

## Inventory Management in Small Business Finance: Empirical Evidence From Kwara State, Nigeria

Abdulrasheed ABDULRAHEEM, Ph.D

Department of Accounting and Finance, University of Ilorin

Khadijat Adenola YAHAYA, Ph.D

Department of Accounting and Finance, University of Ilorin

Sulu Babaita ISIAKA, Ph.D

Department of Business Administration, University of Ilorin

Olanrewaju Atanda ALIU, Ph.D

Department of Accounting and Finance, University of Ilorin

### Abstract

Small Businesses are the backbone of all economies and their importance as an impetus to economic development especially in developing economies cannot be over-emphasized. However, a well designed inventory management can be employed to promote economic development. This paper therefore assessed inventory management in selected small businesses in Kwara State, Nigeria. Using a regression model  $Y = \beta_0 + \beta_1 X_1 + \mu_i$  to explain the effect of inventory value on performance proxy by profit over a period of ten years, the study revealed that a Naira change in stock would cause almost a Naira (92 Kobo) change in profitability of selected businesses. This indicated a strong positive relationship between inventory and profitability of small businesses in Kwara State with a t-value of (6.409). Based on the findings of the study it was concluded that small businesses are likely to generate higher profit if an effective inventory management is put in place.

**Keywords:** Small business, Inventory management, Finance, Profitability

### Introduction

Inventory management is a pivotal in effective and efficient organization. It is also vital in the control of materials and goods that have to be held (or stored) for later use in the case of production or later exchange activities in the case of services. The principal goal of inventory management involves having to balance the conflicting economics of not wanting to hold too much stock. Thereby having to tie up capital so as to guide against the incurring of costs, such as storage, spoilage, pilferage and obsolescence and, the desire to make items or goods available when and where required (quality and quantity wise) so as to avert the cost of not meeting such requirement.

It is Inventory management, in an organization, deals with identifying every items of stock. Inventory management is primarily about specifying the size and placement of stocked goods. Inventory management is required at different locations within a facility or within multiple locations of a supply network to protect the regular and planned course of production against the random disturbance of running out of materials or goods (Chambers Dictionary, 1998). Effective inventory management determined how profit of an organization can be maximized. Maximizing of profit depend on minimizing cost and maximizing revenue. Maximization is an efficient concept which requires increasing profit without increasing the resources used (Stephenson, 1985). The import of inventory management in organization is to ensure that at any point in time the capital of the business is not necessarily tied down in form of material in the store, which may provide opportunity

for fraud and theft. In other word the management wishes to put at minimal rate stock losses, which emanate from store operation. Thus, as business organization stock is of paramount important likewise the profit of the business. Inventory problems of too great or too small quantities on hand can cause business failures. If a small business experiences stock-out of a critical inventory item, production halts could result. It is thus the management of this economics of stockholding, that is appropriately being refers to as inventory management.

Therefore it should be adequately taken care of because it has to do with profit of the business. A well planned and effective stock management can contribute substantially to a firm annual turnover.

The present study intends to solve problems associated with the management of inventory by small businesses. This is because inventory of a business can go a long way in determining the success or the failure of the business. Ineffective inventory management, therefore can lead to stock out which will definitely lead to loss of customer and goodwill, which will make the profit of the business decrease and result in ultimate collapse of the organization. The primary objective this research work is to examine the important of inventory management on small business profitability. Studies have revealed that the major objectives of inventory management and control in small businesses is to inform managers how much of goods to re-order and when to re-order (Lucey 1990; Keth & Muhlemon 1994)

## **Review of Literature**

### **Conceptual Issues**

Robert (1998) defined inventory as the aggregate of those items of tangible personal asset of a firm which are: held for sale in the day to day activities of the business .i.e. finish goods; in the process of production for sale i.e. work in progress; are to be currently consumed in the production of goods and services. While Lucey (1992) says that, after each issue or receipt of the physical balance of stock is calculated, the total balances represent stock in hand (closing stock). Inventory in many organization are held in form of raw material, spare part, work in progress and finish goods. In addition inventory management is of importance to any organization so as to help to: maintain a smooth flow of production; meet the requirement of various customers; sustain its method of production, which gives rise to inventory level.

Lucey (1990) identified the following point as reasons of holding inventories in organization: to absorb variation in demand and production; to ensure that sufficient goods are available to meet anticipated demand; to meet possible shortage in future; to take advantage of bulk purchasing discount; stocks are also held as a necessary part of producing process. Pandy (2005) identified three major reasons for holding inventories which are transactionary motives; precautionary motives and speculative motives. The transactionary motive talks about the need to maintain inventory to facilitate the smooth production or sales operation of day to day transaction. The precautionary motive necessitates inventory holding to guard against the risk of unpredictable change in demand and supply forces and other factor. The speculative motive influences the decision to increase or decrease inventory level to take advantage of price fluctuation.

Rosenblatt (1977) noted that the cost of maintaining inventory is included in the final price paid by the consumers. As such, goods in inventory represents a cost to their owner because, the manufacturer has paid for materials and labour. Morris (1995) also stressed that inventory management in its broadest perspective is to keep the most economical amount of one kind of asset in order to facilitate an increase in the total value of all assets of the organization such as human and material resources. Thus, the overall goal of inventory management is minimization of stock-out.

### **Inventory Management and its Implications on Business Finance**

Although inventory management is the concern of all firms, however, the small businesses should address this issue more seriously because of their vulnerability to fluctuation in the level of working capital. They cannot afford to be starved of cash and inventory. The study by Peel, Wilson and Howorth (2000) revealed that small firms tends to have a relatively high proportion of current assets, less liquidity, exhibit volatile cash flows, and a high reliance on short-term debt. Similarly, Howorth and Westhead (2003) suggested that small companies tend to focus on some areas of inventory management where they can expect to improve marginal returns. For small businesses, an efficient inventory management is a vital component of success and survival (Peel and Wilson, 1996). They further asserted that smaller firms should adopt a routine inventory management policy in order to reduce the probability of business closure, as well as to enhance business performance. The study by Grablowsky (1976) showed a significant relationship between various success measures and the adoption of inventory management policies. Managing cash flow and cash conversion cycle is a critical component of overall financial management for all firms, especially those with capital constraint and more reliant on short-term sources of finance (Walker and Petty, 1978; Deakins et al, 2001). Given these peculiarities of small businesses, Peel and Wilson (1996) have stressed the need for efficient management of inventory and more recently good credit management practice have become pivotal to the health and performance of the small businesses. In the same vein, Berry et al (2002) observed that small businesses have not developed their financial management practices to a great extent and concluded that owner-managers should be made aware of the importance and benefits that can accrue from improved financial management practices. De Chazal Du Mee (1998) found that 60% enterprises suffer from cash flow problems.

Narasimhan and Murty (2001) stressed on the need for many industries to improve their return on capital employed (ROCE) by focusing on some critical areas such as reducing investment in working capital and improving inventory management. This suggested that managers can increase profitability by reducing the number of days of accounts receivable and inventories, for small growing businesses that need to finance increasing amounts of debtors. Most previous studies on inventory management and financial management of small businesses focused on developed economies. Padachi (2006), using panel data and regression analysis in the study of Mauritian small manufacturing firms, discovered a strong relationship between working capital and profitability. Similarly, the study conducted by Deloof (2003) found a strong significant relationship between the measures of working capital management and corporate profitability. Using the same methodology the present study examined the relationship between inventory management and profitability of small businesses in Kwara state, Nigeria.

### **Methodology**

Secondary data was collected from the books of selected small businesses located in Kwara State covering a period of 10 years. The data was subjected to analysis using the SPSS. The linear regression model was used to test the relationship between inventory management and performance based on profitability of the selected small businesses. Borrowing from the works of Padachi (2006), Shin and Soenen (1998) and Deloof (2003) this study therefore adopted their methodology since it has proved effective.

### **Model Specification**

The functional relationship between the variables is expressed as

$$Y = \beta_0 + \beta_1 x_1 + \mu_i$$

Where; Y = Profitability

$x_1$  = inventory value

**Presentation and Interpretation of Results**

This regression analysis is run on six small scale enterprises, using their stock and profit record for the past ten (10) years. More so, rate of turnover and their profit for the past 10 years was also used. In this research work, SPSS was used to run the regression.

**Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.915 <sup>a</sup>	.837	.817	55763.73328	1.234

a. Predictors: (Constant), STOCK

b. Dependent Variable: PROFIT

The R<sup>2</sup> as indicated above means that a change in stock will cause 0.915 ( 91.5%) change in profitability and the remaining 8.5% are other factors affecting profitability of business such as marketing, advertisement, location and other sales strategy. The adjusted R<sup>2</sup> of 0.837 (83.7) shows that it is statistically significant. Durbin – Watson figure of 1.234, test the existence of serial correlation in the model, showing that it is inconclusive because the Durbin Watson statistics 1.234 falls between the dl(0.879) and du (1.320) at 0.05 level of significance.

**ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.277E11	1	1.277E11	41.071	.000 <sup>a</sup>
	Residual	2.488E10	8	3.110E9		
	Total	1.526E11	9			

a. Predictors: (Constant), STOCK

b. Dependent Variable: PROFIT

From the above result, the P- value of 0.00 is significant to the model. For F statistics, the calculated F Statistics is 41.071 where the tabulated F value is 5.32, at degree of freedom of 8. Since the calculated F is greater than the tabulated F we then conclude that the model is statistically significant at 0.05 level of significance. This implies that there exists a very strong positive relationship between the inventory and profitability of small businesses in Kwara State Nigeria.

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	156310.003	34334.257		4.553	.002
	stock	11.866	1.852	.915	6.409	.000

**Coefficients<sup>a</sup>**

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
1 (Constant)	156310.003	34334.257		4.553	.002
stock	11.866	1.852	.915	6.409	.000

a. Dependent Variable: PROFIT

The coefficient of the model which has a positive sign of 0.915 indicates that there is a positive relationship between stock and profitability, showing that a Naira (₦) change in stock value will lead to (₦)0.91 change in profitability. The tabulated t-value at 5% level of significance is 1.645, while the calculated t-value is 6.409. This result indicates a significant relationship between the inventory and profitability.

**Discussion of Findings**

The result shows that there is positive relationship between inventory level and profitability of small businesses. That is, profitability of small businesses increases when effective inventory management is carried out. This finding is not so much at variance with the discovery of Grablowsky (1976) which found significant relationship between various success measures and the adoption of inventory management policies.

**Conclusion and Recommendations**

This study examined the effect of inventory management on the profit of small businesses. The data used for this research work was gathered through records of stock and profit of small businesses. Six selected small businesses in Ilorin were studied based on their financial records in the last ten years. Simple linear regression model was used in analyzing data used for the study. The findings of the study revealed that if stocks of small scale business are not managed effectively, profit level of the businesses will be reduced. We then concluded that stock level is one of the variables that have significant impact on the profitability of small businesses in Kwara state Nigeria.

Based on the findings of the study, it was recommended that small owners of businesses should be trained on management of inventory by carrying out stock checking and stock records. They should also improve on advertisement, marketing strategies and attitude towards customers in order to make higher sales and increase profits. Managers of small businesses must improve services to their customers, by making sure they did not run out of stock, so that the confidence of the customers does not diminish. The managers of small scale businesses should employ competent Accountants in order to keep proper record of business operations. If the afore-mentioned recommendations are strictly adhered, it is believed that profit margin will improve and corporate survival of small businesses in Kwara State specifically and Nigeria at large will be promoted.

**References**

Barry, T., Sweeting, B., Goto, J. & Taylor, M. (2002). Financial management practice amongst SMEs. Manchester Metropolitan University, WP 02/16  
 Chambers Dictionary. (1998). Chambers Harrap, Edinburgh, p.845

De Chazal Du Mee. (1998). Research study on small and medium enterprise. Final Report

- Deakins, D., Logan, D. & Steele, L. (2001). The financial management of the small enterprise. ACCA Research Report. No. 64
- Deloof, D. (2003). Does working capital management affect profitability of Belgian firms? *Journal of Business Finance and Accounting*, 30 (3 & 4), 573 – 587.
- Grablowsky, B. J. (1984). Financial management of inventory. *Journal of Small Business Management*, July, 59-65.
- Howorth, C. & Westhead, P. (2003). The focus of working capital management in UK small firms. *Management Accounting Research*, 14(2), 94-111.
- Keth, L.A. & Muhlemon, J. O. (1994). *Production and operations management*. London: Pitman Publisher.
- Lucey, T. (1992). *Quantitative techniques*. 4<sup>th</sup> Edition. London: Ashford Colour Press.
- Lucey, T. (1999), *A first course in cost and management accounting*; UK :DP Publication
- Morris, C. (1995). *Quantitative approach business study*. London: Pitman Publisher.
- Narasimhan, M. S. & Murty, L. S. (2001). Emerging manufacturing industry: A financial perspective, *Management review*, June, 105-112
- Padachi, K. (2006). Trends in working capital management and its impact on firms' performance: An analysis of Mauritian small manufacturing firms, *International Review of Business Research Papers*. 2(2), 45- 58
- Pandy, I. M. (2005). *Financial management*. Delhi: Vikas Publishing House
- Peel, M.J. & Wilson, N. (1996). Working capital and financial management practices in the small firm sector, *International Small Business Journal* 14(2), 52-68
- Peel, M. J., Wilson, N. & Howorth, C. A. (2000). Late payment and credit management in the small firm sector: some empirical evidence, *International Small Business Journal* 18(2), 52-68
- Robert, J. (1998). The basis of Business Decision**
- Rosenblatt, B.S. (1977). *Modern business - A system approach*. 2<sup>nd</sup> Edition. Boston: Houghton Mifflin Co.
- Shin, H.H & Soenen, L. (1998). Efficiency of working capital and corporate profitability, *Financial practice and education*, Vol 8 No 2, pp. 37-45
- Stephenson, H. B. (1985). Maximizing profit in small and medium-sized businesses, *Journal of Small Business Management*,
- Walker, E. & Petty, W. (1978). Financial differences between large and small firms, *Financial management*, Winter, pp61-68

**APPENDIX**

**Lolly Pure Water**

**No 9, Aiyetoro, Asadam Ilorin Kwara State.**

Year	Unit Produced	Sales Unit	Cost	Waste Unit	Closing Stock	Exp	Profit
2001	38200	37898	2273880	20	282	1472540	801340
2002	57250	57154	3429240	18	78	2115019	1314221
2003	77000	76933	4615980	30	37	2967187	1648793
2004	44250	44144	2648640	50	56	1876765	771875
2005	25962	25948	1556880	14	-	1893072	(336192)
2006	43670	43659	2619540	10	1	2350386	269154
2007	47467	47435	2846100	15	17	2835059	110410
2008	63200	63175	3790500	5	20	3653004	137496
2009	130000	129735	778410	95	170	7161488	622612
2010	165350	165304	9918240	15	31	9155183	763057

**Iya Ajoke Venture**

**Wholesale and Retail in Semovita**

Year	Purchases		Sales		closing stock	Profit
	Unit	cost	unit	cost		
2001	1280	640000	1240	768800	40	148800
2002	1310	707400	1300	845000	10	143000
2003	1290	696600	1270	825500	20	139700
2004	1350	837000	1300	936000	50	130000
2005	1400	1120000	1350	1201500	50	121500
2006	1431	1502550	1420	1775000	11	284000
2007	1420	1491000	1390	1737500	30	278000
2008	1556	2090000	1531	2143400	25	229650
2009	1695	2118750	1651	2311400	44	247650
2010	1740	2296800	1700	2805000	40	561000

**Aroyeke Venture**

**Wholesale and Retail in spaghetti**

Year	Purchases		Sales		Closing stock	Profit
	Unit	cost	unit	cost		
2001	1594	2026340	1505	4691750	89	233340
2002	1620	2187000	1590	2305500	30	159000
2003	1650	2244000	1610	2350600	40	161000
2004	1650	2260500	1615	2357900	35	145350
2005	1690	2315300	1640	2460000	50	219700
2006	1710	2376900	1690	2568800	20	219700
2007	1710	2376900	1700	2618000	10	255000

2008	1750	2467500	1720	2786400	30	361200
2009	1756	2511080	1736	2864400	20	381920
2010	1800	2628000	1789	3005520	11	393580

**Ibroqtoib Investment (Branch A)**  
**Wholesale and Retail in Acquadana Table Water**

Year	Purchases		Sales		Closing stock	Waste	Profit
	Unit	cost	Unit	cost			
2001	2500	600000	2300	690000	160	40	138000
2002	2650	742095	2510	803200	140	-	100400
2003	2720	816000	2590	906500	115	15	129500
2004	3000	930000	2690	995300	280	30	161400
2005	3000	930000	2820	1043400	140	40	169200
2006	3200	1024000	3100	1147000	80	20	155000
2007	3175	1047750	2718	1032840	400	57	135900
2008	3400	1156000	3350	1340000	50	-	201000
2009	3500	1225000	3350	1340000	15	-	167500
2010	3400	1190000	3350	1407000	45	5	234500

**Ibroqtoib Investment (Branch B)**  
**Wholesale and Retail in Evinco Table Water**

Year	Purchases		Sales		Closing stock	Waste	Profit
	Unit	cost	Unit	cost			
2001	5000	1000000	4720	1180000	260	20	236000
2002	5000	1000000	4670	1214200	300	30	280200
2003	5200	109200	4930	1281800	260	10	246500
2004	5200	109200	4900	1274000	88	12	245000
2005	5300	1166000	4940	1333800	360	-	247000
2006	5500	1210000	5012	1503600	440	48	400960
2007	5500	1210000	5200	1664000	250	50	520000
2008	7000	1680000	6400	2176000	590	10	640000
2009	9000	216000	8600	3010000	384	16	946000
2010	11980	3114800	10792	3885120	1100	88	1079200

**Ibroqtoib Investment (Branch C)**  
**Wholesale and Retail in Pure Water**

Year	Purchases		Sales		Closing stock	Waste	Profit
	Unit	cost	Unit	cost			
2001	1000	40000	894	44700	195	11	8940
2002	1500	60000	1260	63000	200	40	12600
2003	2000	80000	1670	83500	300	30	16700
2004	5600	252000	5170	284350	410	20	51700
2005	10500	472500	9800	539000	680	20	98000
2006	1580	711000	14900	819500	867	33	149000
2007	25000	1250000	24800	1488000	120	80	248000

2008	30000	1500000	29650	1779000	300	50	296500
2009	35000	1750000	34450	2067000	500	50	344500
2010	43050	2152500	42950	3006500	84	16	859000