



Science Arena Publications
International Journal of Business Management

ISSN: 2520-3266

Available online at www.sciarena.com

2019, Vol, 4 (4): 114-121

The Impact of Liquidity, Firm Size and Fixed Assets on the Profitability of Sugar Mills in Pakistan

Habib Ullah

Centre for Management and Commerce, University of Swat, Khyber Pakhtunkhwa, Pakistan.

Abstract: *This research study examined the impact of liquidity, firm size and fixed assets on the profitability of sugar mills in Pakistan listed in Karachi Stock Exchange. Eleven years data were collected from the annual financial statements of 8 eight sugar mills over a period of 2008 to 2018. The profitability was measured by ROA (Return on Assets). Liquidity, firm size and fixed assets were taken as independent variables. Multiple regression analysis was used and the result showed that liquidity have a significant positive impact on ROA while the fixed assets have a significant negative impact. The size of the firm have insignificant but positive impact on the profitability of sugar mills in Pakistan.*

Keywords: *Fixed Assets, Firm Size, Liquidity, Profitability, Return on Assets.*

INTRODUCTION

Sugar mills play very important role in the development of a country, so it is important to know about the impact of liquidity, firm size and fixed assets on the profitability of sugar mills in Pakistan. Every stakeholders of the company have interest about the liquidity position of the company. Employees of the company have concerned about the liquidity position of the company in order to know whether the company is able to fulfill employees related obligation. Before to sell goods on credit supplier wants to know about the liquidity position of the company. Profitability and liquidity are closely related to each other (Saleem and Rehman, 2011). Liquidity management play a very important role for the smooth operation of the firm. It helps in the profitability and growth of the firm and it is the aim of every firm to increase the wealth of the shareholders (Madushanka and Jathurika). (Eljelly, 2004) studied the relationship between liquidity and profitability in Saudi Arabia. He found a significant negative relationship between liquidity and profitability of joint stock companies in Saudi Arabia. (Ehiedu, 2014) found that there is a positive relationship between liquidity and profitability. (Demirgüneş, 2016) found a significant positive relation between liquidity and financial performance in turkey. (Malik et al., 2016) collected data of 22 banks from 2009 to 2013. Their result revealed that there is a significant relation between liquidity and return on assets. (Waleed et al., 2016) collected data over a period of 2010 to 2015 and find out that there is a significant relation between liquidity and return on assets.

Now a days a firm size is very important due to economies of scale. In comparison with the smaller firm, large firm produce products on less costs. Firms are trying to increase their size so as to get a competitive edge on their competitors by increasing their market share and by decreasing production costs (Shaheen and Malik, 2012). (Amato and Wilder, 1985) collected data from US firms and found that there is no relationship between firm size and profitability. (Majumdar, 1997) collected data from 1020 firms in india and found that large firms are less productive but more profitable. (Goddard et al., 2005) collected data over a period of 1993

to 2001 from service and manufacturing firms in European countries and found a negative relationship between size and profitability. (Jónsson, 2007) found negative and insignificant relationship between firm size and profitability. (Vijayakumar and Tamizhselvan, 2010) found a positive relation between firm size and profitability in India. (Prasetyantoko and Parmono, 2012) examined the relation between size of the firms and firm performance in Indonesia and collected data from 238 firms over a period of 1994 to 2004. Their result revealed a significant relation between firm performance and firm size.

(Mule et al., 2015) studied the effect of size on firm market value and profitability in Kenya. They collected data from 2010 to 2014 and used multiple regression. They examined that firm size has a significant and positive impact on return on equity while it has insignificant effect on return on assets. (Cyril and Ogbonna, 2013) found that there is insignificant impact of fixed assets on return on assets. (Olatunji and Adegbite, 2014) found positive impact of fixed assets on profitability.

Problem Statement

To examine the impact of liquidity, firm size and fixed assets on the profitability of sugar mills in Pakistan listed in Karachi Stock Exchange.

Purpose of the Study

The purpose of this research study are given below

1. To examine the impact of firm size on the profitability of sugar mills in Pakistan.
2. To examine the impact of liquidity on the profitability of sugar mills in Pakistan.
3. To examine the impact of fixed assets on the profitability of sugar mills in Pakistan.
4. To investigate the relationship and effect of liquidity, firm size and fixed assets on the profitability of Sugar Mills listed on Karachi Stock Exchange Pakistan.

Significance of the Study

This research study would be helpful to the decision maker and policy maker of sugar mills. It would be helpful for all those who want to know about the impact of liquidity, firm size and fixed assets on the profitability of Sugar Mills listed on Karachi Stock Exchange Pakistan. It would be also helpful to the other researchers as well as the students.

Literature Review

Ammar, Hanna, Nordheim, and Russell (2003) collected data from 1985 to 1996 and examined that the profitability of the firm decreases when the sales grow larger than 50 million dollars. Papadogonas (2006) collected data over a period of 1995 to 1999 and used regression analysis. The result revealed that size, sale growth, debt structure, managerial efficiency and investment in fixed assets affects firms profitability significantly. Serrasqueiro and Nunes (2008) studied the relation between size and performance of small as well as medium size firms and examined that there is a positive relation between size and performance. The result also showed that the level of fixed assets affects performance of the firms negatively.

Lee (2009) collected data from 1987 to 2006 of more than 7000 US firms and examined that firm size and profit rate are positive correlated with each other and in a nonlinear manner. Asimakopoulos, Samitas, and Papadogonas (2009) studied the determinants of the firms profitability and collected data of nonfinancial firms over a period of 1995 to 2003 which were listed in Athens stock exchange. Their result revealed that firm size, investment and sale growth affect firm profitability positively while current assets and leverage affects firms profitability negatively. Saleem and Rehman (2011) collected data of 26 oil and gas firms from 2004 to 2009 and their result showed that there is a significant impact of liquidity on return on assets.

Pervan and Višić (2012) They studied the influence of firm size on its performance and success. For this purpose they collected the data from 2002 to 2010. The result of the analysis revealed that firm size has significant and positive impact on the performance of the firm. They also showed that debt ratio and assets

turnover also significantly effect firm performance. Halil and Hasan (2012) collected data of 143 listed manufacturing firms in istanbul stock exchange from 2005 to 2011. They measured profitability of the firm by ROA and measured firm size by total assets and total sale and found positive impact on profitability.

Niresh (2012) collected data over a period of 2007 to 2011 of 31 manufacturing companies in Sri Lanka and found that there is no significant impact of liquidity on profitability. Okwo, Okelue, and Nweze (2012) collected data from 1995 to 2009 and found that fixed assets have no impact on profitability. Iqbal and Mati (2012) found that there is a relation between fixed assets and profitability.

Doğan (2013) studied the effect of size of the firm on profitability and collected data from 2008 to 2011 of 200 firms which were listed in istanbul stock exchange. He measured firm profitability by ROA and find a positive relationship between firm size and profitability. Ben-Caleb, Olubukunola, and Uwuigbe (2013) collected data of 30 firms in nigeria from 2006 to 2010 and examined that there is a insignificant impact of liquidity on profitability. John and Adebayo (2013) studied the effect of firms size on the profitability of manufacturing sector in nigeria. They collected data from 2005 to 2012 and found positive effect of size on profitability in nigeria.

Sritharan (2015) studied the influence of firm size on the profitability of hotel and travelling firms in Sri lanka. For this purpose he collected data of 30 firms over a period of 2008 to 2012 and measured firm profitability by return on assets. The result showed that the size of the firm has a positive influence on the profitability. Ghafoorifard, Sheykh, Shakibae, and Joshaghan (2014) collected data from 2008 to 2011 of 96 firms listed in tehran stock exchange and find out that there is a significant relation between firm age, firm size and financial performance of the firms.

Akhtar, Ibrahim, Riaz, Abbas, and Asif (2015) collected data from 2007 to 2012 and used SPSS software for the analysis. They find out that liquidity has a significant positive impact on the profitability of sugar industry in Pakistan. Akenga (2015) collected data of thirty companies listed in Nairobi Securities Exchange and examined that liquidity has a significant impact on return on assets. Safdar, Awan, Ahmed, Qureshi, and Hasnain (2016) collected five years data of the sugar mills listed in Karachi Stock Exchange and found a positive impact of liquidity on return on assets, return on equity and return on capital employed.

Madushanka and Jathurika studied the impact of liquidity on profitability in Sri Lanka and collected data from 2012 to 2016. Correlation and regression analysis was used and the result revealed that liquidity has a significant impact on the profitability in Sri Lanka. Isik, Unal, and Unal (2017) studied the effect of firm size on the profitability of manufacturing firms in turkey. They collected data from 112 firms over a period of 2005 to 2013 and find out that there is a positive significant relation between firm profitability and size. LYDIA (2018) found positive correlation between fixed assets management and firm profitability.

Research Methodology

Method of Data Collection

The data was collected from the annual financial statements of sugar mills listed in KSE (Karachi Stock Exchange) Pakistan from 2008 to 2018.

Simple Size

11 years data was collected from eight sugar mills listed on KSE (Karachi Stock Exchange) which consists of 88 observations from 2008 to 2018.

Selection of variables

Four variables are used in this study to find out the impact of liquidity, firm size and fixed assets on the profitability of Sugar Mills listed on Karachi Stock Exchange Pakistan. One variable is used as dependent variable and three variables are used as independent variables. ROA (Return on Assets) is the dependent variable and LQ (Liquidity), FA (Fixed Assets) and size of the firm are the independent variables.

Profitability of the sugar mills was measured by ROA and is taken as Net profit after tax / Total assets. Liquidity was measured by current assets / current liabilities, fixed assets was measured by fixed assets / total assets and firm size was measured by natural logarithm of total assets of the firm.

Hypothesis of the Study

This research study focused on testing the following hypothesis.

Hypothesis 1 H₁ : There is a positive impact of firm size on ROA

Hypothesis 2 H₀ : There is no impact of firm size on ROA

Hypothesis 3 H₁ : There is a positive impact of liquidity on ROA

Hypothesis 4 H₀ : There is no impact of liquidity on ROA

Hypothesis 5 H₁ : There is a positive impact of fixed assets on ROA

Hypothesis 6 H₀ : There is no impact of fixed assets on ROA

Model Development

The model for this study are given below in which Size (size of the firm), LQ (liquidity) and FA (fixed assets) are the independent variables and ROA (return on assets) is the dependent variable.

$$ROA = \alpha + \beta_1Size + \beta_2LQ + \beta_3FA + \varepsilon$$

ROA represent return on assets and is taken as net profit after tax / total assets and is used for measuring profitability

Size represents size of the firm and is taken as natural logarithm of total assets

LQ represents liquidity and is taken as current assets / current liabilities

FA represents fixed assets and is taken as fixed assets / total assets

ε represents the error term

α represents the constant

β represents the regression coefficients

Data Analysis

To examine the impact of liquidity, firm size and fixed assets on the profitability of Sugar Mills listed on Karachi Stock Exchange Pakistan multiple regression analysis was used and the data was analyzed through SPSS software to get the result and also to test the developed hupothesis.

Table 1: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Variance
ROA	88	-.13	.23	.0324	.06904	.005
LQ	88	.42	14.52	1.4651	1.80276	3.250
FA	88	.28	.84	.5771	.11926	.014
Size	88	13.37	16.44	15.0496	.68043	.463
Valid N (listwise)	88					

Source: Developed by author

Table 1 shows the descriptive statistics of this study. The total number of observations used in this research study are 88. The dependent variable in this study is ROA. The mean of ROA is 0.0324 and its standard deviation is 0.06904. LQ (liquidity), FA (fixed assets) and size (firm size) are the independent variables. The mean value of liquidity is 1.4651 and its standard deviation value is 1.80276. The mean of fixed assets is 0.5771 and its standard deviation is 0.11926. The mean value of firm size is 15.0496 and its standard deviation is 0.68043.

Table 2: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.377 ^a	.142	.111	.06508
a. Predictors: (Constant), Size, LQ, FA				

Source: Developed by author

Table 2 shows the summary of model. R Square value is 0.142 it means that 14.2 percent variation in return on assets is explained by the independent variables (liquidity, firm size, fixed assets).

Table 3: Anova^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.059	3	.020	4.638	.005 ^a
	Residual	.356	84	.004		
	Total	.415	87			
a. Predictors: (Constant), Size, LQ, FA						
b. Dependent Variable: ROA						

Source: Developed by author

Table 3 shows the validity of the model. The sig. value is 0.005 which is less than 0.05 so the model is statistically significant and is valid.

Table 4: Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.102	.175		.584	.561
	LQ	.008	.004	.210	2.071	.041
	FA	-.173	.061	-.298	-2.832	.006
	Size	.001	.011	.012	.113	.910
a. Dependent Variable: ROA						

Source: Developed by author

Table 4 shows the summarized result of the model. The result shows that LQ(liquidity) is significant and the coefficient is 0.008. This shows the positive relationship of liquidity with the ROA. The sig value of FA(fixed assets) is 0.006 which shows that fixed assets is statistically significant and its coefficient is -0.173 which represents negative relationship of fixed assets with ROA. The sig value of firm size is 0.910 and its coefficient is 0.001 which represents insignificant positive relation with ROA.

Conclusion

This research study examined the impact of liquidity, firm size and fixed assets on the profitability of sugar mills in Pakistan listed in Karachi Stock Exchange. Eleven years data were collected from the annual financial statements of 8 eight sugar mills over a period of 2008 to 2018 which consists of 88 observations. The profitability was measured by ROA (Return on Assets). Liquidity, firm size and fixed assets were taken as independent variables. Liquidity was measured by current assets to current liabilities, firm size was measured by natural logarithm of total assets and fixed assets was measured by fixed assets to total assets. SPSS software was used for the analysis and the result showed that liquidity have a significant positive

impact on ROA and hence the hypothesis that there is a positive impact of liquidity on ROA is accepted. When the liquidity increases the profitability of sugar mills will be increases. This result is similar with the result of Eljelly (2004) and Dermirgunes (2016) while the fixed assets have a significant negative impact on ROA and the hypothesis that there is a positive impact of fixed assets on ROA is rejected. When the fixed assets increase the profitability of sugar mills will be decrease. The size of the firm have insignificant but positive impact on the profitability of sugar mills in Pakistan. This result is similar with the result of Dogan (2013), John and Adebayo (2013), Sritharan (2015) and Vijaykumar & Tamizhselvan (2010).

Limitation and Recommendation

This study is only limited to the sugar sector of Pakistan. Eleven years data were collected from only eight sugar mills. Profitability was only measured by ROA (Return on Assets). Three variables were used as independent variable and only one variable was used as dependent variable. So it is recommended to conduct such study and include all firms listed in Karachi Stock Exchange and also include other various variables to study their impact on profitability.

Reference

1. Akenga, G. (2015). Effect of liquidity on financial performance of firms listed at the Nairobi Securities Exchange, Kenya. *International Journal of Science and Research (IJSR)*, 6(7), 279-285.
2. Akhtar, S., Ibrahim, M., Riaz, M., Abbas, M., & Asif, M. (2015). Impact of Liquidity on Profitability in Sugar Sector of Pakistan. *Research Journal of Finance and Accounting*, 6(15), 2015.
3. Amato, L., & Wilder, R. P. (1985). The effects of firm size on profit rates in US manufacturing. *Southern Economic Journal*, 181-190.
4. Ammar, A., Hanna, A. S., Nordheim, E. V., & Russell, J. S. (2003). Indicator variables model of firm's size-profitability relationship of electrical contractors using financial and economic data. *Journal of Construction Engineering and Management*, 129(2), 192-197.
5. Asimakopoulous, I., Samitas, A., & Papadogonas, T. (2009). Firm-specific and economy wide determinants of firm profitability: Greek evidence using panel data. *Managerial Finance*, 35(11), 930-939.
6. Ben-Caleb, E., Olubukunola, U., & Uwuigbe, U. (2013). Liquidity management and profitability of manufacturing companies in Nigeria. *IOSR Journal of Business and Management*, 9(1), 13-21.
7. Cyril, U. M., & Ogbonna, E. E. (2013). Evaluation of the Effect of Non-Current Assets on Return on Assets of Cement Manufacturing Industry in Nigeria. *Journal of Theoretical & Applied Statistics*, 3(2), 22-30.
8. Demirgünes, K. (2016). the effect of liquidity on financial performance: evidence from Turkish Retail industry. *International Journal of Economics and Finance*, 8(4).
9. Doğan, M. (2013). Does firm size affect the firm profitability? Evidence from Turkey. *Research Journal of Finance and Accounting*, 4(4), 53-59.
10. Ehiedu, V.-C. (2014). The impact of liquidity on profitability of some selected companies: The financial statement analysis (FSA) approach. *Research Journal of Finance and Accounting*, 5(5), 81-90.
11. Eljelly, A. M. (2004). Liquidity-profitability tradeoff: An empirical investigation in an emerging market. *International journal of commerce and management*, 14(2), 48-61.
12. Ghafoorifard, M., Sheykh, B., Shakibae, M., & Joshaghan, N. S. (2014). Assessing the relationship between firm size, age and financial performance in listed companies on Tehran Stock Exchange. *International Journal of Scientific Management and Development*, 2(11), 631-635.
13. Goddard, J., Tavakoli, M., & Wilson, J. O. (2005). Determinants of profitability in European manufacturing and services: evidence from a dynamic panel model. *Applied Financial Economics*, 15(18), 1269-1282.

14. Halil, E., & Hasan, A. (2012). The effect of firm size on profitability: An empirical Icelandic firms. *Bifröst Journal of Social Science*, 1, 33-42.
15. Iqbal, A., & Mati, M. (2012). Relationship between non-current assets & firms profitability: University Library of Munich, Germany.
16. Isik, O., Unal, E. A., & Unal, Y. (2017). The effect of firm size on profitability: evidence from Turkish manufacturing sector. *Journal of Business Economics and Finance*, 6(4), 301-308.
17. John, A. O., & Adebayo, O. (2013). Effect of firm size on profitability: Evidence from Nigerian manufacturing sector. *Prime Journal of Business Administration and Management (BAM)*, 3(9), 1171-1175.
18. Jónsson, B. (2007). Does the size matter?: the relationship between size and porfitability of Icelandic firms.
19. Lee, J. (2009). Does size matter in firm performance? Evidence from US public firms. *international Journal of the economics of Business*, 16(2), 189-203.
20. lydia, C. (2018). *Effect of Asset Performance Management on Profitability of Deposit Taking Saccos in Nakuru County*. Jkuat.
21. Madushanka, K., & Jathurika, M. The Impact of Liquidity Ratios on Profitability.
22. Majumdar, S. K. (1997). The impact of size and age on firm-level performance: some evidence from India. *Review of industrial organization*, 12(2), 231-241.
23. Malik, M. S., Awais, M., & Khursheed, A. (2016). Impact of liquidity on profitability: A comprehensive case of Pakistan's private banking sector. *International Journal of Economics and Finance*, 3(3), 69.
24. Mule, K. R., Mukras, M. S., & Nzioka, O. M. (2015). Corporate size, profitability and market value: An econometric panel analysis of listed firms in Kenya.
25. Niresh, J. A. (2012). Trade-off between liquidity & profitability: A study of selected manufacturing firms in Sri Lanka. *Researchers World*, 3(4), 34.
26. Okwo, I. M., Okelue, U. D., & Nweze, A. U. (2012). Investment in fixed assets and firm profitability: Evidence from the Nigerian brewery industry. *European Journal of Business and Management*, 4(20), 10-17.
27. Olatunji, T., & Adegbite, T. (2014). Investment in Fixed Assets and Firm Profitability: Empirical Evidence from the Nigerian Banking Sector. *Asian Journal of Social Sciences and Management Studies*, 1(3), 78-82.
28. Papadogonas, T. A. (2006). The financial performance of large and small firms: evidence from Greece. *International Journal of Financial Services Management*, 2(1-2), 14-20.
29. Pervan, M., & Višić, J. (2012). Influence of firm size on its business success. *Croatian Operational Research Review*, 3(1), 213-223.
30. Prasetyantoko, A., & Parmono, R. (2012). Does firm size matter? An empirical study of firm performance in Indonesia. *International research journal of business studies*, 2(2).
31. Safdar, M. Z., Awan, M. Z., Ahmed, Z., Qureshi, M. I., & Hasnain, T. (2016). What does matter? Liquidity or profitability: a case of sugar industry in Pakistan. *International Journal of Economics and Financial Issues*, 6(3S), 144-152.
32. Saleem, Q., & Rehman, R. U. (2011). Impacts of liquidity ratios on profitability. *Interdisciplinary journal of research in business*, 1(7), 95-98.
33. Serrasqueiro, Z. S., & Nunes, P. M. (2008). Performance and size: empirical evidence from Portuguese SMEs. *Small Business Economics*, 31(2), 195-217.
34. Shaheen, S., & Malik, Q. A. (2012). The impact of capital intensity, size of firm and profitability on debt financing in textile industry of Pakistan. *Interdisciplinary Journal of Contemporary Research in Business*, 3(10), 1061-1066.

35. Sritharan, V. (2015). Does firm size influence on firm's Profitability? Evidence from listed firms of Sri Lankan Hotels and Travels sector. *Research Journal of Finance and Accounting*, 6(6), 201-207.
36. Vijayakumar, A., & Tamizhselvan, P. (2010). Corporate size and profitability: An empirical analysis. *Journal for Bloomers of Research*, 3(1), 44-53.
37. Waleed, A., Pasha, A., & Akhtar, A. (2016). Exploring the impact of liquidity on profitability: Evidence from banking sector of Pakistan. *Journal of Internet Banking and Commerce*, 21(3).