**VALUE RELEVANCE OF ACCRUALS IN CORPORATE SECTOR OF PAKISTAN**

By

Anam Tahir

Thesis submitted to the Lahore School of Economics
in partial fulfillment of the requirements for the degree of
MPhil
2012

Word Count: 18,515

Supervised by: Dr. Nawazish Mirza

# Acknowledgement

*I would like to express my sincere gratitude for my M Phil thesis supervisor, Dr. Nawazish Mirza. His dedicated supervision, encouragement and advice have motivated me to incline towards further research. I am truly indebted to him for his sincere support. I want to thank all my professors who have guided me throughout the course of this research and my academic career.*

*I would like to thank my Parents, my in Laws and my sisters for their continued support and love. Finally, my loving thanks to my husband Yousaf for being so supportive and motivating me every time I wanted to give up. All my success, I owe it to my family.*

# Abstract

Valuation of business entities has traditionally been backed by careful assessment of earning components. This study aims to test for value relevance of accruals in determining earnings quality. Quality of accounting information is crucial for financial success of any business entity. We aim to test for predictive powers of two basic earning components namely cash flows and accruals. All financial market models focus primarily on predicting cash flows with minimum error. The role of accruals in determining earnings quality has largely been ignored. Accounting literature has widely tested for predictive abilities of these two earnings components.

This study will provide users of financial statements-analysts, investors and creditors' information that needs to be carefully scrutinized for predicting future earnings performance and stock returns. Loss of precious information about earnings may arise if large numbers of investors are fixated on cash flows and ignore information in accruals. It will provide investors interested in investing in corporate sector of Pakistan, an idea as to what variables they need to analyze before making their investment decisions. It has relevance for shareholders, auditors and policy makers too, as it will provide an insight in to how and through what variables managers can take advantage of subjectivity associated with accrual components of earnings. The research findings of this study will have policy and academic implications.

This study confirms the previous findings of lower persistence of accruals compared to cash flows in determining future earnings quality. The reason underlying this is that accruals are not as reliable as cash flows. Entities might manipulate accruals to make their financial reports

attractive for investors. This makes accruals a subjective accounting head as it solely depends on management's discretion and their assumptions.

However, stock prices do not instantaneously reflect different predictive abilities of accruals and cash flows. Investors tend to overweight accruals and underweight cash flows when forming future earnings expectations. They ignore the fact that accruals have lower predictive ability as compared to cash flows due to subjectivity and lower reliability associated with them. As a result, high accrual firms earn negative abnormal returns in future and vice versa.

# Index of Abbreviations

| | |
|---|---|
| CAc | Current Accruals |
| CF | Cash Flows |
| COA | Current Operating Assets |
| COL | Current Operating Liabilities |
| EBITDA | Earnings before interest taxes depreciation and amortization |
| EMH | Efficient Market Hypothesis |
| ISE | Islamabad Stock Exchange |
| KSE | Karachi Stock Exchange |
| LSE | Lahore Stock Exchange |
| NCAc | Non Current Accruals |
| NCOA | Non Current Operating Assets |
| NCOL | Non Current Operating Liabilities |
| NI | Net Income |
| R | Returns |
| RNOA | Return on Net Operating Assets |
| TAc | Total Accruals |
| TACC | Total Accruals |
| TCF | Total Cash Flows |
| WCA | Working Capital Accruals |
| WCCF | Working Capital Cash Flows |

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## Chapter 1

## 1. Introduction

Traditionally, accounting numbers are considered relevant for valuation purposes of any business entity. In accounting, cash basis and accrual basis accounting are the two methods used for recording financial transactions. The difference between the two accounting methods lies in the timing of recording transactions. In cash accounting, revenues and expenses are recorded when cash is actually received from customers and paid to suppliers. Small firms and individuals usually use this method because of its simplicity. However, non cash financial transactions such as credit sales or purchases incurred during the period are recorded only when cash flows from these transactions occur. This makes the amounts of revenues and expenses subjective. As a result, reported earnings derived from this method do not represent the true earnings for given accounting period.

In contrast, the accrual accounting system recognizes financial transactions at the time; they are incurred, irrespective of timing of cash flow. It generally involves accruing expected future cash receipts and disbursements and deferring past cash receipts and disbursements. Revenues earned during a period are recognized and matched with related expenses in the corresponding period. The basic purpose of recognizing revenues in the period when they occur and matching them with the related expenses is to reduce the mismatching problem, making accounting numbers more accurate. Thus accounting numbers such as earnings and cash flows derived from accrual accounting are expected to be more relevant to stakeholders.

Various studies highlight the underlying reasons behind the development of accrual accounting method. The need for accrual accounting system was derived from industrial revolution which precipitated business growth causing greater degree of complexity in business transactions (Sharma, 2001). Additionally there was a need to mitigate the timing and matching problems inherent in cash flows, in order to measure a firm's performance[1]. Financial success of any entity is measured by its ability to generate cash. However, reporting of cash receipts and payments has timing and matching problems that cause cash flows to be a noisy measure of firm performance. Under continuing entity assumption, companies are assumed to operate without discontinuing. So in order to measure their performance, companies need to slice time in to small segments and report their progress for each specific period. Companies which record only cash transactions would have problems when the transaction involves more than one period of recording. This is why companies have to deal with credit transactions. For

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[1] Cheng et al (1997), Dechow (1994).

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instance, if a company purchases assets on credit, the payment will be made in the next period which does not match the period of purchase. If the company records only cash transactions, the report will not show the cost at the time business purchased the assets. This incomplete information would give an inaccurate measurement of firm's performance.

Accrual accounting is considered to be the standard accounting practice for most companies now a days and the underlying reason behind this is that this method provides an overview of company's financial health with greater precision.

In accrual accounting, revenues and expenses reported in accounting period are not always accurate. When the financial transactions take more than one accounting period to complete, a portion of revenues and expenses to be recognized in transaction period needs to be estimated. These estimated amounts are referred to as accruals or in simple terms accruals are adjustments made to financial statements for which cash is either received or paid out in future. For instance, a service firm that sells services that take more than one period to complete and issues invoices to its customers when the services are completed, need to estimate the apportionment of revenues and expenses to be recognized in the transaction period. Similarly, whenever a good or service is sold on credit a portion of receivable might not be collected and therefore be written off as bad debt expense. As the amount of bad debt is not known in advance, the selling firm estimates the amounts of debts it might not collect. The amounts of revenues and expenses calculated in these two examples are referred to as accruals.

Accruals have been traditionally categorized as asset and liability accruals. An asset refers to a resource that belongs to a company as a result of past financial transactions. Assets represent future benefits including cash that is expected in the future. They can be divided in to two categories according to their longevity, current and noncurrent assets. In addition to cash, current assets include accounts receivable, inventories, prepayments and other assets that can be converted into cash within twelve months of the reporting date. In contrast, non-current assets refer to assets that will not be converted into cash within next twelve months after the end of the financial year, such as land and buildings, plant and equipment and intangible assets, including goodwill. Asset accruals refer to accruals related to revenues of the entity include accounts receivables that are accrued earnings for a task that has been done but income will be received in next accounting period.

A liability refers to a present obligation of a company as a result of past financial transactions and which the company is expected to pay for in cash or other economic benefits in the future. Liabilities can also be categorized into current and non-current. Current liabilities include accounts payable, short-term debt and other liabilities that will be paid within one year, while non-current liabilities include long-term debts that will not be paid within the next twelve months. Liability accruals are the ones related to expenses incurred by an entity or accrued expenses. Accrued expenses or accounts payables are the ones that have been incurred but are yet to be paid for example wages, interest, taxes, bills etc.

All these cash and non cash transactions are recorded to come up with net earnings for any given accounting period. Accounting literature segregates earnings into

two main accounting components namely cash flows and accruals. In accrual accounting, cash flows from a transaction refer to cash that is immediately received or paid out. In contrast, accruals refer to transactions for which payments or receiving of cash will be deferred to next accounting period.

Key difference between accruals and cash flows has been highlighted by both International Accounting Standard Board (IASB) and Financial Accounting Standard Board (FASB)[2]. Cash component of earnings or cash flows are considered to be both reliable and relevant measure of earnings as they are recorded when the transaction has occurred. As opposed to this, non cash component or accruals are only relevant measure of earnings but not reliable as they involve subjectivity which implies that the reporting of accruals is simply based on manager's discretion. They might over estimate or under estimate accruals in order to get desired reported earnings. Estimation of accruals is based on a set of assumptions that are defined by the management based on their targeted goals for any financial year. Subjectivity of accruals can be understood from the fact that managers while estimating asset accruals might make over optimistic assumptions thus making revenues biased. On the other, managers are very prudent in estimating amounts of payables they need to pay back thus making liability accruals relatively less biased.

Additionally under Generally Accepted Accounting Principles (GAAP), the estimation of accruals is subject to managerial discretion. Several studies hypothesize that managers could use their discretion to estimate accruals as a tool to convey private information about their firm's future profitability[3]. According to this view, when a firm's

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[2] IASB refers to British accounting standards whereas FASB refer to American Standards. For this study, IASB framework is much more relevant as it is practiced widely in Pakistan.
[3] Holthausen and Leftwich (1983); Healy and Palepu (1993); Subramanyam (1996); Guay et al (1996).

operating activities are expected to increase due to a permanent increase in cash flows from positive NPV projects or better financial contracts, the firm's manager uses accruals to reveal this private information to the investors in the market. Conflicts of interest between managers and stakeholders could induce managers to use their discretion over accruals to manipulate earnings for their own benefit.

The literature currently identifies four incentives for managers to manipulate accruals. First, managers are likely to manipulate accruals to maximize their own compensation and to maintain their job security[4]. Second, several firms close to breaking debt covenants have been found to manage accruals in order to avoid default or to reduce the likelihood of future covenant violations[5]. Third, several firms are reported to understate accruals to take advantage of government regulations or to avoid regulatory scrutiny[6]. Finally, several studies find evidence consistent with managers intentionally increasing accruals around equity issues (and decreasing accruals prior to equity repurchases in an attempt to manipulate the market's short term perception with respect to the firms' stock price[7].

While evidence of opportunistic judgment on accruals has been substantially documented in the literature, empirical evidence supporting the hypothesis that managers deliberately use accruals to communicate private information regarding future firm performance to the market is scarce and inconclusive (Subramanyam (1996); Guay, et al. (1996); Louis and Robinson (2005).

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[4] Healy (1985); Holthausen et al. (1995); DeFond and Park (1997).
[5] DeFond and Jiambalvo (1994); Sweeney (1994)
[6] Jones (1991); Key (1997); Navissi (1999)
[7] Teoh et al. (1998); Rangan (1998); Louis (2004)

The concept of relevance and reliability of these two accounting measure of earnings need to be cleared at this stage based on the widely prevalent accounting standards.

Both IASB and FASB have almost similar definitions of relevance and reliability. According to IAS Framework accounting information is considered to be relevant when it influences the economic decisions of users by helping them evaluate past, present or future events. Relevance of information is affected by its nature and materiality, noting that materiality provides a threshold or cut off point rather than being a primary qualitative characteristic. FASB highlights that accounting information is relevant if it is capable of making a difference in a decision by helping users to form predictions about the outcomes of past, present or future events or to confirm or correct expectations. Accounting information in simple terms is relevant if it is timely and it has an analytical value.

According to accounting standards, reliability comprises of representational faithfulness, verifiability, and neutrality, with an overlay of completeness, freedom from bias, precision and uncertainty. To be reliable, information must be neutral and verifiable. The importance of reliability along with relevance cannot be denied as both make accounting information more useful for decision making.

Research on reliability and predictive powers of various earning components with respect to accrual accounting was first conducted by Sloan in 1996. He reported that accruals have lower predictive ability than cash flows in determining future earnings

performance[8]. Based on this finding, growing literature in accounting assumes and has confirmed lower accrual persistence and this lower persistence forces manager to engage in opportunistic behavior. Sloan (1996) documents that stock prices do not instantaneously reflect different predictive abilities of accruals and cash flows. Investors tend to overweight accruals and underweight cash flows when forming future earnings expectations. They ignore the fact that accruals have lower predictive ability as compared to cash flows due to subjectivity and lower reliability associated with them. As a result, high accrual firms earn negative abnormal returns in future and vice versa. This phenomenon has been named as accruals anomaly in literature. Accrual anomaly refers to making investment decisions based on accruals and earning abnormal returns thus leading to security mispricing.

This study is based on the basic framework underlying accrual accounting. FASB and IASB also explicitly assert that the primary objective of financial reporting is to provide investors and other stakeholders an insight into financial health of the entity. Rational motive of every investor is to earn sufficient returns assuming some level of risk. Investors carefully examine earnings of an enterprise to make their investment decisions. Based on current earnings performance, investors predict future earnings of the enterprise and stock returns. The ability of a company to generate cash flows is reflected in value of shares. Stock price is a contingent claim on future earnings of the enterprise. Future earnings or cash flows associated with any investment are of great interest for investors because the value of their investment today is actually the present value of future cash flows to them through investing in a company.

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[8] Specifically, Sloan (1996) and Xie (2001) document an on-average smaller coefficient on accruals than cash flows, in regressions with future earnings as the dependent variable.

Based on the theoretical underpinnings explained above, we find that the extent to which current earnings performance affects future earnings of an entity is crucial. So is the impact of current earnings on future stock returns. Secondly based on literature, we develop that current earnings has two components namely accruals and cash flows[9].

The importance of accruals in determining earnings quality and future stock returns thus cannot be denied. Investors are basically interested in earning returns on their investments. So for this purpose, they scrutinize the earnings and its components of an enterprise thus developing expectations about the returns. All financial market models focus primarily on predicting cash flows with minimum error[10]. The role of accruals in determining earnings quality has largely been ignored. Accounting literature has widely tested for predictive abilities of these two earnings components. It has been highlighted that accruals have lower persistence or predictive ability as compared to cash flows in determining future earnings performance of the entity[11]. Different studies have supported these findings with different arguments but the most common of all is that accruals are not as reliable as cash flows. Entities might manipulate accruals to make their financial reports attractive for investors. This makes accruals a subjective accounting head as it solely depends on management's discretion and their assumptions.

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[9] Livnat & Santicchia (2006), Richardson et al (2005), Richardson et al (2006), Dechow et al (1995). For more on this please see literature review.
[10] Discounted cash flows model, Economic Value Added model, Constant Growth Model.
[11] Sloan (1996), Richardson et al (2005), Richardson et al (2006).

## 1.1 Accounting Standards in Pakistan

In Pakistan, International Accounting Standards (IAS) are practiced for financial reporting and disclosures. The Institute of Chartered Accountants of Pakistan (ICAP) plays the major role in setting accounting standards in Pakistan. With regard to compliance with IAS, the Securities and Exchange Commission of Pakistan (SECP) is empowered under section 234 of the Companies Ordinance to prescribe appropriate international accounting standards. SECP issues notifications of the accounting standards based on the recommendations of ICAP.

ICAP had issued the following revised statement to ensure compliance with the IAS in its circular No. 01/2003 dated 24 February 2003:

*"These financial statements have been prepared in accordance with approved accounting standards as applicable in Pakistan and the requirements of Companies Ordinance, 1984. Approved accounting standards comprise of such International Accounting Standards as notified under the provisions of the Companies Ordinance, 1984. Wherever the requirements of the Companies Ordinance, 1984 or directives issued by the Securities and Exchange Commission of Pakistan differ with the requirements of these standards, the requirements of Companies Ordinance, 1984 or the requirements of the said directives take precedence"*

Most International Accounting Standards (IAS) are accepted in full.

**[Insert Table 1 about here]**

Few of IAS has not been implemented in Pakistan to date and some standards are accepted with slight amendments to suit the needs of Pakistan.

**[Insert Table 2 & 3 about here]**

International Accounting Standards rest on accrual accounting system. Since this study is related to the listed companies in Pakistan stock exchange, so the underlying relevant accounting standard must be identified and understood at this stage.

IAS 18 focuses on revenue recognition and reporting of accruals. According to IAS 18, revenue is recognized when it is probable that future economic benefits will flow to the entity and these benefits can be measured reliably. This Standard identifies the circumstances in which these criteria will be met and, therefore, revenue will be recognized. Under the standard revenue is defined as the gross inflow of economic benefits during the period arising in the course of the ordinary activities of an entity when those inflows result in increases in equity, other than increases relating to contributions from equity participants. The standard is applied for revenue arising from:

a. The sale of goods

b. The rendering of services

c. The use by others of entity assets yielding interest, royalties and dividends.

The recognition criterion is applied separately to each of the transaction. However, in certain circumstances, it is necessary to apply the recognition criteria to the separately identifiable components of a single transaction. For example, when the selling price of a product includes an identifiable amount for subsequent servicing, that amount is deferred and recognized as revenue over the period during which the service is

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performed. Conversely, the recognition criteria are applied to two or more transactions together when they are linked in such a way that the commercial effect cannot be understood without reference to the series of transactions as a whole. For example, an entity may sell goods and, at the same time, enter into a separate agreement to repurchase the goods at a later date, thus negating the substantive effect of the transaction; in such a case, the two transactions are dealt with together[12]. Lastly, revenues will always be recorded at fair value.

## 1.2 Research Rationale

In this study we aim to test for value relevance of accruals in Pakistan corporate sector. Value relevance is the measure of investor perception of the reliability of corporate financial disclosure. It is an instrument to estimate quality of accounting information which is of prime importance to investors[13]. This study will add to growing body of evidence on reliability of accruals especially for developing countries. Through this study, we would be able to comment on the extent to which accruals are important in determining future earnings in Pakistan's listed companies.

It will provide users of financial statements-analysts, investors and creditors' information that needs to be carefully scrutinized for predicting future earnings performance and stock returns. Loss of precious information about earnings may arise if large numbers of investors are fixated on cash flows and ignore information in accruals. It will provide investors interested in investing in corporate sector of Pakistan, an idea as

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[12] Technical summary of IAS 18 published by IASC Foundation Staff.
[13] Khanagha et al (2010)

to what variables they need to analyze before making their investment decisions.    The research findings of this study will have policy and academic implications.

This study will facilitate shareholders and auditors in analyzing the management's role. Literature currently identifies four incentives for managers to manipulate accruals. Firstly, managers are likely to manipulate accruals to maximize their own compensation . (Healy (1985); Holthausen et al. (1995); DeFond and Park (1997)). Secondly, firms close to breaking debt covenants have been found to manage accruals in order to avoid . (DeFond and Jiambalvo (1994); Sweeney (1994)). Thirdly, several firms are reported to understate accruals to take advantage of government regulations. (Jones (1991); Key (1997); Navissi (1999)) and lastly, several studies find evidence consistent with managers intentionally increasing accruals around equity issues . (Teoh et al. (1998); Rangan (1998); Louis (2004)). So keeping these underlying reasons in mind, owners of corporations may be able to develop strategies that reduce the likelihood of management manipulating accruals for their own benefits.

Considerable research on accruals reliability has been conducted in the developed world. In Pakistan, no such study on accruals reliability and their value relevance has so far been done. So this leaves us with ample domain to conduct our research.

Pakistan has three stock exchanges namely Karachi Stock Exchange (KSE), Lahore Stock Exchange (LSE) and Islamabad Stock Exchange (ISE). The largest is KSE that was established in 1947. It has largest market capitalization, trading volume and the most liquid market in Pakistan. The other two exchanges by and large follow the trading

patterns of KSE. Table 4 depicts the correlation between three stock exchanges of Pakistan.

**[Insert Table 4 about here]**

Over the past decade KSE has experienced tremendous growth and was awarded as the best performing emerging stock market of the world in 2002 by business week. Table 5 reports the decade wise performance of KSE.

**[Insert Table 5 about here]**

KSE was generally following an upward trend from 2003 to April 2008. The market was bullish in 2005. This bullish trend can be attributed to stable macro economic conditions, growth in mutual fund industry, and high investor confidence. Additionally large amounts of foreign inflows were observed thus leading to greater activity in the stock market. However in 2008 KSE took several nose dive corrections and the major reason behind them were deteriorating law and order with political instability. In early 2008 the prices of crude oil along with other commodities were at a record high which led the beginning of recession worldwide. In April 2008 KSE was generally following a downward trend due poor economic situation which led to an increase in inflation followed by a rise in the interest rates and liquidity crunch in the KSE.

**[Insert Table 6 about here]**

This study attempts to provide investors an idea as to what variables they need to analyze before making their investment decisions. Two important variables under consideration are the cash flows and accruals. Through this study we would be able to

comment on the predictive power of these two earning components. Current literature has widely tested for the predictive powers of these two components in the developed world companies and the key finding is that cash flows generally have greater predictive powers than accruals. Accrual component of earnings is prone to greater estimation errors. This study will give an insight in to variables that shouldn't be ignored before making investment decisions about companies' listed on KSE.

**Chapter 2**

**Literature Review**

There is exhaustive literature on the accruals anomaly in the developed world. However, corporations of developing countries like Pakistan have not been analyzed mainly because of non availability of data publicly. Over time regulatory authorities have made it mandatory for all enterprises; financial or non financial to report their financial health to its stakeholders. This has thus opened new avenues for research on economic situations of corporations as well as financial institutions. Listed below is the brief literature review of studies done on accruals anomaly.

Sloan (1996) is considered to be the pioneer of the earnings persistence studies with regard to its components namely accruals and cash flows. All the subsequent studies have either proved or criticized Sloan's findings. He investigated whether stock prices and

future earnings reflect information contained in the accruals and cash flow component of current earnings. They tested the impact of cash flows and asset accruals separately on future earnings and future stock returns using ordinary least squares technique. The study employed financial statements data for 30 years from 1962 to 1991. According to this study the persistence of earnings performance is shown to depend on the relative extents of the cash and accrual component of earnings. However stock prices show that investors fail to identify correctly the properties of the two key earnings components. He reported that growing accruals are leading indicators of deterioration in earnings and stock returns as compared to cash flows. Thus accruals have lower predictability to estimate earnings quality.

According to Sloan (1996) earnings quality implies earnings persistence or predictability of earnings. Investor expectations do not incorporate the greater subjectivity of accruals versus cash flows thus leading to accruals anomaly. By overestimating the effect of accruals and underestimating the effect of cash flows in forming their expectations, investors under estimate one period ahead earnings of low accrual firms and over estimate one period ahead earnings of high accrual firm, thus leading to stock mispricing as earnings are the key variables in forecasting future stock returns. Cash flows are more persistent or sustainable component of earnings. Primary reason for low predictive ability of accruals is their subjectivity. Accruals are only considered to be relevant in determining the earnings whereas cash flows are both reliable and relevant measure.

Lastly Sloan (1996) reported that a trading strategy that holds long position in low accrual firms and short position in high accrual firms tend to make abnormal profits over

subsequent three years. The stock price results were inconsistent with the traditional efficient market's view that stock price fully reflect all publicly available information. However Sloan in his study reported that inconsistency of stock prices with EMH does not necessarily imply investor irrationality and existence of unexploited profit opportunities.

Richardson et al (2006) extended the work done by Sloan (1996). He analyzed the source of information in accruals about earnings persistence. The key purpose was to compare the accrual component of earnings with the cash component of earnings. They extended the analysis of accruals from a subset of accruals considered by Sloan (1996) to all accruals relating to firm operating activities. The asset and liability accruals were analyzed separately. They reported that the information in accruals about earnings is not limited to current accruals only. Instead noncurrent accruals are much more relevant in analyzing or predicting about the earnings. Liability accruals play a unique role in extracting information about earnings persistence from asset accruals. Lastly they reported that accruals are negatively correlated with future stock returns.

Likewise, accruals anomaly was analyzed by Bradshaw et al (2001). He investigated whether professional financial intermediaries expect a fall in earnings and prices experienced by firms with high accruals. The sample consisted of 66762 firms' years from 1988 to 1998. They employed ordinary least squares to analyze the impact of accruals and cash flow components of current earnings performance on future earnings performance. Two set of accruals namely working capital accruals and total accruals were considered for this study. The corresponding dependant variables were earnings before interest, taxes, depreciation and amortization (EBITDA) and earnings before

extraordinary items (EBXI). They concluded that firms with unusually high working capital accruals are more likely to experience declines in subsequent earnings performance. Analysts nor the investors do not fully anticipate the negative implications of high accruals.

Barth et al (2001) analyzed the role of accruals in predicting future cash flows. Financial Accounting Standard Board (FASB) asserts that information about earnings and its components is generally more predictive of future cash flows than current cash flows. This study aimed to look at the ability of various components of earnings and the extent to which they can predict future cash flows. Various explanatory variables were considered to analyze future cash flows as measured by net cash flow from operations. These included earnings before extra ordinary items and discontinued operations, change in accounts receivables, change in inventory, change in accounts payable, depreciation, amortization, and other accruals. The sample like all other studies excluded firms that offer financial services. The final sample included 10,164 firm year observations. They reported that disaggregating earnings in to cash flows and six major accrual components as listed above, significantly enhances predictive ability of earnings. Long term accruals most importantly depreciation of tangible assets and amortization of intangible assets also have predictive ability for future cash flows. The findings are robust to predicting cash flows several years in the future and using share prices, returns or discounted cash flows as a proxy for future cash flows.

Richardson et al (2005) extended the work of Sloan (1996) by linking accrual reliability to earnings persistence. This study highlighted the tradeoff between relevance and reliability.  The sample was from 1962 to 2001. Ordinary least squares technique was

applied to analyze the impact of this period earnings as measured by return on assets and total accruals on next period earnings. Extended accrual decomposition model regressed next period earnings over change in return on assets, change in current operating assets, change in current operating liabilities, change in non current operating assets, change in non current operating liabilities, change in short term investments, change in long term investment, change in financial assets and change in financial liabilities. They reported that less reliable accruals lead to low earnings persistence and investors do not fully anticipate this, thus leading to security mispricing. Secondly, accrual categories that have been ignored by previous research have particularly low reliability. Thirdly, magnitude of security mispricing related to accruals is significantly greater than originally documented by Sloan (1996) in his study.

Accruals anomaly was further studied by Xie (2001). He investigated whether stock prices incorporate the affect of accruals and next year earnings. He reported that accrual anomaly is driven by the mispricing of abnormal accruals. According to him, abnormal accruals are subject to manager's judgment. He decomposed earnings in to discretionary and non discretionary component and found that discretionary component is transitory, suggesting that investors misunderstand potential earnings management. The above results were also confirmed by Defond and Park (2001). Beneish and Vagus (2002) reported that accruals anomaly arises mainly because of mispricing of income that increases because of overestimated accruals. Thomas & Zhang (2002) attributed the accruals anomaly to investors' failure to correctly understand the importance of inventory changes. Inventories were found to be most important of all accruals.

Lev and Nissim (2005) hypothesized that once sophisticated investors are aware of the accruals anomaly, they might learn ways to arbitrage the anomaly and make abnormal profits. They reported that institutions and investors are unable to take trading advantage from high accrual firms due to high information and transaction costs associated with implementing a consistently profitable accruals strategy. Thus they found that accruals anomaly persists.

Dechow et al (2008) investigated whether the persistence of cash component is influenced by management's decision to retain or distribute cash flows. This study actually distinguished between three different categories of the use of cash, namely cash retained by firm in its cash balance, cash distributed to debt holders and finally equity holders. In order to test this research question, authors tested net income as a function of change in annual cash balance, annual net distribution to capital providers, annual net distribution to equity holders and annual net distribution to debt holders. They reported that investors correctly price cash flows relating to equity and debt distributions. The higher persistence of cash component of earnings is entirely attributable to cash that is distributed to equity holders. Stock prices act as if investors anticipate the persistence of earnings that is distributed to debt and equity holders, but over estimate the persistence of earnings that is retained on the balance sheet. This basically suggested that investors are likely to be overly optimistic about investment opportunities of firms that are building their asset bases and retaining capital. This has implications both for analysts and investment bankers.

Collin et al (1999) used quarterly data to study the accrual pricing anomaly documented by Sloan (1996) and whether this form of market mispricing is distinct from

post earnings announcement drift anomaly. A hedge portfolio trading strategy that exploits both forms of market mispricing generates abnormal returns in excess of those based on expected earnings, accruals or cash flow information alone. They reported that market appears to overestimate the persistence of accrual component of quarterly earnings and therefore tend to overprice accruals. Lastly they found that accrual pricing anomaly is distinct from post earnings announcement drift.

Allen et al (2009) analyzed the properties of accruals. Extreme working capital accruals are followed by disproportionately high frequency of extreme accrual reversal in next year. This study highlights negative relation between accruals and both future changes in earnings and future stock returns. So this study corroborates Sloan's (1996) study. Accruals are based on accountants' subjective estimates of future cash flows and so contain measurement error. Extreme accruals are more likely to be attributable to measurement errors and hence are associated with accrual reversals. Investors do not appear to understand this so react to accrual reversals and thus earnings changes.

Livnat and Santicehia (2006) used quarterly earnings data to analyze accruals anomaly. They investigated whether quarterly earnings exhibit same patterns as found in prior studies of annual accruals. They concluded that quarterly accruals tend to have less persistence than net operating cash flows with respect to future quarterly earnings. Secondly, companies with extremely high accruals tend to have low future earnings than companies with same levels of current earnings but higher net operating cash flows.

Presence of accrual anomaly indicates that investors on average do not fully comprehend the lower persistence of accruals relative to cash flows. Evidence on

exploitation of anomaly by certain set of informed investors such as legally defined insiders (Beneish and Vargus, 2002) institutional investors (Lev and Nissim, 2006) and short sellers (Zhang and Cready, 2007) suggested heterogeneous interpretation of accruals across investors resulting in exacerbated information asymmetry in market.

Was an and Boone (2010) investigated whether accruals are associated with higher transaction costs as evidenced in the adverse selection component of the bid ask spread. This study was motivated by market micro structure literature that stated higher information asymmetry leads to higher transaction costs (O'Hara, 1995). It employed a sample of 3912 firm year observations from 1995 to 2002. The impact was examined both in a yearly setting and around the first release of quarterly accrual information. The results of this study provided empirical evidence of a positive association between adverse selection component and accruals in a yearly analysis. Wider bid ask spreads are both theoretically and empirically linked to higher stock returns (Brennan and Subrahmanyam, 1996). This study indicated that transaction costs may be one possible factor underlying linkage between accruals and cost of equity capital.

Increase in cost of equity capital with abnormal accrual activity was observed by Bhattacharya et al (2003) and Francis et al (2005). Bhattacharya et al (2003) used accruals to measure the level of earnings aggressiveness and finds that firms with more aggressive earnings tend to have higher cost of capital. However, Francis et al (2005) documented an inverse relation between earnings quality and cost of capital. Leuz and Verrecchia (2000) noted that higher information asymmetry among investors reduces market liquidity forcing firms to sell their stock at a discount thus increasing their cost of equity capital.

Dechow and Dicher (2002) explained that accounting accruals constitute items that represent management's expectations of uncertain future events and thus are liable to some degree of measurement error. They reported that accruals might be biased to the extent that managers intentionally misrepresent their expectations to achieve private gain (i.e. manage earning) or convey their private information.

Henry (2004) observed that accounting accruals are nosey and biased measures of future events, investors must incur significant information processing sots to fully understand the valuation implications of the accruals. Such information processing costs include the cost to investor of becoming knowledgeable about accounting accruals.

Lobo et al (2011) analyzed how accruals quality affects the supply of and demand for analyst services accrual basis accounting requires managers to estimate the future economic consequences of current events, estimate future cash flows ad use judgment in allocating cash collections to current and future periods. The potential for estimation errors may result in lower quality accruals, which provide noisier signals about firm value and lead to information asymmetry between managers and investors. Accounting earnings provide less precise signals about firm value, so this increases the demand for private information. The authors reported that analysts' coverage is greater for firms which have greater operating uncertainty, which is measured by volatility in stock returns or cash flows. It was also observed that firms with lower accruals quality have more analyst coverage and they also have larger analyst forecast errors.

Ahmed et al (2006) empirically investigated whether the persistence of cash flow component of earnings is misestimated by analysts and investors or not. Secondly they

examined that whether the cash flow effect or accrual effect are distinct or not. Lastly, they tested the relative strengths of the magnitudes of these two effects. This study was conducted on a sample of 26700 firm year observations from 1989-2000. The authors reported that prior period operating cash flows have a significant positive effect on forecast errors and stock returns. This finding was consistent with analysts and investors underestimating the persistence of operating cash flows secondly, they reported that operating cash flow effect is distinct from accrual effect and is considerably larger in magnitude.

Prior to Ahmed et al (2006) various studies document that analysts underweight the information in prior period earnings and stock returns. For instance, Mendenhall (1991), and Ali (1992) documented that analysts underweight the information in prior period earnings. Consistent with their findings, Elliott et al (1995) showed that analysts do not revise their forecasts sufficiently to incorporate prior information. Above quoted studies also reported underweighting of information in prior period returns.

Xu (2010) investigated whether management earnings forecasts fully reflect the implications of accruals for future earnings. He examined whether managers overestimation of accrual persistence is affected by managerial optimism or litigation risk. The study employed a sample of 8244 firm quarter observations from 1997 to 2005. Management forecast error was tested as a function of total accruals, firms long term debt, merger and acquisition activity, firms net insider transactions by CEO and CFO, probability of litigation risk, size adjusted stock returns and analysts earnings forecasts. Key findings of this study were that managers overestimate accrual persistence in range forecasts and managers accrual related forecast bias increases with forecast horizon.

Secondly, Xu suggested that managers overestimate accrual persistence when faced with greater difficulty in forecasting earnings. Lastly, it was reported that managers accrual related forecast bias is somewhat affected by managerial opportunism and fear of litigation.

When analysts provide forecasts of both earnings and operating cash flows, they also implicitly provide a forecast of total operating accruals. McInnis and Collins (2010) hypothesized that this forecast increases the transparency and the expected costs of accrual manipulations used to manage earnings. The tests for this hypothesis were conducted on firms for which analysts began providing cash flow forecasts. The authors founds that accrual quality improves firms propensity to meet or beat earnings benchmarks declines following the cash flow forecasts. It was also observed that after the provision of cash flow forecasts, firms place greater emphasis on some forms of real transaction. Another key finding highlighted by authors was that issuance of cash flow forecasts leads to a decline in economic performance of firms.

Elgers et al (2003) examined whether financial analysts forecasts of annual earnings exhibit an overweighting of working capital accruals that is similar in magnitude to the overweighting by investors as documented by Sloan (1996) and Bradshaw et al (2001). Basically the purpose was to evaluate whether analysts earnings forecast bias is similar in direction and magnitude to the bias by investors that is implied by delayed securities returns associated with accruals. The empirical analysis employed all December fiscal year firm years available from the intersection of the I/B/E/S US summary database updated through may 2000 and 1999. The results indicated that the overweighting of working capital accruals in analysts' earnings forecasts is less than one third of the over

weighting by investors that is implicit in stock prices. This implied that securities market inefficiencies that are unrelated to financial analyst's earnings forecasts underlie at least part of accruals related anomaly.

Xu and Lacina (2009) examined the accrual anomaly under the framework of Campbell (1991). The purpose was to adopt Easton (2004) approach to simultaneously estimate expected returns and future earnings growth using stock price and analysts earnings forecasts. Future expected growth was used to proxy expected cash flow growth. The results showed that firms with low accruals have lower expected returns than firms with high accruals, which was contradictory to prior research that argued that firms with low accruals are more risky. However, it was found that investors underestimate (overestimate) future earnings growth for low (high) accrual firms. Further analysis demonstrated that earnings news (proxy for cash flow news) plays a major role in explaining abnormal returns associated with accruals anomaly.

Beaver (1998) White et al (2002) and Graham and Dodd (2005) developed that the predictive power of accruals in determining stock returns stems from theoretical information content of current earnings in predicting stock returns. Empirical results on the association between earnings and stock returns were first reported by Ball and Brown (1968) who found that unexpected earning changes are positively correlated with future stock returns. The findings of Ball and Brown were followed by numerous studies on the relationship between earnings and stock returns. For instance, Beaver et al (1980), Freeman et al (1982), Kormendi and Lipe (1987), Lev (1989), Beaver (1998), Kothari (2001) and Scott (2003).

According to Beaver (1998), the link between current earnings and stock returns depends on three assumptions. First, a stock price is assumed as the present value function of all expected future firm cash flows that are dividends in case of corporations. Stock valuations in all finance text books follow this standard model. Second, assuming that dividends are dependent on earnings, future dividends are dependent on future earnings. Similarly, a stock price can also be viewed as a function of the expected value of future earnings. Third, current earnings provide information not only about the current period of firm profitability but also information about future earnings. This assumption was supported by Finger (1994), who found that current earnings are significant predictors of future earnings.

The predictive power of current earnings with regard to future earnings thus depends on the permanence of the components of current earnings. Earnings consist of cash and accrual components. Unlike cash flows, accruals are temporary in nature and reverse in the following periods. Prior studies report that when future earnings are regressed on accruals and cash flows, the coefficients of accruals are statistically smaller than those of cash flows suggesting that when accruals are high (low) relative to cash flows, earnings performance is unlikely (likely) to persist (Sloan (1996), Bradshaw et al (2001) and Barth and Hutton (2004)). The temporary nature of accruals thus explains weak predictive power of current earnings on future earnings and means reversion of changes in earnings (Fama & French, 2000).

Elgers and Lo (1994) reported that market participants act as if they fixate on accounting earnings and do not distinguish the different effects of the accruals and cash flow components of current earnings on future earnings. As a result, the market seems to

under weigh the persistence of cash flows and to overweigh the persistence of the accruals component of current earnings. Accordingly, the market tends to overprice high accruals (low cash flows) stocks and to under price low accruals (high cash flows) stocks. Thus, the market's mispricing of the earnings components creates an opportunity to profit from an arbitrage investment strategy involving a short position in the highest accrual (lowest cash flows) firm portfolio and simultaneously holding a long position in the lowest accrual (highest cash flows) firm portfolio.

The predictability of stock returns based on the level of accruals is a contradiction to the efficient market hypothesis and is recognized in the literature as the accrual anomaly. According to Houge and Loughran (2000), accrual anomaly is reported to be robust to the three factor Fama and French model and is distinct from the post announcement drift anomaly. They observed that the accrual anomaly is mainly attributed to the discretionary accruals. In contrast, Desai, et al (2004) argued that the accrual anomaly is actually the value glamour anomaly in disguise. They reported that when the ratio of operating cash flows deflated by share price is used as an additional control variable, the abnormal return from the accrual anomaly disappears.

Pincus et al. (2007) reported that the accrual anomaly is not a global phenomenon. They found that the occurrence of this anomaly is related to specific legal and market characteristics of a country. In addition, Pincus et al. (2007) and Chan et al. (2006) found that the accrual anomaly is consistent with earnings management.

Schipper (1989) defined earnings management as "a purposeful intervention in the external financial reporting process, with the intent of obtaining some private gains".

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Earnings management occurs when managers use judgments in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers (Healy and Wahlen, 1999).

Subject to Generally Accepted Accounting Principles (GAAP) rules, managers have discretion in estimating accruals. This provides room for managers to deliberately bias the estimates of accruals, implying that, it is more likely that earnings management occurs through accruals than cash flows. Consequently, studies on earnings management typically hypothesized that managers manipulate the accrual component of earnings for their own benefit. Kothari (2001) stated that discretionary accruals and earnings management are used synonymously in the literature.

Literature suggests that earnings management is hard to observe phenomenon. Researchers in order to observe the occurrence of earnings management, usually examined accruals in relation to the incentive for earnings management. Four incentives to manipulate earnings are documented in the literature.

The first incentive is related to management compensation. Healey (1985) argued that managers have the incentive to manipulate earnings through accruals to maximize their bonuses. He reported that when the upper bound bonus plan has been reached, firms with binding upper bound bonus plans tend to defer income that exceeds the upper bound by decreasing accruals. He also observed that firms are likely to decrease accruals when income is below the lower bound of the bonus plan. However, when income is between the bonus plan upper and lower bound, firms accelerate income by increasing accruals.

Gaver et al. (1995) and Holthausen et al. (1995) extended Healey's study by examining the discretionary component of accruals as the earnings management variable. Using the Jones (1991) model to analyze accruals, Gaver et al. (1995), however, found evidence inconsistent with Healey's study. He found that firms with earnings below (above) the lower bound have positive (negative) discretionary accruals. Although their results were inconsistent with Healey's bonus plan maximization hypothesis, however they were consistent with the opportunistic income smoothing theory, which hypothesized that managers attempt to smooth earnings to avoid an increase in their target earnings.

Holthausen et al. (1995) employed the modified Jones model proposed by Dechow et al. (1995) to estimate the discretionary part of accruals. Similar to Healey (1985), Holthausen et al. reported that managers are likely to defer income when their bonuses are at their maximum. However, unlike Healey, they found no evidence of earnings management when earnings are below the threshold.

The second incentive for earnings management is associated with equity valuation. Theoretically, the role of financial managers is to maximize the wealth of the firm's shareholders. Conflict of interest however might influence managers to act in way that harms shareholders wealth. According to Holthausen et al. (1995) several corporate events such as equity issues and buybacks may provide incentives for managers to manage earnings in a way which results in expropriating the wealth of shareholders. Managers may decrease earnings prior to buybacks to give unfavorable signals to the market so that firm stock price becomes unattractive to investors, thus lowering the buyback price. Similarly, managers may also increase earnings around equity issues to

manipulate stock price to increase the proceeds from issuing equity, and according to the authors these manipulations are always done by manipulations in accrual component of earnings.

The literature documents evidence consistent with the hypothesis that managers manipulate earnings around equity issues or buybacks in an attempt to opportunistically influence short term stock performance. For example, Perry and Williams (1994) documented that management buyout firms report significantly negative discretionary accruals prior to the buyouts. Vafeas et al. (2003) investigated the earnings performance of self tender offering firms and observed that pre offer total accruals and discretionary accruals of repurchasing firms are lower than those of control firms. In addition, Vafeas et al. also found that the average changes in discretionary accruals of the repurchasing firms are positive in the year after the offers. They reported that the increase in discretionary accruals after the offers is weakly significant.

Gong et al. (2006) examined the association between the operating and stock performance of open market share repurchasing firms and the earnings management hypothesis. They observed that pre repurchase discretionary accruals of open market repurchasing firms are significantly negative. Consistent with earnings management, they found that the negative discretionary accruals significantly explain the positive future operating and stock performance of the repurchasing firms.

Rangan (1998) and Teoh et al. (1998) examined whether managers manipulate earnings prior to seasoned equity offerings (SEO). They argued that seasoned equity offerings provide managers with an incentive to increase earnings surrounding the offers

to portray a favorable picture of the firm in order to increase the proceeds from the offering. Rangan and Teoh et al. found that on average, discretionary accruals of seasoned equity firms increase significantly in the quarters surrounding the offers. Consistent with the earnings management hypothesis, Rangan and Teoh et al. reported that the firms' positive discretionary accruals in the issue year significantly explain the poor post issue stock performance.

Similar to the results on earnings management around seasoned equity offerings, Teoh et al. (1998b) reported evidence consistent with earnings management in the context of initial public offerings (IPO). They documented that around the offers, initial public offering firms report higher accruals than those of non issuers. More importantly, they also found that the pre issue positive discretionary accruals of the issuing firms are negatively associated with the poor post issue stock returns.

Louis (2004) argued that when managers decide to issue stock to finance an acquisition, they have an incentive to influence their firms' stock price by overstating earnings prior to the merger announcement. Using a performance adjusted discretionary accruals model, Louis observed that stock swap acquiring firms increase accruals in the quarter prior to a stock swap announcement. Louis also reported that future stock performance of stock acquirers is worse than that of cash acquirers. Consistent with managers manipulating earnings prior to stock swap mergers, Louis found that the positive pre announcement discretionary accruals significantly explain the poor future stock performance of stock acquiring firms.

The third incentive associated with earnings management is related to government regulations. Jones (1991) reported that, in an attempt to benefit from import relief regulations, managers understate earnings during import relief investigations by the United States International Trade Commission. Similarly, Key (1997) found that US cable TV firms report income decreasing accruals during periods of congressional scrutiny to mitigate political scrutiny and potential regulations associated with the rates they charged to their customers for basic service. Employing New Zealand data, Navissi (1999) reported that New Zealand manufacturing firms decreased earnings to take advantage of the Price Freeze Regulation introduced by the New Zealand government in the early 1970s.

The fourth incentive to manipulate earnings reported in the literature is related to debt covenants. The need to comply with the conditions in debt covenants is thought to provide incentives for firms that are close to breaking debt covenants to manipulate earnings either to avoid the costs of covenant violations or to reduce the restrictiveness of accounting-based constraints in debt agreements (Beneish, 2001). Empirical results supporting this view, however, are mixed. DeFond and Jiambalvo (1994) examined a sample of default firms and reported evidence consistent with managers increasing earnings prior to default to avoid covenant default. In contrast, Sweeney (1994) found that managers increase earnings after the default. DeAngelo and Skinner (1996), however, observed insignificant differences in the magnitude of accruals between binding and without binding covenant firms.

Preliminary evidence on the signaling theory of accruals was reported by Wilson (1986) and Bowen et al (1987). These studies examined the information content in

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accruals and reported that total accruals have incremental information content beyond cash flows and earnings. Using a methodology similar to these studies, Subramanyam (1996) regressed contemporaneous stock returns on the components of accruals. He reported that the discretionary component of accruals is positively correlated with stock returns suggesting that discretionary accruals are priced by the market. In addition, Subramanyam observed that current period discretionary accruals are significantly and positively correlated with future earnings and future cash flows. Based on these results, Subramanyam concluded that discretionary accruals provide information for predicting future profitability.

Guay et al. (1996) used discretionary accruals to examine which of the following: the opportunistic accrual management; the information theory of accruals; or the noise hypothesis, has the best explanation for managerial discretion over accruals. He found results consistent with the information theory and the opportunistic accrual behavior but failed to distinguish between the two hypotheses. However, in a similar way to Subramanyam (1996), Guay et al. found that discretionary accruals are positively associated with stock returns.

The positive correlation between stock returns and discretionary accruals suggested that managers may deliberately use accruals as a device to convey private information to the market. Sankar and Subramanyam (2001) developed a model which showed that when managerial discretion is allowed by Generally Accepted Accounting Principles (GAAP), managers use this discretion to communicate their private information through reported earnings. Indirect support for this hypothesis was reported by Brooks (1996) and Kang (2005). Brooks examined the effects of earnings and

dividend announcements on the asymmetric information level and found that the level of information asymmetry falls at earnings announcements but not at dividend announcements. This evidence suggested that there is private information released at earnings announcements. The results reported by Kang (2005) suggested that managers use accruals as the device to release the information. He showed that the frequency of accruals-related disclosure increases the accuracy of analysts' forecasts and decreases the analysts' forecast dispersion on future earnings.

The positive associations between discretionary accruals, stock returns and future profitability reported in Subramanyam (1996) and Guay et al. (1996) were consistent not only with the information hypothesis of accruals, but also with the opportunistic income-smoothing hypothesis. DeFond and Park (1997) argued that in an attempt to maintain their job security, when current (future) period earnings are poor (good), managers "borrow" earnings from the future by increasing accruals. On the other hand, when current (future) earnings are good (poor), managers decrease accruals to "save" current earnings for possible use in the future. As a result, according to the opportunistic income-smoothing hypothesis discretionary accruals are predicted to be positively correlated with future earnings.

The inconclusive evidence on the signaling hypothesis reported by Subramanyam (1996) and Guay et al. (1996) can be attributed to their use of broad sample data. To mitigate this problem, Louis and Robinson (2005) used stock split firm data as their research setting to examine the signaling hypothesis of accruals. Assuming that managers use discretionary accruals to signal and use stock splits to reinforce the signal, Louis and Robinson found a positive association between pre split discretionary accruals and the

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positive abnormal returns surrounding the split announcement dates. Based on this finding, Louis and Robinson concluded that managers use both discretionary accruals and stock split to communicate private information to the market.

Stock split announcements, however, are often contaminated by other company specific information around the event window. Nayak and Prabhala (2001) observed that many stock split firms also contemporaneously announce dividends. Therefore it is not clear if the positive market reaction around the announcement dates, and the positive association between discretionary accruals prior to the events and positive abnormal returns, are attributed to the dividend announcements, or to the stock split signal. In addition to the contamination problem, Crawford et al. (2005) found that the costs of false signaling for stock splits are very small. As the credibility of a signal depends on the cost of the signal, the low costs for issuing a false signal undermine the validity of the signal in stock splits. The low costs of signaling for stock split suggested that firms split their stocks for reasons other than signaling about firm future profitability. Confirming this conjecture, Huang et al. (2006) reported that except for dividend paying firms, firms that split their stocks have negative future profitability.

The positive association between the pre-split discretionary accruals and the abnormal returns documented by Louis and Robinson (2005) is also consistent with the opportunistic earnings management hypothesis. Managers have the incentive to increase accruals prior to stock splits, so that the post split stock price would be higher than that when earnings are not managed. This argument was empirically supported by Lakonishok and Lev (1987) who reported that the median growth rates of earnings of splitting firms drop significantly after the events. Moreover, Louis and Robinson (2005) also reported

that the association between presplit discretionary accruals and one-year ahead abnormal returns, though insignificant, is negative. Overall, this evidence was consistent with managers increasing accruals prior to stock splits to send a false signal to the market. When accruals reverse in the following period, the market adjusts its valuation on the firms' stock price accordingly.

**Chapter 3**

**Research Methodology**

In this study, we aimed to develop a link between accruals reliability and earnings persistence. Future earnings and stock returns were be tested as a function of their cash and non cash components namely cash flows and accruals respectively. We intended to check the relative predictive powers of these two earning components. This decomposition was referred to as general decomposition in this research.

At second stage that is initial balance sheet decomposition, we tested for relative informativeness of different components of accruals. For this purpose accruals were divided in to current and noncurrent accruals. This decomposition was motivated by different balance sheet classifications to which accounts generating accruals were assigned.

Lastly, based on hypothesized difference in reliability of accruals relating to different balance sheet categories, we decomposed accruals in to their respective assets and liability components. This was named as extended balance sheet decomposition.

**[Insert Figure I about here]**

The impact of all these variables on future stock returns was also analyzed.

**[Insert Figure II about here]**

## 3.1 Sample Criterion

We used panel data of the firms under consideration to analyze earnings quality and stock returns with respect to accruals and cash flows.  The information of the relevant variables was extracted from financial statements – balance sheet, income statement and statement of cash flows. Our sample was based on following criterion:

a. All companies included in KSE 100 except financial institutions were considered for analysis. Firstly, we are only considering KSE 100 companies for our analysis to minimize the size impact. We will need daily stock prices data of our firms for the calculation of returns. So we needed to make sure that only those firms are on our samples that are involved in active trading. Secondly, the primary reason of exclusion of financial institutions from the sample was that their nature of business was very different from those of non financial entities. Financial institutions do not have sales. They liquidate their assets to pay off their liabilities so the cash flows from their operating activities are unique thus making them misfit for our sample.

b. The companies that were delisted or merged will not be included.

c. The sample was from 2005 to 2010, due to constraints in data availability. Table 7 represents per year sample distribution.

**[Insert Table 7 about here]**

### 3.2 Research Design

The literature on accruals suggests that current earnings of an entity can be gauged with two components namely, cash flows (cash component) and accruals (non cash component). Current earnings performance in turn affects future earnings of the entity and thus its stock returns. Based on this theoretical underpinning, we develop two broad heads to conduct this study:

a. Analysis of future earnings quality and future stock returns on the basis of balance sheet measure.

b. Analysis of earnings quality based on statement of cash flow measures.

### 3.3 Analysis of Future Earnings Quality and Future Stock Returns on the Basis of Balance Sheet Measures

#### 3.3.1 Variable Estimations

**Dependant Variables**

We will be estimating two different sets of regressions with different dependant variables but same independent variables.

**a) Earnings Quality**

Different terminologies have been used for predictability of future earnings in literature. We define the quality of earnings as the degree to which earnings performance persists in to next period[14]. Return on net operating assets (RNOA) is used to gauge earnings quality (Richardson et al, 2001). We are only considering net operating assets in this earnings quality measure. The primary reason for this is that in non financial entities, operating assets are mainly the ones leading to generation of sales. Fixed assets dominate their balance sheets. Non operating assets such as deferrals and gain on sales of securities etc in these entities mainly arise because of accounting treatments.

RNOA refers to core return on net operating assets that is operating income after depreciation scaled by lagged net operating assets (NOA). To facilitate cross sectional comparison of magnitude of accruals in our empirical analysis, we deflate the measure of

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[14] For instance, Sloan (1996) used the term "earnings persistence", Richardson et al (2006) named it "earnings quality" and IASB named it "earnings power".

accruals by NOA. NOA provides a natural deflator, as they represent the cumulative stock of accruals made by an enterprise (Richardson et al, 2001).

$$RNOA_T = \frac{Operating\,Income\,after\,Depreciation_t}{NOA_{T-1}}$$

Where

$NOA_{T-1}$ = Operating Assets$_{T-1}$ – Operating Liabilities$_{T-1}$

Operating assets = Total Assets – Cash and Short Term Investments

Operating liabilities = Total Assets – Total Debt – Book Value of total common and preferred    equity

## b) Future Stock Returns

Finance literature widely focuses on idea that stock prices reflect economic position or earnings performance of the enterprise. Firm's ability to generate cash flows affects the value of securities. Return on securities is calculated in the following way

$$R_T = \ln \frac{P_T}{P_{T-1}}$$

Returns are generally calculated in two ways. One approach is to compute yearly returns and second one is to calculate daily returns and then annualize them. The discrepancy with yearly returns approach is that it makes prices a discrete variable whereas prices are continuous in nature. So to cater for this problem, we computed daily returns and annualized them. Daily prices of all the companies under consideration were extracted from business recorder for the time period under consideration i.e. 2005 to

2010. The daily returns were computed by simply taking the natural log of prices at time t-1 and time t. lastly, the daily returns were annualized for comparative purposes.

### 3.3.2 Independent Variables

### A) Initial Decomposition

First of all, based on Richardson et al (2006) study, we decompose future earnings and future stock returns in to their two basic components namely *Total accruals* and *Cash flows*

$$TotalAccruals_{T-1} = \frac{NOA_{T-1} - NOA_{T-2}}{NOA_{T-2}}$$

Where $NOA_{T-1}$ = *Operating Assets*$_{T-1}$ – *Operating Liabilities*$_{T-1}$

$$CashFlow_{T-1} = RNOA_{T-1} - TotalAccruals_{T-1}$$

Where $RNOA_{T-1}$ = *Operating Income*$_{T-1}$/ *NOA*$_{T-2}$

We expect accruals and cash flows to mean revert in subsequent years. Mean reversion in RNOA implies that coefficients of components of this year RNOA (total accruals, cash flows) will be between 0 and 1. We are basically concerned with the relative magnitudes of the coefficients of our two independent variables.

Literature suggests that accruals have lower predictive ability than cash flows in determining earnings quality[15]. So we expect that the coefficient of accrual component of earnings will be less than the coefficient of the cash flow component.

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[15] Livnat & Santicchia (2006), Richardson et al (2005), Richardson et al (2006), Dechow et al (1995).

Unlike Sloan (1996) we expect both these variables to have positive relation with the earnings quality variable. Sloan only considered asset accruals for his analysis and ignored liability accruals. This led to biased earnings as asset accruals are considered to be more prone to estimation errors due to over optimistic assumptions of managers as compared to liability accruals.

However, total accruals are expected to be negatively related with the future stock returns as investors generally do not anticipate the lower persistence of earnings due to accruals (Richardson et al, 2006). Secondly, it is generally observed that investors only keep track of cash flows only and do not anticipate lower persistence of earnings due to accruals.

## B) Balance Sheet Decomposition

### i. Initial Balance Sheet Decomposition

Our balance sheet decomposition begins with the decomposition of total accruals in to current and noncurrent components. This is done in order to test for relative informativeness of the components of accruals namely: current and noncurrent accruals. However cash flow measure is same as used in initial decomposition.

Here, $$TotalAccruals_{T-1} = CurrentAccruals_{T-1} + NonCurrent\ Accruals_{T-1}$$

Where $$CurrentAccruals_{T-1} = \frac{CurrentNOA_{T-1} - CurrentNOA_{T-2}}{NOA_{T-2}}$$

Current $NOA_{T-1}$ = Current Operating Assets$_{T-1}$ – Current Operating Liabilities$_{T-1}$

Current Operating Assets = Total Current Assets – Cash and Short Term Investments

Current Operating Liabilities = Total Current Liabilities – Short Term Debt

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$$Noncurrent\ Accruals_{T-1} = \frac{Noncurrent\ NOA_{T-1} - Noncurrren\ tNOA_{T-2}}{NOA_{T-2}}$$

*Noncurrent NOA$_{T-1}$ = Noncurrent Operating Assets$_{T-1}$ – Noncurrent Operating Liabilities$_{T-1}$*

*Noncurrent Operating Assets = Operating Assets – Current Operating Assets*

*Noncurrent Operating Liabilities = Operating Liabilities – Current Operating Liabilities*

Based on Richardson et al (2006) study, we expect both current and noncurrent accruals to have lower coefficients than cash flows. As accruals are expected to be less persistent than cash flows, so we expect the same for the components of accruals that are current and noncurrent accruals. We expect both current and noncurrent accruals to be positively related to earnings quality.

We expect a negative relation between current and noncurrent components and stock returns. Current accruals reverse in short term however noncurrent accruals reverse over periods longer than one year. However, Richardson et al (2006) states that investors become aware of long term reversals over subsequent year.

ii. **Extended Balance Sheet Decomposition**

The second stage of balance sheet decomposition splits current and noncurrent accruals into their respective asset and liability components. These include change in current (noncurrent) operating assets and change in current (noncurrent) operating liabilities. This is done in order to test for hypothesized difference in reliability of accruals relating to different balance sheet categories.

$$\Delta CurrentOpe\ ratingAsse\ ts_{T-1} = \frac{CurrentOpe\ ratingAsse\ ts_{T-1} - CurrentOpe\ ratingAsse\ ts_{T-2}}{NOA_{T-2}}$$

$$\Delta CurrentOpe\ ratingLiab\ ilities_{T-1} = \frac{CurrentOpe\ ratingLiab\ ilities_{T-1} - CurrentOpe\ ratingLiab\ ilities_{T-2}}{NOA_{T-2}}$$

Similarly, changes in noncurrent operating assets and liabilities will be scaled by lagged NOA because it is a natural deflator representing the cumulative stock of accruals made by an enterprise. We expect both the current and noncurrent liability changes to have significant negative coefficients with earnings quality, as changes in liability accounts are subtracted while computing accruals. We expect the coefficients of all accruals (asset and liability) to be less than those of cash flows. Secondly, we expect liability accruals to be relatively more than asset accruals. Accruals relating to assets involve expected future benefits and frequently involve estimations that are subjective. Management might make very optimistic estimates about asset accruals ignoring the likelihood of default. In contrast, the most common liabilities represent future financial obligations of enterprises that involve little subjective estimation. Financial obligations such as accounts payables, accrued liabilities and taxes payable are listed at discounted (face) value. A company is not permitted to record an allowance on its financial obligations for expected non payments. Normally accruals relating to operating liabilities are dominated by accruals relating to fixed financial obligations that involve little subjectivity. This enforces management to be very prudent in making estimates about their liabilities. This expectation can also be backed by the fact that increase in operating liabilities causes earnings to fall.

However we expect liability components to have positive relations with future stock returns as according to current literature changes in current liabilities play an important role in predicting future stock returns. As opposed to this, asset components of

accruals tend to have a negative relation with future stock returns. Literature suggests that asset and liability components of accruals are strongly correlated. Growing firms tend to have both growing assets and growing liabilities. Thus, while the direct effect of increased liabilities is to reduce accruals, increased liabilities tend to be associated with increased assets, leading to an indirect increase in accruals. This indirect asset effect dominates the direct liability effect, leading to a positive relation between changes in liabilities and total accruals. This is why we hypothesize that netting asset accruals against liability accruals should provide a better indication of earnings quality. Secondly, for growing firms increases in asset accruals are offset by liability accruals, and liability accruals associated with growth in a firm's operating activities are considered to be more reliable as they represent future financial obligations of any enterprise and managers are very prudent in recording them.

### 3.3.3    Econometric Models

The data will be collected from financial statements of listed companies for the period 2005 to 2010. The dependent and independent variables will be computed in manner described in the following section. We will estimate the following regressions for the analysis of future earnings quality and stock returns on the basis of balance sheet measures:

1.  Regressions of General Components of Earnings.

$$RNOA_T = \gamma_0 + \gamma_1 CF_{T-1} + \gamma_2 TAc_{T-1} + \upsilon_T ..........(1)$$

$$R_T = \beta_0 + \beta_1 CF_{T-1} + \beta_2 TAc_{T-1} + \upsilon_T ..........(2)$$

Where
        $RNOA_T$ is the return on net operating assets at T;

$R_T$ is the return on securities in time T;
$CF_{T-1}$ is the cash flows of an entity at time T-1;
$TAc_{T-1}$ is the total accruals of an entity at time T-1.

2. Regressions for Initial Balance Sheet Decomposition

$$RNOA_T = \gamma_0 + \gamma_1 CF_{T-1} + \gamma_2 CAc_{T-1} + \gamma_3 NCAc_{T-1} + \upsilon_T \ldots\ldots\ldots(3)$$

$$R_T = \beta_0 + \beta_1 CF_{T-1} + \beta_2 CAc_{T-1} + \beta_3 NCAc_{T-1} + \upsilon_T \ldots\ldots\ldots(4)$$

Here
CAc$_{T-1}$ represents current accruals at time T-1;
NCAc$_{T-1}$ represents noncurrent accruals at time T-1.

3. Regressions for Extended Balance Sheet Decomposition

$$RNOA_T = \gamma_0 + \gamma_1 CF_{T-1} + \gamma_2 \Delta COA_{T-1} + \gamma_3 \Delta COL_{T-1} + \gamma_4 \Delta NCOA_{T-1} + \gamma_5 \Delta NCOL_{T-1} + \upsilon_T \ldots\ldots\ldots(5)$$

$$R_T = \beta_0 + \beta_1 CF_{T-1} + \beta_2 \Delta COA_{T-1} + \beta_3 \Delta COL_{T-1} + \beta_4 \Delta NCOA_{T-1} + \beta_5 \Delta NCOL_{T-1} + \upsilon_T \ldots\ldots\ldots(6)$$

Here
$\Delta COA_{T-1}$ is change in current operating assets at time T-1;
$\Delta COL_{T-1}$ is change in current operating liabilities at time T-1;
$\Delta NCOA_{T-1}$ is change in non current operating assets at time T-1;
$\Delta NCOL_{T-1}$ is chance in non current operating liabilities at time T-1.

The same models will also be estimated keeping $R_T$ as the dependent variable as shown in

equation 2, 4 and 6.

Table 8 summarizes the expected signs of variables in the above models.

**[Insert Table 8 about here]**

**3.4 Analysis of Earnings Quality Based on Cash Flow Statement Measures**

In order to test for the robustness of our results, we develop a link between accruals and earnings using statement of cash flows, thus resulting in a cleaner measure of cash flows and accruals. Literature suggests that changes might occur in balance sheet accounts due to mergers etc.; however statement of cash flows remains unaffected (Bradshaw et al, 2001).

**3.4.1   Dependent Variables**

Like Bradshaw et al (2001) we use two measures of earnings that would respond to different sets of accruals. One would be earning before interest tax depreciation and amortization (EBITDA). EBITDA excludes special items and is considered to be more highly correlated with stock prices than the final net income measure. This earning measure would correspond to working capital accruals.

Second measure of earnings is Net income. The cash flow measure corresponding to NI is cash flow from operations. In this empirical analysis, we deflate all variables by average total assets.

**3.4.2   Independent Variables**

We test future earnings performance (EBITDA) as a function of accrual and cash flow components of current earnings performance. Two independent variables corresponding to EBITDA are working capital accruals (WCA) and working capital cash flows (WCCF). These two variables are measured in following manner:

WCA = Increase in Accounts Receivable + Decrease in Accounts Payable and Accrued Liabilities + Decrease in Accrued Income Tax + Increase (Decrease) in Assets (Liabilities) – Other.

$$WCCF = EBITDA - WCA$$

Secondly we test NI as a function of total accruals (TAcc) and total cash flows (TCF) where

TAcc = NI – Net Cash Flow from Operating Activities
TCF = Total Cash Flow from Operations

The key difference between WCA and TAcc is that working capital accruals exclude a variety of long term accruals such as depreciation and amortization. These accruals tend to be fairly constant over time. The above mentioned measures are adapted from Bradshaw et al (2001) study. We expect a positive relation between EBITDA, WCCF and WCA and similarly between NI and TCF, TAcc. However we expect the coefficients of independent variables of both models to be between 0 and 1 indicating that they contribute to mean reversion in earnings. We expect coefficients of accruals components to be consistently lower than cash flow components thus implying lower predictive power of accruals as compared to cash flows.

### 3.4.3 Econometric Models

Like mentioned above, data will be collected from financial statements of enterprises. The least squares models that we will be develop are as follows:

$$EBITDA_T = \gamma_0 + \gamma_1 WCA_{T-1} + \gamma_2 WCCF_{T-1} + \upsilon_T .........(7)$$

Where

*EBITDA = Earnings before interest, taxes, depreciation and amortization.*

*WCA = Working capital accruals.*

*WCCF = Working capital cash flows.*

$$NI_T = \gamma_0 + \gamma_1 TACC_{T-1} + \gamma_2 TCF_{T-1} + \upsilon_T ..........(8)$$

Where

*NI = Net Income*

*TACC = Total accruals*

*TCF = Total cash flows.*

Table 9 summarizes the expected signs of variables in the above models.

**[Insert Table 9 about here]**

# Chapter 4

## Empirical Results and Analysis

*4.1 Descriptive Statistics*

We begin by presenting univariate statistics for our key variables. Table 10 contains descriptive statistics for the balance sheet decomposition

**[Insert Table 10 about here]**

Table 10 provides univariate statistics for the balance sheet decomposition of total accruals. The mean value of total accruals is 0.21004, indicating that total accruals average about 21% of net operating assets. This indicates that the average sample firm has been originating more accruals than it has been reversing, suggesting that the average firm in the sample is growing. The positive mean value for accruals documented here

differs from the negative mean value for accruals documented by Sloan (1996) and related studies. This difference arises because Sloan's definition of accruals includes the reversals of the investing accruals (depreciation and amortization), but not the origination of the investing accruals.

Inspection of the current and non-current components of accruals shows that non-current accruals have a somewhat higher mean and variance than current accruals. Thus, noncurrent accruals appear to be a relatively more important source of variation in total accruals. This result suggests that previous studies using Sloan's definition of accruals, which focuses on current accruals, ignore an important source of variation in total accruals. The means and variances of the asset and liability components indicate that both are relatively large in the case of current accruals, but that asset accruals dominate liability accruals for non-current accruals. The variances for the asset and liability components of current accruals also make it clear that the current liability accruals play an important role in dampening the impact of variation in current asset accruals on current accruals.

Table 10 also provides descriptive statistics on the cash flow component of earnings, the RNOA and stock return variables that we use to evaluate earnings quality. Note that the mean value for cash flows of 0.17447 is much smaller than the mean value of total accruals, indicating that most of the earnings performance reported over the period is attributable to accruals rather than cash flows. Accruals must ultimately reverse and thus be mean zero in the long run, but over our sample period, the average firm has been growing and hence originating substantially more new accruals than reversing old accruals.

We did check for heteroskedasticity and multicollinearity between our variables.

*4.2 Earnings Persistence Results*

Table 11 presents the analysis of persistence of the cash flow and accrual components of earnings. Following Sloan, this analysis consists of regressions of this year's RNOA on the cash flow and accrual components of previous year's RNOA. Mean reversion in RNOA implies that the coefficients of the components of this year's RNOA will be less than one. The key predictions concern the relative magnitudes of the coefficients on the cash flow and accrual components of RNOA. If the accrual components of earnings cause earnings to be relatively less persistent than the cash flow component of earnings, then the coefficients on the accrual components of earnings will be less than the coefficients on the cash flow component of earnings. Conventional t statistics are used to show significance of accrual and cash flow component of earnings.

**[Insert Table 11 about here]**

The regression in Panel A of table 11 presents the basic regression of this year's earnings on the cash flow and accrual components of previous year's earnings. Both the cash flow and accrual components differ from those used by Sloan (1996) because we define accruals as total accruals (both current and non-current) and cash flow as the net free cash flow (both operating and investing cash flows). Consistent with Sloan, the accrual component of earnings is significantly less persistent than the cash flow component of earnings. The economic magnitude of the difference is, however, relatively small. We find that the coefficient on cash flows is 0.615, while the coefficient on accruals is 0.418. In contrast, Sloan found that the persistence of the accrual component

is around 10% lower than the cash flow component. The regression in Panel B of table 11 separates total accruals into the current and non-current components. The results in panel B indicate that the coefficient on the current component of accrual (0.083) is indeed well below the coefficient on the cash flow component (0.205). However, the coefficient on the noncurrent component (0.197) is almost equal to the coefficient on the cash flow component. Thus, while current accruals are clearly less persistent than cash flows, noncurrent accruals appear to be about as persistent as cash flows. At first glance, these results appear difficult to reconcile. One potential explanation is that current accruals tend to reverse in one year or less. Thus, firms with extreme current accruals experience reversals in current accruals that translate to reversals in earnings within the next year. Non-current accruals, however, take somewhat longer to reverse, and so a reversal in the next year is not apparent.

Panel C of table 11 further decomposes the current and non-current components of accruals into their underlying operating asset and liability changes. Note that both the current and non-current liability changes have significantly negative coefficients because we subtract the change in the liability accounts in computing accruals. The results in Panel C generally confirm the results in panel B, in that the coefficients on both the asset and liability components of current accruals are significantly lower than the coefficients on the cash flow component of earnings. Similarly, the coefficients on the asset and liability components of non-current accruals are very similar to those on cash flows. The most important takeaway from the results in panel C is that the coefficient on the change in current operating liabilities is the lowest of all in absolute magnitude (-0.561). Thus, current operating liability accounts contain important information about earnings quality.

The increases in operating liability accounts cause reductions in earnings. The relatively low coefficient on changes in current liabilities indicates that these reductions are relatively transitory.[16]

*4.3 Stock Return Results*

Table 12 repeats the regressions in table 11 after replacing the independent variables with this year's stock returns. The regression in panel A of table 12 confirms Sloan's basic finding of a significant negative coefficient on the accrual component of earnings. This result is consistent with investors not anticipating the lower persistence of earnings due to accruals. Panel B of table 12 decomposes accruals into its current and non-current components. Previously we found that the lower persistence of accruals was entirely attributable to current accruals. Consistent with this result, Panel B of table 12 confirms that current accruals are the most significant predictor of future stock returns.

**[Insert Table 12 about here]**

However, the coefficient on non-current accruals is also significant and negative, which is more difficult to reconcile with the results from table 11. One possible explanation for this result is that non-current accruals reverse over periods longer than one year, but that investors become aware of the longer-term reversals during the subsequent year. Alternatively, investors could be expecting increases (decreases) in earnings for firms with significant increases (decreases) in non-current accruals, and so are disappointed when they do not materialize.

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[16] We are checking for relative magnitudes of components of accruals and they are scaled by same variable i.e. Net Operating Assets. So following Sloan (1996) justification we compare for absolute differences in coefficients of accrual components. Secondly, the variables are ratios so we don't need any further modifications before interpreting them. (Sloan, 1996).

Panel C of table 12 decomposes accruals into their underlying changes in asset and liability accounts. This regression illustrates that changes in current liabilities play an important role in predicting future stock returns, consistent with their role in predicting earnings persistence in table 11. The change in current operating liabilities has a significantly positive coefficient, indicating that increases in current liabilities lead to increases in future stock returns. To further understand the intuition behind this result, recall that the correlation between change in current liabilities and future stock returns is negative. The positive and significant coefficient in the regression specification arises from the positive correlation between changes in current assets and changes in current liabilities. We previously found that earnings persistence is the lowest for firms with large changes in current assets that are not accompanied by offsetting changes in current liabilities. Similarly, the coefficients in table 12 indicate that future stock returns are the lowest for firms with large changes in current assets that are not accompanied by changes in current liabilities. Again, this result highlights the important role of current liabilities in helping to extract information about earnings quality from current assets.

## 4.4 Analysis of Earnings Quality based on Cash Flow Statement Measure

Table 13 presents the relationship between earning measures and the components of earnings that are cash flow and accruals. This is done as a robustness test only. The current earnings components have been extracted from the statement of cash flows. Literature suggests that changes might occur in balance sheet accounts due to mergers etc.; however statement of cash flows remains unaffected (Bradshaw et al, 2001). So this

leads to a cleaner measure of earning components. All variables have been deflated by total assets measure.

The findings of table 13 are in line with the findings of table 11 and 12.

**[Insert Table 13 about here]**

The key finding is that both accruals and cash flows have significant positive relation with the earnings measure. However, predictive ability of accrual component of earnings is less than that of cash flows. The lower persistence of accrual components is attributed to the subjectivity that is associated with this component of earnings. The robustness test result largely confirms the findings of this and previous studies.

**Chapter 5**

**Conclusion**

Accounting numbers have traditionally been considered relevant for valuation purposes of any business entity. In accounting, cash basis and accrual basis accounting are the two methods used for recording financial transactions. The difference between the two accounting methods lies in the timing of recording transactions. In cash accounting system the mismatching of revenues and expenses led to the need for development of accrual accounting method that involves accruing expected future cash receipts and disbursements and deferring the past cash receipts. The need for accrual accounting system was derived from industrial revolution which precipitated business growth causing greater degree of complexity in business transactions.

Accrual accounting is considered to be the standard accounting practice for most companies now a days and the underlying reason behind this is that this method provides an overview of company's financial health with greater precision.

Accounting literature segregates earnings into two main accounting components namely cash flows and accruals. In accrual accounting, cash flows from a transaction refer to cash that is immediately received or paid out. In contrast, accruals refer to transactions for which payments or receiving of cash will be deferred to next accounting period.

Key difference between accruals and cash flows has been highlighted by both International Accounting Standard Board (IASB) and Financial Accounting Standard Board (FASB). Cash component of earnings or cash flows are considered to be both reliable and relevant measure of earnings as they are recorded when the transaction has occurred. As opposed to this, non cash component or accruals are only relevant measure of earnings but not reliable as they involve subjectivity which implies that the reporting of accruals is simply based on manager's discretion.

Research on reliability and predictive powers of various earning components with respect to accrual accounting was first conducted by Sloan in 1996. He reported that accruals have lower predictive ability than cash flows in determining future earnings performance. Based on this finding, growing literature in accounting assumes and has confirmed lower accrual persistence and this lower persistence forces manager to engage in opportunistic behavior. Sloan (1996) documented that stock prices do not instantaneously reflect different predictive abilities of accruals and cash flows. Investors

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tend to overweight accruals and underweight cash flows when forming future earnings expectations. They ignore the fact that accruals have lower predictive ability as compared to cash flows due to subjectivity and lower reliability associated with them. As a result, high accrual firms earn negative abnormal returns in future and vice versa.

This study is based on the basic framework underlying accrual accounting. FASB and IASB also explicitly assert that the primary objective of financial reporting is to provide investors and other stakeholders an insight into financial health of the entity. Rational motive of every investor is to earn sufficient returns assuming some level of risk. Investors carefully examine earnings of an enterprise to make their investment decisions. Based on current earnings performance, investors predict future earnings of the enterprise and stock returns. The ability of a company to generate cash flows is reflected in value of shares. Stock price is a contingent claim on future earnings of the enterprise. Future earnings or cash flows associated with any investment are of great interest for investors because the value of their investment today is actually the present value of future cash flows to them through investing in a company.

Based on the theoretical underpinnings explained above, it was found that the extent to which current earnings performance affects future earnings of an entity is crucial. So is the impact of current earnings on future stock returns. Secondly based on literature, it was developed that current earnings has two components namely accruals and cash flows.

In this study we aimed to test for value relevance of accruals in Pakistan corporate sector. Value relevance is the measure of investor perception of the reliability of

corporate financial disclosure. It is an instrument to estimate quality of accounting information which is of prime importance to investors. The primary objective was to develop a link between accruals reliability and earnings persistence.

Future earnings and stock returns were tested as a function of their cash and non cash components namely cash flows and accruals respectively. We intended to check the relative predictive powers of these two earning components. This decomposition was referred to as general decomposition in this research. At second stage that is initial balance sheet decomposition, we tested for relative informativeness of different components of accruals. For this purpose accruals were divided in to current and noncurrent accruals. This decomposition was motivated by different balance sheet classifications to which accounts generating accruals are assigned. Lastly, based on hypothesized difference in reliability of accruals relating to different balance sheet categories, we decomposed accruals in to their respective assets and liability components and named it as extended balance sheet decomposition.

We used panel data of the firms under consideration to analyze earnings quality and stock returns with respect to accruals and cash flows. The information of the relevant variables was extracted from financial statements – balance sheet, income statement and statement of cash flows. The sample was reduced to KSE 100 companies only in order to reduce the size impact. Secondly financial institutions were excluded from the sample because their nature of business is very different from those of non financial entities. Financial institutions do not have sales. They liquidate their assets to pay off their liabilities so the cash flows from their operating activities are unique thus making them

misfit for our sample. The time frame was from 2005 to 2010. We had an unbalanced panel of 2436 observations with varying companies in each year.

The key findings of this research study are in line with existing literature. It was found that both cash flow and accrual component of earnings are crucial in determining future earning performance of an entity. However cash component has greater significance because it is both a relevant and a reliable measure of earnings. Compared to cash flow, accruals have lesser significance and this may be attributed to the greater amount of subjectivity involved in estimation of accruals. Subjectivity implies that estimation of accruals is simply based on manager's discretion. They might over estimate or under estimate accruals in order to get desired reported earnings. Estimation of accruals is based on a set of assumptions that are defined by the management based on their targeted goals for any financial year. Subjectivity of accruals can be understood from the fact that managers while estimating asset accruals might make over optimistic assumptions thus making revenues biased. On the other, managers are very prudent in estimating amounts of payables they need to pay back thus making liability accruals relatively less biased. Literature suggests that managers could use their discretion to estimate accruals as a tool to convey private information about their firm's future profitability.

It was also found that the non current accruals have higher predictive powers as compared to current accruals and liability accruals are more significant than asset accruals. The reasoning behind this is motivated by the fact that long term obligations of the entities are precisely defined before hand and they involve little subjective estimation. Financial obligations such as accounts payables, accrued liabilities and taxes payable are

listed at discounted (face) value. A company is not permitted to record an allowance on its financial obligations for expected non payments. Normally accruals relating to operating liabilities are dominated by accruals relating to fixed financial obligations that involve little subjectivity. This enforces management to be very prudent in making estimates about their liabilities. Lastly, increase in operating liabilities causes earnings to fall.

From investor's perspective, we found that investors generally do not anticipate lower persistence in earnings because of accruals. However it is found that accruals have a significant negative relation with future stock returns implying that investors do not take in to account that reversal of accrual component of earnings.

The overall research study shows that both cash flows and accruals are equally important components that determine the earnings performance of any entity. They however have different predictive powers.

This study will provide users of financial statements-analysts, investors and creditors' information that needs to be carefully scrutinized for predicting future earnings performance and stock returns. Loss of precious information about earnings may arise if large numbers of investors are fixated on cash flows and ignore information in accruals. It will provide investors interested in investing in corporate sector of Pakistan, an idea as to what variables they need to analyze before making their investment decisions. The research findings of this study will have policy and academic implications.

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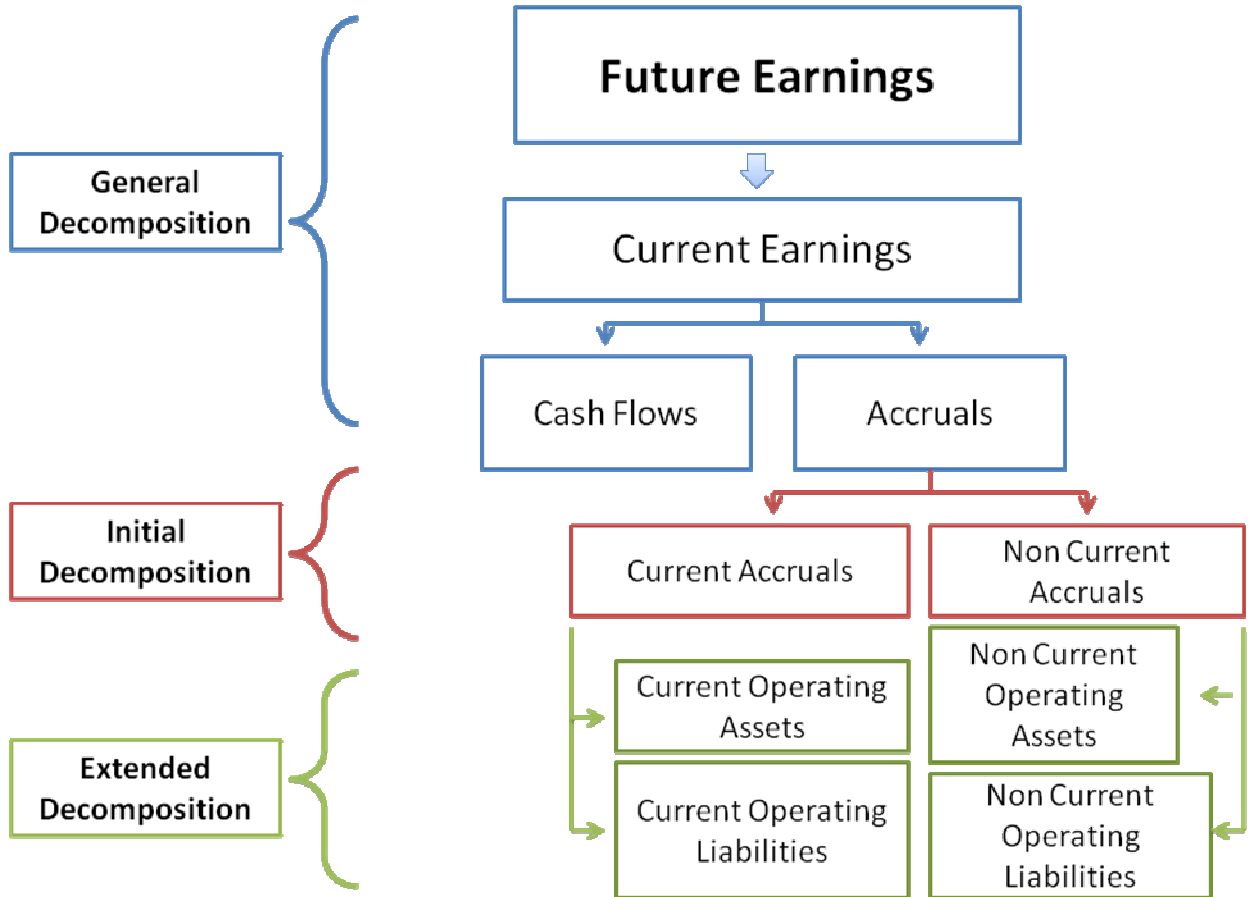
**Appendix**

**Figures and Tables**
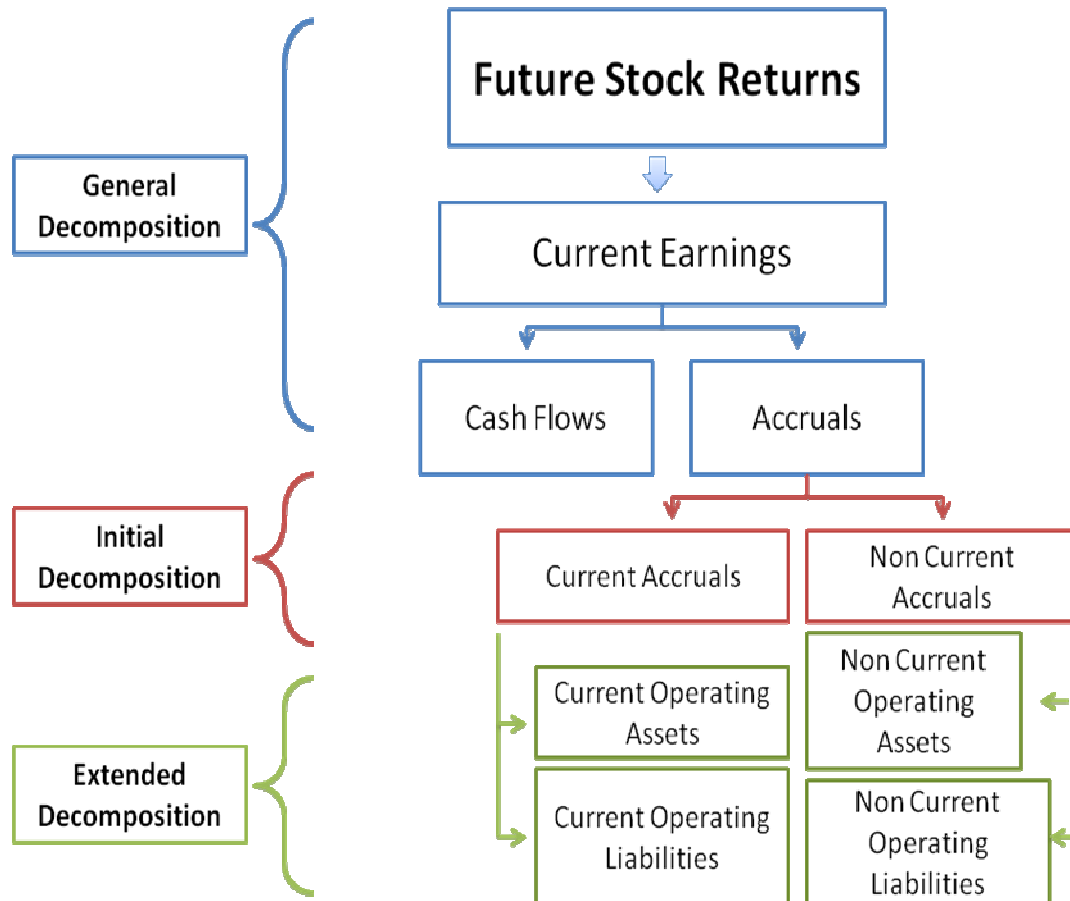
**Figure I**

**Figure II**

| Table 1: Accounting Standards Adopted by National Accounting Bodies and SEC for Mandatory Application to Listed Companies and Subsidiaries of Listed Companies. | |
| --- | --- |
| IAS 1 | Presentation of Financial Statements |
| IAS 2 | Inventories |
| IAS 7 | Cash Flow Statements |
| IAS 8 | Net Profit or Loss for the Period, Fundamental Errors and Changes in Accounting Policies. |
| IAS 10 | Contingencies and Events Occurring After the Balance Sheet Date |
| IAS 11 | Construction Contracts |
| IAS 12 | Income Taxes (effective in Pakistan after 1-1-2001) |
| IAS 14 | Segment Reporting |
| IAS 16 | Property, Plant and Equipment |
| IAS 17 | Leases |
| IAS 18 | Revenue |
| IAS 19 | Employee Benefits |
| IAS 20 | Accounting for Government Grants and Disclosure of Government Assistance. |
| IAS 21 | The Effects of Changes in Foreign Exchange Rates |
| IAS 23 | Borrowing Costs |
| IAS 24 | Related Party Disclosures |
| IAS 25 | Accounting for Investments |
| IAS 26 | Accounting and Reporting by Retirement Benefit Plans |
| IAS 27 | Consolidated Financial Statements and Accounting for Investments in Subsidiaries |
| IAS 28 | Accounting for Investments in Associates |
| IAS 30 | Disclosures in the Financial Statements of Banks and Similar Financial Institutions |
| IAS 31 | Financial Reporting of Interests in Joint Ventures |
| IAS 32 | Financial Instruments: Disclosure and Presentation |
| IAS 33 | Earnings Per Share |
| IAS 34 | Interim Financial Reporting |
| IAS 35 | Discontinuing Operations |
| IAS 36 | Impairment of Assets |
| IAS 37 | Provisions, Contingent Liabilities and Contingent Assets |
| IAS 38 | Intangible Assets |
| IAS 39 | Financial Instruments: Recognition and Measurement |

Source: Accounting & Auditing Standards – ICAP

| Table 2: Standards that have NOT been adopted | |
|---|---|
| IAS 15 | Information Reflecting the Effects of Changing Prices – Has been classified as non-mandatory by IAS Committee and has not been adopted by Pakistan |
| IAS 22 | Business Combination – is being considered for adoption. |
| IAS 29 | Financial Reporting in Hyperinflationary Economies – Not relevant in the Pakistan context and has not been considered for adoption. |
| IAS 40 | Investment Property – Is being considered for adoption. |
| IAS 22 and IAS 35 to IAS 39 have been adopted by ICAP but not yet notified by the Securities and Exchange Commission. | |

Source: Accounting & Auditing Standards – ICAP

| Table 3: IAS followed with some Minor Deviations | |
|---|---|
| IAS 1 | Not mandatory for banks and insurance companies. The accounting requirements for banks are covered in the Banking Companies Ordinance 1962 and insurance companies are required to have separate classes of insurance accounts under the Insurance Ordinance 2000 |
| IAS 16 | Allows for a revaluation of an asset to be offset against the devaluation of another asset, i.e., the offset is not restricted to the same asset in accordance with IAS. |

Source: Accounting & Auditing Standards – ICAP

**Table 4: Correlation Matrix (July 2007 - June 2008)**

| | Index | | Turnover | | Trading Value | |
|---|---|---|---|---|---|---|
| | LSE | ISE | LSE | ISE | LSE | ISE |
| KSE | 53.60% | 84.59% | 72.05% | 60.38% | 70.41% | 63.57% |

Source: Reproduced from "Speculative bubbles in KSE", CREB working paper series

### Table 5: Decade Wise Performance of KSE

| Year | No of Listed Companies | Listed Capital (PKR in Million) | Market Cap (PKR in Million) |
|------|----------|----------|----------|
| 1950 | 15 | 117.3 | - |
| 1960 | 81 | 1007.7 | 1871.4 |
| 1970 | 291 | 3864.6 | 5658.1 |
| 1980 | 314 | 7630.2 | 9767.3 |
| 1990 | 487 | 28056 | 61750 |
| 2000 | 762 | 236458.5 | 382730.4 |

*Source: KSE Website*

### Table 6: Years Progress Report

**In millions except companies, index and bonds data**

| | 30-12-2006 | 29-12-2007 | 31-12-2008 | 31-12-2009 | 18-08-2010 |
|---|---|---|---|---|---|
| Total No. of Listed Companies | 652 | 654 | 653 | 651 | 651 |
| Total Listed Capital - Rs | 519,270,17 | 671,255.82 | 750,477.55 | 814,478.74 | 909,968.03 |
| Total Market Capitalization - Rs | 2,771,113.94 | 4,329,909.79 | 1,858,698.90 | 2,705,879.83 | 2,721,604.94 |
| KSE-100 Index | 10040.5 | 14075.83 | 5865.01 | 9386.92 | 9705 |
| KSE -30 Index | 12521.54 | 16717.1 | 5485.33 | 9849.92 | 9641.55 |
| New Companies Listed during the year | 9 | 14 | 10 | 4 | 6 |

*Source: KSE Website*

### Table 7: Sample Distribution (2005 - 2010)

| Years | 2010 | 2009 | 2008 | 2007 | 2006 | 2005 |
|---|---|---|---|---|---|---|
| No of Companies | 66 | 70 | 71 | 69 | 67 | 63 |

| TABLE 8: Expected Signs of Coefficients of Model I | | | | |
|---|---|---|---|---|
| | | | **Dependent Variables** | |
| **Categories** | | **Independent Variables** | **Future Earnings Quality** | **Future Stock Returns** |
| General Decomposition | | Total Accruals | + | - |
| | | Cash Flows | + | + |
| Balance Sheet Decomposition | Initial Stage | Current Accruals | + | - |
| | | Noncurrent Accruals | + | - |
| | | Cash Flows | + | + |
| | Extended Stage | Δ Current Operating Assets | + | - |
| | | Δ Current Operating Liabilities | - | + |
| | | Δ Noncurrent Operating Assets | + | - |
| | | Δ Noncurrent Operating Liabilities | - | + |
| | | Cash Flows | + | + |

| TABLE 9: Expected Signs of Coefficients of Model II | | | |
|---|---|---|---|
| | | **Dependent Variables** | |
| **Categories** | **Independent Variables** | **EBITDA** | **NI** |
| Decomposition on the Basis of Statement of Cash Flows | Working Capital Accruals | + | NA |
| | Working Capital Cash Flows | + | NA |
| | Total Accruals | NA | + |
| | Total Cash Flows | NA | + |

# Table 10

## Descriptive Statistics for Total Accruals and its Components

### Descriptive Statistics

|  | Mean | Std. Dev. | Median |
|---|---|---|---|
| **Total Accruals** | 0.21004 | 0.32770 | 0.15351 |
| **Current Accruals** | 0.18143 | 0.37136 | 0.18281 |
| **Non Current Accruals** | 0.19803 | 0.91295 | 0.13676 |
| **Δ Current Operating Asset** | 0.19465 | 0.64080 | 0.14017 |
| **Δ Current Operating Liabilities** | 0.17045 | 0.35701 | 0.14368 |
| **Δ Non - current Operating Asset** | 0.16766 | 0.23594 | 0.11314 |
| **Δ Non - current Operating Liabilities** | 0.10848 | 0.28345 | 0.10973 |
| **Cash Flow** | 0.17447 | 0.49961 | 0.18369 |
| **RNOA** | 0.36947 | 0.33092 | 0.32803 |
| **Returns** | 0.01320 | 0.57877 | 0.04929 |

# Table 11
## Regressions of Earnings on Total Accruals and its Components

**Panel A: Regressions with Total Accruals**

*(1) $RNOA_T = \gamma_0 + \gamma_1 CF_{T-1} + \gamma_2 TAc_{T-1} + v_T$*

| Regression Coefficient | $\gamma_1$ | $\gamma_2$ | Adj. $R^2$ |
|---|---|---|---|
| Estimated Value | 0.615 | 0.418 | 0.342 |
| (t statistic) | 9.082 | 9.372 | |

Where $RNOA_T$ is the return on net operating assets at T;
$CF_{T-1}$ is the cash flows of an entity at time T-1;
$TAc_{T-1}$ is the total accruals of an entity at time T-1.

**Panel B: Regressions for Initial Balance Sheet Decomposition**

*(2) $RNOA_T = \gamma_0 + \gamma_1 CF_{T-1} + \gamma_2 CAc_{T-1} + \gamma_3 NCAc_{T-1} + v_T$*

| Regression Coefficient | $\gamma_1$ | $\gamma_2$ | $\gamma_3$ | Adj. $R^2$ |
|---|---|---|---|---|
| Estimated Value | 0.205 | 0.083 | 0.197 | 0.314 |
| (t statistic) | 5.554 | 3.657 | 3.478 | |

Where $CAc_{T-1}$ represents current accruals at time T-1;
$NCAc_{T-1}$ represents noncurrent accruals at time T-1.

**Panel C: Regressions for Extended Balance Sheet Decomposition**

*(3) $RNOA_T = \gamma_0 + \gamma_1 CF_{T-1} + \gamma_2 \Delta COA_{T-1} + \gamma_3 \Delta COL_{T-1} + \gamma_4 \Delta NCOA_{T-1} + \gamma_5 \Delta NCOL_{T-1} + v_T$*

| Regression Coefficient | $\gamma_1$ | $\gamma_2$ | $\gamma_3$ | $\gamma_4$ | $\gamma_5$ | Adj. $R^2$ |
|---|---|---|---|---|---|---|
| Estimated Value | 0.292 | 0.237 | -0.561 | 0.281 | -0.272 | 0.258 |
| (t statistic) | 6.646 | 3.790 | -3.089 | 4.807 | -1.959 | |

Where $\Delta COA_{T-1}$ is change in current operating assets at time T-1;
$\Delta COL_{T-1}$ is change in current operating liabilities at time T-1;
$\Delta NCOA_{T-1}$ is change in non current operating assets at time T-1;
$\Delta NCOL_{T-1}$ is chance in non current operating liabilities at time T-1.

# Table 12
## Regressions of Returns on Total Accruals and its Components

**Panel A: Regressions with Total Accruals**

$$(4) \ R_T = \beta_0 + \beta_1 CF_{T-1} + \beta_2 TAc_{T-1} + v_T$$

| Regression Coefficient | $\beta_1$ | $\beta_2$ | Adj. $R^2$ |
|---|---|---|---|
| Estimated Value | 0.036 | -0.038 | 0.004 |
| (t statistic) | 0.687 | -10.362 | |

Where RT is the return on securities in time T.

**Panel B: Regressions for Initial Balance Sheet Decomposition**

$$(5) \ R_T = \beta_0 + \beta_1 CF_{T-1} + \beta_2 CAc_{T-1} + \beta_3 NCAc_{T-1} + v_T$$

| Regression Coefficient | $\beta_1$ | $\beta_2$ | $\beta_3$ | Adj. $R^2$ |
|---|---|---|---|---|
| Estimated Value | 0.026 | -0.138 | -0.108 | 0.003 |
| (t statistic) | 0.731 | -11.552 | -9.134 | |

**Panel C: Regressions for Extended Balance Sheet Decomposition**

$$(6) \ R_T = \beta_0 + \beta_1 CF_{T-1} + \beta_2 \Delta COA_{T-1} + \beta_3 \Delta COL_{T-1} + \beta_4 \Delta NCOA_{T-1} + \beta_5 \Delta NCOL_{T-1} + v_T$$

| Regression Coefficient | $\beta_1$ | $\beta_2$ | $\beta_3$ | $\beta_4$ | $\beta_5$ | Adj. $R^2$ |
|---|---|---|---|---|---|---|
| Estimated Value | 0.005 | -0.235 | 0.279 | -0.200 | 0.109 | 0.004 |
| (t statistic) | 0.590 | -8.720 | 6.980 | -7.980 | 1.720 | |

# Table 13

**Analysis of Earnings Quality Based on Cash Flow Statement Measures**

$$EBITDA_T = \gamma_0 + \gamma_1 WCA_{T-1} + \gamma_2 WCCF_{T-1} + v_T$$

| Regression Coefficient | $\gamma_1$ | $\gamma_2$ | Adj. $R^2$ |
|---|---|---|---|
| Estimated Value | 0.317 | 0.732 | 0.333 |
| (t statistic) | 20.498 | 7.726 | |

Where EBITDA = Earnings before interest, taxes, depreciation and amortization.
   WCA = Working capital accruals.
   WCCF = Working capital cash flows.

$$NI_T = \gamma_0 + \gamma_1 TACC_{T-1} + \gamma_2 TCF_{T-1} + v_T$$

| Regression Coefficient | $\gamma_1$ | $\gamma_2$ | Adj. $R^2$ |
|---|---|---|---|
| Estimated Value | 0.200 | 0.412 | 0.410 |
| (t statistic) | 8.964 | 10.187 | |

Where NI = Net Income
   TACC = Total accruals
   TCF = Total cash flows