1965). For example, Graham and Dodd (1934) and others have contended that stocks with high fundamental to price ratios (value stocks) outperform low fundamentals to price ratios and this behaviour of stocks returns is known as Glamour stocks. Another anomaly is that stocks having low market capitalisation (small stocks) results in abnormally high average returns [Rosenberg, Reid, and Lanstein (1985); Chan, Hamao, and Lakonishok (1991)]. Fama and French (1992) state that stocks with high book to market value of equity have substantially high average stock returns. Fairfield, Whisenant, and Yohn (2003), Haugen and Baker (1996), Cohen, Gompers, and Vuolteenaho (2002) and Titman, Wei, and Xie (2004) document that those firms which invest more have lower stock returns whereas firms having high profits results in higher average stock returns. The leading anomaly identified by Jegadeesh and Titman (1993) known as momentum anomaly asserts that stocks with low return last year tends to have low returns for subsequent few months and high past returns stocks tend to have high future returns. Sloan (1996) contends that high accruals firms will result in lower stock returns. These anomalies are heavily researched by different people in different countries and coming up with quite different results. This motivates to examine these anomalies in case of Pakistani market. The anomaly which this study is going to examine is accrual anomaly which is not investigated comprehensively for Pakistan's stock market.

Accruals are balance sheet accounts representing liabilities and non-cash based assets employed in accrual based accounting. They comprise of accounts like accounts receivable, accounts payable, goodwill, future tax liability and future tax expense. The application of accrual based accounting system has greatly increased the amount of information in accounting statements, as only cash transactions were reported before. The drawback associated with cash based system was that it failed to provide information related to the business activities like revenue based on credit and future liabilities. The accrual based accounting helps to overcome these deficiencies along with the ability to report non-cash assets like goodwill.

The previous literature and the subject of analysis of financial statements suggest that in predicting future earnings emphasis should be given to the components of current earnings, accruals and cash flows.¹ As investors main focus is on reported earnings of firms when financial statements are disclosed, so such analysis can be subject to identify mispriced securities. This is what accrual anomaly tends to figure out, stating that the accrual factor of earnings is less persistent than the cash flow factor of earnings. Also, due to investors' fixation on earnings, they fail to characterise the different constituent properties of cash flow and accrual earnings. So, negative (positive) future abnormal returns are experienced by firms having relatively high (low) levels of accruals and the returns are concentrated around future earnings announcements.

Most of the work done in Pakistan has made an effort to identify the determinants of stock returns using CAPM [Javid and Ahmad (2008), Ibrahim, *et al.* (2012), Javid, *et al.* (2009)]. Although one study of Mahmood and Ali (2011) has already been done on accrual anomaly but they have only studied the persistence of accruals and related it to profitability, whereas this study extends the boundary of investigation by scale as well as by methodology. This is the main motivation in this study is to investigate the persistence of accruals and cash flows, fixation of earnings by investors and the resulting stock prices effect.

The overall objective of this study is to find out the existence of accrual anomaly in firms listed at Karachi Stock Exchange. This study examines first, whether accrual and cash flows components of earnings are persistent. Second, it investigates the fixation of investors' on earnings of the firms, in other words the failure of investors to recognise the differential properties of accruals and cash flows and third, the study explores that firms experiencing abnormal returns are due to reversal of accruals or not.

This study adds to the existing literature on accruals anomaly for an emerging market. As apart from the required rate of return, the basis on which investors invest in a particular stock is the earnings and fundamental analysis of

¹Graham, *et al.* (1962), Bernstein (1993), Schilit (1993), and White, *et al.* (1994).

that company. Any error in judging the earnings and fundamentals can result in significant loss. This study will help individual investors and mutual funds to correctly identify stocks with proper earnings and proper fundamentals to invest, the first of its kind to figure out such a phenomenon in Pakistan.

After the introduction section, the rest of the study is structured as follows. Section two overviews the accrual anomaly, section three reviews the relevant literature in this area. The conceptual framework and working hypothesis are presented in section four and section five discusses data and methodology. Section six consists of empirical results and discussions and section 7 delve into conclusion and policy implications.

2. OVERVIEW OF THE ACCRUAL ANOMALY

This section provides the brief history of accrual anomaly internationally and in Pakistan's case.

2.1. International Evidence of Accrual Anomaly

Sloan (1996) has discovered the existence of accrual anomaly in US stock markets, New York Stock Exchange (NYSE) and American Stock Exchange (AMEX) stating that the accrual factor of earnings is less persistent than the cash flow factor of earnings. Also, due to investors' fixation on earnings, they fail to characterise the different constituent properties of cash flow and accrual earnings. So, negative (positive) future abnormal returns are experienced by firms having relatively high (low) levels of accruals and the returns are concentrated around future earnings announcements.

Clinch, *et al.* (2012) finds the accrual anomaly in Australian market exists. Although there are some idiosyncrasies like persistence of earnings is underestimated by investors and significant hedge portfolio returns are earned in the first year of portfolio formation. Kaserer and Klingler (2008) have examined the response of accrual anomaly under International Accounting Standards (IAS) and German-Generally Accepted Accounting Principles (GAAP). They come up with the result that German-GAAP show same level of earnings persistency for accruals and cash flows. Accrual anomaly exists under fair value accounting which gives managerial discretion is the main cause of the anomaly. Li, *et al.* (2011) have investigated the existence of accrual anomaly in China, excluding the firms with losses to avoid the special treatment and delisting regulation bias, evidence of accrual anomaly is found there.

LaFond (2005) has investigated whether accrual anomaly exists globally in seventeen countries (Australia, Belgium, Canada, Denmark, France, Germany, Hong Kong, Italy, Japan, the Netherlands, Norway, Singapore, Spain, Sweden, Switzerland, the U.K., and the U.S) and concluded that in general accrual anomaly results from accrual accounting. He also observes that the anomaly is a global phenomenon and the causes of the anomaly across countries

differ, the reasons are analyst following, managerial discretion and ownership structure.

2.2. Overview in Pakistan's Scenario

Pakistani Stock Market (KSE) is one of emerging markets around the world. There are three stock exchanges which are operational in Pakistan namely Karachi Stock Exchange (KSE), Lahore Stock Exchange (LSE) and Islamabad Stock Exchange (ISE). The Karachi Stock Exchange is oldest, well-known and active among the three markets.

KSE was founded in 1947 and was liberalised for more effective trading in 1992. Around 651 companies are listed at KSE with a market capitalisation of US\$ 26.50 approximately (As per KSE site). It was characterised as best operating market in the world by Business Week Magazine in 2002 and International Finance Corporation ranked it as third for percentage returns in local market index in 1991. Due to Badla financing KSE crashed in 2005. The KSE-100 index posted a return of 40.20 percent in 2007, showing the recovery of the market from the crash of 2005. Other financial instruments are also traded in the market like redeemable certificates, TFCs and preference shares but most of the trading is done in ordinary shares. Since 2003, the trading of derivative instrument futures has also started.

With the passage of time investing in stocks has increased due to high return which has led to formation of a lot of mutual funds who have trained personnel to analyse firms' financial statements and invest the pooled funds. So, the importance of examining the accrual anomaly is crucial to check whether the anomaly and the resulting mispricing exist or not.

One study conducted for Pakistan by Mahmood and Ali (2011) examines the repercussions of accrual and growth anomalies for future profitability and growth in long term net operating assets. The results show that both affects one year ahead profitability negatively. The accruals effect is due to managers' manipulation to increase current profitability and this will result in earning management relating to growth in long term net operating assets. The negative relation is also due to decreasing marginal returns on future investment and conservative accounting policies.

3. LITERATURE REVIEW

The issue of accrual anomaly is investigated extensively; some of relevant studies are reviewed briefly. Rayburn (1986) has studied the relationship of operating cash flow and accruals with security returns, using firm specific holdout models. He comes up with the result that current accruals causes abnormal returns whereas random walk regression shows that all components of accruals do so. The difference in the result of the two models may be caused by the large outliers resulting from holdout model. Sloan (1996)

has investigated that whether the different information contained in the components of earnings that are accrual and cash flow is reflected in stock prices. The results state that continuity in earnings of firms show to depend on the relative scale of cash flows and accrual components of earnings. Investors are obsessed with earnings factor only, as accruals are not persistent and investors not being able to distinguish between these two factors leads to decrease in stock prices.

While examining that whether analysts and auditors make use of the information in accruals, Bradshaw, *et al.* (2001) have shown that analysts fail to identify the accrual segment of earnings and its consequent non-persistence in earnings forecasts. Auditors also do not point to the Generally Accepted Accounting Principles (GAAP) violations and rather stating the violation in their audit opinions. This study also verifies that investors do not foresee the adverse outcome of having high accruals. Separating total accruals into normal and abnormal accruals, Xie (2001) finds that market overprices both of them but the abnormal accruals are highly overpriced, which is also validated by the hedge-portfolio test. The overpricing of normal accruals is mixed and weak while that of abnormal accruals is due to their relation with one year ahead earnings. So the overpricing of total accruals is due to overpricing of abnormal accruals which results from managerial discretion.

Barth, *et al.* (2001) have investigated the role of accruals in forecasting future cash flows. They observe that divided earnings into cash flows and six accrual components improve the forecasting ability of earnings. The results also show that components of current earnings have high explanatory power than the aggregate earnings and its lags and that of cash flows and that of aggregate accruals. Therefore, the proxies of future cash flows such as returns, share prices or discounted cash flows can be used to forecast future cash flows for several years. Defond and Park (2001) have studied the abnormal accruals reversal and valuation of earnings surprises by market. They decompose the accruals in income increasing abnormal accruals and income decreasing abnormal accruals and investigate the effect of earning surprises. They find that good news earnings surprises comprising of income increasing abnormal accruals have lower earnings response coefficients (ERCs) than ERCs of income decreasing abnormal accruals and vice versa for the bad news earnings surprises. They also find that after the announcement date, the cumulative abnormal returns are substantially higher for good news firms having income decreasing abnormal accruals.

The impact of insider trading on earnings quality and valuation effects of accruals is studied by Beneish and Vargus (2002) and accruals turn out to be an informative indication for both of them. They show that the income increasing accruals continuity in the following years is lesser when there is abnormal insider selling and vice versa. Mispricing of accruals in earlier literature is

caused by the income increasing accruals and investors price them as they are of high quality. The hedge portfolio return based on insider trading outperform the returns on accruals, while the income increasing accruals' lower persistence complimented by the abnormal insider selling is due to earnings management.

Dechow and Dichev (2002) have studied the quality of accruals and earnings by employing a new approach for the calculation of accruals. They come up with the notion that precise estimates of accruals improves the equivalency of current accruals and past, present and future cash flow realisations but an imprecise measure causes a reduction in the role of accruals. Also, using volatility of earnings and accruals for their respective quality, they find that the ability of earnings to measure performance is enhanced by accruals compared to cash flows and the persistence of accruals is less than cash flows. McNichols (2002) have examine accrual estimation errors by doing a comparison using Dechow and Dichev (2002) and Jones (1991) models separately and then in combined formed showing that both models are misspecified, the first one showing that CFO is a noisy proxy for the cash flows included in accruals while the second one shows that extensive part of non-discretionary accruals is included in the discretionary accruals.

The impact of the measuring error of accruals is investigated by Hribar and Collins (2002). They have pointed out that calculating accruals using balance sheet approach results in a substantial erroneous measurement rather it should be done using cash flows statement. The presence of earning management indicated by the partitioning variable if correlated with acquisitions and mergers or discontinued operations will show that earning management exists which in reality are not correlated. The tests for market pricing will also be understated. Fairfield, *et al.* (2003) have probed the extent to which the differential persistence and valuation of accruals can be explained by the role of accruals as a component of growth in net operating assets. They state that accruals and growth in long term net operating assets being parts of growth in net operating assets negatively effects the one year ahead return on assets equally. Conservative bias or the lower rates of economic profits are the cause of lower persistence of accruals rather than the earnings management.

The role of institutional investors to value accruals is examined by Hribar, *et al.* (2003). They find that high institutional ownership firms along with a minimum threshold level of actively trading institutions show low mispricing due to accruals compared to low institutional ownership firms. They show that an accrual based hedge portfolio's one year ahead returns are smaller for high institutional ownership firms than lower institutional ownership firms. Callen and Segal (2004) have studied the impact of accrual, cash flow and operating income news on current stock returns and come up with the result that accrual news cause current stock returns rather than expected return news. While operating income news more likely to impact current stock returns than expected

return news and cash flow news. On the whole, the result is that expected future accruals steer current stock returns.

Whether accrual anomaly is a manifestation of the glamour stock phenomenon or not is explored by Desai, *et al.* (2004). They document that if we add another fundamental Cash Flow from Operations to sales growth, Book to Market, Earnings to Price, Cash Flow to Price then accrual and value glamour anomalies are the same anomalies, otherwise both are different sources of mispricing. As the characteristics of both accruals and value glamour anomalies are captured by Cash Flow from Operations fundamental. Cheng and Thomas (2006) using different measures of accruals calculation find that Cash Flow from Operations includes total accruals in explaining future annual returns which occur smoothly in the next year but fails to explain the future announcement returns which are grouped around future earnings information releasing dates. Regardless of controlling Cash Flow from Operations, future annual returns are explained by the abnormal returns and concentrate around quarterly earnings announcements. Using different control variables like Cash Flow from Operations, Book to market value and sales growth, the abnormal accrual coefficient is significant while that of Cash Flow from Operations is insignificant which shows that abnormal accruals are not an indication of value glamour anomaly.

LaFond (2005) has investigated whether accrual anomaly exists globally and comes up with an affirmative answer. Further checking either the underlying cause is common or not, he finds that it differs considerably across markets due to analyst following, managerial discretion and ownership structure. Also, he concludes that accrual anomaly is not caused by specific accrual measurement methods but generally due to the use of accrual accounting. Core (2006) has scrutinised the theories and explanations offered for the mispricing of accruals and accrual components and checked whether the earning fixation hypothesis is a causal explanation for the accrual anomaly. After removing 1 percent of the data, the study finds that earning fixation hypothesis fails, however the methodology itself is questionable whether it is right to delete outliers.

Lev and Nissim (2006) have examined the persistence of accrual anomaly and report that it still exists. They find that although institutions trade on accrual information on a timely basis but the intensity of the trade has increased over time. However the accrual anomaly exists showing that the failure of stock prices to equal intrinsic values is due to the lackluster response of institutional and other investors to accruals information. They state that persistence of accrual anomaly is due to undesirable fundamentals of extreme accruals firms to institutional investors and the high transaction costs as large number of securities are involved and the intensity of short sales associated with an accrual strategy which is unbearable for an individual investor. So these factors will lead the accrual anomaly to exist for some time. Richardson, *et al.* (2006) have

studied how the lower persistence of accrual factor of earnings is caused by accounting distortions. They show that the tradeoff between relevance and reliability lead to the lower persistence of accrual component of earnings. They conclude that the inclination towards fair value accounting by the accounting standard setters will decrease the persistence and reliability of earnings due to increase in accounting distortions. Liu and Qi (2006) come up with the result that despite of controlling for trading costs, informed traders are able to earn abnormal returns, thus taking benefit of the proprietary information relating to accruals quality, which is the main driver for the persistence of accrual anomaly.

Shevlin, *et al.* (2006) have tried to answer the failure of accrual anomaly to be arbitrated away and turned up with two impediments to arbitrage, deficiency of close substitutes and transaction costs. Deficiency of close substitutes result in higher future abnormal returns originating from accrual based trading positions while stocks having higher transaction costs especially with lower prices and lower trading volume are profitable using the accrual based trading strategy. If arbitragers are wise enough to understand the manipulation of reported earnings by managers, it will be difficult for them to eliminate the mispricing.

Pincus, *et al.* (2007) have investigated whether accrual anomaly exists internationally taking into consideration 20 countries and concluded that accrual anomaly exists in only the US, the UK, Canada and Australia. The alternative explanations for the accrual anomaly show that it is due to earning management and limits to arbitrage. They also find that the anomaly is more expected to exist in those countries where accrual accounting is extensively used, lower concentration of share ownership and common law tradition. The OCFs under weighted in the four countries but not in the other countries which may be due to the fact that earning management occurs through structuring of transaction not through accruals. Furthermore, less efficient markets as stock prices and economic fundamentals show a weaker relation; this may be due to less confidence of investors on reported fundamentals.

Subramanyam and Venkatachalam (2007) examining the impact of earnings and operating cash flows on equity valuation. They employ ex-post intrinsic value measure by using dividend discount model which excludes the earning fixation problem and the resulting accrual and cash flows components mispricing. They come up with the result that earnings have high explanatory power than cash flows in explaining ex-post intrinsic values. Further, their approach suggests that accruals mispricing is substantially diminished. Zhang (2007) finds that accrual anomaly is higher in the firms/ industries which have high correlation between accruals and employees growth, a measure used to indicate the investment information in accruals. The earnings persistence factor is inconclusive in one-year-ahead earnings growth but investment factor is substantiated in long-term earnings growth, not the persistence factor. So accrual

anomaly results due to the investment information contained in the accruals. Palmon, *et al.* (2008) concludes that accrual anomaly is dependent upon company size and that incremental information about future returns is provided by the interaction of accruals and company size. High abnormal returns can be earned by going short in high accrual docile firms while going long in the smallest quartile of lowest accrual docile firms.

Kaserer and Klingler (2008) have examined the response of accrual anomaly to different accounting standards. As companies in Germany are shifting from German-GAAP to IAS, they come up with the result that German firms following German-GAAP show same level of earnings persistency for accruals and cash flows, and no evidence of accrual anomaly is found before 2000 the years before the adoption of IAS. Also, accounting system which relies on true and fair view can be abused as it gives managerial discretion whereas a conservative accounting system does not provide the said space. Ali, *et al.* (2008) have investigated that whether trading on the accrual anomaly is profitable by using actual transaction costs. They find that top 10 percent of mutual funds having highest weights in low accruals stocks however have small exposure to low accruals stocks. Although they earn excess returns after deducting transaction costs but they are less diversified and highly volatile in returns and fund flows both. Due to these factors mutual funds do not trade aggressively on accrual anomaly which results in its persistence.

Li, *et al.* (2011) have investigated the existence of accrual anomaly in China and find that when firms with losses are included then accrual anomaly fails to exist, as the earning management done is to avoid special treatment and delisting regulation. But when the firms with losses are excluded to remove the effect of delisting regulation, the result is the existence of accrual anomaly in China's stock market and a positive hedge portfolio return confirms it. They conclude that earning management by the profit firms results in accrual anomaly. Clinch, *et al.* (2012) have studied accrual anomaly in Australia and find that it exists there. Although there are some idiosyncrasies like persistence of earnings is undervalued by investors, not only accruals but also the impact of cash flows on the persistence of earnings is erroneously measured and hedge portfolio returns are only significant in the first year and decreasing over the three year post portfolio formation period.

Mahmood and Ali (2011) have studied the repercussions of accrual and growth anomalies for future earnings and long term growth in net operating assets in Pakistan and find a negative impact on one year ahead profitability. The accruals effect is due to managers' manipulation to increase current profitability and this will result in earning management relating to operating asset's long term growth. The result suggests that negative relation is due to decreasing marginal returns on future investment and conservative accounting policies.

The literature review indicates that most of the research is done for developed markets and results are also inconclusive. It would be interesting to investigate the accrual anomaly for Pakistan's market.

4. THEORETICAL FRAMEWORK AND WORKING HYPOTHESIS

This section discusses the theoretical framework and development of the hypothesis.

4.1. Theoretical Framework

The scrutiny of accrual and cash flow components is heavily stressed in financial statement analysis for the estimation of future earnings. As Graham, *et al.* (1962) has pointed out that the future earnings power of a firm is determined by the underlying information in current earnings and its constituents, the importance of which cannot be neglected. They have worked out earnings power by a five step procedure is needed to align current earnings for a variety of operating accruals like infrequent depreciation levels, arbitrary reserves and varying methods of inventory valuation. The rationale for the adjustment is non-recurring characteristic of these accruals in future earnings. This approach is usually advocated as Bernstein (1993) states that:

“Cash flow from operations (CFO), as a measure of performance, is less subject to distortion than is the net income figure. This is so because the accrual system, which produces the income number, relies on accruals, deferrals, allocations and valuations, all of which involve higher degrees of subjectivity than what enters the determination of CFO. That is why analysts prefer to relate CFO to reported net income as a check on the quality of that income. Some analysts believe that the higher the ratio of CFO to net income, the higher the quality of that income. Put another way, a company with a high level of net income and a low cash flow may be using income recognition or expense accrual criteria that are suspect.”

Similar rationale is given by Financial Accounting Standard Board (FASB) (1980, para. 54) as explanation for the importance of cash flow information in financial statements of firms.

The basic idea behind this thought is that the constituents of current earnings that are accruals and cash flows have different effects for the measurement of future earnings. Although current earnings comprises of both components but the persistence of current earnings will be short lived if it is primarily due to the accrual factor rather than the cash flow factor.²

²Rayburn (1986), Sloan (1996), Bradshaw, *et al.* (2001), Xie (2001), Beneish and Vargus (2002), Dechow and Dichev (2002), Fairfield (2003), Core (2006), Richardson, *et al.* (2006), Pincus, *et al.* (2007), Zhang (2007), Li, *et al.* (2011), Clinch (2012).

The association between earnings and stock prices has been extensively studied. As Ball and Brown (1968) contend that the value relevant information embedded in earnings is due to the concurrent positive relationship between earnings and stock returns. On the other hand, many studies manifest the inability of investors in forecasting future earnings performance correctly subject to available information [Ou and Penman (1989); Bernard and Thomas (1990); Hand (1990); Maines and Hand (1996)]. So the prospects of the well-known relationship between stock returns and earnings may be to a certain extent show the guileless fixation on reported earnings in disguise, instead of value relevant information embedded in earnings. Thus, as already stated that persistence of accruals is short lived, so the resulting effect will also translate into decrease in stock prices due to reversal of earnings which shows that the information content of accruals and cash flow differs as verified by the naïve expectation model tested against market efficiency.³

If markets are not efficient then there is room for investors to earn abnormal returns by beating the market due to the valuable information at hand. If investors are indeed obsessed with earnings then it will transpire in overpricing (underpricing) stocks in which the accrual component is relatively high (low). This takes place due to not fully foreseeing the lower persistence of accrual component of earnings. So, negative (positive) abnormal stock returns will result when the mispricing is corrected when lower (higher) future earnings are realised than expected earnings. Thus, those investors will earn positive abnormal stock returns who have taken long (short) position on less (high) accrual firms.⁴

4.2. Development of Hypothesis

From the above arguments it can be deduced that the level of accruals and cash flow should be examined in the earnings of firms for the purpose of future earnings predictions. As the high accruals earnings will mean revert so the inability of investors to see through earnings will cause a decline in stock prices of high accrual firms. If information is not symmetric, then there is room to earn abnormal stock return arises, which should be exploited. In short, following hypothesis can be formulated:

Hypothesis 1: The persistence of current earnings performance is negatively affected by accrual factor of earnings and positively affected by cash flow factor of earnings.

³Rayburn (1986), Sloan (1996), Bradshaw, *et al.* (2001), Xie (2001), Fairfield (2003), Pincus, *et al.* (2007), Li, *et al.* (2011), Clinch (2012).

⁴Sloan (1996), Xie (2001), Beneish and Vargus (2002), LaFond (2005), Liu and Qi (2006), Lev and Nissim (2006), Shevlin, *et al.* (2006), Pincus, *et al.* (2007), Palmon, *et al.* (2008), Clinch (2012).

Hypothesis 2: The earnings expectations inherent in stock prices fail to reflect fully the higher earnings persistence due to cash flow factor of earnings and the lower earnings persistence due to the accrual factor of earnings.

Hypothesis 3: Positive abnormal returns can be earned by a hedge portfolio by taking long position in the stock of firms having relatively low levels of accruals and a short position in the stock of firms having relatively high levels of accruals.

5. METHODOLOGY AND DATA

This section of the study illustrates methodology, econometric tools used to accomplish the objectives of the study and the data used in the study.

5.1. Methodological Framework

The methodology consists of analysing three parts. First, the persistence of earnings and its constituent's accruals and cash flows. Second, the existence of market efficiency, that is the investors' inability to differentiate between the two constituent factors of earnings. Third, the benefit from accrual anomaly can be achieved by taking equal value long position in highest accrual portfolios and short position in lowest accrual portfolios, thus earning positive hedge portfolio returns. To examine these issues, portfolios are formed on the basis of accruals and size.

5.1.1. Portfolio Formation

Portfolios are formed on the basis of accruals and size. Stocks are sorted into ten deciles on the basis accruals and size; equal number of stocks is put into each decile. The top decile has the stocks with highest accruals or size values. Then first decile which is now a portfolio in itself, the annual buy and hold return for one year holding is calculated. The same is repeated for the ten portfolios for each respective year.

Ibbotson (1975) technique is used to calculate Jensen alphas for each portfolio to adjust abnormal returns for the expected returns. The method uses the time series regression estimated for each portfolio separately for each year of the assessment period based on the Sharpe Lintner CAPM given in the following equation:

$$(R_{pt} - R_{ft}) = \alpha_p + \beta_p (R_{mt} - R_{ft}) + \varepsilon_{pt} \quad \dots \quad \dots \quad \dots \quad (1)$$

Where

R_{pt} = equal weighted return on portfolio p in year t .

R_{mt} = market return in year t .

R_{ft} = riskless rate of return in year t .

The technique assumes that investors use Sharpe-Lintner Capital Asset Pricing Model (CAPM) to calculate expected returns. The excess return is measured by α_p that is Jensen Alpha and β_p shows the relative risk of each portfolio.

5.1.2. Accrual and Cash Flow Persistence

To examine the accrual and cash flow persistence following Freeman, *et al.* (1982) future earnings are considered as a function of current year earnings:

$$Earnings_{t+1} = \alpha_0 + \alpha_1 Earnings_t + v_{t+1} \dots \dots \dots (2)$$

α_1 measures the persistence of the accounting rate of return on assets. It is mean reverting and should be less than one [Beaver (1970) and Freeman, *et al.* (1982)]. As Equation (2) does not differentiate between accrual and cash flow components of earnings, therefore, it can be written as:

$$Earnings_{t+1} = \gamma_0 + \gamma_1 Accruals_t + \gamma_2 CashFlows_t + v_{t+1} \dots (3)$$

Where $\gamma_1 < \gamma_2$, because accrual factor is less persistent than the cash flow factor shown by the small coefficient of accrual factor.

5.1.3. Rational Expectation Model

The outline of Mishkin (1983) is used to examine rational expectations hypothesis. Abnormal stock returns are zero in expectations, which is the basic inference of market efficiency and can be stated as:

$$E(r_{t+1} - r_{t+1} | \phi_t) = 0 \dots \dots \dots (4)$$

where

ϕ_t = the set of information available to the market at the end of period t ,

$E(\dots | \phi_t)$ = the objective expectation conditional on ϕ_t

r_{t+1} = the return to holding a security during period $t+1$, and

r_{t+1} = the market's subjective expectation of the normal return for period $t+1$.

A model that satisfies the efficient-markets condition in (4) is:

$$E(r_{t+1} - r_{t+1} | \phi_t) = \beta(X_{t+1} - X_{t+1}^e) + \varepsilon_{t+1} \dots \dots \dots (5)$$

Where

ε_t = a disturbance with the property that $= 0$,

X_t = a variable relevant to the pricing of the security in period t ,

X_{t+1}^e = the rational forecast of X_{t+1} at time t [i.e. $X_{t+1}^e = E(\varepsilon_{t+1} | \phi_t)$]

β = a valuation multiplier.

The implication of market efficiency highlighted by this model is that only unanticipated changes in X_{t+1} can be correlated with $(r_{t+1} - r_{t+1} | \phi_t)$. In this case, the variable X represent earnings performance and β shows earning response coefficient, so the above model is using the two specifications of the earnings forecasting Equations in (2) and (3). Therefore, the model becomes:

$$(r_{t+1} - r_{t+1} | \phi_t) = \beta(Earnings_{t+1} - \alpha_o - \alpha_1^* Earnings_t) + \varepsilon_{t+1} \quad \dots \quad (6)$$

Market efficiency imposes the constraint that $\alpha_1 = \alpha_1^*$. So, stock prices should correctly anticipate the average persistence of earnings performance as necessitated by the constraint. For Equation (3), the equation takes the form as:

$$(r_{t+1} - r_{t+1} | \phi_t) = \beta(Earnings_{t+1} - \gamma_o - \gamma_1^* Accruals_t - \gamma_2^* Cash\ flows_t) + \varepsilon_{t+1} \quad (7)$$

Now dual constraints $\gamma_1 = \gamma_1^*$ and $\gamma_2 = \gamma_2^*$ are imposed by market efficiency. If investors are unable to differentiate between the two components of earnings then the coefficients on the two factors are equal (i.e. $\gamma_1^* = \gamma_2^*$), otherwise market efficiency requires $\gamma_1^* < \gamma_2^*$.

Estimation Technique

Iterative weighted non-linear least squares [Mishkin (1983)] is used to estimate the two systems of equations. The asymptotically distributed likelihood ratio is used to test market efficiency, as $\chi^2(q)$:

$$L = 2n \log(SSR^c / SSR^u) \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad (8)$$

Where

q = the number of constraints imposed by market efficiency,

n = the number of observations,

SSR^c = the sum of squared residuals from constrained weighted system,
and

SSR^u = the sum of squared residuals from unconstrained weighted system.

5.2. Data

The sample of this analysis consists of 340 firms listed at Karachi Stock Exchange (KSE). The data covers the time period from 1998 to 2011. The balance sheet data of non-financial firms listed at KSE is taken from *Balance Sheet Analysis* published by State Bank of Pakistan (SBP). Annual and monthly stock prices data is taken from business recorder website khistocks.com. The data includes firms from almost all sectors of the economy except financial firms which are not included due to different structure of their accruals.

5.3. Variables Definition and Construction

Earnings: The variable shows magnitude of earnings of firms measured as operating income after depreciation which leaves out non-recurring items like discontinued operations, special items, extraordinary items and non-operating income. This variable is also used by Sloan (1996) and Bradshaw, *et al.* (2001).

Accruals: The variable represent balance sheet account that signifies liabilities and non-cash based asset such as accounts receivables, account payables, good will, future tax liability and future interest expense. The variable is also used by Sloan (1996) and Desai (2004) measured as:

$$\text{Accruals} = (\Delta CA - \Delta \text{Cash}) - (\Delta CL - \Delta \text{STD} - \Delta \text{TP}) - \text{Dep}$$

Where

ΔCA = change in current assets

ΔCash = change in cash/cash equivalents

ΔCL = change current liabilities

ΔSTD = change in debt included in current liabilities

ΔTP = change in income taxes payable

Dep = depreciation and amortisation expenses.

The calculation of accruals leaves out debt in current liabilities as it is associated with financing transactions rather than operating transactions.

Also accruals are further divided in current assets ($\Delta CA - \Delta \text{Cash}$), current liabilities ($\Delta CL - \Delta \text{STD} - \Delta \text{TP}$) and depreciation components each of which is scaled by average total assets.

Cash Flows: The variable stands for the cash transactions of a firm. It is calculated as a difference of earnings and accruals component of earnings. It is used by Sloan (1996) his study as well.

The variables earnings, accruals and cash flows are divided by average total assets for standardisation as to make cross-sectional and temporal comparisons possible.

Size: The relation between size and stock returns is showed in many studies. It is measured as the natural log of the common equity at fiscal years end value. It is also employed by Sloan (1996) and Desai, *et al.* (2004) in their respective studies.

Book to Market: It is used as a proxy for growth of firms and its relation with stock prices which shows that a low book to market ratio firms will have high returns. It is measured as natural log of the ratio of book value of equity to market value of equity at fiscal years end. It is also employed by Sloan (1996) and Desai, *et al.* (2004).

Beta: Beta measures the volatility of a security or portfolio with respect to market. It is calculated as a regression of excess return on the risk premium. It is also used by Sloan (1996).

Earnings to Price: A high earnings to price ratio means that the firm is less risky. It is measured as ratio of earnings per share divided by price of the stock at fiscal year end. The variable is employed by Sloan (1996) in his study.

6. EMPIRICAL RESULTS AND DISCUSSIONS

The empirical results and interpretation of the results is presented in this section. The analysis begins with summary statistics of the data.

6.1. Descriptive Statistics

The descriptive statistics of earnings and its constituents are reported in Table 1. Panel A describes the mean and median values of earnings and its constituent components accrual and cash flows of each portfolio. The strong negative relation between accruals and cash flows is apparent, and as mentioned by Dechow (1994). As evident, the mean (median) value of cash flows is 0.15(0.11) in the lowest portfolio and goes on to decrease to 0.07(0.06) in the highest portfolio sorted on the basis of accruals. However, a positive relation exists between accruals and earnings with a mean (median) values of 0.09(0.06) for the lowest portfolio and 0.12(0.10) for the highest accrual sorted portfolios.

Table 1

*Mean (Median) Values of Selected Characteristics for Ten Portfolios
of Firms Formed Annually by Assigning Firms to Deciles
Based on the Magnitude of Accruals*

	Portfolio Accrual Ranking									
	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10
Panel A: Components of Earnings										
Accruals	-0.50	-0.15	-0.09	-0.06	-0.03	-0.01	0.02	0.06	0.11	0.44
	-0.27	-0.14	-0.09	-0.06	-0.04	-0.02	0.01	0.04	0.10	0.20
Cash Flows	0.15	0.13	0.13	0.12	0.11	0.10	0.10	0.09	0.08	0.07
	0.11	0.11	0.13	0.10	0.07	0.10	0.09	0.08	0.08	0.06
Earnings	0.09	0.10	0.08	0.05	0.11	0.08	0.08	0.08	0.10	0.12
	0.06	0.09	0.08	0.10	0.07	0.07	0.08	0.05	0.09	0.10
Panel B: Risk Proxies										
Beta	0.69	0.70	0.67	0.75	0.70	0.57	0.74	0.75	0.74	0.67
Size	5.06	5.26	5.44	5.55	5.42	5.71	5.72	5.57	5.69	6.49
	5.57	5.03	5.22	5.06	5.81	5.44	5.51	5.20	5.63	5.52
Panel C: Components of Accruals										
Current Assets	-0.11	-0.04	-0.02	0.01	0.02	0.04	0.07	0.09	0.13	0.20
	-0.04	-0.02	-0.01	0.00	0.01	0.03	0.07	0.08	0.13	0.20
Current Liabilities	0.10	0.06	0.03	0.03	0.02	0.01	0.03	0.00	-0.01	-0.11
	0.15	0.05	0.02	0.01	0.01	0.02	0.01	0.01	0.00	-0.03
Depreciation	0.08	0.05	0.04	0.04	0.04	0.04	0.03	0.04	0.04	0.03
	0.04	0.04	0.04	0.04	0.04	0.04	0.03	0.03	0.03	0.03

Panel B reports the results for the two risk proxies which have the potential to determine the systematic variation as a result of incomplete adjustment for risk for the accrual sorted portfolios. The first proxy calculated by employing the Ibbotson (1975) procedure is portfolio beta. The lowest accrual portfolio has a beta of 0.69, in the middle portfolio it's almost constant except portfolio three and six, and the highest accrual portfolio has a beta of 0.67. So the portfolios at extremes are less risky than the middle ones. However, a hedge portfolio comprising of equal amount of short and long position in lowest and highest portfolio has a beta of 0.02.

Firm size, the second risk proxy measured as the natural logarithm of market value of equity shows an increasing trend in portfolio means with small firms in lowest accrual portfolio and large firms in the highest accrual portfolio. Also the lowest accrual portfolio contains small firms with relatively high risk than the highest accrual portfolio having large firms with low risk. So, a minor net exposure to small firms would exist in a hedge portfolio consisting of equal amount of short and long positions in lowest and highest accrual portfolio.

Panel C describes that which component of accruals plays an active role in the variation of accruals and from the results it is clear that current assets component of accruals plays a vital role in the variation of accruals, as its mean and median values spans over from -0.11 (-0.04) to 0.20 (0.20). Whereas, the mean and median values for current liabilities and depreciation components lie between 0.10 (0.15) to -0.11 (-0.03) and 0.08 (0.04) to 0.03 (0.03).

6.2. Results for Accrual and Cash Flow Persistence

Table 2 shows OLS regression results for Equation (2), estimating the effect of current earnings on future earnings performance. The coefficient of the parameter α_1 is 0.858 which is less than unity showing sluggishly mean reverting characteristics as predicted by previous studies.⁵ The null hypothesis of temporary earnings performance is rejected by a t-statistics of 61.9.

Table 2

<i>Results of Future Earnings Performance on Current Earnings Performance</i>	
Parameters	Coefficients
α_0	0.0030
t-stat	(2.01)**
α_1 (Earnings)	0.8582
	(61.94)***
$R^2 = 0.55$	

Note: OLS is estimation technique. Earnings are income from continuing operations divided by average total assets. The ***denotes significance at 1 percent, **denotes significance at 5 percent and *denotes significance at 10 percent.

⁵Beaver (1970), Freeman, *et al.* (1982).

The parameter estimates of Equation (3) are provided by Table 3, showing the effect of the constituent factors of earnings that is accruals and cash flows impact on future earnings performance. The accruals coefficient γ_1 has the value of 0.853 whereas the coefficient of the cash flows component of earnings γ_2 is 0.867. The argument of accrual and cash flow factors to be equal is rejected by the F-test ($F= 1952.05$). So, there is strong evidence that both components have different properties with respect to the persistence of earnings, and the results are consistent with Sloan (1996).

Table 3

*Results of Future Earnings Performance on the Accrual and
Cash Flow Components of Current Earnings Performance*

Parameters	Coefficients
γ_0	0.0030 (2.1)**
γ_1 (Accruals)	0.8536 (59.12)***
γ_2 (Cash Flows)	0.8678 (66.16)***
F-test of $\gamma_1 = \gamma_2$: 1952.05	
$R^2 = 0.59$	

Note: OLS is estimation technique. Earnings are income from continuing operations divided by average total assets. The ***denotes significance at 1 percent, **denotes significance at 5 percent and *denotes significance at 10 percent.

6.3. Results for Rational Expectation Model

The system of Equations (2) and (6) estimated using non-linear GLS is reported in Table 4, reporting a current earnings coefficient α_1 of 0.772 whereas the stock price equation coefficient α_1^* is 0.768 which are approximately the same. Thus, it shows that average earnings persistence is foreseen by the stock prices. The null hypothesis of market efficiency is not rejected as shown by the likelihood ratio of 0.010 (marginal significance level = 0.825). So, inferences regarding current earnings for future earnings are precisely forecasted by stock prices.

Table 5 gives an account of estimation of Equations (3) and (7) using non-linear GLS, the purpose of which is to examine the effect of constituent factors of earnings on future earnings and on stock prices in the other equation. The coefficient of accruals γ_1 and cash flows γ_2 in forecasting equation is 0.761 and 0.791. The failure of fulfillment of the conditions of market efficiency's dual constraint of $\gamma_1 = \gamma_1^*$ and $\gamma_2 = \gamma_2^*$, shows that the constituent factors of earnings, accruals and cash flows do not possess different implications.

Table 4

*Results of Future Earnings on Current Earnings and Non-linear Stock Price
Reaction to Information in Current Earnings about Future Earnings*

Parameter	Coefficient	S.E
Panel A: Regression of Future Earnings on Current Earnings		
α_1 (Earnings)	0.7727	0.0220
$R^2 = 0.62$		
Panel B: Regression of Non-linear Stock Price Reaction to Information in Current Earnings about Future Earnings		
α_1^* (Earnings)	0.7686	0.0093
B	1.34	0.0116
$R^2 = 64$		
Test of Market Efficiency: $\alpha_1 = \alpha_1^*$		
Likelihood Ratio Statistic	0.010	
Marginal Significance Level	0.825	

Note: GLS is estimation technique. Earnings are income from continuing operations divided by average total assets. Abnormal returns are computed by taking the raw buy-hold return, inclusive of dividends and subtracting the buy-hold return on a size matched portfolio of firms. The size matched portfolios are based on market value of equity deciles of KSE.

Table 5

*Results of Future Earnings Performance on Accrual and Cash Flow
Components of Current Earnings and Non-linear Stock Price
Reaction to Information in Accrual and Cash Flow Components
of Current Earnings about Future Earnings*

Parameter	Coefficient	S.E
Panel A: Regression of Future Earnings on Components of Current Earnings		
γ_1 (Accruals)	0.761196	0.0093
γ_2 (Cash Flows)	0.791409	0.0093
$R^2 = 0.67$		
Panel B: Regression of Non-linear Stock Price Reaction to Information in Accrual and Cash Flow Components of Current Earnings about Future Earnings		
γ_1^* (Accruals)	0.870165	0.0093
γ_2^* (Cash Flows)	0.744998	0.0093
β	0.008141	0.0011
$R^2 = 0.68$		
Test of Market Efficiency: $\gamma_1 = \gamma_1^*$ and $\gamma_2 = \gamma_2^*$		
Likelihood Ratio Statistic	190.20	
Marginal Significance Level	0.00	

Note: OLS is estimation technique. Earnings are income from continuing operations divided by average total assets. The ***denotes significance at 1 percent, **denotes significance at 5 percent, and *denotes significance at 10 percent.

As the coefficients turn out to be 0.870 for γ_1^* and 0.744 for γ_2^* that is for accruals and cash flows respectively. This indicates that the magnitude of accruals from the stock prices equation is higher than magnitude from forecasting equation whereas that of cash flows is less than the forecasting equation's magnitude. Therefore, the results infer that the lower (higher) persistence of earnings performance due to accrual (cash flow) constituent of earnings is not rationally anticipated by the stock prices. The null hypothesis of market efficiency is rejected by the likelihood ratio statistic of 190.20 (marginal significance level =0.00). The coefficients of accrual and cash flows components are not the same as that of earnings (0.7720), so investors do not fixate on earnings rather investors considers accruals to persist for longer time period than cash flows. The results conform to that of Sloan (1996).

6.4. Results for Hedge Portfolio

Table 6 gives an account of the size adjusted returns and returns calculated through Jensen Alphas. For the first year after portfolio formation using size adjusted returns shows a negative association between abnormal returns and portfolio accruals. The lowest accrual portfolio posts an abnormal return of 10.35 percent ($t=3.65$) while the highest accrual portfolio posts -0.93 percent ($t=-3.56$) abnormal returns. The equally valued hedge portfolio formed by going long in lowest decile accrual portfolio and short in highest accrual decile portfolio yields a return of 11.26 percent ($t=3.85$). The size adjusted returns for the second year reports a weak negative forecasted relation than the first year. The lowest accrual portfolio posts an abnormal return of 2.68 percent ($t=2.21$) while the highest accrual portfolio posts -0.36 percent ($t=-2.58$) abnormal returns, whereas the hedge portfolio for the second year results in a return of 3.04 percent ($t=2.45$). The third year size adjusted returns still shows a negative relation but its statistically insignificant. The lowest accrual portfolio posts an abnormal return of 0.50 percent ($t=1.13$) while the highest accrual portfolio posts -0.29 percent ($t=-1.50$) abnormal returns, whereas the hedge portfolio for the second year results in a return of 0.79 percent ($t=1.8$).

The abnormal returns results computed through Jensen Alphas are quite similar to those calculated through size adjusted returns. The equally valued long position in lowest accrual portfolio and short position in highest accrual portfolio that is a hedge portfolio for the first year earned an abnormal return of 11.34 percent ($t=3.15$), for the second year 3.06 percent ($t=2.07$) and for the third year 0.71 percent ($t=1.42$). The results show the failure of investors to differentiate between the constituents of earnings that are accruals and cash flows.

Table 6

Time Series Means of Equal Weighted Portfolio Abnormal Stock Returns

Portfolio Accrual						
Ranking	Size Adjusted Returns			Jensen Alphas		
	Year t+1	Year t+2	Year t+3	Year t+1	Year t+2	Year t+3
Lowest	0.1033 (3.65)***	0.0268 (2.21)**	0.0050 (1.13)	0.1010 (2.70)***	0.0215 (1.40)	0.0050 (0.88)
2	0.0118 (2.06)**	0.0035 (1.54)	0.0030 (1.90)*	0.0973 (1.48)	0.0203 (0.10)	0.0042 (1.03)
3	0.0105 (2.90)***	0.0017 (0.87)	0.0015 (1.05)	0.0913 (2.08)**	0.0180 (0.21)	0.0030 (1.15)
4	0.0104 (1.43)	0.0014 (0.91)	0.0018 (0.92)	0.0753 (1.18)	0.0111 (1.30)	0.0019 (1.42)
5	0.0094 (1.10)	0.0014 (0.74)	0.0011 (0.51)	0.0624 (1.29)	0.0050 (1.58)	0.0016 (1.86)*
6	0.0088 (1.70)*	0.0007 (0.55)	0.0011 (0.71)	0.0508 (0.26)	0.0011 (0.25)	0.0010 (0.36)
7	-0.0020 (-1.07)	-0.0014 (-0.51)	-0.0007 (-0.29)	-0.0023 (-3.02)***	-0.0008 (-0.91)	0.0006 (1.10)
8	-0.0049 (-2.89)***	-0.0020 (-1.12)	-0.0021 (-0.77)	-0.0070 (-2.19)**	-0.0021 (-2.04)**	-0.0008 (-1.03)
9	-0.0070 (-1.72)*	-0.0027 (-2.02)**	-0.0025 (-1.34)	-0.0095 (-2.06)**	-0.0053 (-0.34)	-0.00162 (-1.37)
Highest	-0.0093 (-3.56)***	-0.0036 (-2.58)***	-0.0029 (-1.50)	-0.0124 (-3.18)***	-0.0091 (-2.48)**	-0.0021 (-1.22)
Hedge	0.1126 (3.85)***	0.0304 (2.45)**	0.0079 (1.8)*	0.1134 (3.15)***	0.0306 (2.07)**	0.0071 (1.42)

Note: Portfolios are formed annually by assigning firms into deciles based on the magnitude of accruals in year t. The values in parentheses are t-statistics based on the time series of the annual portfolio abnormal stock returns. The *** denotes significance at 1 percent, ** at 5 percent and * at 10 percent.

Table 7 furnishes further confirmation of the accrual and future stock returns relationship by reporting regressions of stock returns on accruals and other control variables using Fama and Macbeth (1973) approach. For each of the 13 years a separate cross sectional regression is run and their means of coefficients along with t-statistics are reported. Panel A, describes the regression of future stock returns on accruals and reconfirms the results reported in Table 6 that there exists a negative relation between future stock returns and accruals which is more significant in the first year than the subsequent two years to follow.

Panel B presents regression results of future stock returns on the constituents of accruals that are current assets, current liabilities and depreciation. All the coefficients of the accrual components are negative for the first two years and current asset component being the highest in magnitude along with high significance level, thus being the major constituent to contribute to accruals (as shown in Table 1). The component of current liabilities also slightly influences the accruals and thus playing a significant role in forecasting future stock returns for the first year only.

Panel C describes results of regressions on certain other variables which previous studies consider as the determinants of stock returns [Fama and French (1992)]. The inclusion of variables like size, book to market (B/M), beta and earnings to price (E/P) is to check whether the forecasting power of accruals is integrated by these variables or not. The results of panel C show that the coefficient of accruals is quite similar in magnitude and significance level to the results described in panel A of univariate analysis. So, accruals provide additional and supplementary power to the prediction of future returns along with these control variables.

Table 7

*Cross-sectional Regression Tests of the Explanatory Power of
Accruals with Respect to Future Annual Stock Returns*

Panel A: Cross-sectional Regressions of Stock Returns on Accruals			
	Dependent Variable is Stock Return for:		
	Year t+1	Year t+2	Year t+3
Intercept	0.18*** (6.03)	-0.03 (-1.46)	0.13 (-4.81)***
Accruals	-0.29 (-1.97)**	-0.20 (-1.96)**	-0.06 (-1.66)*
Panel B: Cross-sectional Regressions of Stock Returns on the Components of Accruals			
	Dependent Variable is Stock Return for:		
	Year t+1	Year t+2	Year t+3
Intercept	0.04 (0.63)	-0.02 (-0.51)	0.03 (0.62)
Current Assets	-0.25 (-2.61)***	-0.17 (-2.02)**	-0.13 (-1.70)*
Current Liability	-0.21 (-1.71)*	-0.15 (-0.81)	0.05 (1.15)
Depreciation Expense	-0.15 (-1.57)	-0.13 (-0.37)	0.01 (1.77)
Panel C: Cross-sectional Regressions of Stock Returns on Accruals and other Predictors of Returns			
	Dependent Variable is Stock Return for:		
	Year t+1	Year t+2	Year t+3
Intercept	0.35 (3.58)	-0.01 (-0.07)	0.04 (0.43)
Accruals	-0.26 (-2.61)***	-0.26 (-2.08)**	-0.35 (-1.45)
Size	-0.03 (-1.83)*	-0.01 (-1.01)	0.01 (0.51)
Book to Market	0.01 (0.93)	0.08 (3.67)***	0.08 (2.50)**
Beta	0.13 (3.00)***	-0.04 (-1.26)	-0.04 (-0.77)
Earning to Price	-0.01 (-1.81)**	-0.01 (-0.87)	0.01 (1.01)

Note: The numbers reported are time series means of the estimated parameters from cross-sectional regressions. The values in parentheses are t-statistics based on the time series of the annual portfolio abnormal stock returns. The ***denotes significance at 1 percent, **at 5 percent and * at 10 percent.

7. CONCLUSION AND POLICY RECOMMENDATIONS

The present study has examined that whether constituents of earnings that are accrual and cash flow possess different effects for future earnings based on 340 non-financial firms listed at KSE for the period of 1998 to 2011. The analysis is carried out in three parts.

First, the persistence of earnings and its constituent's accruals and cash flows. The study shows a strong negative relation between accrual and cash flow components of earnings evident in previous studies like Dechow (1994) findings. The result also shows that current asset is the major component of accruals same as Sloan (1996) observes. Results also conclude that a positive relationship exists between current earnings and future earnings and future earnings are also associated with the accrual and cash flow constituents of earnings.

Secondly, although market efficiency exists in earnings case only but the results manifest that lower persistence of earnings performance due to the lower persistence of accrual component is not anticipated by stock prices along with the higher persistence of cash flows. Therefore, rejecting the existence of market efficiency, which shows that the investors inability to differentiate between the two constituent factors of earnings.

Thirdly, the benefit from accrual anomaly can be achieved by taking equal value long position in highest accrual portfolios and short position in lowest accrual portfolios, thus earning positive hedge portfolio returns. Also, the univariate analysis shows that accruals affect future stock returns negatively and along with other control variables its effect is not subsumed by other control variables showing the same negative relation with almost same magnitude.

Therefore the results reveal that accrual anomaly exists in Karachi Stock Exchange (KSE). The continuity and durability in earnings turns out to be dependent on the accrual and cash flow components of earnings' magnitudes. The efficient market hypothesis which states that all publicly available information is reflected in stock prices fails to hold. In addition, the failure of stock prices to comprehend the different properties of the constituents of earnings looks like investors inability to differentiate between the two components. The nonexistence of market efficiency does not qualify that investors are irrational or the presence of chances earning profits that are not exploited. But normal returns can be earned by opting for an active investment strategy which fully utilises the analysis of financial statements.

From above results and conclusions this study comes up with the following implications. Security Exchange Commission of Pakistan (SECP) can consider making the firms binding to explicitly state the earnings and the corresponding accrual and cash flow components values. The firms reporting under Generally Accepted Accounting Principles (GAAP) truly reflect the values of accruals and the level of managerial discretion needed to be declined.

Any investor who opens an account with a broker requires some training which enables him/her to analyse the financial statements correctly.

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