IOSR Journal of Economics and Finance (IOSR-JEF)
e-ISSN: 2321-5933, p-ISSN: 2321-5925.Volume 12, Issue 5 Ser. VIII (Sep. – Oct. 2021), PP 20-27
www.iosrjournals.org

Effect of Inventory Management on Financial Performance of Non-Financial Firms Listed at the Nairobi Securities Exchange

Divinah Jepleting Koech[1], Willy Muturi[2], Oluoch Oluoch[3], Assumpta Kagiri [4]
1(Economics and Finanace, COHRED/ Jkuat, Kenya)
2(Economics and Finanace, COHRED/ Jkuat, Kenya)
3(Economics and Finanace, COHRED/ Jkuat, Kenya)
4(Entrepreneurship, COHRED/ Jkuat, Kenya)

Abstract
Financial performance in an organization is essential because firm's nonperformance can spell out failure. The underlying problem is that non-financial firms both globally and locally in Kenya are experiencing fluctuating financial performance and this affects the financial health of economic systems with grave socio-economic implications. This study is therefore motivated by the lack of clarity on how current asset management influences performance of non-financial firms. Ideally, efficient management of current assets should enhance financial performance yet in practice the connection between asset management and performance is not clear owing to theoretical, empirical and conceptual literature confounding contradictions. The specific objective of this study was to determine the effect of inventory management on financial performance of non-financial firms listed in the NSE. Alongside with that, the effect of the moderating variable (firm size) was also investigated. The study applied transaction cost economics theory. The methodology of the study was based on panel regression model. The study adopted descriptive research design. Target population included 42 non-financial firms listed in the NSE, for the period 2004– 2018. Secondary data from the annual audited financial statements published in the websites of respective firms was used. Hausman Test was used to test the hypothesis at p-value of 0.05, the null hypothesis that inventory management has no effect of financial performance was rejected. The same conclusion was arrived at for the moderating effect of firm size on how inventory influences financial performance. Based on these finding, the study concludes that inventory management has a positive effect on the financial performance of non-financial firms listed in the NSE. It is recommended that public firms enhance their current asset management strategies to boost performance.

Key Words: *Current asset management, financial performance, firm size, Non-financial firms listed in NSE*

Date of Submission: 10-10-2021 Date of Acceptance: 24-10-2021

I. Introduction

Inventory is part of current assets of an entity. Current assets refer to the short-term investments of a firm with maturity of less than one year (Flanagan, 2005). They form a major portion of assets in the financial statement of a firm. Besides inventory, other current assets include items such as cash and cash equivalents, accounts receivable, marketable securities management, prepaid expenses, and other liquid assets that can be readily converted into cash. Current assets were described as the life blood of every firm by Flanagan (2005), who also emphasized that the primary task of every manager is to keep current assets flowing and use the cash flows to generate profits. Current assets management is extremely important to management for the daily operations of a business as it assists in measuring the components of currents assets of a firm and its financial performance (Jain, Singh & Yadav, 2013).

According to Horne and Wachowiz (2005), in most corporate entities, in some entities like manufacturing and merchandising firms, inventories account for more than half of its total assets. Excessive levels of inventory can easily lead to substandard return on investment. However, if the level of stock is low the firm may incur shortages and its operations will be affected by being unable to meet customer and operational needs. Management of inventories is similarly as important as the management of long-term assets because short-term assets directly contribute to the maximization of a business profitability, liquidity and total performance (Horne & Wachowiz, 2005).

The objective of inventory management is to turn over inventory as quickly as possible without losing sales from stock-outs. It is an important aspect of current asset management because inventories themselves do not earn any revenue, holding either too little or too much inventory incurs costs. It should neither be too low to effect the production adversely nor too high to block the funds unnecessarily due to the facts that excess

investment in inventories is unprofitable for the business and both excess and inadequate investments in inventories are not desirable (Fabozzi & Peterson, 2003). Proper inventory management requires close coordination among the sales, purchasing, production, and finance departments. Lack of coordination among departments may lead to poor sales forecasts and can lead to disaster (Brigham & Houston, 2003).

Atrill (2006) as cited in Mshelia (2016) provided questions that efficient inventory management practices should answer: how much should be ordered? And when should it be ordered? The questions are associated with the problem of determining the economic order quantity which can be addressed by the analysis of the costs of maintaining certain levels of inventory. This is because there are costs involved in holding too much stock and in holding too little alike, hence, the need to put in set up an effective stock management system to ensure robust sales forecasts to be used in stock ordering purposes. Ross *et al*. (2008), proposed the Economic Order Quantity model as one of the approaches for determining the optimal inventory level takes into account the inventory carrying costs, inventory shortage costs and total costs helps in the determination of the appropriate inventory levels to hold. Keeping optimal inventory levels minimizes the cost of possible stoppages or of loss of business due to the scarcity of products, keeps supply costs down and protects against price fluctuations.

The management and control of inventory is a problem experienced in all organizations and in all sector because it involves investing more than 60% of shareholders working capital. Hence, inventory management deals primarily with keeping correct balance between two extremes. It is includes the development and administration of policies, system and procedures for minimizing total cost based on inventory decisions and related functions such as customer service requirement, production scheduling and purchasing. Thus, inventory management has a broad scope and affects a great number of activities in an organization (Brindha, 2015).

Namagembe and Munene (2016) provide a unique focus by explicitly linking supply chain with inventory management. Inventory, transport, location of production and storage spaces significantly influence supply chain performance. Modifications of inventory policies can lead to a dramatic alteration of supply chain efficiency and responsiveness. Increasing supply chain inventories will improve customer service and revenue but also increase supply chain cost. Therefore, key areas to be explored include the correct sizing of inventory, links with supply chain efficiency and impact on logistics services.

There are a number of indicators that reveal the efficiency with which inventory management is being undertaken in an entity. Firstly is the inventory turnover. Koumanakos (2008) defined inventory turnover as the number of times inventory is converted into cash. It is a ratio showing how many times a company's inventory is sold and replaced over a one-year period. Furthermore, inventory turnover is the speed at which the trading company sells its inventories or how much turnover the average inventory generates in one year. Similarly, inventory turnover reflects how frequently a company flushes inventory from its system within a year.

Moridipour and Mousavi (2014) explained that proper inventory turnover is in maintaining optimum inventory and proper marketing to sell inventory and in time order. Koumanakos (2008) cited in Namagembe and Munene (2016) explained high levels of inventories to mean that there are low levels of inventory turns. Otherwise, rapid inventory turnover indicates the success of a company in the use of their investments in inventory and that are the primary current assets of the manufacturing companies. In addition, quick inventory turnover minimizes overstocking and helps reduce costs. On the other hand, an unreasonably long inventory holding period may indicate an economic recession, obsolete inventory, poor sales and marketing, a change of customer taste or bad inventory management.

The second indicator is the inventory management efficiency is the inventory conversion period. Deloof (2003) cited in Mshelia (2016) argued that the inventory conversion period has a negative impact on a business's performance. For instance, short inventory conversion period increases stock out costs of inventory which results in losing sales opportunities and leads to poor performance. Managers of firms should therefore keep their inventory to an optimum level since mismanagement of inventory will lead to tying up excess capital at the expense of profitable operations (Lazaridis & Dimitrios, 2005).

The third indicator is the inventory management efficiency is the stock holding period is another measure of inventory management used in this study. It refers to the length of time between when an inventory is acquired and when it's sold (Lazaridis & Dimitrios, 2005). Hence, it is the length of time during which a firm holds a particular inventory. Counting the length of a holding period begins on the day after the purchase of the asset until the day of its sale. It is calculate in days in inventory by dividing the number of days in the period by the inventory turnover ratio.

Checking the effect of inventory management of firms at the Nairobi Securities Exchange (NSE) is critical. The NSE was formed in 1954 and is today the leading securities exchange in East Africa. It is based in Nairobi the capital city of Kenya. NSE is licensed by Capital Market Authority (CMA) with the main responsibility of regulating the security market and ensuring trading in securities by public companies for issuing their debt and equity securities. Regulation of quoted firms is achieved by ensuring that firms stand by

the rules and regulations set by providing their periodic performance reports. They further indicate that a business should select and apply accounting policies such that financial statements are consistent with all the relevant and applicable International Accounting Standard (IAS) or International Financial Reporting Standard (IFRS) and the standing interpretation committee of IAS (NSE, 2018).

II. Statement of the Problem and Objectives

Besides shareholder wealth maximization, financial performance is one among other established objectives that companies seek to achieve for long term survival. Hence, enterprises strive to improve the performance through various management strategies. Despite this important, studies show that non financial firms from developed countries are experiencing declining performance and data shows that firms have been delisted from the Stock exchange in the last decade (Tian & Zeitun, 2007). World Bank (2017) documented evidence available shows that, non-financial firms in Kenya are characterized by a decline in financial performance for example, Kenya Airways made a loss of Sh3.4 billion after tax by March 2014, down from Sh7.8 billion it made in 2013 (Wahito, 2014).In this respect it is critical to establish how current assets management, particularly inventory management is likely to influence such performance. This is because existing literature is still confounding as to the effect of current assets management on financial performance.

A number of studies conducted show that the current asset management adopted by the entities determines their performance. Onipe *et al*. (2015), investigated relation between current asset management and financial performance in listed deposit money banks in Nigeria whose findings revealed a positive relation between the cash and bank balances, financial asset held for trading, loans and advance to customers, and ROA, while the result of the derivative assets, loans and advances to bank revealed a negative impact on ROA. Al-Qudah and Al-Afeef (2015) investigated the relationship between the investment in current assets, profitability and liquidity in Industrial Companies Listed in Amman Stock Exchange fore period of five years between 2008 - 2013 using variables such as current assets ratio, return on assets ratio and current ratio. Results findings revealed a positive relationship between investment in current assets, profitability and liquidity respectively. Khaled and Hayam (2016) studied the relationship between management of inventory and the firms' general performance. The finding showed that inventory to sales ratio has negative effect on organization performance in the initial growth stage and at maturity stage and rapid growth stage, inventory to sales ratio has a significant positive coefficient on performance. Onyango (2014) investigated the current asset management practices of small and medium enterprises in Nairobi County the study period covered between May 2014 and June 2014. The period for the study was deemed short not adequate to provide a wide range of observations required. From the foregoing the following objectives are pursued.

i. To examine the effect of inventory management on financial performance of non-financial firms listed at Nairobi Securities Exchange.
ii. To establish the moderating effect of firm size on the relationship between current asset management and financial performance of non-financial firms listed at Nairobi Securities Exchange.

Drawing from literature, the hypotheses pursued are:

H_{01}: Inventory management has no significant effect on financial performance of non-financial firms listed at NSE

H_{02}: Firm size has no moderating influence on the effect of inventory management on financial performance of non-financial firms listed at NSE

III. Research Design

The study used descriptive research design. It was used since it describes the characteristics of the variables being studied and can incorporate multiple variables for analysis, unlike other methods that require only one variable (Kothari, 2004). Descriptive research is undertaken to provide information on characteristics of a population, answers to questions of who, what, where, when and how and it is suitable for description and measurement of phenomena at a point without manipulation (Sreevidya & Sunitha 2011). Descriptive design is important in reporting the summary of data including measures of central tendency consisting of the mean, median, mode, deviance from the mean, variation, percentage, weighted scores and correlation between variables (Kimari 2013). This study also used a causal research design. Causal research is designed to collect raw data and create data structures and information that allowed the researcher to model cause-and-effect relationships between two or more variables (Hair et al., 2006). (Krauss, 2005) points out that causal research examines whether one variable causes or determines the value of another variable. It is in consistent with the study which seek to determine the effect of current asset on financial performance of non-financial firms listed at NSE.

The research adopted the positivism philosophy because it is relied on establishing the causal relationship between inventory management and financial performance in a scientific processas required Kahneman and Tversky (1981). It seeks to establish a way of getting to real knowledge rather than having mere

opinions. Positivism is based upon values of reason, truth and validity and there is a focus purely on facts, gathered through direct observation and experience and measured empirically using quantitative methods (such as surveys and experiments) and statistical analysis (Eriksson &Kovalainen, 2008). As observed by Saunders, Lewis and Thornhill (2013), the positivist approach is usually applied when testing hypothesis that has been developed from existing theory through measurement of observable social realities. The goal of positivist research is to make generalizations because human actions can be explained as a result of real causes that precedes their behaviour.

In this study the target population comprises of all listed non-financial firms at Nairobi stock exchange in Kenya. According to the Nairobi Securities Exchange, as at 2018, there were 59 listed firms at the NSE under different categories. Excluding the financials - Banking (11) and Insurance (6), there remains forty two (42) firms which formed the target population for the study. The study used data for 15 years from 2004 to 2018 from these companies. The focus on non-financial firm listed in NSE is justified on the fact that there was stringent disclosure requirements imposed on these firms by the capital markets regulator in which it provide adequate data necessary for this study. Besides the choice of the target firms, the study narrows down on a study period of 15 years in which covers all the information on financial performance of these firms quoted in NSE from 2004 to 2018. Francis *et al.* (2005) place an emphasis on such long time study periods to satisfy the data requirements for adequate analysis.

The study used panel data over a 15 year period (2004 to 2018) to examine the effects of inventory, cash, account receivable, marketable securities management and firm size on financial performance. Regression coefficients were interpreted using the E-views software output. To ensure that enough degrees of freedom in the models to be estimated are available, yearly data covering the entire study period was collected. The data collection method was secondary research, which essentially involved reviewing data sources that have been collected for some other purpose than the study at hand. Thus, all the relevant data for this study are available in secondary form. The data was extracted from the Nairobi Securities Exchange hand books for the period 2004-2018. This was done by use of desk search techniques by visiting the NSE website and check there statement of financial position for the years from 2004 to 2018 in order to measure their financial performance.

IV. Research Findings and Discussion

Smith (2015) defines data analysis as a systematic manipulation, processing, arrangement, and organization of data to produce meaningful information. Panel data increases the number of data points in the study, which increases the degrees of freedom which in turn reduces the possibility of collinearity among independent variables. This improves the efficiency of econometric estimates which helps to deal with the problem of unobserved heterogeneity which causes an endogeneity problem that makes the estimated coefficients lack any meaning hence cannot be interpreted (Gujarati, 2003). The dependent variable was measured using two contrasts, therefore 2-panel regression models were specified as shown on equations.

The study was conducted among 35 firms listed in Nairobi security Exchange for a period 18 years (2004-2018). The finding based on figure 4.1, clearly suggest that there was general growth (upward trend) of inventory management over the years as the average stock kept on increasing over the years from 2004 to 2008. More conspicuously, the highest mean of 2950.25 with corresponding increase rate of +936.73 was recorded in the year 2018. For median, the highest value recorded across years was 1155.00 in the year 2014 with corresponding increase growth of 256.13 however major decline in mean of -345.98 and median of -328.43 was experience in the year 2017 and 2015 respectively.

Maximum value of inventory management across the years was recorded in the year 2014 with value 14968.21 while minimum value for inventory management for the firms across the years was recorded in the year 2011 and 2012 with no value was recorded in the year 2011 and 0.036 was recorded in the year 2012. Skewness and kurtosis values also suggest that inventory management values were heavily skewed and highly peaked across the years clearly suggesting that there was an upward trend inventory management that is lack of stationarity in the data set. With the findings recorded, it was clear that there was significant and highly recognisable increase in the values of inventory management across the years 2004 to 2018.

Based on the mean and median growth recorded for inventory management based on table 1 in the appendix, it was quite evident that Limuru Tea Co. Ltd, EAAG, Kenya Orchards Ltd and Express Kenya Ltdrecorded the lowest mean of inventory management over the years at 1.35, 7.85, 10.15 and 17.85 respectively while Kenol Kobil Ltd, K P & L C Ltd and East Africa Breweries Ltd recorded the highest mean of inventory management at 9067.09, 8456.66, 6423.32 respectively. These findings clearly demonstrate that many firms usually have varying inventory management over the years. These could have been attributed by the fact that some firms were smaller in size while others are slightly large in size thus enabling the large size firms being able to maintain high value of stock. Which may also be described in terms of firm's equity, financial performance, capital base, profitability among others?

Shifting the attention to the overall mean of Inventory management for 35 non-financial companies in the Nairobi Stock Exchange with 525 observations for a period of 18 years covering 2004 – 2018, it was evident that, the overall mean for inventory management was 1865.25. Maximum and a minimum number of inventory management recorded was 36100 and corresponding Kenol Kobil Ltd and 3.66 corresponding to Limuru Tea Co. Ltd respectively. Usually, Inventory management is dictated by a number of competing variables for instance; Policies and regulations set aside by the government of Kenya, profitability of the product, capital base of the firms among many others.

Table 1: Mean, Median for inventory management across the years

Year	Mean growth	Change in mean	Median growth	Change in median	Standard Deviation	Maximum values	Minimum values	Skewness	Kurtosis
2004	724.11	-	314.31	-	972.55	3669.99	2.07	1.98	3.61
2005	716.99	-7.12	353.64	39.35	884.82	3535.23	3.32	1.62	1.97
2006	913.17	196.18	500.76	147.12	1351.36	6049.59	0.68	2.50	6.75
2007	1073.64	160.47	535.30	32.54	1459.51	5438.58	0.94	1.92	2.87
2008	1647.43	573.80	800.44	267.14	2488.32	10816.3	3.43	2.25	5.22
2009	1918.04	270.61	661.18	-139.26	3042.65	13172.28	0.28	2.30	5.45
2010	1885.15	-32.89	680.99	19.80	3012.56	12750.78	0.97	2.52	6.11
2011	2124.72	239.57	642.14	-38.84	4412.07	24008	-	4.17	19.78
2012	2202.94	78.22	713.83	71.69	3156.71	12039.01	0.036	1.89	2.82
2013	2729.89	526.95	898.87	185.04	4152.58	14915.62	0.059	2.14	3.86
2014	2694.59	-35.30	1155.00	256.13	3696.14	14968.21	0.153	1.87	3.06
2015	2541.87	-152.72	826.57	-328.43	3512.91	11660.09	0.351	1.50	0.94
2016	2359.51	-182.37	803.96	-22.61	3549.18	12080.56	1.13	1.79	2.40
2017	2013.53	-345.98	586.77	-217.19	3051.35	12461.12	1.375	2.09	3.94
2018	2950.25	936.73	610.81	24.04	6488.77	36100	3.656	4.35	21.60

To examine the effect of inventory management on financial performance of non-financial firms listed at Nairobi Securities Exchange, an empirical analysis was conducted. The null hypothesis tested was that Inventory management has no significant effect on financial performance of non-financial firms listed at NSE against the alternative that there was a significant relationship between Inventory management and on financial performance of non-financial firms listed at the Nairobi Securities Exchange. By conducting panel regression analysis, preliminary findings reveal that there was some significant and positive relationship between Inventory management on financial performance of non-financial firms listed at the Nairobi Securities Exchange.

Table 2 gives panel regression analysis findings between financial performance of non-financial firms listed at Nairobi Securities Exchange (NSE) and Inventory management. The dependent variable financial performance of non-financial firms was measured using Return on Assets (ROA) and Net profit Margin (NPM). Both Randomized and fixed models were used in the analysis. From the Table 2, R- square values recorded were; 0.684 and 0.6260 implying that 68.4% and 62.6% of Return on Assets (ROA) were explained by Inventory management in the absence of moderator. Similarly, when moderator was included in the model, R-square values obtained were: 0.719 and 0.6261 which translates to 71.9% and 62.6% of the total variation in Return on Assets of non-financial firms listed at the NSE were explained by Inventory management.

Also considering the output indicating the relationship between inventory management with Net profit margin of financial performance for non-financial firms listed at the NSE, it was established that; for randomised and fixed panel regression models, R-square values recorded were; 0.4235, and 0.6261 implying that; 42.35% and 62.61%, of Net profit Margin (NPM) of financial performance for non-financial firms listed at the NSE were explained by Inventory management in the absence in of moderator. However, when the moderator was included in the model, R-square values were; 0.4544, and 0.781 again, the results suggest that there was significant improvement of the models in the present of moderators. In this case 45.4% and 78.1% of Net profit Margin (NPM) of financial performance for non-financial firms listed at the NSE were predicted by Inventory management in the presence of moderator

Besides R-square values, the fitness of the models was also examined and elaborated by F-Statistics values 26.52 and 36.7098 with the corresponding p-values of 0.0001 and 0.000 when moderator was absent and 13.91 and 16.106 with p-value of 0.001 and 0.001 when the moderator is present the values were all less than 0.05. These findings, simply suggest that there was a significant relationship between Inventory management and Return on Assets (ROA), For net profit Margin (NPM) of financial performance of non-financial firms

listed at the Nairobi Securities Exchange and Inventory management, F-statistics values with their corresponding p-values recorded were less than 0.05 indicating that there was significant relationship between financial performance and Inventory management.

Table 2: Regression Analysis for Inventory Management and Return on Assetsof non-financial firms listed at the NSE

Dependent Variable: Financial performance of non-financial firms listed at the Nairobi Stock Exchange (NSE), Return on Assets, Method: Panel Least Squares
Sample: 2004 -2018, Periods included: 11Cross-sections included: 35Total panel (balanced) observations: 363

	Variable	B	SE	T	P	R^2	Adj R^2	F	P-value
Random	C	3.280	0.217	15.105	0.000	0.68	0.657	26.524	0.000
Effects Model	*INVMGT*	0.122	0.024	5.1454	0.000				
	S.E. of regression				0.517	Sum squared residual			96.45
	F-statistic				26.52	Durbin-Watson stat			1.350
Random	C	4.370	0.192	22.78	0.000	0..719	0.668	13.915	0.000
Effects Model	*INVMGT*	0.116	0.023	5.152	0.000				
with	INVMGT*Z	0.002	0.002	0.774	0.439				
Moderator	S.E. of regression			0.466	Sum squared resid				78.11
	F-statistic			13.915	Durbin-Watson stat				1.222
Fixed effect	C	4.498	0.235	19.358	0.000	0.626	0.588	36.71	0.000
Model	*INVMGT*	0.094	0.028	3.360	0.001				
	S.E. of regression			0.466	Akaike info criterion				1.399
	Sum squared resid			71.13	Schwarz criterion				1.764
	Log likelihood			-219.15	Hannan-Quinn criter.				1.544
	F-statistic			16.639	Durbin-Watson stat				1.325
Fixed effect	C	4.499	0.235	19.312	0.000	0.63	0.587	16.11	0.000
Model with	*INVMGT*	0.091	0.030	3.006	0.003				
moderator	*INVMGT*Z*	8.680	0.000	0.281	0.7788				
	S.E. of regression			0.466	Akaike info criterion				1.404
	Sum squared resid			71.12	Schwarz criterion				1.780
	Log likelihood			-219.1	Hannan-Quinn criter.				1.554
	F-statistic			16.106	Durbin-Watson stat				1.328

Table 2 also gives the estimates of the coefficient for the three-model considered and, in each case, t-test was also applied to test the effect of predictor variable (Inventory management) on Return on Assets (ROA) and Net profit Margin (NPM) of the overall financial performance of non-financial firms listed at Nairobi Securities Exchange (NSE). In each of these models considered, two instances were checked that is, when moderator was included in the model and when moderator was not included in the model. From the output, it was observed that there was significance effect of Inventory management on financial performance of non-financial firms listed at the Nairobi Securities Exchange with P-values less than 0.05 for all models involving no moderator and with moderator.

The regression equations between Inventory management and Return on Assets (ROA), the measure of financial performance of non-financial firms listed at Nairobi Securities Exchange (NSE) were expressed as follows; ROA = 3.2802+ 0.1221*INVMGT for randomised model and ROA = 3.3778 + 0.1103*INVMGT for Fixed model when the moderator was not considered. The null hypothesis is therefore rejected with the conclusion that inventory management has a positive effect on financial performance of companies listed at the Nairobi Securities Exchange.

Consequently, in the present of moderators, the following models were obtained; ROA = 4.3698 + 0.1161 INVMGT+ 0.00017 INVMGT *Z for randomised model and ROA = 4.49869 + 0.09094* INVMGT + 8.6803 INVMGT *Z for Fixed model. These models indicate that for every unit of Inventory management, the value of Return on Assets (ROA), for financial performance of non-financial firms listed at the Nairobi Securities Exchange changes by the coefficient values indicated on the models both in the present of moderator and in the absence of moderator (Firm size). From these results, it was therefore, concluded that Inventory management had significant effect on Return on Assets (ROA) for financial performance of non-financial firms listed at the Nairobi Securities Exchange

Table 3 considers the Net profit margin component of financial performance of non-financial firms listed at the Nairobi Securities Exchange. The model obtained were as follows; NPM =0.86029 + 0.05804*INVMGT and NPM = 0.9894 + 0.04244*INVMGT for fixed model for instances when moderator was not included. On the other hand, when moderator was included, the regression equations obtained were as follow; NPM = 0.85803 + 0.0640*INVMGT +0.00015INVMGT*Z for randomised model and NPM = 0.9869 + 0.0381*INVMGT + 0.00013 INVMGT*Zfor fixed model as indicated on table 3. based on these facts, the preliminary conclusion was that, inventory management had significant influence on Return on Assets (ROA) as well as Net profit margin (NPM) of financial performance of financial firms listed in Nairobi Securities Exchange (NSE) since the t- statistics values were all significant with p-values were less than 0.05.

Table 3: Regression Analysis for Inventory Management andNet profit Margin of non-financial firms listed at the NSE with moderator

Dependent Variable: Financial performance of non-financial firms listed at the Nairobi Stock Exchange (NSE), NPM
Method: Panel Least Squares
Sample: 2004 -2018, Periods included: 11Cross-sections included: 35Total panel (balanced) observations: 363

	Variable	B	SE	T	P	R^2	Adj R^2	F	P-value
Random	C	0.86029	0.1452	5.9244	0.000	0.4235	0.394	14.5077	0.0001
Effects Model	*INVMGT*	0.0580	0.0152	3.8172	0.0002				
	S.E. of regression				0.2476	Sum squared residual			20.110
	F-statistic				14.508	Durbin-Watson stat			1.4011
Random	C	0.85803	0.1437	5.9723	0.0000	0.4544	0.3960	7.7832	0.0005
Effects Model	*INVMGT*	0.0640	0.0166	3.8666	0.0001				
with	INVMGT*Z	-0.0002	0.0002	-0.7998	0.4244				
Moderator	S.E. of regression			0.2484	Sum squared residual				20.175
	F-statistic			7.7832	Durbin-Watson stat				1.4008
Fixed effect	C	0.9894	0.1512	6.5422	0.0000	0.6261	0.583	36.7098	0.0000
Model	*INVMGT*	0.0424	0.0182	2.3528	0.0203				
	S.E. of regression			0.2471	Akaike info criterion				0.1391
	Sum squared residual			18.068	Schwarz criterion				0.5304
	Log likelihood			11.064	Hannan-Quinn criterion				0.2951
	F-statistic			36.710	Durbin-Watson stat				1.5693
Fixed effect	C	0.9870	0.1515	6.5129	0.0000	0.8038	0.781	35.5408	0.0000
Model with	*INVMGT*	0.0381	0.0205	1.8537	0.0648				
moderator	INVMGT*Z	0.0001	0.0003	0.4554	0.6492				
	S.E. of regression			0.2473	Akaike info criterion				0.1444
	Sum squared residual			18.056	Schwarz criterion				0.5473
	Log likelihood			11.181	Hannan-Quinn criterion				0.3051
	F-statistic			35.541	Durbin-Watson stat				1.5675

Table 4: Hausman test table for Inventory Management

Model	Correlated Random Effects - Hausman Test Equation: Untitled Test cross-section random effects				
Inventory management Return on Assets (ROA) with no moderator (Firm size)	Test Summary		Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
	Cross-section random		0.345034	1	0.5569
	Cross-section random effects test comparisons:				
	Variable	Fixed	Random	Var(Diff.)	Prob.
	INVMGT	0.110312	0.122135	0.000405	0.5569
Inventory management Return on Assets (ROA) with moderator	Cross-section random	0.002451	2	0.00407	0.00367
	Cross-section random effects test comparisons:				
	Variable	Fixed	Random	Var(Diff.)	Prob.
	INVMGT	0.130312	0.142135	0.000405	0.03569
	INVMGT*Z	0.000014	0.000011	0.000010	0.02545
Inventory management with Net profit margin in the presence of moderator	Test Summary		Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
	Cross-section random		0.145084	1	0.72369
	Cross-section random effects test comparisons:				
	Variable	Fixed	Random	Var(Diff.)	Prob.
	INVMGT	0.210312	0.202132	0.000405	0.72369
Inventory management with Net profit margin in the presence of moderator (Firm size)	Cross-section random		0.1345034	2	0.00297
	Cross-section random effects test comparisons:				
	Variable	Fixed	Random	Var(Diff.)	Prob.
	INVMGT*Z	0.038106	0.064037	0.000148	0.00352
		0.000127	-0.000157	0.000000	0.01525

To make a choice of the most appropriate model between randomized and fixed models, Hausman test was conducted. Most importantly, Hausman test is mainly conducted to establish the most appropriate model between fixed models and GLS Randomized models. Basically, Hausman test is used to test the null hypothesis that; random effect model is the most appropriate model against the alternative hypothesis that Fixed-effect model is more appropriate. Usually, the null hypothesis is rejected when the p-value recorded is less than 0.05 otherwise we fail to reject the null hypothesis. In this study, Hausman test was conducted and the result indicates that in the absence of moderator, Random effects model was the most appropriate model since the test

statistics values recorded was 0.5569, while in the presence of moderator it was established that fixed effect model was the most appropriate model for Return on Assets (ROA) of non-financial institutions listed in NSE. To select the most optimal model, R-square values were compared that is R2RM <R2FM so fixed effect model was the best model and it was expressed as:

$$ROA = 4.49869 + 0.09094* INVMGT + 8.6803 INVMGT *Z$$

Similarly, for Net profit margin of non-financial institutions listed in NSE, it was established that both fixed effects models were appropriate in the presence of moderator and in the absence moderator. The findings were also backed with p-values 0.00367and 0.032 respectively. Again, the details of this findings are shown in table 4. From these results, it was concluded that fixed effect with moderator was more superior than fixed effect model with no moderator based on the R-square values that is R2FW <R2FM. In summery the final models selected in this case was;

$$NPM = 0.9869 + 0.0381*INVMGT + 0.0013 INVMGT*Z$$

V. Conclusion

There was significant effect of inventory management on financial performance therefore, it could be applied in predicting financial performance of non-financial firms in the Nairobi Security Exchange. The two models; random effects and fixed effect were employed both with and without a moderator and the results indicated that there was significant effect of inventory management on both return on assets and net profit margin (Financial performance) of the firms listed at the NSE. The findings also demonstrated there was a significant increase in R^2 in the two models when moderator was included in the models and this clearly demonstrated the effect of the moderating variable (firm size) on both models. According to the finding it was established that; fixed effect model was the most appropriate model since the null hypothesis was rejected. Similar finding was also obtained when overall model consisting with all variables were considered. Based on these facts, inventory management, therefore, could be used to predict both the Return on assets and Net profit margin of non-financial firms in the Nairobi Security Exchange. The study therefore concluded that inventory management had significant positive effect on financial performance of non-financial firms in the Nairobi Security Exchange.

References

[1]. Al-Qudah, A. &Al-Afeef, M. (2015) The Relationship between the Investment in Current Assets and Profitability & Liquidity in Jordan Irbid: *Journal of Finance and Investment Analysis*, *4*(4), 11-22.
[2]. Atrill, P. (2006). *Financial Management for Decision Makers (4th* ed.). Prentice Hall. Autumn, 50-55.
[3]. Eriksson, P. & Kovalainen, A. (2008). *Qualitative Methods in Business Research*. London: Sage Publications.
[4]. Jain, P.K., Singh, S., & Yadav, S.S. (2013). Financial Management Practices: An Empirical Study of Indian Corporates. Springer Science & Business Media.
[5]. Khaled, E. & Hayam, W. (2016). Reexamining the Relationship between Inventory Management and Firm Performance:An Organizational Lifecycle Perspective. *Future Business Journal*,*2*, 65–80.
[6]. Kothari, C.R. (2004). *Research methodology: Methods and techniques* (2nd Ed.). New Delhi, India: New Age International Publishers Limited.
[7]. Koumanakos, D. P. (2008). The effect of inventory management on firm performance. *International Journal of Productivity and Performance Management, 57* (5), 355– 369.
[8]. Lewis, C. M., Rogalski R. J., and Seward, J. K. (2001), The long-run performance of firms that issue convertible debt: an empirical analysis of operating characteristics and analyst forecasts. *Journal of Corporate Finance, 7*, 447-474.
[9]. Moridipour, H., & Mousavi, Z. (2014). Relationship between inventory turnover with gross profit margin and sales shocks. International Research Journal of Applied and Basic Sciences, 8, 8, 1106-1109.
[10]. Mshelia, H. (2016).Effects of working capital management on the performance of small and medium enterprises in Nigeria: Thesis
[11]. Nairobi Securities Exchange, NSE (2015). About Us. At www.nse.co.ke, accessed on 4th November 2018.
[12]. Namagembe, S., & Munene, J. C. (2016). Information sharing inventory management and customer satisfaction: The case of manufacturing firms in Kampala. International Journal of Economics and Management Sciences, 1 (6), 35-44.
[13]. Onipe, A., Umar, M., Abiola, A., Onyabe, M. and Safiya, O. (2015). Conducted a study on Current Asset Management and Financial Performance: Evidence from Listed Deposit Money Banks in Nigeria. *International Journal of African and Asian Studies, 13*(5), 45-56.
[14]. Onyango, D. O. (2014).Current Assets Management Practices of Small and Medium Enterprises in Kenya: Evidence from Selected Enterprises in Nairobi.
[15]. Saunders, M. Lewis, P., & Thornhill, A., (2013). *Research Methods for Business students* (4th edition). Harlow: Prentice Hall.
[16]. Sreevidya, U., & Sunitha, K. (2011). *Business research methods*.
[17]. Stock, J. H., & Watson, M. W. (2003). Has the business cycle changed and why? In *NBER Macroeconomics Annual 2002, 17*, 159-230. MIT press.
[18]. Watson, J. (2001). *How to Determine a Sample Size:* University Park, PA: Penn State Cooperative Extension.

Divinah J. K, et. al. "Effect of Inventory Management on Financial Performance of Non-Financial Firms Listed at the Nairobi Securities Exchange." *IOSR Journal of Economics and Finance (IOSR-JEF)*, 12(05), 2021, pp. 20-27.