EFFECT OF ACCRUALS QUALITY ON EQUITY SECURITY MARKET RETURNS: EVIDENCE FROM THE NAIROBI SECURITIES EXCHANGE

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Abstract

This study uses a mixed research design to evaluate the pricing effect of accruals quality among public companies in Kenya. The study's sample of 39 companies is purposively derived from a population of 60 companies and covers the period January 1993 through December 2013. It relies on secondary data on accruals information from annual financial statements and monthly equity market security prices. Once estimated, accruals quality is further split into its innate and discretionary components. Panel regression of accruals-based portfolio decile premiums on the Fama and French (1993) market pricing factors is used to test the statistical significance of the market excess returns to establish whether and how accruals quality is priced in the Kenyan securities market. The findings show that most of the accruals quality comprises innate accruals quality and that level discretionary accruals quality among listed companies in Kenya is statistically insignificant. They further indicate that there exists accruals quality market return premium at the Nairobi Securities Exchange (NSE) and that the security market returns are inversely related with market returns. In essence, accruals quality is a diversifiable information risk factor at the NSE. Since the conclusions are based on the listed companies in Kenya only, the study recommends that the pricing tests could be conducted on a wider scope of companies that includes non-listed firms since these play a prominent economic role among the developing countries.

Keywords: Accruals quality, Market return premium, Pricing effect

Introduction

Accrual's quality is the extent to which accruals implied in financially reported earnings map into actual cash flows over successive financial periods (Lobo et al. (2012). Literature splits accruals quality into two components, the discretionary accruals quality and the innate accruals quality (Francis et al., 2005). The discretionary accruals quality relates to intentional manipulation of accruals to manage earnings information while innate accruals quality arises from the unintentional estimation and judgement errors inherent in the determination of accruals as an inevitable limitation of financial reporting (Francis et al., 2005).

Even though the emerging body of literature identifies a relationship between financial reporting accruals quality and the market returns (Core et al., 2008; Ogneva, 2008; Gray, Koh and Tong, 2009; Demirkhan et al., 2012), there is still no consensus on whether and how accruals quality is priced by the capital markets. Three schools of thought emerge with respect to this accruals quality pricing dilemma: that firstly, accruals quality has a negative pricing effect; secondly, it has a positive pricing effect and that thirdly it has no pricing effect at all.

The first school of thought supported by Demirkhan et al. (2012) hypothesizes an inverse relationship between accruals quality and returns. Francis et al. (2005) had earlier tested the market pricing effect of accruals quality using 91,280 US large firm year observations over the 1970 to 2001 period. Using time series regressions of contemporaneous stock returns they tested the pricing effect of innate and discretionary accruals quality for both cost of debt and cost of equity. Their findings show that accruals quality is related to cost of capital and therefore return premium such that poor accruals quality firms have higher costs of capital than their high accrual quality counterparts. In this respect, accruals quality is a market priced information risk factor.

Gray, Koh and Tong (2009) carried tests similar to Francis et al. (2005) but in the Australian environment. They represent cost of debt using interest as a proportion of total debt and industry adjusted earnings to price ratio to proxy for cost of equity. They use financial data over the eight year period of 1998 to 2005 leading to 2057 and 1362 firm year observations for cost of debt and cost of equity models respectively. After carrying out regression analysis and evaluation of accruals quality and its components, they find that accruals quality is a priced risk factor for both cost of debt and cost of equity and that it affects cost of capital in Australia although their findings provide a hint that contrary to the effect in the USA, in Australia the costs of debt and equity are largely influenced by innate accruals quality as opposed to the discretionary accruals quality.

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The second competing alternative school of thought asserts that accruals quality is a directly and not inversely priced risk factor In this respect, Brousseau and Gu (2011) prove empirical evidence that for large firms, after controlling for size and liquidity risk, poor accruals quality correspond with lower returns. In their empirical appraisal, Brousseau and Gu (2011) examine how accruals quality is priced by the stock market using the CSRP data over the period 1980 to 2005. They use sample of 61,756 firm year observations with 741,072 monthly returns and decile assignments and regress portfolio excess returns against the Fama and French portfolio return factors. The findings indicate that the relationship where lower accruals quality firms exhibit higher returns is driven by small firms in the market through liquidity risk while for majority of the firms, low accruals quality translates to low returns.

In the third view on the pricing of accruals quality, Core et al. (2008) and Du (2011) dispute the pricing effect and attribute the findings of Francis et al. (2005) on asset pricing test misspecifications. Further, Armstrong et al. (2011) attribute the accruals quality pricing premium to the degree of competition in the financial markets and that for very competitive markets, the effect is non-existent. Core et al. (2008) and carry out an invalidation examination of the methodology used by Francis et al. (2005) in a bid to show that the Francis et al. (2005)'s time-series asset-pricing regressions approach constituted a pricing model mis-specification and that in deed accruals quality is not an information risk priced factor. They study the period April 1971 to March 2002 and use the two stage cross sectional regressions where accruals monthly excess returns are regressed on risk factor betas. Their study fails to find any evidence that accruals quality is a priced risk factor.

The foregoing discussion implies that the peculiarity of the financial reporting, regulatory and institutional environment are critical to the quality of accruals in financial statements. Gray, Koh and Tong (2009) for instance evaluate the effect of innate accruals quality on cost of capital in the Australian financial reporting and market setting. Their approach recognises that innate accruals are fundamentally a function of regulatory and institutional regimes as opposed to discretionary accruals that are principally firm specific. They draw some parallels with the findings from other markets particularly the USA while at the same time pointing out that the effect of accruals quality on cost of capital is sensitive to the differences in the regulatory regimes although ultimately accruals quality is a priced risk factor. In line with Armstrong et al. (2011), it seems theoretically conceivable that accruals quality should at least be reflected in security prices of small emerging markets like the Nairobi Securities Exchange (NSE) given their effect on earnings.

There are several theoretical arguments that try to explain the possible accruals quality premium in the financial markets. In the information uncertainty theorization, Francis et al. (2005) argue that accruals quality is a remote indicator of information risk and that since investors make future estimations of cash flows based on current earnings, the poorer the accruals quality, the poorer the future cash flows estimates and hence the higher the cost of capital and therefore expected returns. In this respect, Leuz and Verrecchia (2005) hold the view that investors take into consideration an information risk premium arising out of the inability of earnings information to perfectly align firms and investors with respect to capital investments. The magnitude of the information risk premium depends of the perception of investors about the degree of this non-alignment. If the information risk is evaluated from an accruals quality point of view, the conclusion by Francis et al. (2005) that cost of capital and hence returns are inversely related to the accruals quality also applies in this argument. Empirical tests by Hughes et al. (2007) in competitive noisy markets with rational expectations support this theorization.

Some scholars theorize that the pricing of accruals quality is indirect through some established anomalous behaviour of securities' markets (Gray, Koh and Tong, 2009; Kim and Qi, 2010; Brousseau and Gu, 2011). As indicated earlier, Brousseau and Gu (2011) believe that the type of effect of accruals quality on cost of capital is firm-size dependent. They explain this through the dominating differences of opinion and the illiquidity effects. In their view, the uncertainty inherent in the portrayal of the accruals quality presents a dichotomous scenario of optimistic investors and pessimistic investors who face short sale constraints. They expect optimists, whom they theorize to be the early dominants in the market to buy stocks at specified level of accruals quality at which pessimists are unlikely to sale short. This explains the intial overvaluation of the security. Ultimately, the accruals quality uncertainty is resolved which reduces the dominat effect of optimists. This leads to a downward security price correction hence negative returns (Brousseau and Gu, 2011).

Brousseau and Gu (2011) indicate that the effect is large for small firms because of the short sale constraints faced by pessimists which are likely to be magnified for the small firms. This makes their stocks more illiquid than those of the large firms. This theory is consistent with the illiquidity supposition of Core et al. (2008). In summary, the theory expects accruals quality to affect returns through security liquidity and that small firms have higher liquidity risk exposures than the large firms. Intuitively, once the effect of liquidity is controlled, they expect the accruals effect in the small firm portfolio to dissipate. In this logic accruals quality is directly proportional to the cost of capital and market returns.

Besides the pricing of accruals quality through the size effect, other anomalies that have been tested for their indirect influence on the pricing effect of the accruals quality are the January effect in which Mashruwala and Mashruwala (2011) find out that high accruals quality stocks perform better than low accruals quality stocks in January only and that the reverse is true for the rest of the year; the economic fundamentals effect where Gray, Koh and Tong (2009) show that only the innate accruals quality component (reflecting environmental idiosyncrasies) has a significant effect on returns and the business cycle effect where Kim and Qi (2010) provide empirical evidence that the accruals quality risk premium exists during economic expansion cycles but is absent during economic recessions. In this respect, Geng et al. (2013) examine if earning quality risk magnifies its influence on cost of capital, measured by earnings-price ratio, as fundamental risk increases based on the empirical data of Shanghai Stock Exchange non financial businesses over the period 1999 to 2009. They carry out asset pricing tests on the basis of Fama-French risk factors and incorporate accruals quality measure in the regression of excess returns against these factors. They find that as fundamental risk rises, accruals quality's influence on cost of capital is enhanced, although this influence on cost of capital does not exceed that of low-fundamental-risk enterprises.

In a nutshell, whereas it is theoretically plausible to expect accruals quality to affect financial information asymmetry and therefore influence firms' returns in line with Gray, Koh and Tong (2009), theoretical and empirical evidence are confounding. It is not clear if and how accruals quality is priced in the capital markets. This is critical literature gap given that although accruals quality has been shown to be an information risk factor (Mashruwala and Mashruwala, 2011), it is not yet apparent if it is a part of the market systematic risk or if it is priced separately by the capital markets (Armstrong et al., 2011). In addition, there is lack of knowledge on how accruals quality as a risk factor is priced in the capital markets of a developing country like Kenya in which this study is undertaken. In such countries securities markets are small and undercapitalized. Nairobi Securities Exchange (NSE) with only sixty listed companies at the time of this study provides a perfect case for exploring these types of markets.

Research Objectives and Justification

The study undertakes three objectives. In the first objective, it aims to estimate accruals quality among the companies listed at the NSE. In the second, it targets to evaluate the nature of the accruals quality by decomposing it to the innate and discretionary components. Lastly, the study intents to establish the nature of an accruals quality security market premium, if any. Achieving these objectives is instrumental in a number of

ways. Firstly, it helps test the suggestion by Gray, Koh and Tong (2009) supported by Mao and Wei (2012) that institutional and regulatory differences among various countries affect the levels of accruals quality. NSE provides a uniquely different institutional and regulatory regime from those tetsted in existing literature. In this respect, that identification of the nature of the pricing effect of accruals quality at NSE provides new knowledge in the context of an underdeveloped securities market that is considerably small in size, undercapitalised, relatively new and with comparatively weak control stuctures. The results can be evaluated against empirical findings from complex and organizationally diverse capital markets to enrich accruals quality pricing literature.

Research Methodology

The study is an empirical evaluation of the effect of accruals quality on market returns based on a population of 60 firms quoted at the Nairobi Securities Exchange over the study period January 1993 through December 2013. Although set to be a census study, purposive sampling is used to establish the firm-year observations that meet all the criteria for estimating innate accruals quality. The criteria relates to full data over five year-rolling periods both for the financial statement data used to compute accruals quality and the market price data for establishing periodic security returns.

Data processing first involved the cleaning of the raw data to ensure that it is consistent with the requirements for estimation and evaluation of accrual quality. For the first objective, accruals quality is taken as the five year measure of volatility (standard deviation) of firm specific residuals that emanate from the multiple linear regressions (equation i) of the one year lagging cash flows from operations (OCF_{t-1}); current year cash flows from operations (OCF_t); one year leading cash flows from operations (OCF_{t+1}); the change in revenue between the current year and the past one period (ΔREV) as well as current year gross value of plant, property and equipment (PPE).

$$\Delta WC_{i,t} = \beta_0 \left(\frac{1}{A}\right) + \beta_1 \left(\frac{OCF}{A}\right)_{i,t-1} + \beta_2 \left(\frac{OCF}{A}\right)_{i,t} + \beta_3 \left(\frac{OCF}{A}\right)_{i,t+1} + \beta_4 \left(\frac{\Delta REV}{A}\right)_{i,t} + \beta_5 \left(\frac{PPE}{A}\right)_{i,t} + \varepsilon_{i,t} \dots i$$

Here the value of total assets (A) is used to augment all variables in the equation (i) to control for firm size among the parameters of the sample firms. Working capital (WC) for various firms i at in years t is estimated straight away from the regular norms that indicate changes in current assets and current obligations of a financial reporting entity. Accordingly change in working capital is equivalent to change in current assets less change in current liabilities between years t-1 and t. The change in working capital is taken as the accruals of the year t.

For the second objective, once the total accruals quality is estimated from equation (i) it is split into its two components by a further multiple linear regression of the estimated accruals quality onto the five determinants of innate accruals quality. These five determinants are the size of a firm in the accruals year as iicated by total assets (TA); the volatility of cash flows from operations in the same year (δCFO); the volatility of revenue in the accruals year (δREV); the length of operations cycle of the firm (LOOC) and the number of incidences of losses (NOLI) over the past five periods to the accruals year. The interrelationship is modeled into equation (ii) whose residual term is taken as the discretionary accruals quality while the difference estimated values from the model are the innate accruals quality. The difference between their means is tested using t-test.

$$AQ_i = \textit{b}_0 + \textit{b}_1 LnTA + \textit{b}_2 Ln\delta OCF + \textit{b}_3 Ln\delta REV + \textit{b}_4 LnLOOC + \textit{b}_5 LnNOLI + v_i \dots ii$$

To test the null hypothesis that accruals quality premium is not priced risk factor with respect to the third objective, the accruals quality values are ranked to form ten buy and hold monthly decile portfolios representing a hedge strategy long in low accruals quality companies and short in high accrual quality companies with a holding period of one year after the year end. This implies a portfolio rebalancing based on one year accruals but involving monthly decile value weighted portfolio returns. It is found necessary to adjust the accruals with TA in order to standardize the accruals and eliminate the size effect since sample companies comprise different sizes. To control for the already established pricing effects, the modified model based on Fama and French (1993) approach is used. It tests for the market ($R_{m,t} - R_{f,t}$); size (SF) and value (BTMF) effects as per equation (iii). The statistical significance of β_0, the excess returns of the lowest accruals quality portfolio decile return over highest accruals quality portfolio decile is tested.

$$R_{L,t} - R_{H,t} = \beta_0 + \beta_1(R_{m,t} - R_{f,t}) + \beta_2 SF + \beta_3 BTMF + \varepsilon_i \dots \dots iii$$

Here, $R_{L,t}$ represents the returns on the lowest accrual quality decile while $R_{H,t}$ represents the returns on the highest accrual quality decile. $R_{m,t}$ represents the monthly market return generated from the monthly NSE-20 share index. R_{ft} represents the risk free rate of return generated from the monthly 91-day treasury bill rates. Decile portfolio returns are the value weighted security market returns based monthly prices of the listed companies computed as the difference between the natural logarithms of prices at month t+1 less the natural logarithms of the same prices at month t. Accordingly, the dependent variable is the difference between the long and short returns for the lowest and highest accrual quality-based portfolio deciles respectively. The same applies for market returns computed from the monthly NSE-20 share index, the performance indicator at NSE. The size factor is estimated as the difference between the monthly Jensen's alphas

from the regressions of large and small capitalization portfolio return premiums on the market return premium. Book to market factor (BTMF) is taken as the value weighted monthly portfolio ratio of the book value of equity to the market value of equity. It is on the basis of the regression results that the significance of the alpha (the accruals quality based excess returns over market) is tested holding that the market excess returns are a function of the market risk level represented by market beta.

Results and Analysis

To achieve the first objective of establishing accruals quality, nine out of the twelve segments of the NSE qualified for analysis. After controlling for the normality, linearity, homoscedasticity, collinearity and linearity assumptions of multiple linear regression, the results of model (i) for the market are indicated in Table 1.

The coefficients β_i, coefficient of determination and the adjusted R-square values are based on the averages of the 1993-2013 annual estimates of the model (i). The output indicates that all the change in working capital variables have a high joint explanatory power of the changes in working capital given the high value of the adjusted coefficient of determination of 78.39%. All the corresponding coefficients are statistically significant at 95% confidence interval given that all the P-values are less than 0.05 and that all the t values are above ±2.131. The fact that F is statistically significant confirms that the model fits the data well and it can therefore be relied upon in estimating accruals quality for companies quoted at the NSE.

Table I: Market Accruals' Quality Regression Output

Adjusted R Square	0.78385				
Standard Error	0.03252				
Observations	21				
ANOVA					
	Df	SS	MS	F	Significance F
Regression	5	0.081983	0.016397	15.50598	1.83E-05
Residual	15	0.015862	0.001057		
Total	20	0.097845			
	Coefficients	Standard Error	t Stat		P-value
Intercept	0.035028	0.013637	2.568682		0.02139
CFO_{t-1}	-1.20831	0.158315	-7.63229		1.53E-06
CFO_t	0.276246	0.117731	2.346421		0.033108
CFO_{t+1}	-0.48482	0.062226	-7.79127		1.19E-06
ΔREV	0.082237	0.03798	2.165259		0.046897
PPE_t	-2.21049	0.279677	-7.90372		9.99E-07

Table II which shows the annual accruals quality information and the correspeonding descriptive statistics is presented in two panels A and B. Panel A indicates the summary data of accruals quality for the NSE over the study period while Panel B reflects the corresponding descriptive statistics.

The descriptive findings on the overall accruals quality show a high value of 0.304213 and a low value of 0.135848 over the twenty one year study period. This provides a range 0.168365 which is less than the average accruals quality of 0.221568. This statistic points towards a low level of dispersion in accruals quality over the study period. This indicates that there is a tight financial reporting regulatory regime that provides less room for creative accounting that would otherwise inflate the overall accruals quality of financial reports. It further indicates that whereas accruals quality is relatively poor, the level of volatility is low.

Comparing the mean and standard values of accruals quality from Panel B of Table II, a coefficient of variation of 0.1978 is ascribed to the data. This provides a variability of approximately 2% for every unit change in accruals quality. This affirms the relative stable nature of accruals quality among the overall financial reporting of the companies quoted at the NSE.

Evaluating the foregoing characteristics of accruals quality can be compared with similar information from other regulatory regimes. Wong (2009) while studying the pricing effect of earnings quality in Australia over the period 1991 to 2007, with accruals quality as one of the variables, ascertains an accrual quality of 0.0269. This when compared with a standard devaiation of 0.0363 translates to a coefficient of variation (CV) of 1.349. In a different study over the period 1988 to 2007, Perotti and Wagenhofer (2014) while evaluating the relationship between earnings quality and excess returns establish a mean of 0.0371 and a standard deviation of 0.0917. This provides a relatively high CV of 2.472. A similar study by Wysocki (2008) provides a coefficient of variation of 5.5.

Table II: Market Accruals Quality Descriptive Statistics

Panel A: Accruals Quality Trend			
Year	AQ	Year	AQ
1997	0.24875	2006	0.20453
1998	0.28750	2007	0.20552
1999	0.30421	2008	0.18853
2000	0.23977	2009	0.23693
2001	0.20452	2010	0.27018
2002	0.20490	2011	0.24066
2003	0.18417	2012	0.23045
2004	0.13585	2013	0.22555
2005	0.15466		
Panel B: Accruals Quality Descriptive Statistics			
Mean	0.221568		
Standard Error	0.010630		
Median	0.225545		
Standard Deviation	0.043829		
Sample Variance	0.001921		
Range	0.168365		
Minimum	0.135848		
Maximum	0.304213		
Confidence Level (95.0%)	0.022535		

Demirkhan et al. (2012) find a mean and median of accruals quality of 0.0479 and 0.0404 respectively when they study diversification aspects of accruals quality of the Compustat database over the period 1984 to 2003 for single segment firms. Single segment firms are comparable to those quoted at the NSE which operate in the specified segments of the NSE only. All these findings when compared to the NSE case over the 1993 to 2013 period provides evidence that NSE has a comparatively poor accruals quality than firms quoted in other financial markets.

In addition, the comparative studies reveal that whereas the level of accruals quality among the companies quoted at the NSE is relatively poor compared to other financial markets, the volatility in the quality of accruals is relatively very small. A CV of 0.1978 is far lower than those of 1.349, 2.472 and 5.5 derived from the Wong (2009), Perotti and Wagenhofer (2014) and Wysocki (2008) respectively.

For the second objective, innate and discretionary accruals qualities were estimated by regressing accruals quality on the five variables that determine innate accruals quality. These five determinants are the size of a firm in the accruals year as indicated by total assets (TA), the volatility of cash flows from operations in the same year (δCFO), the volatility of revenue (δREV) in the accruals period, the length of the operations cycle of the firm (LOOC) and the number of loss incidences (NOLI) over the past five periods to the accruals year. Before using model (ii) for estimation of individual, segmental and overall innate accruals quality, its reliability was established by regressing annual accruals quality on these five variables. The output after the necessary adjustments for the multiple regression assumptions is indicated in Table III

Table III: Market Innate Accruals Quality Regression Output

Adjusted R Square	0.85485				
Standard Error	0.01670				
Observations	17				
ANOVA					
	Df	SS	MS	F	Signf. F
Regression	5	0.02767	0.00553	19.84565	3.61E-05
Residual	11	0.00308	0.00028		
Total	16	0.03074			
	Coefficients	Std Error	t Stat		P-value
Intercept	-1.30815	0.22075	-5.92592		9.9E-05
LnTA	6.71142	0.99724	6.73002		3.2E-05
LnδCFO	-0.36558	0.07540	-4.84864		0.00051
LnδREV	0.59089	0.18995	3.11078		0.00991
LnLOOC	3.34984	0.67056	4.99560		0.00041
LnNOLI	-0.12570	0.05220	-2.40822		0.03472

The coefficient estimates β_i and the adjusted R-square values are based on the averages of 1997-2013 annual estimates of the natural logarithm of total assets (LnTA); natural logarithm of the five year moving standard deviations of cash flows from operations (LnδCFO); natural logarithm of the five-year moving standard deviations of revenues (LnδREV); natural logarithm of the length of the operating cycle (LnLOOC) and the natural logarithm of the number of loss incidences on a moving five-year basis (LnNOLI). The values have been scaled using the total values of assets for each of the respective companies.

The output indicates that all the innate accruals quality variables have a high joint explanatory power of the changes in accruals quality capital given the high value of the adjusted coefficient of determination of 85.48%. All the corresponding coefficients are statistically significant at 95% confidence interval given that all the P-values are less than 0.05 `and that all the t values are above ±2.179. The fact that F is statistically significant confirms that the model fits the data well.

The findings further indicate that total assets, change in revenues and length of the operating cycles are positive indicators of innate accruals quality while volatility of cash flows from operations and the number of loss incidences are negative predictors of innate accruals quality for the companies quoted at the NSE over the study period. This is verified from the implied signs on the predicted coefficients of these indicators of accruals quality over the study period. This is in line with the findings of Francis et al. (2005) whose study indicated that a significant portion of accruals quality reflect economic fundamentals.

Comparing these findings with the Australian environment, Gray, Koh and Tong (2009) had found out thatthat all the factors apart from business size are positive predictors of accruals quality. In their study, size had a negative coefficient. In the USA, Demirkhan et al. (2012) showed that apart from the size indicator that had a negative coefficient, all the other four innate accruals quality variables had positive coefficients that were all statistically significant. The contrast in these findings with those in this study can however be seen from the fact that the market sizes are very different. The study by Gray, Koh and Tong (2009) for instance incorporated 509 firms while this one is limited by the number of qualifying listed firms to only 39.

Table IV, which is presented in two panels A and B. Panel A indicates the summary data of the innate accruals quality for the NSE over the study period while Panel B reflects the corresponding descriptive statistics. The measures of central tendency, and dispersion indicate that the innate accruals values are relatively high when compared with other reporting regimes. Just like the case of accruals quality however, the

relatively low accruals quality is not very volatile. The mean of 0.221568 for innate accruals quality at 95% confidence interval can be compared with Westerholm (2011) which showed the mean for the US Market over 1970-2006 period as 0.058. This shows that the quality of IAQ in the USA is far higher than that exhibited by the companies quoted at the NSE by almost four times. The corresponding standard deviation in the US market from the Westerholm (2011) study of 0.06 however translates a coefficient of variation of 1.0345 that compares poorly with 0.1877 from the NSE. Further, using compustat data, Johnston (2009) to the findings in this study reveal an innate accruals quality of -0.076 with a corresponding standard deviation of 0.05. This translates to a relative measure of volatility of 0.6579. These when compared with the findings in this study indicate that whereas the innate accruals quality is poor in the Kenyan market, there is a great level of stability of indicated by the low CV.

Whereas the predicted values from model (ii) reflect the innate accruals quality, the residuals from the same regression output reflect the discretionary accruals quality. When the values from Table II and Table IV are compared, there is no significance difference between them given that out of the mean accruals quality of 0.221568706, 0.881567882 (representing 99.999628%) relate to innate accruals quality. This leaves only 0.0004% to account for the discretionary accruals quality. The implication is that almost all the accruals quality among the financial statements reported for the listed companies in kenya relate to innate accruals quality and that discretionary accruals quality is statistically insignificant.

Table IV: Market Innate Accruals Quality Descriptive Statistics

Panel A: Innate Accruals Quality Trend			
Year	IAQ	Year	IAQ
1997	0.26152	2006	0.21307
1998	0.25564	2007	0.20961
1999	0.29410	2008	0.19555
2000	0.27042	2009	0.24246
2001	0.20600	2010	0.25092
2002	0.19174	2011	0.24913
2003	0.18771	2012	0.22928
2004	0.13361	2013	0.21942
2005	0.15649		
Panel B: Innate Accruals Quality Descriptive Statistics			
Mean		0.221568	
Standard Error		0.010086	
Median		0.219421	
Standard Deviation		0.041585	
Sample Variance		0.001730	
Range		0.160490	
Minimum		0.133608	
Maximum		0.294099	
Confidence Level(95.0%)		0.021381	

In Table V, the findings indicate that the null hypothesis that there is no difference between the mean values of innate accruals quality (IAQ) and overall accruals quality (AQ) is not rejected as indicated by the less than critical t-values and the more than 0.05 p-values for the test of difference between means of the two samples at 95% confidence interval. This confirms that discretonary accruals quality is statistically insignificant for the listed companies at the NSE.

Table V: t-Test of Paired Two Sample for Means of AQ and IAQ

	AQ	*IAQ*
Mean	0.221569	0.221569
Variance	0.001921	0.001729
Observations	17	17
Pearson Correlation	0.948793	
Hypothesized Mean Difference	0	
df	16	
t Stat	0.000175	
P(T<=t) two-tail	0.999862	
t Critical two-tail	2.119905	

The finding of a non-existent discretionary accruals quality is perhaps not surprising because similar findings have been obtained in other regulatory regimes. In Australia for instance, Gray, Koh and Tong (2009) find that the mean value of accruals quality of 0.081 is identical to the discretionary mean accruals quality an indication that most of the accruals quality originate from the innate aspects of financial reporting. It is in the same study that they obtain mean accruals value of 0.000. since the discretionary accruals quality values are insignificant, further analysis is done on the overall accruals quality (and therefore innate accruals quality) only.

In the final objective of the study, the effect of accruals quality on equity market returns at the NSE is evaluated. The difference in monthly return of the low accruals quality decile portfolio and the high accruas quality decile portfolio signifies the accruals quality effect on returns as indicated in model (iii). Before running the regression model (iii) for the overall accruals quality, the respective descriptive statistics of the accruals quality premium factors were established as indicated in Table VI.

Consistent with theoretical expectations of Francis et al. (2005) that accruals quality represents an information risk factor, the lowest accruals quality decile portfolio return (LAQR) has a mean average greater than that of highest accruals quality decile portfolio return (HAQR). The validity of this observation is tested by regression running regression model (iii). Interestingly however, the high accruals quality portfolio seems to be more volatile in the negative territory than the low accruals quality portfolio as can

be observed from their coefficients of variation of -23.34 and 10.17 respectively.

Table VI: Descriptive Statistics of Accruals Quality Premium Factors

	LAQR	HAQR	R_M-R_F	SF	BTMF
Mean	0.00941	-0.0037	-0.00612	-0.0101	0.0131
Median	0.00859	-0.0055	-0.00489	-0.0160	0.0091
Std Deviation	0.09568	0.0872	0.06088	0.1121	0.0980
Coefficient of Var.	10.1682	-23.3424	-9.95232	-11.1121	7.4522
Range	1.01658	0.95454	0.41545	1.2259	0.9367
Confidence Level 95%	0.01321	0.01203	0.00840	0.0155	0.0135

The descriptive values can be compared and contrasted with those from Kim and Qi (2010) from the NYSE, AMEX and NASDAQ dataset over the period January 1970 to December 2006. From this study carried out to evaluate accruals quality, stock returns and macroeconomic conditions, the mean accruals quality of the highest and lowest quality deciles were determined as 0.009 and 0.145 respectively. With respective mean respective values of 0.00119 (0.119%) and 0.00135(0.135%), accruals quality is shown as a risk factor that requires a security return premium just as is the case for NSE. However, unlike the results from this study, that of Kim and Qi (2010) portrays comparable volatility as implied by the coefficient of variations of 36.72 and 37.85 for highest and lowest accruals quality portfolios. Using Compustat database over the 1975-2009 period, Du (2011) reports accruals quality values of 0.279 and 0.009 for the lowest and highest accruals quality decile portfolios respectively. The regression results after controlling for multiple regression analysis assumptions are indicated in Table VII.

Table VII: Accruals Quality Return Premium Regression Output

Adjusted R Square	0.75422				
Standard Error	0.00811				
Observations	204				
ANOVA					
	Df	SS	MS	F	SigF F
Regression	3	0.04114	0.01371	208.6413	2.532E-61
Residual	200	0.01315	6.57E-05		
Total	203	0.05429			
	Coefficients	Std Error	t Stat		P-value
Intercept	0.01380	0.00058			3.889E-60
R_M-R_F	0.19419	0.00988	23.75605		1.443E-48
SF	-0.04381	0.00534	19.64494		2.729E-14
BTMF	0.00694	0.00587	-8.20787		2.384E-01
			1.18259		

The findings indicate that size factor and market risk factor are statically significant in explaining security return premium. This is confirmed by the t-values of -8.2079 and 19.6449 respectively at 95% confidence interval which automatically imply that the suggestion of an insignificant relationship between accruals quality return premium and these two variables is automatically rejected. The corresponding p-values of 0.0000 also support this. The value effect is however statistically insignificant at a t-value of 1.18259 and a P-value of 0.2384. This implies that a firm's relationship of book and market values of equity has no bearing on the pricing of the accruals quality return premium.

On the overall, the coefficient of the excess returns β_0, does not only have a positive value, it is also statistically significant t-value of 23.7561. Accordingly, the null hypothesis that there is no significant accruals quality pricing effect at the NSE is rejected. It is concluded that the level of accruals quality affects the security pricing for the companies listed at the NSE. Accruals quality is therefore an information risk factor priced by the NSE and trading strategies based on accruals quality can yield above normal returns at least in the short-run. This implies that low accruals quality portfolios have higher returns that the high accruals quality portfolios hence accruals quality is an information risk factor priced at the NSE. The higher the accruals quality the lower the returns implying a negative pricing effect.The findings from this study are consistent with those of Kim and Qi (2010) who also report that the accruals quality risk factor is significantly priced, after controlling for low-priced stocks.

The annual rebalancing of the accruals portfolios in this study implies that the results contradict to the expectations of Core et al. (2008) that annual rebalancing of portfolios eliminates the significance of the return premium. This indicates that the pricing effect of accruals quality at the NSE is spectacularly overbearing and therefore its effect on returns is significant. This is because even with the less frequent portfolio rebalancing, the coefficient of the accruals quality portfolio return premium is still statistically significant.

The small size of the NSE however implies that the postulation by Brousseau and Gu (2011) that the accruals quality premium is a result of a small number of small-size companies cannot be verified at the NSE. Similarly, the assertion by Armstrong et al. (2011) that the degree of market competition drives the accruals quality premium is difficult to verify at the NSE given its relatively small size with only 39 qualifying companies for the study on accruals quality.

Discussion

The accruals quality model for which working capital is mapped to one year lagging cash flows, current period cash flows, one year leading cashflows, change in revenues and values of plant property and equipment fitted very well on the financial statement data of listed companies at the NSE. On average, the findings from this model indicate that the current year cash flows from operations (CFOt) and change in revenues over two successive financial periods (ΔREV) are positive predictors of working capital while .one year lagging cash flows from operations (CFOt-1), one year leading cash flows from operations (CFOt+1) and the value of plant, property and equipment are all negatively related with the working capital.

In a nutshell, accruals quality was found to be relatively poor, albeit stable, for the companies listed at the NSE. The working capital mapping model used in the study meant that whereas cash flows from operations (one-year lagging; current period and one-year leading), changes in revenues and values of plant, property and equipment are good predictors of working capital, the residual value used for estimating accruals quality for the companies quoted at the Nairobi Securities Exchange was very volatile relative to the levels of accruals quality in other financial markets (Wong, 20089Perotti and Wagenhofer, 2014 and Wysocki, 2008). Although the mean was established as 0.2216, the trend in accruals quality over the period shows a relative stability with a minimum of 0.1358 and a maximum of 0.3042. Accordingly there has been no significant improvement in accruals quality over the 1993 to 2013 period. This could largely be attributed to the tight regulatory regime that provides less room for creative accounting as indicated by the finding that discretionary component of accruals quality is negligible at the NSE.

In essense, discretionary accruals quality is of a far less significant influence on overall accruals quality than innate accruals quality. This signifies that in the Kenyan financial reporting environment, the regulatory reporting effect on the quality of accruals dominates that managerial opportunism and idiosyncratic firm financial reporting attributes with respect to the quality of accounting reports in general and the portrayal of accruals in particular.

All the innate accruals quality factors (total assets; the volatility of cash flows from operations in the same year; the volatility of revenue in the accruals period; the length of the operations cycle of the firm and the number of loss incidences are all statistically significant is determining innate accruals quality from overall accruals quality of the companies quoted at the NSE. The findings indicate that total assets, change in revenues and length of the operating cycles are positive indicators of innate accruals quality while volatility of cash flows from operations and the number of loss incidences

are negative predictors of innate accruals quality for the companies quoted at the NSE.

The study rejected null hypothesis that accruals quality has no effect on market pricing of cost of capital with the conclusion that accruals quality is a priced risk factor and that high accruals quality companies have low market returns while the low accruals quality companies have an inherent returns premium over and over the high accruals quality companies.Accruals quality is therefore a diversifiable information risk factor priced by the NSE and trading strategies based on accruals quality can yield above normal returns at least in the short-run. Market returns are inversely related with accruals quality.

Conclusion

Several conclusions can be drawn from this study. Firstly, on an overall basis, current year cash flows from operations and change in revenues over two successive financial periods are positive predictors of working capital while the one year lagging cash flows from operations, one year leading cash flows from operations and the value of plant, property and equipment are positive predictors working capital

Secondly, companies listed at the NSE have a relatively poor accruals quality than firms quoted in other financial markets. In addition, the volatility in the quality of accruals is comparatively very small. This suggests that firms at the NSE have little discretion if any in portrayal of earnings such that there is no significant swings in the accruals information over succeive accrounting periods and cross-sectionally among various firms. The most important determinant of accruals quality in Kenya is the innate aspects of the regulatory environment. This points towards a tight regulatory regime among the listed firms in Kenya.

Thirdly, the innate component of accruals quality dominates the discretionary component such that accruals quality in kenya is largely a function of the innate characteristics of the operating environment. Discretionary accruals quality is largely a negligible compenent of accruals quality.

Lastly, the accruals quality has a market pricing premium is is priced distinctly from the market market risk as indicated by market beta. Accruals quality is therefore a diversifiable information risk factor priced by the NSE and trading strategies based on accruals quality can yield above normal returns at least in the short-run. Poor accruals quality firm have higher market returns than the high accruals quality firms. The robustness of the findings in the study is however limited by the fact that the NSE is a relatively small market with very few listed companies such that tests with respect to the size anomaly as not possible.

One of the limitatios of this study is that it focused only on the firms listed at the Nairobi securities Exchange. Accordingly, the study did not take into account the accruals quality and pricing aspects of small and medium size companies in Kenya because they are largely not listed at the NSE. It is therefore suggested that a study on the effect of accruals quality on cost of capital of small and medium size enterprises for wider conclusions. The findings from such a study could be compared with those from this study to check if there are any significant differences between cost of capital and accruals quality characteristics of the listed and non listed firms as well as large and small scale enterprises in Kenya.

Finally, the study did not consider governmental organizations, their accruals aspects as well as their cost of capital attributes. The findings of this study are therefore limited to public companies yet parastatals play a significant part in the Kenyan economy. A study is therefore recommended to evaluate the effect of accruals quality on cost of capital of governmental business enterprises and government associated organizations like public-private partnership special purpose vehicles.

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