

EFFECT OF WORKING CAPITAL MANAGEMENT ON TAX EFFICIENCY OF NON-FINANCIAL LISTED FIRMS AT NAIROBI SECURITIES EXCHANGE

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Abstract: *It is likely that a firms' liquidity determines to a great extent the tax efficiency of a firm. However, whether excess liquidity or inadequate liquidity or injures the operations and performance of the firms in meeting their short-term obligation including tax expense has been a dilemma and controversial to tax consultants, financial analyst and experts in corporate finance. In trying to fill this controversy, this research addressed the following research question: "What is the the effect of working capital management on tax efficiency of non-financial firms listed at NSE, Kenya from 2013-2018. Further, the research reviewed the effect of variables including cash management, inventory management, accounts payables management, accounts receivable management and firm size on tax efficiency of non-financial firms listed at NSE, Kenya. To obtain the objectives of the study, a longitudinal research design was conducted on 42 non-financial firms listed at NSE from the period of 2013-2018. A census study was applied to collect the panel data for the 6 years. The study used financial statement Approach (FSA) that is secondary data from the financial statements and notes to financial statements, annual reports and disclosures provided by CBK, CMA as well as data from the NSE on listed non-financial institution. Descriptive statistics including maximum, minimum, means and standard deviations was used. Data analysis was done using the SSPS version 25 where multiple regression model, ANOVA and correlation coefficients was generated. Normality test confirmed that data was normally distributed since the values were neither below -0.96 nor above +1.96. Multicollinearity tests was done by use of Variance Inflation Factor (VIF) and values were below 10 indicating existence of multicollinearity problem. Breusch-Pagan and Koenker heteroscedacity showed that residuals were homogenous as P-Value for Breusch-Pagan (BP) was 0.95 and Koenker P-value of 0.95 were more than 0.05. The study also showed that the r-squared value was 0.447, which indicate that nearly 48% of the total variations in the tax efficiency among non-financial firms listed at NSE. The R coefficient of the correlation that shows the relationship that exist among the research variables was 0.690 which implies a strong positive correlation exist among the study variables as captured by the study variables. The findings further indicated that the research model had an f-tests of 11.839, which was statistically significant at 0.1% confidence level. The study concluded that there is a weak positive and significant effect of cash management, inventory management and firm size on tax efficiency of non-financial firms at NSE. The study also concluded that there is a negative but significant effect of accounts payable and accounts receivable management on tax efficiency of non-financial firms at NSE.*

Keywords: *Accounts Payable Management, Accounts Receivables Management, Cash management, Inventory management, Tax Efficiency, Working Capital Management*

1.0 Introduction

Tax efficiency of firms is a subject that has attracted a lot of attention, comments and interests from tax consultants, financial experts, researchers, the general public and the management of corporate entities (Aikaeli, 2016). Tax efficiency simply defined an attempt to minimize tax liability when given many different financial decisions (Fritschy, 2016). A non-financial institution is said to be tax efficient if the tax income of the firm is lower than an alternate financial structure that attains the same end. Moreover, taxes whether direct or indirect taxes paid by firms heavily affects the firms' cost structure and liquidity. According to Loretz and Moore (2018) tax expense is a significant cost to firms as it affects the firm's cash flow and working capital. As a result of this, organizations all over the world adopt tax planning strategies targeted at enhancing tax efficiency without adversely affecting the overall working capital management of the firm. However, Aikaeli (2016) argues that heavy tax burdens on firms' profits have been observed to reduce the cash and bank amounts available to meet their short-term obligations.

The effect of firms' working capital management of financial institution has remained fascinating and intriguing, though very elusive in measurement of tax efficiency (Kipnetich, 2011). According to Kesimli and Gunay (2011) working capital management refers to all management actions and decisions that influences the size and efficiency of the working capital that is used in maintaining the optimal balance of current liabilities such as accounts payables and current assets including cash, accounts receivables and inventory. Therefore, each stakeholder has concern in the maintaining the working capital; for instance; tax consultants look at the current assets to know whether the firm can be able to pay taxes and follow tax regulation; Suppliers of goods also will look at the working capital of the firm before selling goods on credit; whereas employees are interested about the firm's to know whether the firm can meet its employee related obligations such as salary, pension, provident fund, and many others. Thus, a firm needs to manage their working capital (Kipnetich, 2011).

Loretz and Moore (2018) argues that working capital management is the cash needed to finance the day to day revenue activities of the firm. Therefore, efficient working capital management involves controlling and maintaining both the current assets and current liability in a sense that risk exposure of a firm not meeting its short term obligation is eliminated and excess investments is avoided (Loretz & Moore, 2018). Therefore, a firm's ultimate long term goal is based on maintaining enough cash and liquid assets with the capability of converting them immediately to other funds without loss of value to meet the firm's short-term payment obligation and financial commitment including tax expense (Sharma & Kumar, 2011). The aim of working capital management should be to regulate and control those costs that cannot be eliminated altogether. These costs include the tax expense, credit administration expenses, bad debts, losses and opportunity cost of the fund tied up in receivables. Thus, Ruozi and Ferrari (2012) points that a firm that has adequate working capital in relation to its size performs much way better than those firms that have less than the required working capital in relation to their size.

Onsumu (2015) noted that working capital management is likely to be fundamental to the tax efficiency of any firm. Since it may be vital to the existence and operations of a firm. Mwangi (2013) opined that efficient working capital management of a firm is of extreme relevance for the firm's profitability and well-being. Thus, the management of the current ratio is likely to directly affect the results of a firm's operation (Olagunju, Adeyanju & Oluwayinka, 2011). Previous researches, for instance, Blagikh and Salnikov (2010) also confirms that the use of incorrect working capital management models is likely to decrease the return ratio of a firm and therefore cause its insolvency. Besides; holding cash also provides some benefits, such as the payment for daily expenses, such as taxes, salaries and materials. In spite the fact that future cash flows are also unreliable,

holding cash gives a safety mechanisms for subsequent downturns. Likewise, the ownership of cash warranties are undertaken for highly profitable investments for firms that demands immediate payment.

Statement of the Problem

For tax to be of high burden to the firm it may be likely because tax rates are high or due to poor working capital management (Kirwa, 2016). Moreover, firms are required to maintain minimum prudential working capital requirements. For instance, Bank of India (RBI) (2014) requires all firms to hold enough liquid assets (cash) to cover at least 25% of time deposits and demand; China Banking Regulatory Commission (CBRC) requires Chinese banks to maintain a minimum current ratio of 25%; Hong Kong Monetary Authority (2010) obliges all firms to maintain at least 25% of one month liabilities which can be easily liquefied into cash without loss of value; Thailand obliges Banks to maintain at least 6% of all deposits and borrowings in liquid asset to be converted to immediate cash whereas South Korea's Banking Commission Regulators (BCC) and Financial Supervisory Service (2010) require banks to maintain a one to one ratio of denominated current assets to current liabilities. In Kenya, CBK Supervision Authority requires that any firm to maintain adequate capital and adequate cash that denotes financial strength and as well conform to any policy or regulation issued by CBK on capital requirements or minimum ratios (Banking Act, Sec. 57₍₂₎). However, how firms could withhold such minimum requirement to ensure good working capital management has been a puzzle to many financial experts, specialist and tax consultants.

Maina (2011) argues that a firm needs sufficient resources to keep it going. However, many managers use wrong methods for working capital decisions as such the working capital mix which if not efficiently managed may lead to under or over capitalization and worse the liquidation of the firm. Further, Bhunia and Das (2012) posits that if working capital is not properly managed, it is likely to lead to severe taxes in an institution. Burman et al. (2016) also opposes the argument of Bhunia and Das (2012) by stating that a firm may be able to pay its taxes with a poor working capital. However, working capital level should not fall below minimum requirement as it may lead to the inability of the firm to pay taxes. These scholars produces mixed results of positive and negative effect of working capital on tax efficiency on firms.

Despite tax efficiency being a paramount of business entities, there exists a dilemma on whether working capital management affects tax efficiency in any way. For instance, Banks (2015) and Ruozi and Ferrari (2012) conducted a study on the relationship between tax paid and level of investment in Nigeria. They looked at all types of taxes that a company is subjected to. But they failed to measure the effect of these taxes; also a Kenyan perspective is needed. Kusi (2015) carried out some reforms aimed at increasing tax revenue productivity in Ghana but failed to show the tax efficiency of such reforms. Further, Kariuki (2012) surveyed revenue enhancement strategies by Local Authorities in Kenya, he however investigated the credibility of tax of Local Authorities to promote revenue generation and not tax efficiency; Kimeli (2013) studied the taxpayers attitudes and tax compliance behavior in Kenya, he looked at tax compliance and not tax efficiency.

World Bank (2012) also carried out a study on the efficiency of paying tax in Kenya and found that taxpayers face significant compliance costs and this interferes with their willingness to pay. Their study however targeted only income tax payers. Nyale (2010) looked at the relationship between leverage and corporate while Wairimu (2012) did a study on the empirical relationship between liquidity and corporate taxes; these studies are talking about corporate tax separately and not linking them to other variables such a cash management, inventory management, accounts payables management, accounts receivable management and firm size.

The empirical studies reviewed above showed that there exists a dilemma of whether working capital management affects tax efficiency of non-financial firms. Many studies have separately studied working capital management and tax efficiency. Besides the different theories reviewed, these studies have been done in different macroeconomic environment both internationally and in Africa, a Kenyan Perspective is needed. Moreover, these studies are found to be differing in how to measure working capital levels and tax efficiency, they therefore lack of consensus. It is in light of this background that the researcher tried to fill these gaps by answering the question; what is the effect of working capital management on tax efficiency of non-financial firms listed at NSE, Kenya?

Specific objectives

To determine the effect of cash management on tax efficiency of non-financial firms listed at NSE, Kenya.

To determine the effect of inventory management on tax efficiency of non-financial firms listed at NSE, Kenya.

To determine the effect of account payables management on tax efficiency of non-financial firms listed at NSE, Kenya.

To determine the effect of account receivables management on tax efficiency of non-financial firms listed at NSE, Kenya.

Research Hypothesis

H₀; There is no significant effect of cash management on tax efficiency of non-financial firms listed at NSE, Kenya.

H₀; There is no significant effect of inventory management on tax efficiency of non-financial firms listed at NSE, Kenya.

H₀; There is no significant effect of account payables management on tax efficiency of non-financial firms listed at NSE, Kenya.

H₀; There is no significant effect of account receivables management on tax efficiency of non-financial firms listed at NSE, Kenya.

2.0 Literature Review

At the heart of modelling, the following theories and model that underpinned the effect of firm's liquidity on tax efficiency were used: **trade-off theory, shiftability theory, Liability management model and optimal tax theory.**

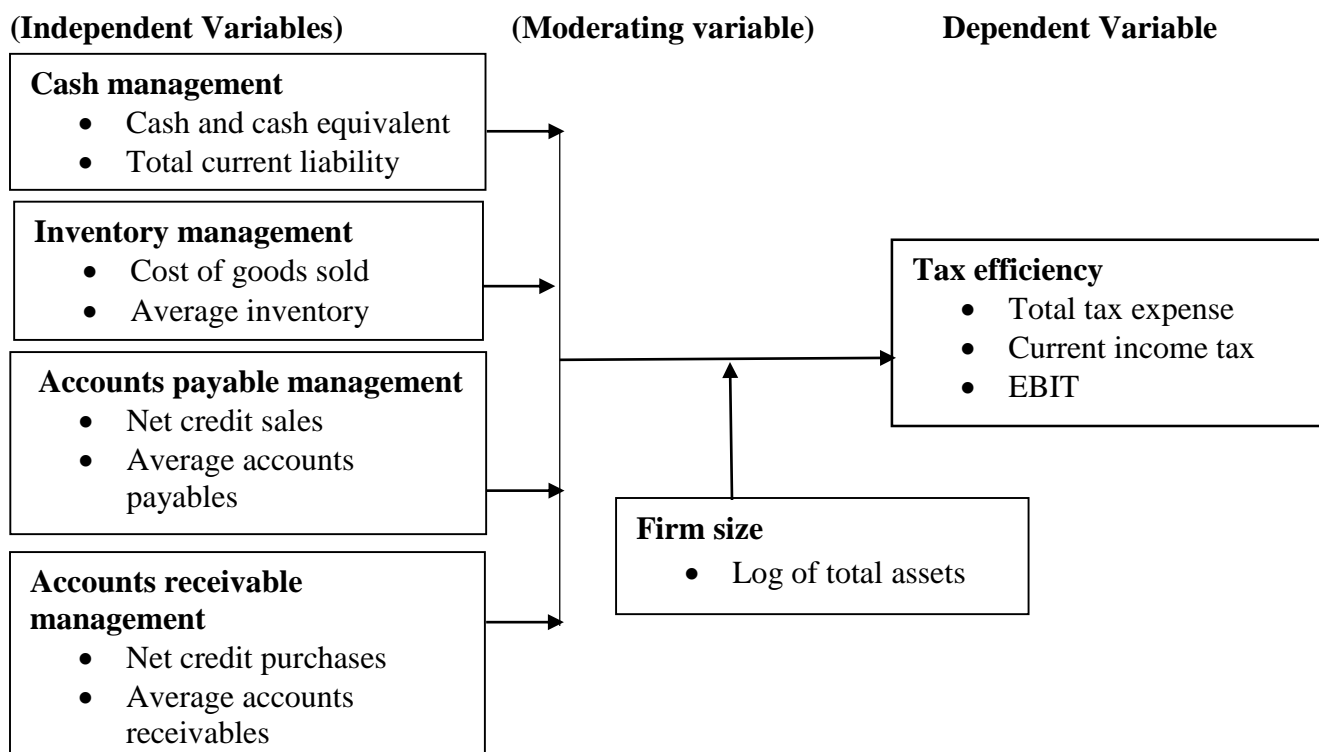
Trade off-theory- The classical version of the trade-off theory goes back to Kraus and Litzenberger (1995) who considered a balance between the dead weight costs of bankruptcy and the tax saving benefits of debt. This theory states that firms chooses their ideal working capital that increases the value of the firm by minimizing the costs of predominant market imperfections, such as taxes, bankruptcy costs, and agency costs (Fama & French, 2002). The trade-off theory originates from the Modigliani and Miller (1958) prepositions. MM I states that in a perfect capital market it is irrelevant how a firm chooses to raise finance as the financing decision has no impact on firm value (Modigliani & Miller, 1958). Conversely, since capital markets are imperfect, there exists taxes, bankruptcy costs, and agency costs indicate that MM I does not apply in reality.

Shiftability Theory - was founded by Moulton (1918) in USA who states that firms should maintain minimum substantial amount of liquid assets that can be shifted immediately without any material loss in case of necessity. Moulton (1918) quantified that to realize minimum cash reserves, relying on maturing bills are not needed but holding liquid assets which can be shifted to other firms in form of cash whenever needed. Proponents like Molefe and Muzindutsi (2016) proposed that shiftability or transferability of a firm’s assets is based on guaranteed good working capital management. Suppose when there are no hard cash management, firms tend to trade pawn goods on loan to get adequate cash. The crisis happens because collateral which is illiquid turns into liquid.

Liability Management Model- Originally liability management model was founded in 1970s (Saunders, Cornett, & McGraw, 2006). The liability management model holds that firms can meet their working capital management requirements by bidding in the market for additional funds to meet loan demand and deposit withdrawal. Some proponents like Onsumu (2015) and Sharma and Kumar (2011) argues that there is no need to follow old working capital strategies like maintaining liquid assets, debentures, inventory, cash reserve and liquid investments; firms can focus on liabilities side of statement of financial position. Accordingly, firms can meet working capital needs by borrowing in the money and capital markets (Onsumu, 2015).

Optimal Tax Theory- was founded by Economist Ramsey (1927) and Mirrlees (1971). The Theory is also referred as the study of how tax is designed and implemented so as to reduce distortion and inefficiency under a given economic constraints. This theory suggests there exists two tax rate schedules namely; optimal marginal tax and flat tax. Optimal marginal tax involves rate schedules that declines at high income and depend on the distribution of ability. On the other hand, flat tax has universal rates for lump-sum funds transfer but not closely optimal tax rates. Mwangi (2013) states that the main objective of tax is optimization of tax revenue which helps in creation of public goods and services and redistribution of wealth levels. However, most taxes distort firm’s behaviour, because the activity being taxed becomes relatively less desirable.

Conceptual Framework



Empirical review

Cash management and Tax Efficiency

Bhunia and Das (2012) included cash reserves measured by cash ratio as a variable in their study of examining the relationship between the working capital management and the profitability of Indian private sector firms from the period of 2006-2011. The study used independent variables liquidity ratios including: cash position ratio, liquid ratio, debt to equity ratio, interest coverage ratio, debtors' turnover ratio, inventory turnover ratio and creditors' turnover ratio. Profitability was measured by ROCE. Using multiple regression analysis, the study found a weak relationship between all the liquidity ratios on profitability. Nevertheless, the study should have been extended to identify the other factors that drive profitability in addition to working capital management.

Soenen (2014) also used cash management as independent variable in his study of the effect of international cash management practices of Netherlands listed firms from 1982 to 2013. A survey was undertaken among 350 Netherlands based companies. The study also used non-linear regression model. The study indicated in a great percentage (67%) that cash flows were badly managed by Netherlands based companies. The study further found that cash and marketable securities were being handled on the basis of ad-hoc opinions rather than soundly conceived by cash holding management policy. The study recommended that firms can enlarge cash position by instituting clear regulation and policy while cash position can be managed by maintaining the minimum cash as required by Bank of Netherlands. The study however did not measure cash position of the firm hence no effect was established. The study filled the gap by investing the effect of cash management as measured by cash ratio on tax efficiency of non-financial firms listed at NSE, Kenya.

Abbasali and Milad (2012) conducted a market evaluation study on impact of working capital management on profitability of a sample of firms listed in Tehran Stock Exchange from the period of 2006 to 2010. They study used independent variables including cash ratio, current ratio, current assets to total assets ratio, current liabilities to total assets ratio and total debt to total assets ratio as measure ratios of working capital. Descriptive method was used and Ordinary least squares linear regression analysis was done. The findings of the study indicated a significant relationship between the working capital and profitability of a firm. The study also found that there is no significant relationship with the criterion of market value of shares of a firm with cash management. Nevertheless they failed to breakdown the analysis per industry. As earlier noted, different industries have their own specific characteristics and therefore, what favors one industry may not favor the other industry. The study covered this gap by giving a broader view on effect of cash management as measured by cash ratio on tax efficiency of non-financial firms listed at NSE, Kenya.

Njoroge (2018) also included cash ratio as a variable on his study of effect of working capital on financial performance of selected 30 construction and allied and companies listed at the NSE. The objective of the study was to establish the effect of cash ratio, current ratio and debt ratio on construction and allied and companies listed at the NSE. Purposive sampling and causal research design was adopted. The data was analyzed using both descriptive and inferential statistics. The researcher found that the cash ratio had a significant effect on ROA with a p-value of less than 0.05. The debt ratio was also found to have no significant effect on ROA as it had a significance level of 0.571. However, this study relied on one industry. The study covered this gap by giving a broader view on effect of cash management as measured by cash ratio on tax efficiency of all non-financial firms listed at NSE, Kenya.

Inventory Management and Tax efficiency

Melita, Elfani and Petros (2010) used day in inventory as a measure of inventory management in their study of the effect of working management on financial performance of manufacturing firm in Cyprus. Their data set consisted of manufacturing firms listed at Cyprus Stock Exchange for the period 1998-2009. Using multivariate regression analysis, the results revealed that there is a positive effect of working capital management on profitability. In detail, the results indicated that the inventory management and all other major constituents; days in inventory, day's sales outstanding, account payables, accounts receivables, and creditors' payment period have positive significant on financial performance of manufacturing firms in Cyprus. However, this study covered specifically on manufacturing firms. Different industries have their own specific characteristics and therefore, what favors one industry may not favor the other industry. Therefore, assuming that the effect of working capital management on profitability is the similar for each is misleading. The study filled this gap by investigating the effect of inventory management measured by inventory turnover ratio on tax efficiency of all non-financial firms listed at NSE, Kenya.

Zeng (2010) found that inventory management is a factor that influence tax efficiency rates in his empirical study of examining the effect of long term income tax liability for Chinese public corporations from 1998 to 2007. The main aim of the study was to determine the factors that are associated with Chinese firms long-run effective tax rates. Secondary data was collected from China stock market financial statement database and corporate ownership structure database. He tested both univariate and multivariate tests. The study revealed that effective tax rates are considerably lower in all Chinese public corporations than the statutory tax rate. Also, the study found that factors associated with effective tax rates were; inventory management, firm's size, profitability, cash holdings, capital structure, and capital intensity. However, effective tax rates vary significantly across industries and geographic areas, this scenario may not be the same in Kenya. The study filled this gap by investigating the effect of inventory management measured by inventory turnover ratio on tax efficiency of all non-financial firms listed at NSE, Kenya.

Makori and Jagongo (2018) included inventory management as a variable in their empirical study of the relationship between working capital management and firm profitability of manufacturing and construction firms listed on NSE from 2003 to 2012. The researcher used Ordinary Least Squares regression and Pearson's correlation to establish the relationship between working capital and profitability. They found that there is a positive relationship between profitability and average inventory, cash holdings and number of day's accounts payables. However, the study found a negative relationship between day's accounts receivable and cash conversion ratio with profitability. The study also established that the bank ratios, cash ratio, financial leverage, sales growth, and firm size have significant effect on the profitability of the firms. However, the study only focused on current ratio, accounts receivable and cash conversion cycle, average inventory and accounts payables; it did not determine how levels of inventory turnover ratio affect the tax efficiency of the firm. This study filled these gaps by investigating the effect of inventory management measured by inventory turnover ratio on tax efficiency of all non-financial firms listed at NSE, Kenya.

Arthemon (2018) conducted a study on the relationship between liquidity and performance of manufacturing cement firms in Kenya. The study used Purposive sample design which suited to the selected samples of top cement companies of Kenyan Cement Industry namely Bamburi Cement, Athi River Mining and East African Portland Cement. Secondary data was extracted from the income statements, balance sheets starting from 2009 to 2017 and was analyzed by use of descriptive statistics and relationship drawn using multiple regression analysis. The research findings revealed that the mean values of cash at bank ratio to ROCE was 1.71 which is

below the standard conventional rule of 2:1. Using both regression analysis and correlation, the study revealed that Current Ratio was positively associated with ROCE. The gap in this study is that it the study only focused on the liquidity ratios including current and quick ratios, which do not inform us on how the level of working capital measured against the cash ratio, average inventory, receivables and payables effect on tax efficiency of firms. This study filled the gap by investigating these capital management effect on tax efficiency of all non-financial firms listed at NSE, Kenya.

Accounts Payable Management and Tax efficiency

Sen and Oruc (2016) conducted an empirical study on the association between efficiency levels of working capital efficiency on profitability of firms listed at Istanbul Securities Exchange. The variables for working capital included accounts payables, operating cash flow, firm size and leverage while profitability was measured by ROA. Simple random sampling was used to select 42 firms listed Istanbul Securities Exchange from 2010-2015. Secondary data was collected and analyzed using least square regression method. The study found that there is a significance negative association between accounts payables, firm size and leverage with profitability of firms listed at Istanbul Securities Exchange whereas there was a positive significant association between operating cash flow with profitability of firms listed at Istanbul Securities Exchange. A Kenyan perspective was needed. The researcher filled this gap by investigating the effect of accounts payables on tax efficiency of all non-financial firms listed at NSE, Kenya.

Rita and Shleifer (2018) conducted a cross country empirical study on the effect of corporate taxes on investment of water house coopers accountants and tax lawyers of entrepreneurship from 2015 to 2017. Panel data used covered the tax system effective in fiscal year 2015-2017. The sample consist of 85 countries covered by Djankove (2016) including; 27 high income countries, 19 upper-middle income countries, 21 lower-middle income and 18 low income countries. In addition to 22 rich OECD countries, 10 were in East Asia, 13 in Latin America, 17 in Eastern Europe, 14 in Africa, 6 in the Middle East and 3 in south Asia. The study revealed that selecting standardized business fills out tax return as well as providing supporting information and relevant tax schedules.

The study also found that there exists a negative relationship between effects of corporate taxes on investment more so in marketable securities because of foreign exchange effect. However this research gave a generalized results on 85 countries. The study covered this gap by investigating the effect of payables including tax income liability on tax efficiency of all of all non-financial firms listed at NSE, Kenya.

Kipngetch (2012) did a study on the relationship between tax paid and level of investment for the quoted companies in Kenya. The population of the study was all companies listed in the NSE from the year 2006 to 2010. Investment in securities including treasury bills and commercial paper were investigated. Data was analyzed using descriptive statistics. It was concluded that there is a relatively strong relationship between tax paid and investment made especially pronounced in the financial sector and agricultural sector. However, the study did not look at the exact effect of tax on investment. But he further suggested in research area that effect of payables and tax can be investigated.

Ngira et al., (2016) conducted a study on effects of working capital management on the security market performance of companies listed at the NSE, over a 72-month period of 2008 to 2013. The study used descriptive research design and the Ordinary Least Squares (OLS) model to analyze data. The study focused on working capital as measured by Cash Conversion Cycle (CCC) and how individual working capital component including accounts payables, accounts receivable and inventory influenced. Further, the study

revealed that working capital as measured by Cash Conversion Cycle (CCC), sales growth and lesser debtor's collection period affected security market performance of companies. From the study findings, the liquid portfolio excess market return is suggestively higher than the illiquid portfolio excess market return. This could possibly mean that the liquid portfolio companies are very risky while the illiquid portfolio companies are less risky as confirmed by the discrepancies in the coefficient of variation. Since there was failure in market performance of liquid companies, it was observed that the effect of liquidity management on the market performance of companies listed at the NSE increases with the level of illiquidity. Despite this finding, a gap exists between the payables and tax efficiency.

Accounts Receivable Management and Tax efficiency

Abbabi and Abdabi (2018) used account receivables as a variable on their study of determinants of working capital for Palestinian industrial firms. They study used simple random sampling to select 11 industrial firms listed at Palestinian Securities Exchange for the period of 2010-2017. Secondary data was collected from the annual reports financial statements of Palestinian industrial firms. Linear regression model was used to analyze the panel data. The working capital was the dependent variable measured by current ratio while the independent variables were accounts receivables, leverage, firm size, ROA, operating cash flow and economic growth. The study found that accounts payables, ROA and operating cash flow were significantly determinants of working capital and were positively related while leverage and firm size were significant but negatively related to working capital. A Kenyan perspective was needed. The researcher filled this gap by investigating the effect of accounts receivables on tax efficiency of all non-financial firms listed at NSE, Kenya.

Mohamad and Elias (2017) conducted a study on working capital management practices of listed Public companies in Bursa, Malaysia. The study adopted purposive sampling of 150 public listed companies for the period of 2011-2016. Multiple regression model was analyzed by use of panel data which was collected from the annual reports of such firms. The working capital variables included receivables, firm size, free cash flow, gross domestic product and capital expenditure. The study found that there is a significant relationship between working capital and its determinant factors. A Kenyan perspective was needed. The researcher filled this gap by investigating the effect of accounts receivables on tax efficiency of all non-financial firms listed at NSE, Kenya.

Akoto, Awunyo and Angm (2013) examined the relationship between working capital management practices and profitability of listed manufacturing firms in Ghana. The study used secondary data collected from all the 13 listed manufacturing firms in Ghana from 2001-2012. Using multiple regression model and panel data, they found a significantly negative relationship between profitability and average accounts receivable. It also found that the firms' average receivable turnover and current asset ratio positively influenced profitability. The gap in this study is it failure to establish how the working capital affects the tax efficiency of a firm, since they only focused on the average accounts receivable and cash conversion cycle. The researcher filled this gap by investigating the effect of accounts receivables as measured by account receivable turnover on tax efficiency of non-financial firms listed at NSE, Kenya.

Nyamao et al. (2018) conducted a study to investigate the effects of working capital management practices on financial performance of Small-Scale Enterprises (SSEs) in Kisii South, Kenya. The aim of the study was to determine how accounts payables measured by account payable turnover ratio influence financial performance of SSEs. The study adopted a cross-sectional survey research design and analyzed data using multiple regression model. The study found that accounts payables were low amongst SSEs as majority of them had not

held enough working capital. Correspondingly, their financial performance was a small average. The study concluded that there is a negative relationship between working capital and financial performance of the SSEs. Though, the study relied on primary qualitative data to measure working capital levels.

Firm Size and Tax Efficiency

Afeef (2018) used firm size as the moderating variable in their study of effect of working capital on profitability of small and medium enterprises listed at Karachi Securities exchange in Pakistan. The study used a census study of all 40 small and medium enterprises listed at Karachi Securities exchange in Pakistan for the period of 2012-2016. Profitability was measured by ROA and operating income while the dependent variables included firm size, leverage, average inventory and accounts payables. Secondary data collected was tested by uses of univariate and multivariate tests. The study found that there is a negative signification association between firm size and leverage with profitability of small and medium enterprises listed at Karachi Securities exchange whereas there was a positive significant relationship between average inventory and accounts payables with profitability of small and medium enterprises listed at Karachi Securities exchange. He however suggested for a further research on the effect of firm size. This study tried to fill this gap by investigating the relationship the firm's size and tax efficiency of non-financial firms listed at NSE, Kenya.

Deloof (2016) conducted a study to determine whether working capital affected profitability of Hindalco industries limited in India. The dependent variables was profitability measured by EBIT to Total Assets Ratio while independent variables included firm size, receivables and liquidity. The study used correlation analysis and a multivariate regression model. Panel data was collected secondary from the period of 2010-2015. The study averred that the is a negative relationship between the firm size and liquidity with profitability of Hindalco industries limited in India whereas there is a positive relationship between average inventory measured by inventory turnover ratio with profitability of Hindalco industries limited in India. A Kenyan perspective was needed. This study tried to fill this gap by investigating the relationship the firm's size and tax efficiency of non-financial firms listed at NSE, Kenya.

Ukaegbu (2014) also conducted an empirical study on the significance of working management in determining firm profitability of African countries. The study covered African countries including Kenya, Egypt, Nigeria and South Africa. Profitability was measured by Net operating profit whereas the independent variables included firm size, cash conversion cycle, number of day's accounts payable and number of day's accounts receivable. Secondary data from 2017-2013 was collected and panel regression analysis was used to analysis the data. The study found that there is a negative relationship between firms size and cash conversion cycle with net operating profit whereas there is a positive relationship between number of day's accounts payable and number of day's accounts receivable with net operating profit of firms in African countries. This study gave a generalized results of all African countries. This study narrowed down the working capital effect to a Kenyan perspective only.

In Kenya, Afande (2015) conducted a study on the relationship between working capital and profitability of cement companies in Kenya. Profitability was measured by ROA whereas the independent variable included firm's size, cash conversion cycle, sales growth, depth ratio and current ratio. A census of study of 5 listed Construction and Allied company at NSE was done and panel data collected from 2009-2014, namely; Athi River Mining Ltd, E.A Portland Cement Ltd, E.A Cables Ltd, Crown Berger Ltd and Bamburi Cement Ltd. Multiple regression model was used to analyze data. The study found that there is a negative significant relationship between ROA with firm's size and sales growth while there existed a positive significant

relationship for ROA with cash conversion cycle, depth ratio and current ratio. However the study only cover one industry, that is Construction and Allied Industry. Another study was suggested for further study of other industries. This study filled the gap by investigating the effect of working capital management on tax efficiency of non-financial firms listed at NSE, Kenya.

3.0 Research Methodology

The study adopted a longitudinal research design. Longitudinal research design follows a sample over time and makes repeated observation across that period (Mugenda & Mugenda, 2003). According to Kothari (2004) longitudinal research design helps in describing patterns and measuring patterns over more than one time period. It also establishes the change and magnitudes of casual relationships. The population comprised of the entire data of non-financial firms listed at NSE from 2013-2018. A census study was done for 42 non-financial firms listed at the Nairobi Securities Exchange. A census is highly recommended since it eliminates errors that are associated with sampling Kothari (2004). Secondary data was collected from the financial statement, firm’s annual reports, notes and disclosures of NSE handbook, CBK and CMA website, journals, relevant internet and library materials. Data collected was based on key variables which were; cash management, inventory management, accounts payable management and accounts receivable management on tax efficiency of firms listed at NSE. The secondary data collected was analyzed by use of both descriptive and inferential statistics. Descriptive statistics involves description of data using statistics such as means and standard deviations. Inferential statistics includes using t-tests for relationship purposes. Statistical Package for Social Sciences (SPSS) version 25.0 was used for the data analysis. The study tested for normality and autocorrelation. Normality is important in knowing the shape of the distribution and helps to predict dependent variables scores. The research was controlled by autocorrelation as provided by (Levine, 2008). Further, the multiple regression model was established;

$$Y = \alpha_{it} + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + \beta_5 X_{5it} + \epsilon$$

Where;

Y : is the Tax Efficiency measured by Tax Efficiency Rate = Corporate Taxes + Indirect and Direct Taxes / EBIT

X_1 : is the Cash Management measured by Cash Ratio = Cash and Cash Equivalent / Total Current Liabilities

X_2 : is the Inventory Management measured by Inventory Turnover Ratio = Cost of Goods Sold / Average Inventory

X_3 : is the Accounts Payable Management measured by Accounts Payable Turnover Ratio = Net credit sales / Average Accounts Payables

X_4 : is the Accounts Receivable Management measured by Accounts Receivable Turnover Ratio = Net Purchases / Average Accounts Receivables

X_5 : is the Firm Size measured by Log of Total assets

ϵ : Error term, α : Intercept and β_i : coefficient of the independent variable i which measures the responsiveness of Y to changes in i .

4.0 Data Analysis And Research Findings

Descriptive Statistics

This shows the statistically the mean, standard deviation, minimum and maximum of the dependent and the independent variables over the 5 year period, as represented in table 1

Table 1 Summary Statistics

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
TER	42	-.15.04	38.3526	1.334390	5.9287438
CR	42	-.2573	4.4884	.722544	1.2104881
ITR	42	.0687	300.6853	12.369791	45.7835607
APTR	42	.4771	188.9727	11.671522	28.8552547
ARTR	42	.5816	30.3584	6.808586	6.2538940
FSZ	42	3.2525	9.3035	6.858538	1.0450541

From the table findings, Tax Efficiency rate (TER) ranges from -15.04% to 38.3526% with a mean of 1.3343 and a standard deviation of 5.9287. Cash Ratio (CR) shows ranges from -0. 2573 to 4.4884 with a mean of 0.7225 and a standard deviation of 1.2104. Inventory Turnover Ratio (ITR) ranges from 0.687 to 300.6858 with a mean of 12.3697 and 45.7836. Accounts Payables Turnover Ratio (APTR) ranges from ranges from 0.4771to 188.9727 with a mean of 11.6715 and standard deviation of 28.8552. Accounts Receivable Turnover Ratio (ARTR) ranges from 0.5816 to 30.3584 with a mean of 12.3697 and standard deviation of 6.2538. Last but not least, the firm size ratio measured by log of total assets (FSZ) ranges from 3.2525 to 9.3035 with a mean of 6.8085 and standard deviation of 1.0450

Diagnostic Tests

Normality Test

Normality tests are used to determine whether a data set is modeled for normal distribution. The researcher assessed normality test by using Skewness and Kurtosis statistics. Z-value was calculated by dividing the statistics values by the standard error. The values are normally distributed if their span values of the Z-value is between -1.96 to +1.96. The data findings were recorded in table 2.

Table 2 Normality Test

		Statistic	Std. Error	Z-value
CR	Skewness	-.134	.105	-1.28
	Kurtosis	-.554	.717	-.78
ITR	Skewness	.651	.571	1.14
	Kurtosis	.241	.371	0.65
APTR	Skewness	-.014	.201	-.70
	Kurtosis	-.881	.759	-1.16
ARTR	Skewness	.374	.365	1.03
	Kurtosis	.584	.717	.81
FSZ	Skewness	.019	.012	1.58
	Kurtosis	.889	.873	1.02
TER	Skewness	.012	.388	.03
	Kurtosis	.882	.789	1.16

From the data findings, for Cash Ratio (CR) the Skewness z-value is -1.28 and the Kurtosis Z-value is -0.78. For Inventory Turnover Ratio (ITR) the Skewness z-value is 1.14 and the Kurtosis Z-value was 0.65; for Accounts Payable Turnover Ratio (APTR) the Skewness z-value was -0.70 and the Kurtosis Z-value was -1.16; FOR Accounts Receivables Turnover Ratio (ARTR) the Skewness z-value was 1.03 and the Kurtosis Z-value was 0.81; for Firm Size Ratio (FSZ) the Skewness z-value was 1.58 and the Kurtosis Z-value was 1.02 and last but not Tax Efficiency Rate (TER) the Skewness z-value was 0.03 and the Kurtosis Z-value was 1.16. These values are neither below -0.96 nor above +1.96 but are with the Z-value of +/-0.96. These shows that the data for all variables was normally distributed.

Multicollinearity Test

The researcher sought to find out whether the independent variables namely; cash management measured by cash ratio, inventory management measured by Inventory Turnover Ratio (ITR), accounts payable management measured by Accounts Payable Turnover Ratio (APTR), accounts receivable management measured by Accounts Receivable Turnover Ratio (ARTR) and firm size measured by log of total assets was highly correlated with the dependent variable- tax efficiency measured by Tax Efficiency Ratio (TER).

The researcher used Variance Inflation Factor (VIF) to test for multicollinearity. The value larger than 10 indicates existence of multicollinearity problem. The data findings were recorded in table 3.

Table 3 Multicollinearity Test

Model	Collinearity Statistics	
	Tolerance	VIF
CR	.935	1.070
ITR	.935	1.069
APTR	.986	1.014
ARTR	.931	1.074
FSZ	.949	1.054

a. Dependent Variable: TER

From the data findings, all the values for independent variables namely; Cash Ratio (CR), Inventory Turnover Ratio (ITR), Average Payable Turnover Ratio (APTR), Average Receivable Turnover Ratio (APTR) and Firm Size Ratio (FSZ) are below 10. This indicates a non-existence of multicollinearity.

Heteroscedasticity test

Heteroscedasticity tests whether the variance of errors from a regression model is dependent on the values of the independent variables. The researcher used Breusch-Pagan and Koenker tests which states that if the significance values are less than 0.05, there is no Heteroscedasticity. Breusch-Pagan and Koenker heteroscedasticity shows that residuals were homogenous as P-Value for Breusch-Pagan (BP) was 0.95 and Koenker P-value of 0.95 were more than 0.05.

Hausman Test

Houseman test is used to differentiate between the fixed effects model and the random model in the panel data. Fixed effect model assumes firms’ specific intercept that captures the effect of variables in a particular to that specific firm and eliminates anything that is time invariant. In random effect there is a single common intercept that changes from firm to firm in a random manner.

The study carried out a Hausman test and the results were recorded in table 4.

Table 4 Hausman test

	Coefficients ^a			Signifant
	(b) fixed	(B) Random	(b-B) Difference	
CR	2.0707	.3769	1.6938	1.3927
ITR	-.3082	.01170	-.3199	.6341
APTR	-.3206	.1202	-.4408.	.5722
ARTR	-.2937	.1624	-.4561	.4310
FSZ	2.2865	.9631	1.3234	1.2101

b=constant under Ho and Ha (Alternative Hypothesis)
 B=inconsistent under Ha, efficient under Ho.

Test H0; Difference in coefficients not systematic

$$\text{Chi2}(5)=(b-B)[(V_b-V_B)^{-1}] (b-B)$$

$$=4.07$$

$$\text{Prob}>\text{ch2}=0.3960$$

If Prob>ch2 value is less than significant 0.05, then fixed model is used other than random effect model. The study therefore used the fixed model effect.

Correlation Analysis

Correlation analysis refers to extent to which research variables are related. Correlation analysis was employed to establish the strength of the relationship which exists among dependent and independent variables whereby Equity to total assets ratio, Long term debt to total assets ratio and the CA/CL Ratio were utilized as independent variables while the ROE was used as the dependent variable. Pearson correlation varies from -1.00 to +1.00 with positive values indicating positive relations while negative values suggest negative relations among study variables. Data was recorded in table 5.

Table 5 Correlation matrix

Variable	TER	CR	ITR	APTR	ARTR	FSZ
TER	1					
CR	.088	1				
ITR	.017	-.060	1			
APTR	-.053	-.068	-.032	1		
ARTR	-.010	-.199	-.139	.096	1	
FSZ	.066	-.111	-.185	-.026	.036	1

Correlation is significant at the 0.01 level (2-tailed)

All the research study variables are perfectly correlated with themselves as revealed by the correlation coefficient of +1. Tax efficiency of non-financial firms as measured by TER has a positive correlation with Cash management as measured by Cash Ratio by (R= 0.088); inventory management also

has a positive correlation with tax efficiency as measured by inventory turnover ratio by (R=0.017), accounts payables management has a negative correlation with tax efficiency as measured by accounts payable turnover ratio by (R= -0.053); accounts receivable management also has a negative correlation with tax efficiency as measured by accounts receivable turnover ratio by (R= -0.10), while firm size has a positive correlation with the firm tax efficiency as measured by log of Total assets by (R= 0.066).

Regression Analysis

The regression analysis among dependent and the independent was carried out. The coefficient of determination was denoted by the adjusted r-squared which provides explanations to the total variations in the dependent variables due to the changes in the value of the dependent variables. The data was recorded in table 6.

Table 6 Regression Model Summary

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.690 ^a	.477	.436	0.0713

a. Predictors: (Constant), CR, ITR, APTR, ARTR, FSZ

b. . Dependent Variable: TER

The results in table 6 shown above shows that, the r-squared value was 0.447, which indicate that nearly 48% of the total variations in the tax efficiency among non-financial firms listed at NSE can be attributed to the changes in the value of the independent variables (Equity, Long term debt and short-term debt) captured by the study model and at confidence level of 95%. The R coefficient of the correlation that shows the relationship that exist among the research variables was 0.690 which implies a strong positive correlation exist among the study variables as captured by the study variables.

Analysis of Variance

Analysis of Variance (ANOVA) is a parametric statistical technique used to compare datasets. The research study determined that all the variables were significant at their significance level which was lower than 0.05. Normally, F-test is used to test whether the regression model fits well. The predictor variables were regressed against the tax efficiency of non-financial firms listed at NSE and the data findings were recorded in table 7.

Table 7 Analysis of Variance

ANOVA^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	21.776	5	43.308	11.839	.001 ^b
	Residual	1419.374	39	83.763		
	Total	1441.150	42			

a. Dependent Variable: TER

b. Predictors: (Constant), CR, ITR, APTR, ARTR, FSZ

The findings indicate that the research model had an f-tests of 11.839, which was statistically significant at 0.1% confidence level. On the other, the P-value is 0.01 which is less than 0.05 indicating that the model was good for the study. This finding shows that the study model is significant and can be applied for the purposes of making predictions at 5% level of significance.

Regression Coefficients

Regression coefficients shows the statistical significant test of the predictor variables in the study model. It shows the estimation of the independent variables, standard error and the t-ratios. It was used for case of multiple regression. The findings was recorded in table 8.

Table 8 Regression Coefficients

Coefficients^a					
Model	Unstandardized Coefficients		Standardized Coefficients Beta	T	Sig.
	B	Std. Error			
(Constant)	-.019	6.994		-.003	.998
CR	.452	.838	.092	.540	.593
ITR	.002	.022	.018	.107	.916
APTR	-.012	.034	-.056	-.337	.738
ARTR	-.026	.162	-.028	-.162	.872
FSZ	.295	.963	.052	.306	.761

a. Dependent Variable: TER

From the findings, the multiple regression was summed as below;

$$TER = -0.19 + 0.452X_1 + 0.002X_2 - 0.12X_3 - 0.026X_4 + 0.295X_5$$

Where;

X₁ represent Cash management, which was captured by Cash Ratio

X₂ represent the Inventory management which was captured by the Inventory Turnover Ratio.

X₃ represent Accounts payable management which was captured by the Accounts Payable Turnover Ratio.

X₄ represents the Accounts Receivable Management which was captured by the Accounts Receivable Turnover Ratio.

X₅ represents the firm size which was captured by the log of Total assets.

E is a stochastic error term which denotes the unexplained variations (65%) indicating the existence of other variables which can make the model better.

According to the regression model shown above, the tax efficiency of all firms listed at NSE is -0.19 provided all the other independent variables are held constant at zero value. A unit increase in the cash management will result to a 0.45 increase in the tax efficiency of non-financial firms listed at NSE. Similarly, a unit change in the inventory management will results to a 0.02 increase in the tax efficiency of non-financial firms listed at

NSE. Further, a unit change in the accounts payable management will results to a 0.12 decrease in the tax efficiency of non-financial firms listed at NSE. Also, a unit change in the accounts receivable management will results to a 0.026 decrease in the tax efficiency of non-financial firms listed at NSE. Last but not least, a unit change in the firm size will results to a 0.029 increase in the tax efficiency of non-financial firms listed at NSE.

Interpretations and Discussions of Findings

The objective of this study was to investigate the effect of working capital management on tax efficiency of non-financial firms listed at the Nairobi Securities Exchange. Data was collected from 42 non-financial firms as appendix III shows. The firm's tax efficiency was measured using Tax efficiency rate, cash management measured by cash ratio, inventory management measured by Inventory Turnover Ratio (ITR), accounts payable management measured by Accounts Payable Turnover Ratio (APTR), accounts receivable management measured by Accounts Receivable Turnover Ratio (ARTR), Firm Size measured by Log of Total Assets as the interdependent variables.

The researcher further conducted inferential statistics to find out the effects of effect of working capital management on tax efficiency. The results from the statistical analysis indicated that, there is a weak positive correlation of (R= 0.088), (R= 0.017) and (R= 0.066) for cash management, inventory management and firm size respectively on tax efficiency of non-financial firms listed at Nairobi Security Exchange. The study further revealed there is a negative correlation of (R= -0.053) and (R= -0.10) for accounts receivable management and accounts payables respectively on tax efficiency of non-financial firms listed at Nairobi Security Exchange.

The level of standard error was 0.01, which represent the unexplained percentage of the study model indicating that there exist other factors, which can make the model better for prediction purposes. The significance value of .001 from the ANOVA results of the study shows that the model was significant at 5% significance level with an F-test of 11.839. The model ANOVA analysis thus indicates the capability of the independent variables in providing explanations of about 48% of total variations in the tax efficiency. The study further established that cash management and inventory, inventory management and firm size had a lightly positively and has statistically significant effect on tax efficiency of non-financial firms at NSE. On the other hand, accounts payable, accounts receivable had a lightly negative and has statistically significant effect on tax efficiency of non-financial firms at NSE.

These findings are in line with Abu (2018) who posits that good cash management is likely to have an overall effect on working capital management which in return affects cash controlling inflows and outflows, cash balance and payment/ receipts distribution schedule and thus an overall effect on tax efficiency. Also, Abbasali and Milad (2012) notes that inventory management is a paramount aspect of good working capital management because inventories are the main source of revenues in a firm. Therefore, managing or holding too much inventory or too little inventory incurs costs. Large firms have high inventory and a generous trade credit policy than smaller firms that leads to high sales because it allows customers to access quality product before paying. Therefore, large firms have efficient tax obligations as compared to smaller ones. Also, Maina (2011) averred that accounts payables are more deferrable in that the average payment can be extended by managers' decisions. Being part of current liabilities, they are likely to affect the working capital which in return affects the tax efficiency of a firm.

In addition, Deloof (2016) posits that firms can have possible amounts of working capital that leads to their value maximization and tax efficiency. He further added that maintaining huge inventory on the other hand

and granting creditors credit and being willing to wait for a longer period can lead to increased sales and hence profitability. A firm should as well have a rational collection period for receivables to enhance better collection of debts and avoid high bad debts and collection cost. Also, Kamoyo (2016) found out that large firms are found to have competitive advantage over small firms because they have a wide array of resources that denotes efficient net working capital hence tax efficiency.

5.0 Conclusions

The study concluded that there is a weak positive and significant effect of cash management, inventory management and firm size on tax efficiency of non-financial firms at NSE. The study also concludes that there is a negative but significant effect of accounts payable and accounts receivable management on tax efficiency of non-financial firms at NSE. The study also concludes that 48% of the total changes in tax efficiency of non-financial firms listed at NSE and can be attributed to changes in the cash management, inventory management, accounts payable management, accounts receivable management and firm size. This shows that firms' tax efficiency can be increased by lowering both the accounts payables and receivables. Although many finance and tax consultants fear for managing accounts payables might stem the fact that more controlling the accounts payables would damage firm's reputation and consequently the performance of such firms.

The study also concludes that there is a significant effect of firm size and tax efficiency. Not surprisingly, the amounts invested in working capital are usually in proportion to the total assets employed by a firm. This further can include the cash hold by the firm and thus it is vital for a firm to efficiently and effectively manage its cash. Otherwise, it will be forced to borrow to support its continued working capital needs which is likely to affect payment of tax expense obligation. Therefore, the finding of this study indicate that efficient working capital will results to increased tax efficiency of non-financial firms listed at NSE. The conclusion of this study then is that when efficient working capital management leads to efficient tax, then firms can expect a negative relationship between the tax efficiency and working capital management measures.

6.0 Recommendations

In an attempt to take advantage of the opportunities arising from the effect of working capital management on tax efficiency of non-financial firms listed at NSE, the study provides the following;

The liquid assets hold by the firm should be in excess of current liabilities to act as buffer when commitment of meeting short term obligation arises. So, non-financial firms should invest in more current assets. They should also manage their cash by conservative financing of their operational activities.

Managers of non-financial firms should also get a clear understanding between individual working capital management components and tax efficiency. On managing accounts receivables, they should try as much as possible to reduce the collection period for collecting receivables from their customers. Firms should however be careful that it does not harm the volume of credit sales which can adversely affect profitability of firms besides tax efficiency.

Also, firms should manage their inventory by making a tradeoff between the speed of production, product quality and cost of innovation. By reducing their inventory, a firm can achieve tax efficiency. This inventory reduction will results to reduction warehouse space, reduced obsolescence of products, low depreciation and low deadweight costs associated with inventories such as cash tied up in raw materials or work-in-progress.

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