DOES THE ACCRUAL ANOMALY EXISTS IN STOCK MARKET? EVIDENCE FROM PAKISTAN

Muhammad Saad Baloch[1]*
[1] Pakistan Institute of Development Economics, Quaid-i-Azam University Campus, 4400, Islamabad, muhammadsaad_13@pide.edu.pk, msaad.baloch@gmail.com,

Abstract

This study examined the existence of accrual anomaly exclusively in Karachi Stock Exchange by measuring accruals from cash flow approach and by using a sample of 100 non-financial firms registered at Karachi Stock Exchange (KSE) for the time period of 2002 to 2013. The objective of the study is to examine the accrual anomaly by measuring accruals from cash flow approach as measuring accruals from balance sheet approach may contain estimation errors which may lead to biased result i.e. existence of accrual anomaly. Robust Fixed Effect method is used to achieve the objective.
Result revealed that accruals predict the future stock returns positively when accruals are measured through cash flow approach which is contradictory to the accrual anomaly. It proved that measuring accruals from balance sheet approach contain estimation errors which lead to biased results. The study concluded that accrual anomaly does not exist in KSE and selection of specific estimation method is reason for accrual anomaly.

Keyword: Accrual Anomaly, Accruals, Accounting, Earning Management, KSE, Pakistan

JEL Classification: M 41, 49

I.   Introduction

Earning management plays a vital role in financial accounting system. Firms adopt

such practices to smoothen the volatility of the business income, to reduce uncertainty of

---

Corresponding author: Muhammad Saad Baloch , E-mail: muhammadsaad_13@pide.edu.pk, msaad.baloch@gmail.com,

the business future and to increase its performance. Mainly there are two financial accounting systems. One is cash based accounting system in which transactions are recorded when cash is received or paid. Second is accrual based accounting system in which transactions are recorded when these are occurred. Earning management is only possible in later accounting system so focus of this study is on accrual based accounting system. Different studies like Healy (1985), Sloan (1996) and Teoh et al. (1998) explain the method to identify the process of managing earnings by using accruals. As it is the era of competitiveness, so it is necessary for the survival of firms that they should perform well as firm performance is reflected in stock return and quality of earnings should be reliable. So earning management is highly focused area for last few decades.

Accrual based accounting system is very important feature of financial accounting system. This system consists of accrual in which financial transaction is recorded in current period and financial effect of this transaction may take place in current period but the exchange of cash for that specific financial transaction is delayed to the next period. Mainly there are two estimation methods to measure accruals. First one is balance sheet approach and second one is cash flow approach which is also known as net income approach. In this system, economic events are identified by matching expenses to the revenues at current period when transaction takes place rather than when payment is received or paid. This system involves the forecasting of possible future economic benefits i.e. future cash inflows in case of accrued revenue and it also create future obligations i.e. future cash outflows in

case of accrued expenses and liabilities. So financial effects takes place in current period rather when the related costs and benefits are acknowledged. By involving in accruals based business transactions, Firm can perform its operations continuously even if there is shortage of cash. So this specific accounting system provides ease to the flow of business. In current scenario when the world become global village, the trade between firms across countries increases enormously.

Accruals reverse when their forecasting economic benefits are recognized. Their reversal should not have any impact on subsequent earnings. It means that there should be no difference between forecasting economic benefits and actual economic benefits. But in reality, accruals reverse and affect the earnings and future stock returns respectively. This concept is defined as "Accrual Anomaly" identified by Sloan (1996) which shows a negative relationship between accruals and future stock returns. It shows that there is some difference between forecasted and realized economic benefits. This difference can arise due to estimation errors in accruals estimation. According to Sloan et al. (2011), extreme accrual reversals are the reason why accruals are more mean reverting than cash flow as extreme accruals are more frequently reverse than normal accruals. This is also demonstrated in previous studies that accruals are less persistent than earnings and cash flows. They are negatively linked with future stock returns. This negative association arise because of high frequency of accruals reversals. So accruals affect the market-based earning i.e. future stock return. But there are some other studies which show positive association between accrual

and future stock returns. As Hirshleifer et al. (2009) identified that aggregate accrual is a significant positive predictor of aggregate stock return and this positive return predictability of aggregate accrual is inconsistent with the accrual fixation hypothesis. Some previous studies suggest that accruals are associated with economic characteristics and those economic characteristics predict the future stock returns and not the accruals.

Pakistan Scenario:

In Pakistan, Karachi Stock Exchange (KSE) is one of the emerging stock market in the world. In Pakistan, there are three stock markets namely Karachi Stock Exchange (KSE), Islamabad Stock Exchange (ISE) and Lahore Stock Exchange (LSE). Karachi Stock Exchange is the oldest and more active than others two. Due to its utmost importance, different studies discussed whether the KSE follows the pattern of developed stock market or not? Whether the investor's behavior in KSE is same as it is in developed markets like NYSE? Whether the EMH (Efficient market Hypothesis) does exist in KSE or not? So due its greater importance, KSE is highly focused market for research.

In case of accruals, a study is conducted by Mahmood and Ali (2011), in which they identify the role of accruals in profitability and firm valuation. Another study is conducted by Mohammad and Javid (2015), in which they indicate the existence of accrual anomaly in KSE and find a negative association between

accruals and future stock returns. But these studies measure accruals through balance sheet approach which includes high chances of estimation errors as discussed by Hribar and Collins (2002). According to Hribar and Collins (2002), researchers should revisit previous research findings by using cash flow statement approach if they believe that these estimation errors caused by balance sheet accruals might have impacted their results. So by using cash flow approach, we can minimize the risk of estimation error in accrual estimation and can get fair result. So in order to avoid estimation errors and to get better result we measure accruals by using cash flow approach and we analyze the impact of accruals on market-based earnings i.e. Future Stock Return.

The purpose of this study is to examine the "Accrual Anomaly" and measure the relationship between accruals and future stock returns and find out whether these accruals which are estimated through cash flow approach affect future stock returns in same manner as shown in study of Mohammad and Javaid (2015) as they estimated accruals by using balance sheet approach. This study also helpful for investors so they can make better investment policies by observing the impact of accruals on future stock returns.

I.1.   Significance of Study

Most of the research in this field is done in developed markets but in developing markets this area is still not explored. Different studies discuss the accrual anomaly and role of accruals in earning management, and their impact on stock returns and profitability by measuring accruals from balance sheet approach. In Pakistan, there is only one study which discusses the accrual anomaly (Mohammad and Javid (2015)) which also uses accruals from balance sheet approach but this study is adopting different approach i.e. Cash Flow Approach for estimation of accruals because balance sheet approach contains high chances of estimation errors. This study is contributing to the literature by investigating the relationship exclusively between accruals and future stock returns by using cash flow approach which will highlight the reason of existence of accrual anomaly. This study will be helpful for the investors so they can make better investment decisions by considering the relationship of accruals and future stock return.

The remainder part of the study after the introduction chapter is describing the literature review, the data and methodology, results and discussions, and conclusion and policy implications respectively.

II.   Literature Review

Accruals are considered in number of previous studies. This study measures accrual through cash flow approach in which accrual measures as the difference between income from the operations (EBIT) and cash flows from the operations. In different studies on accruals conducted by Healy (1985), Dechow (1993), Sloan (1996) and many others, accruals are largely defined as a product of accounting entries which improves the ability of earnings to forecast future performance. Most of the studies measure accruals by using balance sheet approach.

Dechow (1993) studies different situations under which accruals are forecasted to improve earning's ability to measure firm performances. This study identifies different situations in which accruals are predicted in such a way that these improve the ability of earnings to improve firm performance which is reflected by stock return. His estimation shows that results are consistent with the hypothesis and accrual improves the relationship of earning with stock returns. So it is clear from the evidence that accruals play a vital role in improving the capability of earnings to expand firm performance as compared to cash flows and generate a positive correlation of earning with contemporaneous stock return than the cash flows. This study shows the positive aspects of accrual based accounting system. But it does not identify the problems created by accruals like in case of bad debts,

which create uncertainty about the cash recovery and due to this earnings decrease

which affect the firm performance.

Accrual can be measured through following methods:

- Cash Flow Statement Approach (Net Income Approach)

- Balance Sheet Approach

In cash flow statement approach, accruals measure through the difference

between net income (EBIT) and cash flow from operations of the firm. Hribar and

Collins (2002) examine the impact of measuring accruals from change in balance

sheet account i.e. using balance sheet approach than measuring accruals from cash

flow statement approach. In Balance sheet approach they calculate accruals by

deducting the change in current liabilities, the change in cash and cash equivalent

and the change in depreciation and amortization expense in that specific period from

the change in current asset during that period and then adding the current maturities

of long-term debt and other short-term debt included in current liabilities during that

period. It founds the estimation errors in measuring accruals from balance sheet

approach and concludes that it would be better to measure accruals from cash flow

statement directly to avoid estimation errors. These estimation errors and their

magnitude can be significant when accruals are measured by balance sheet

approach. Because of using the balance sheet accruals, the results are statistically

insignificant in previous research on pricing of accruals as balance sheet accruals generate errors-in-variables problems. So they suggest that researchers should revisit previous research findings by using cash flow statement accruals approach if they believe that these estimation errors caused by balance sheet accruals might have impacted their results. By using cash flow approach, they can minimize the risk of estimation error in accrual estimation and can get fair result. So different studies highlight the different prospective of accruals and their role in earning management but they fail to identify the consequences of high accruals e.g. in case of bad debts, firm's earning adversely affected. Manipulation in earnings create problems for the investors as they fail to make expectations regarding expected returns. Estimation errors may generate biased result so to deal with that this study uses cash flow approach (Net Income Approach) to get fair result.

Accruals and Future stock returns:

"Accrual Anomaly" is described as a negative relationship between accruals and future stock returns. Sloan (1996) examines whether stock prices reflect information about future earning contained in accruals, he reports that a firm which has high levels of accruals experiences negative future abnormal stock return that are concentrated around future earnings announcement and shows lower persistence in earning performance based on accrual component of earning. The reason is

accrual fixation hypothesis that mean investors fixate on accounting accruals without taking into account their tendency to reverse and they fail to anticipate the accrual reversals. Different studies discuss the accrual anomaly and its possible reasons and justifications.

Richardson et al. (2002) comprehensively examine the source of information in accruals about earning persistence and future stock return. They extend Sloan's (1996) work by first relating accruals to investing and financing activities, and second by differentiating between the information content of liability accruals and asset accruals. They report that less reliable accruals are associated with lower earning persistence and investors misprice the security because of failing to anticipate the lower earning persistence so they confirm the Sloan's prediction. They also show that liability accruals provide more information about future earnings and stock returns. They confirm that investing and financing accruals give some extra useful information about future stock returns and earning persistence. They fail to identify that if information is not available how investors can take benefits from it and can anticipate the accrual's effect. Livnat et al. (2006) analyze the accrual anomaly for quarterly accrual data and report that accrual anomaly also exist for quarterly accrual as it exist for annual accruals. They find that future quarterly earnings are more associated with current net operating cash flow than the

accruals as accruals are less persistent. These studies find that accruals are negatively related to future stock returns. But some studies find positive relationship between accruals and future stock returns.

Hirshleifer et al. (2009) examine the effects of firm-level accrual and cash flow on aggregate stock market. This study test the abilities of aggregate accruals and aggregate cash flows to predict the aggregate stock return. It finds that aggregate accrual is a significant positive predictor of aggregate stock return and this positive return predictability of aggregate accrual is inconsistent with the accrual fixation hypothesis and it argue that the aggregate cash flow predicts the aggregate returns negatively, which is again inconsistent with the fixation hypothesis. Aggregate accruals are less persistent than aggregate cash flows. Another study conducted by Sehgal et al. (2012) examine the role of accrual in earning persistence and examine whether investors correctly value the information contained in accruals for stock pricing in Indian stock market. The result indicates that the earning persistence is more attributable to cash flow than accruals. Accruals are positively related to future returns and high accrual portfolios tend to provide higher returns. So the difference arise because of difference in investor behaviour across markets and because of different estimation approach used to measure accruals.

In Pakistan there is only one study which discusses the accrual anomaly. Mohammad and Javid (2015) investigate the existence of accrual anomaly in Karachi Stock Exchange by analyzing the accrual behavior of non-financial firms. This study analyzes the persistence of cash flow and accrual components and their impacts on hedge portfolio and future stock prices. They measure accruals from balance sheet approach and find that persistence in earnings is depends upon the size of components of earnings which are accruals and cash flows. They show a negative relationship between accruals and cash flows like many previous studies. Due to this, the efficient market hypothesis does not takes place as lower earning persistence is not predicted by future stock prices. This study concludes that accrual anomaly exists in Karachi Stock Exchange but they measure accruals from balance sheet approach which contains high chances of estimation errors as identify by Hribar and Collins (2002). They also fail to identify the role of accrual reversals in explaining the accrual anomaly.

So most of the studies measure the accruals from balance sheet approach which contains high chances of estimation errors. This study is contributing to the literature by using the cash flow approach to measure accruals before examining the accrual anomaly. This study will enable us to differentiate the impact of using diferent approaches to measre accruals.

III.   Data and Methodology

This chapter describes the data and methodology used in this study to achieve the objective.

Methodology:

This section illustrates the econometric model that is used to achieve the objective. This study uses the panel data to estimate the models.

- **Accrual:**

Accruals are measured through cash flow approach (Net Income Approach) which is following:

Accrual = Net Income (EBIT) – Cash Flow from operations

- **Accrual and Future Stock Return:**

To measure the relationship between Accruals and future stock return, Sloan et al. (2011) uses stock returns of current period as a function of accrual of previous period:

$$R_{i,t} = \alpha + \beta_0 \, ACC_{i,t-1} + \beta_1 \, G_{i,t} + \beta_2 \, S_{i,t} + \beta_3 \, CSL_{i,t} + u_{i,t} \tag{1}$$

R_t = Return of current period

ACC_{t-1} = Accrual of previous period

The control variables are S = Size of firm, CSL = Capital Structure Leverage and G = Growth of firm

- **Estimation Techniques:**

This section illustrates the different econometric techniques which we use to achieve our objectives.

Our two basic estimation techniques include:

  - Fixed Effect Method

  - Pooled OLS Method

This study uses one of the above mentioned estimation technique after applying following diagnostic tests.

- **Diagnostic Tests:**

We apply following tests before selecting the appropriate estimation technique for the equation 1.

  a) LR Test for Heteroskedasticity:

  b) F-Test: To decide between Pooled OLS and Fixed Effect method

  c) The Hausman Test: To decide between Fixed Effect and Random Effect method

Only that econometric technique will be used which will fulfill the above mentioned criteria.

- **Variables:**

The financial variables included in this study are Cash Flows from operations, Earnings (Earnings before Interest and Taxes), Long term liability, Market value of Common Equity, Total Asset of both periods i.e. "t-1" previous period and "t" current period. Annual Stock Prices for stock return of previous "t-1" and current "t" periods. All those variables taken from financial statements i.e. cash flow from operation, Earnings (EBIT) and Long Term Liabilities are scaled by Total Asset as used by Sloan (1996) and Mohammad (2015) in order to remove extreme outliers and make them standardize. The control variables used in models are Size of firm (natural log of market value of equity), Growth of firm (ratio of book value of equity to the market value of equity) and Capital Structure leverage (debt to equity ratio) and all these are used in previous studies. The list of interested variables is following:

Name	Explanation
Accrual	Difference between EBIT and Cash Flow from Operations. It shows Non-cash business transactions. It is used in many studies like Collins, et.al (2002) etc.
Earning	Earnings Before Interest and Taxes (EBIT) shows amount of operating income earn by firms after deducting the depreciation. This variable is used by Sloan (1996), Hribar and Collins (2002)
Cash Flow	Cash Flow from operations. It shows cash-based business transactions. It is used by Hribar and Collins (2002) as well.
Size	Natural log of closing market value of equity is used to measure Size of firm. It is used by Sloan (1996). Natural log is used for smoothening and linearizing the data.
Capital Structure Leverage	Debt to Equity Ratio is used as a proxy to capture the impact of capital structure. This is used in many different studies which are conducted over the period of time. Debt = Long term Liability , Equity = Shareholder Equity
Growth	Ratio of Book value of equity to the Market value of equity is used as a proxy to capture the impact of Growth of firms on earnings and stock returns. It is used by Sloan (1996). Book value of equity = Shareholder Equity Market value of equity = MPS * number of shares
Stock Return	First take difference of Current and Previous period annual prices of stock and then divide it by previous period price.

- **Data:**

The focus of this study is on Non-Financial sectors of Karachi Stock Exchange. In analysis, the sample of 100 Non-Financial companies listed on Karachi Stock Exchange is used. Companies are selected on the basis of capitalization in the market. First Non-Financial companies included in KSE 100 index are taken and remaining companies are selected from Non-Financial sectors on the basis of market capitalization. The data of Earnings (EBIT), Cash Flows, Market Value of Common Equity, Total Asset and Long term liability is taken from the balance sheet analysis, which is available on website of State Bank of Pakistan. For Stock Return, the data of annual stock prices of sample companies is taken. Time period of study is 2002-2013.

IV.   Empirical Results and Discussion

This sections includes the results and their interpretations.

Descriptive analysis

The Descriptive statistics of the variables of interest are given in table 1.

Table: 1   **Descriptive Statistics**

Variables	Mean	Median	Std. Dev.	Maximum	Minimum
R_t	0.345	0.110	1.066	19.000	-0.960
ACC_{t-1}	0.111	0.060	0.195	3.050	-0.750
S_t	9.777	9.970	2.077	15.05	2.770
G_t	0.238	0.109	0.447	6.095	-2.889
CSL_t	0.033	0.010	0.064	0.830	-0.580

Table 1 describes the descriptive statistics of our main variables which are as follows: Return of current period (R_t), Accrual of previous period (ACC_{t-1}), Size of current period (S_t), Growth of current period (G_t) and Capital Structure and Leverage of current period (CSL_t), The mean value of current period return is 0.345 and it ranges from -0.960 to 19.00 with a standard deviation of 1.066. The mean value of accruals of previous period is 0.111 with maximum of 3.050 and minimum of -0.750 and its standard deviation is 0.195. Mean value of size is 9.77 and it ranges from 2.770 to 15.05 with a standard deviation of 2.077. The mean value of growth of current period is 0.238 and its maximum value is 6.095 and minimum value is -2.889 and its standard deviation is 0.447. Mean value of capital structure leverage is 0.033 and it ranges from -0.580 to 0.830 with a standard deviation of 0.064. The

mean and median values of all variables are positive and closer to each other.

Standard deviation of all variables are closer to their means.

Correlation:

Table 2 reports the correlation among variables which are included in equation 1.

Table: 2   **Correlation Matrix**

	$Return_t$	ACC_{t-1}	G_t	S_t	CSL_t
$Return_t$	1.000				
ACC_{t-1}	0.059	1.000			
G_t	-0.098	-0.016	1.000		
S_t	0.029	0.016	-0.458	1.000	
CSL_t	0.043	-0.101	-0.004	-0.040	1.000

Table 2 shows pair-wise correlation among the variables included in equation 1. These variables are Return of current period, Accrual of previous period, Size, Capital Structure and Leverage and Growth. Last three variables are control variables. From the correlation values among the variables, we can say that correlation among the variables is low so there is no multicollinearity among the variables. Consistent with the previous result documented in Hirshleifer et al. (2009), Accrual of previous period are positively correlated with return of current

period as correlation value is 0.059. This is against the accrual anomaly. It means when Firm increases accrual in previous period because of increase in profit, in next period accruals reverse and cash flow increases again. So the return increases in current period. As people expect the reversal of accruals in current period so they transfer profit of one period to another period in shape of accruals.

Growth has negative correlation with returns of current period i.e. -0.098 which is consistent with the previous result if the Book-to-Market ratio is high it means the return will be lower. Size (S_t) and Capital Structure and Leverage (CSL_t) has positive correlation with returns as they have 0.029 and 0.043 correlation with $Return_t$ respectively. However, it is worth mentioning that correlation does not provide cause and effect relationship.

Result for Accrual and Future Stock Returns:

LR Test for Heteroskedasticity is used on equation 1 to test the presence of Heteroskedasticity in model. Result mentioned in appendix revealed the presence of Heteroskedasticity. So robust regression should be used to remove this problem. Hausman test is used to decide between Fixed Effect method and Random Effect method as f-test indicated that fixed effect method is better to use. Result of Hausman test mentioned in appendix indicated that Fixed Effect is better to use.

The result of fixed effect model with robust is presented in table 3:

Table: 3   **Fixed Effect method with robust**

	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
				Robust		
ACCt-1	0.28453	.139495	2.04	0.044	.0077469	.561324
Gt	-0.42430	.052488	4.34	0.000	.1238196	.332116
St	0.22796	.173449	-2.45	0.016	-.7684682	-.080147
CSLt	0.80221	.487543	1.65	0.103	-.1651818	1.76960
constant	-1.84079	.523294	-3.52	0.001	-2.879122	-.80246
sigma_u	0.63276					
sigma_e	1.04191					
rho	0.26944	(fraction of variance due to u_i)				
					F(4,99)	9.86
					Prob > F	0.000
					R-sq:	0.061

Table 3 shows Fixed Effect regression with robust for equation 1, estimating

the effect of Accrual of previous period **(ACCt-1)** on Returns of current period

(Returnt). The coefficient (β_0) of parameter **(ACCt-1)** is 0.28453. It means increase

in accruals of previous period increase the current period returns. In other words

accruals predicted future stock returns positively. The coefficient (β_0) is positive

and significant as value of t-stat is greater than 2 i.e. 2.04 and its p-value is

significant. So we rejected the perception that there is a negative relationship

between accruals and future stock returns. It means when firms increase accruals in previous period, investors expect reversal of accruals in current period as well in next period. Due to increase in accrual reversals, earning of firms increases which lead to a positive increase in returns. This result is contradictory to the accrual anomaly but consistent with the previous result documented in Hirshleifer et al. (2009), Sehgal et al. (2012) etc. As firms expect the reversal of accruals in current period so they transfer profit of one period to another period in shape of accruals. The difference can also arise because of different estimation approach of accruals i.e. cash flow approach as Sloan (1996), Mohammad and Javid (2015) use balance sheet approach to measure accruals. Hribar and Collins (2002) identifies that measuring accruals from cash flow approach can create opposite results as balance sheet approach contains high chances of estimation errors because of events like merger and acquisition, discontinued operations etc. This result supported the income smoothening hypothesis. It means when firms earn profits, these want to earn higher profit in subsequent years also so such firms create high accruals in current period with expectations of having high accrual reversals in next period. So in next period when accrual reversals happen, their earning increases which puts positive impact on returns. Because when earning increases people expect higher

returns, so firms smoothen their income and increase the returns by increasing the provision of accruals.

The coefficient of growth (β_1) is demonstrating a negative impact on current period returns i.e. -.424. It means increase in the book-to-market ratio will decrease the current period returns. This result indicating a negative and significant relationship between growth of firm and current period returns if we use BMR (book-to-market ratio) as a proxy for growth. This result is consistent with the finding of previous studies. The coefficient of size (β_2) is .227 which means increase in size of firm will increase the current period returns. So there is a positive and significant relationship between size of firm and current period returns as value of t-stat is positive. Again results are consistent with previous results that increase in size of firm has positive impact on current period returns.

The coefficient of capital structure or leverage (β_3) is positive but insignificant. As value of t-stat is lower than 2, so this relationship is insignificant. The constant is showing on average change i.e. -1.8. As its t-value is significant, which means some variable are missing in the model either these variables are company specific or macro-variables. R-square is indicating that 6% variation in dependent variable (returns) is due to those explanatory variables which are mentioned in equation 2 or in other words independent variables explaining only

the 6% variation in dependent variable. As already mentioned that R-square is low in this type of studies because of large number of cross-sections like different studies with lower R-square like Sloan et al. (2011) Fatma (2012), Resutek (2014) etc. can be identified. As value of F-stat is positive and significant which shows the overall fitness of model.

Result indicated that accrual anomaly did not existed in Karachi Stok Exchange as find by Mohammad and Javid (2015) when accruals are measured through cash flow approach. Accrual anomaly occurs because of use of specific estimation approach i.e. Balance Sheet Approach to measure accruals.

V.   Conclusion

This study examines the impact of accruals on stock returns of 100 non-financial firms which are listed at KSE for the time span of 2002 to 2013. In this study, accruals are measured through cash flow approach (Net Income Approach). Impact of accruals of previous period on the stock returns of current period is examined. Hribar and Collins (2002) indicates that measuring accruals from Balance Sheet approach contains high chances of estimation errors and can lead to biased results. The result indicated a positive relationship between accruals of previous period and returns of current period which is contradictory to the accrual anomaly find by Sloan (1996) and Mohammad and Javid (2015) but consistent with

the result documented by Hirshleifer et al. (2009) and Sehgal et al. (2012). The result supported the income smoothening hypothesis. It means firm that wants to smoothen profit create high accruals in current period with expectations of having high accrual reversals in next period to have high earnings in future. So in next period when accrual reversals happen, it puts positive impact on earnings which increase the returns as well. So accrual anomaly does not exist in KSE when we measure accruals from cash flow approach. It is clear from the evidence that balance sheet approach contains estimation errors so it is better to measure accruals from cash flow approach to get fair results. Accrual anomaly should be rechecked in developed markets like NYSE etc. by measuring accruals from cash flow approach. Alternative measure of accruals like inventory, liability etc. should be used to study the relationship between accruals and future stock returns.

References

Allen, E. J., Larson, C. R., & Sloan, R. G. (2011). Accrual reversals, earnings and stock returns. *Kellogg School of Management*, Working Paper

Boubakri, F. (2012). The Relationship between Accruals Quality, Earnings Persistence and Accruals Anomaly in the Canadian Context. *International Journal of Economics and Finance*, *4*(6), p51.

Dechow, P. M. (1994). Accounting earnings and cash flows as measures of firm performance: The role of accounting accruals. *Journal of accounting and economics*, *18*(1), 3-42.

DeFond, M. L., & Park, C. W. (2001). The reversal of abnormal accruals and the market valuation of earnings surprises. *The Accounting Review*, *76*(3), 375-404.

Driscoll, J. C., & Kraay, A. C. (1998). Consistent covariance matrix estimation with spatially dependent panel data. *Review of economics and statistics*, *80*(4), 549-560.

Healy, P. M. (1985). The effect of bonus schemes on accounting decisions. *Journal of accounting and economics*, *7*(1), 85-107.

Hirshleifer, D., Hou, K., & Teoh, S. H. (2009). Accruals, cash flows, and aggregate stock returns. *Journal of Financial Economics*, *91*(3), 389-406.

Hribar, P., & Collins, D. W. (2002). Errors in estimating accruals: Implications for empirical research. *Journal of Accounting research*, 105-134.

Lewellen, J., & Resutek, R. J. (2014). Why do accruals predict earnings? *Tuck at Dartmouth*, Working paper.

Livnat, J., & Santicchia, M. (2006). Cash flows, accruals, and future returns. *Financial Analysts Journal*, *62*(4), 48-61.

Mahmood, I., & Ali, S. Z. (2011). Implications of Accrual and Growth Anomalies for Future Profitability—A Case Study of Karachi Stock Exchange. *Economics and Finance Review*, *1*(7), 01-09.

Mohammad, J., & Javid, A. Y. (2015). *An Analysis of Accrual Anomaly in Case of Karachi Stock Exchange* (No. 2015: 116). Pakistan Institute of Development Economics.

Richardson, S. A., Sloan, R. G., Soliman, M. T., & Tuna, I. (2002). Information in accruals about earnings persistence and future stock returns. *Ann Arbor*, *1001*, 48109-1234.

Sehgal, S., Subramaniam, S., & Deisting, F. (2012). Accruals and cash flows anomalies: evidence from Indian stock market. *Investment Management and Financial Innovation*, *9*(4), 49-59.

Sloan, R. (1996). Do stock prices fully reflect information in accruals and cash flows about future earnings? (Digest summary). *Accounting review*, *71*(3), 289-315.

Teoh, S. H., Wong, T. J., & Rao, G. R. (1998). Are accruals during initial public offerings opportunistic?. *Review of Accounting Studies*, *3*(1-2), 175-208.

Zhang, X. F. (2007). Accruals, investment, and the accrual anomaly. *The Accounting Review*, *82*(5), 1333-1363.

Appendix:

This section first discusses the results of LR test for Heteroskedasticity and Housman test applied on first model.

1. **Result for LR test:**

Likelihood-ratio test	LR chi2(99) = 916.12
(Assumption: homo nested in hetero)	Prob > chi2 = 0.0000

Result is indicating that hetero does exist in the model as probability is significant. So to remove it robust method should be used.

2. **Results for Housman test:**

	Coefficients			
	(b)	**(B)**	**(b-B)**	**sqrt(diag(V_b-V_B))**
	fe	**re**	**Difference**	**S.E.**
ACC$_{t-1}$	.3242463	.3450846	-.0208382	.1595762
G$_t$	-.4078456	-.2521202	-.1557254	.0648108
S$_t$	.2252226	-.0097153	.2349379	.0371378
CSL$_t$	.8053935	.7879978	.0173958	.2617643

b   = consistent under Ho and Ha; obtained from xtreg

B   = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

chi2(4) =   (b-B)'[(V_b-V_B)^(-1)](b-B)   =   55.96

Prob>chi2   =   0.0000

As probability is significant so we rejected the null hypothesis. It means Fixed Effect method is better to use.