March - April 2020
ISSN: 0193-4120 Page No. 13762 - 13774

Economic Value Added Momentum & Traditional Profitability Measures (ROA, ROE & ROCE): A Comparative Study

Maeenuddina[1] , Rajni Bansal[2], Altaf Hussain[3] , Muhammad Hafeez[4] , Mehran Khan[5] , Naveed Wahi[6]

[1,5] Ph.D Scholar, Putra Business School, University Putra Malaysia, Malaysia.
[2] Chitkara Business School,Chitkara University, India.
[3,4] Department of Business Administration & Putra Business School Shaheed Benazir Bhutto University, Shaheed Benazirabad- Pakistan & University Putra Malaysia, Malaysia.
[6] Shaheed Benazir Bhutto University, Shaheed Benazirabad Pakistan.

Article Info
Volume 83
Page Number: 13762 - 13774
Publication Issue:
March - April 2020

Abstract

To examine and provide empirical evidence about the Economic Value Added Momentum' comparison with other traditional financial measures with respect to working capital management, we examined the relationship by analyzing the data collected from a sample of 69 non-financial sector firms listed with Pakistan Stock exchange for a period of 11 years (2007-2017). Secondary data is used available on the SBP website and verified with the consolidated financial statements of the firms. Hypothesis have been tested that EVAM (Economic Value Added Momentum) is more highly associated with the value of non-financial firms than other traditional performance measures with respect to working capital management. The purpose of the study is to provide empirical evidence on the relative and incremental information content of EVAM and other traditional measures, Return on Assets (ROA), Return on equity (ROE) and Return on Capital Employed (ROCE) with respect to working capital management (measured by CCC). Statistical tools regression analysis is used for the analysis. F-statistic, T-statistic and respective Beta coefficients are take into consideration to check to superiority of the EVM. The results are robust to the presence of endogeneity, demonstrate that that there is a significant relationship between Working capital management and the firm's Economic Value Added Momentum, and managers can create value by reducing their firm's cash conversion cycle. It has been proved from the overall analysis that EVAM is more superior to other traditional financial performance measures in relations with working capital management.

Article History
Article Received*: 24 July 2019*
Revised*: 12 September 2019*
Accepted*: 15 February 2020*
Publication*: 20 April 2020*

Keywords; *Economic Value Added Momentum, Weighted Average Cost of Capital, Cash Conversion Cycle, working capital management, Net Operating profit after tax, Cost of capital employed.*

INTRODUCTION

In the current competitive environment where number of factors is affecting the performance of the firm, it is very difficult for various firms to generate and maximize their shareholders wealth. While the pressure for maximizing the shareholder value has been continually increased and reach to an exceptional level (Bacidore et al. 1997). While on the other hand shareholder are not confident for the tool using for measuring the financial performance of the firm. With different studies, different measurement tool presenting different results. The traditional financial performance measurement tools are not showing the exact the financial position of the firm, therefore no one can rely with full satisfaction on any of the single ratio, as these ratios are considering one aspect of the firm while avoiding the others. To overcome this problem of a

Published by: The Mattingley Publishing Co., Inc.

March - April 2020
ISSN: 0193-4120 Page No. 13762 - 13774

finding a realistic financial performance measurement tool, different consultants developed different tools as Economic value added has been developed by Stern Stewart & Company, CFROI (Cash flow return on investment) has been developed by the Boston Consulting Group's HOLT Value Associates, EVM (Economic value management) by KPMG Peat Marwickm, DEP (discounted economic profit) has been developed by Markon Associates to fill-up the gap available in traditional measurement tools as cash flow and earnings (Biddle, et al. 1997). During these efforts made by different researchers and consultants for finding a best possible financial performance measurement tool, the most reputed and popular one is "Economic Value Added Momentum" developed by Stern Stewart in 2009. According the Stern Stewart, Economic value added momentum is the only financial performance measurement tool that reflects the true picture and financial position of a firm.

Economic Value Added Momentum is derived from the Economic valued Added or Economic Profit which was developed by Stern Stewart in 1991, while Economic profit or Economic valued added is based on the concept of residual income. Economic Valued Added is the net of NOPA (Net operating profit after tax) and Cost of capital (Equity & Debt) Stern Stewart, 1994). A company will be consider as in a position where the company creating value for its shareholder, if the company's cost of capital is less than return of the company or the firm's return exceeds the firms cost of capital. Firms will be valued highly by the shareholders by generating high value of EVA momentum (Dierks & Patel, 1997). The price of those firms will likely to be increase, whose Economic Value Added Momentum is positive. The main objective of the Economic Value Added is to point out the firm with high shareholder value by generating higher return. While among the different applications of the EVA are setting of the firm goal, measuring the firm performance, investors' communications, strategies evaluations, capital allocation, acquisitions valuations and also determining bonuses (Stewart, 1994). Economic value added momentum gaining interest of the different personal as corporate managers' business management and business press. EVA momentum is a new measure which reflects the real picture and real economic profit the firm. Economic value added momentum reduces the income of the firms by deducting the cost of the equity cost provided to the firms by the owners. Some of the economist using the same cost of capital for more than a century, as it is included in some of the traditional measures of income (McIntyre, 1999). A firm will only be capable to create value only, if the firm generating return more the cost of the capital of the firm or if the capital charge of the firm is less than the firm return, than the firms will be considered as a value creating firm.

Economic value added Momentum can be calculated by deducting the previous EVA from current year EVA and the resultant is divided by the previous year sales. Stern & Stewart mentioned that there are 120 adjustments to be made to arrive to NOPAT. The most common adjustments for the calculation of NOPAT for the calculation of EVA are! The capitalization of R&D, Staff training cost and all other promotional activities cost. The depreciation should be added back to profit and economic depreciation should be made. All allowance as for provisions, inventory, doubtful debts, etc will be added back to capital employed and all non-cash expenses should be added back to profits. Finance will also be capitalized and operating lease being excluded from the financial statement. Tax charge should be on the base of cash taxes rather than accrual base. (Stewart, 2009) described the theoretical weaknesses of using different financial performance measurement tools and concluded that Economic Valued Added Momentum is the best performance measurement tool to measure the financial performance of the firm. As it is a new financial performance measurement tool therefore very rare work has been made on it. Various

Published by: The Mattingley Publishing Co., Inc.

March - April 2020
ISSN: 0193-4120 Page No. 13762 - 13774

researchers studied the concept of economic profit or economic value added. A lot of work has been done on the relationship WCM and other financial performance measurement tools as EBIT, ROA, ROE, ROCE etc., but we did not find any work which discussed the relationship, importance, impact of short term planning, decisions, investment on newly developed financial performance measurement tools EVA momentum.

We calculated EVA momentum by making some of the adjustment to reach to NOPAT. The study has been made in the non-financial sectors companies listed in Pakistan stock exchange for the entire period. 11 years data has been used for the analysis as to use the latest data for the purpose. The number of firms selected is 69, the reason behind the number is the firm's should be registered throughout the study period with elimination d re-listing in the stock exchange. Darning the study the relationship have been analyzed by using panel data through regression analysis (by taking remedial measure for multicollinerarity, heteroskedasticity, autocorrelation and using fixed effect model) and correlation (Pearson's correlation coefficient) as statistical tools. The relationship has been examined for the first time specifically in Pakistan. Different statistical tool have been used to examine the impact.

As it is a new performance measure, therefore a continued study is needed to offer the decision makers of industries a performance measurement tool that better assist the requirements of the shareholders, customers & employees. This will encourages the hard work made by the manager to improve the performance of the firm through efficient and effective management of the WCM components. Moreover the details available in the financial report were also not adequate to perform all of the adjustment as per Stewart and Stern methodology. Therefore the researcher has to rely on the data available on the specified Data source and annual reports of the companies. Hence the optimality has been ensured within the given constraints and therefore the result is reliable in nature. During this study we used only 11 years where there is a lot of variation found with respect to beta, cost of equity, level of debt, invested capital, WACC.

This study aimed to fill this gap of lace of availability of research work on the comparison of EVA momentum as measure of profitability with other traditional performance measurement tools. To proceed with a somehow similar study but in different sector of different country with different measure of profitability as EVA Momentum, we analyzed the growth and significance of the different constituent of working capital management with respect to profitability in non-financial sectors of Pakistan. We investigated the impact of the overall working capital management, operationalized by CCC to the EVA momentum, ROA, ROE and ROCE of non-financial sector of Pakistan. The study also gives some insight how the working capital in non-financial sectors is managed in order to increase profitability.

CACULATION OF EVA MOMENTUM, ROA, ROE & ROCE

EVAM can be obtained by deducting current year EVA from previous year EVA divided by the previous year sales.

EVA Momentum

As per Stewart 2009, EVA momentum is the change occurs in the EVA of the previous year divided by the sales of the previous year. It has been calculated as

EVA Momentum = EVAt – EVA t-1 / Sales t-1

Economic value added (EVA)

It can be calculated as NOPAT minus cost of invested capital. The cost of capital means invested capital multiplied by WACC (Weighted Average Cost of Capital).

Published by: The Mattingley Publishing Co., Inc.

March - April 2020
ISSN: 0193-4120 Page No. 13762 - 13774

1- Calculation of NOPAT

2- Calculation of WACC

3- Calculation of total Capital employed.

EVA = NOPAT – Capital Charges

Capital charges = Capital employed x WACC

Capital employed = Equity + Short term & Long term interest bearing loans

Equity = Common stock + Preferred stock + Reserve

Net operating profit after taxes (NOPAT)

It can be calculated as profit after tax plus interest tax shield.

NOPAT can be calculated as

NOPAT = EBIT – Interest (1-t)

Where, EBIT = Earnings before interest and tax and t= Tax

Weighted Average Cost of Capital (WACC)

It can be calculated as. (Brealey & Myers, 1984).

WACC= (E/V) * Re + (D/E) * Rd (1-t)

Cost of Equity (Re)

It has been calculated with help of Nobel Prized Capital Assets Pricing Model (CAPM) as.

Capital Asset Pricing Model (CAPM)

It can be calculated by the formula

Re = Rf + (Rm – Rf) * beta

The Calculation of Beta (β)

PSE-100 index is used as proxy, Two years monthly (24 period) data have been considered for calculating beta for the year. For monthly price the closing price has been used. For the calculation of change in PSE 100 index for time t as closing value of the Index at time t minus closing value of the Index at time t-1 and then divided by the closing value of the Index at time t-1 to convert it to percentage. For the calculation of change in stocks value for time t as closing value of stock at time t minus closing value of stock at time t-1 and then divided by the closing value of stock at time t-1 to convert it to percentage. It is also used by (Akhtar, Malik, Nusrat, & Bakhsh, 2016) in their research work of "The Analysis of the Validity of Capital Asset Pricing Model: Evidence from Pakistan Stock Exchange" in 2016.

It has been calculated as,

Beta =CoVariance.P(stock % change: index % change) / VAR (index % change)

% age change can be calculated as

%age change = current period price – previous period price / previous period price

Calculation of Market Return (Rm)

For this proses we used the closing data for all the 10 years and calculate the market return. It has been used by (Akhtar et al., 2016) during their study.

Calculation of market return

Market Return at time t (Rm) = (Closing balance of PSE-100 Index at Time t – Closing balance of PSE-100 Index at Time t-1) / Closing balance of PSE-100 Index at Time t-1.

Risk Free Rate of Return

Securities issued by the government have been used as proxy for risk free rate of return. Hence for the said purpose during the study, we used the 3-months T-Bills rate issued by the government has been taken as proxy to risk free rate. The 3-months T-Bills rate was easily available on the site of STATE BNAK OF PAKISTAN. It was also used earlier by (Akhtar et al., 2016).

Cost of debt (Rd)

The after tax cost of debt is calculated by multiplying the before tax cost by (1-corporate tax

Published by: The Mattingley Publishing Co., Inc.

March - April 2020
ISSN: 0193-4120 Page No. 13762 - 13774

rate). It can be calculated as by excluding the interest tax shield as!

Cost of debt = Rd (1-t)

Total Capital Employed

It consists of total equity including common shares, preference shares, reserves and surplus or revaluation of assets, long term interest bearing loans and short term interest bearing loans.

The formula is,

TCE = Equity + STIBL + LTIBL

Where,

STIB = short term interest bearing loans and LTIBL = the long term interest bearing loans.

Return on Assets (ROA)

The percentage of net income of the firm relative to its total assets. It shows that how much a firm earns for tis one dollar investment in fixed assets. It can be calculated as;

ROA = EBIT / Total assets

Return on Equity (ROE)

The percentage of net income of the firm relative to its stockholders equity. It shows that how much a firm earn per dollar invested by the investor in the business. The high ROE ratio shows that the firm is less dependent on debt and is more capable to generate cash internally.

It can be calculated as;

ROE = Profit after tax / shareholders' equity

Return on Capital Employed (ROCE)

Capital employed can be calculated as total shareholders' equity plus total interest bearing short term loans and total interest bearing long term loans.

Return on capital employed can be calculated as;

ROCE = EBIT / Capital Employed

Working capital Management

The working capital management are reflected in the Cash Conversion Cycle (Juan García-Teruel & Martinez-Solano, 2007) (Leach & Melicher, 2011).

CCC can be calculated as:

CCC= DDTO + DITO - DCTO

Where:

DDTO = Days debtors turnover, DITO = Days Inventory turnover, DCTO= Days payable turnover

The components of CCC will be measured as follows:

Days Debtors turnover = (Accounts receivable / Sales) x 365

Days Inventory turnover = (Inventory / Cost of goods sold) x 365

Days Payable Turnover = (Accounts payable / Purchase or CGS) x 365

II. LITERATURE REVIEW

After the introduction of EVA in 1989 and EVA Momentum in 2009 by Stewart, various studies have been conducted on the performance measures. Grant (1996) studied the relationship between corporate valuation and EVA. His results showed that EVA-to-capital ratio (MVA/Capital) explains approximately 32% of the variable. He concluded that EVA has a significant impact on the firm's value. Uyemura et al. (1996) also found a strong relationship between EVA and MVA by examining the relationship of EPS, NI, ROE, ROA and EVA with MVA by studying the data of 100 largest banks for a period of 10 years 1986-95. His results showed that the correlation between these performance measures.

O'Byrne (1996) also found EVA is a superior measurement tool than other traditional measurement tools by assessing a sample of 6551 firms for period of 1985-93. His regression results

Published by: The Mattingley Publishing Co., Inc.

shows that EVA outperform NOPAT in explaining firms value by monitoring the Coefficient of determination or explanatory power of the model as adjusted R^2 for EVA is 56% and 33% for NOPAT. Milunovich and Tsuei (1996) studied the firms value of computer industries and found that EVA explaining the changes more than EPS, growth and cash flow by keeping the R^2 value as 42%. Lehn and Makhija (1997) examined the relationship of stock returns and MVA, EVA, ROA, ROE, ROS by studying the data of 452 U.S companies. The result shows that the correlation of MVA (0.58), ROE (0.46), ROA (0.46), ROS (0.39) and concluded that EVA and MVA are considered to be the best performance measure than other traditional measure.

While there are some studies which did not support the hypothesis that EVA is superior to other traditional performance measures. Chen (1998) studied the relations of various performance measures with stock price and stock returns by selecting the data of 325 companies from S&P 500 and Stewart 1996 performance 1000 database for a period of 5 years 1991-95. His result failed to support the hypothesis and concluded that EVA was the only measure that did not reveals consistent significant relationship with stock prices and returns. Chen & Dodd (2001) also concluded from their research work that EVA metric is not the best to measure the performance of the firms. Their result failed to support the assertions that EVA is the best measurement tool for valuation of the firms. (Sharma & Kumar, 2011) observed the impact of WCM components on profitability of Indian firms by using return on assets (ROA) as measure of profitability and sales growth, leverage ratio, current ratio and firm size as control variable and concluded a significant negative relationship between days inventory conversion & Cash conversion cycle with profitability of the firm. (Gumber & Kumar) made a comparative study between fertilizer and cooperative sectors of India by using Current ratios, Liquidity ratios, Activity ratios, Profitability ratios, working capital Leverage ratio and operating cycle and found a significant relationship between the independent variables and profitability. (Ray, 2012) tested the data of 311 Indian manufacturing firms to study the relationship of WCM and profitably of the firms and concluded a significant positive relationship between WCM and firm's profitability. (Shakoor et al., 2012) studied the impact of WCM on firm's profitability for duration of 10 years by selecting a sample of 25 companies registered with Karachi Stock Exchange of Pakistan and found that; in case of profitability the QR, DIO, DER ratios have positive relationships, while CR Current ratio, Days sales outstanding DSO have negative relationship. In case of Return on equity ROE, the CR, DIO & ROA shows positive relationships, while QR, DSO & DER indicates negative relation. (Pouraghajan & Emamgholipourarchi, 2012) found a strong negative association between WCM variables and the firm's profitability.

(Tufail & Khan, 2013) examined the relationship between WCM and profitability of the Textile sector of Pakistan. By using regressing model they concluded that aggressiveness of working capital management policies negatively associated with profitability. (Rehman & Anjum, 2013) examined the relationship of WCM and firm's profitability in Pakistan cement industry and noted positive relationship by using the data of 10 firms of cement industry listed in KSE for a period of 5 years from 2003 – 2008. (Agha, 2014) tested the impact of Working capital management on profitability. She collected the data of Glaxo Smith Kline Pharmaceutical of Pakistan for the period of 15 years to test her hypothesis. She used different financial tools for the analyses which are; asset ratio and activity ratios. The author concluded that the manager may enhance the profitability of the company by minimizing the inventory turnover, receivables ratio and creditor's turnover ratios. While she found that there is no significant impact of increasing or decreasing the current ratio on profitability. The finding of her study were; there is a positive relationship between debtors turnover

Published by: The Mattingley Publishing Co., Inc.

DTO, Creditors turnover CTO, Inventory turnover ITO ratios and ROA while no relationship between Current ration and ROA. (Khidmat & Rehman, 2014) studied the impact of liquidity and solvency on profitability in Chemical Sector of Pakistan by analyzing the 9 years (2001-2009) data of the 36 company of Pakistan. They used Return on Assets (ROA) and Return on equity (ROE) as dependent variables and Activity ratios, liquidity ratios and interest coverage ratios independent variables. As per their study; these is a significant negative association between the firm's solvency, ROA and ROE. They also found a positive association between firm's liquidity and ROA, as with the increase of liquidity, ROA also increased(Khidmat & Rehman, 2014). (Raza, Bashir, Latif, Shah, & Ahmed, 2015) tested the impact of WCM on profitability of the oil sector of Pakistan by using the data for the period of 5 years from 2006 to 2010. They used cash conversion cycle CCC, average receivables AR, Average inventories AI, and Average payables AP and current ratio for measuring working capital and used gross operating profit as a tool for measuring the profitability of the firm. The study shows the firm's efficiency with respect to return, return expectation and current assets, and also examined that the firm's profitability perception significantly fluctuate during crises. (Mathuva, 2015) studied the impact of WCM on corporate profitability. He collected data from 30 firms listed in Nairobi Stock Exchange (NSE) for 15 years period 1993-2008. The result indicates a negative association found between receivables collection period and profitability of the firm and also profitability with average payments period and inventories conversion period.

(Garvey & Milbourn, 2000) examined the incremental value added to the firm by Economic value added by studying the correlation between stock performance and Economic Value added adoption. The EVA has been used is a single content performance based measure of the firm which describe the stock prices. (Malik, 2004) studied EVA a financial performance measure and compared with other traditional financial performance measure such as EPS, ROCE, RONW, and ROI. The researcher used the sample of 50 firm's data for a period of 5 years 1998-2003 by using correlation and regression analysis. The results form correlation indicated that EVA has low positive relationship with EPS, highly positive with ROCE and RONW. The R^2 or coefficient of determination showed that the variation in EVA is explained by EPS up to 14%, by ROCE up to 69% and RONW up to 61% which shows that these traditional financial measurement tool did not reflect the real value of the shareholder's capital. The result concluded that the shareholder's value should be measured through EVA. (Ferguson, Rentzler, & Yu, 2005) studied EVA is a performance measure by conducting their study on 65 firms. To analyze the each firm's stock performance, the monthly total returns were obtained for the period of 60 months before EVA months and 60 months after EVA months. The date when firms start using EVA is defined as "EVA date". The result concluded that firms using EVA appear to have above average profitability relative to their peers both before and after the EVA date and also found evidence that firms using EVA experience increased profitably as compared to their peers. (Tibrewal, 2006) stated that, the firm's shareholder are always concerned with the realizable return, which should measure by a new and reliable measurement tool, which he concluded in his paper that EVA is the best to be used for the calculating of economic reality. He also stated that the necessary adjustment should be made in EVA calculation. There are round about 120 adjustments to be made, but 4 of them are most important and should be and are using by different companies in calculating their true economic profit or shareholder's value. (Pantea, Munteanu, Gligor, & Sopoian, 2008) stated that EVA is dependent on the strategies applied by the firm's manager. This study has been done to provide a pertinent measure of management performance, which shows that performance of the firm's came from operational

Published by: The Mattingley Publishing Co., Inc.

March - April 2020
ISSN: 0193-4120 Page No. 13762 - 13774

activities which have to generate enough cash to remunerate the creditors and overcome taxes and create the shareholder's wealth. (Lin & QIAO, 2009) stated in his study that EVA is associated with corporate value. While also concluded from his study that Economic Value added and future growth Value (FGV) have significant incremental explanatory ability to corporate value. (Joibary & Nagaraja, 2010) in his study discussed the advantages and disadvantage of the Economic Value Added and concluded that EVA is the best characteristic of performance evaluations in corporate sectors. (Tong, Yao, & Xiong, 2010) examined by EVA and balance scored and found that EVA has significant positive correlation with strategic objective. (Hovězáková, 2010) discussed in his study the basic concept of EVA and empirically compare the EVA with the traditional performance measures. He studied five years period 2005-2009 and calculated EVA and also profitably by using the other traditional performance measures. He also concluded that EVA is the ideal performance evaluation tools which also provide the reason for the increase or decrease in the performance.

From the overall literature review, it is concluded that numerous research work have been made on the relationship of WCM and profitability in different countries in different geographical regions in different sectors and in different business condition, but the result are not the same in all cases. Related to this topic of research, there is a lot of capacity in this area of study to understand this relationship properly. As we noticed that all the result regarding the relationship are not the same, as in Days Inventories turnover and profitability the relationship is mostly negative but in case of Muthuva (2009) there is a positive relationship. Receivables turnover has mostly a negative relationship with profitability as examined while (Sharma & Kumar, 2011) concluded a positive relationship. Number of days creditors turnover has a positive relationship with profitability in most cases, while Sharma & Kumar (2011) noted a negative relationship for the said relationship. Incas of days CCC, most of the investigators found a negative association with profitability, but some of the researchers as (Sharma & Kumar, 2011) and (Gill et al., 2010) noted a significant positive relationship. This study aimed to fulfill this gap of non-availability of research work on non-financial sector of Pakistan by using EVA momentum as performance measure. Most of the researchers mentioned above as examined the impact of WCM components on the firm profitably, with different performance measurement tools used for profitably measurement. To carryout somehow similar research and study but in different sector by using a different measurement tool for measuring profitability of the non-financial sector of Pakistan.

III. METHODOLOGY

Theoretical Framework:

The following model illustrated in order to predict the impacts of selected working capital management practices as independent variable ON firm's EVA momentum, ROA, ROE & ROCE as dependent variables.

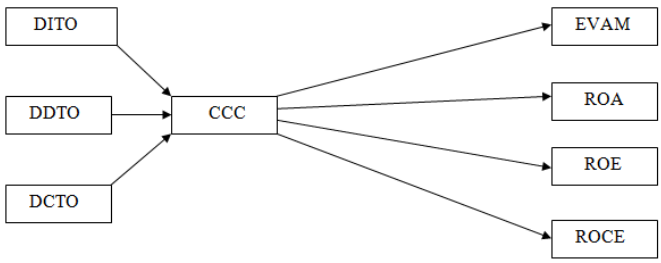

Figure. – Theoretical Framework

Data Collection & Sample

To tests the hypothesis that Economic Value Added Momentum (EMAM) is more highly associated with the value of non-financial firms than other traditional performance measures with respect to working capital management. To use the crises period of 2008 in the PSE in the analysis and availability of latest data is the reason for selecting the specified period of 11 years (2007-17).

Published by: The Mattingley Publishing Co., Inc.

March - April 2020
ISSN: 0193-4120 Page No. 13762 - 13774

The sample for this study consists of 69 different firms from non-financial sector listed with PSE (Pakistan Stock Exchange). The method used for sampling during the study is purposive stratified random sampling. Secondary data source has been used for data collection. The secondary source used during the study is internet and website from the selected firms, State Bank of Pakistan and Pakistan stock Exchange. Types of data collected for the study includes Sales, EBIT, Taxes paid, Interest paid, and Interest bearing long term and short term debts, equity. 3 months T-Bills rate are used as a risk free rate for the calculation of Cost of Equity through CAPM, WACC and Invested capital.

For the calculation of WACC (weighted average cost of capital) of the firms and CAPM the following variables sere operationalized. The 3-months Treasury bills rate obtained from the SBP data base was used as a proxy of a risk free rate. As discussed earlier, for the calculation of return of the market and market portfolio return, we used that data from PSE-100 index. For this purposes we used the closing data for all the 11 years and calculate the market return. For the calculation of risk premium the procedure as per the capital asset pricing model were used.

Model Specification

To test the predictive power and significance level of the EVA Momentum relative to ROA, ROE and ROCE with respect for CCC, four separate simple linear regression model were developed to examine the relationship between a firm's value and traditional performance measure. The following four models have been used during regression analysis to examine the relationship of working capital management measured by Cash conversion cycle (CCC) and other tradition financial measures.

Model 1 = $EVAM_{it} = \beta 0 + \beta 1\ CCC_{it} + \eta i + \lambda t + \varepsilon i$

Model 2 = $ROA_{it} = \beta 0 + \beta 1\ CCC_{it} + \eta i + \lambda t + \varepsilon i$

Model 3 = $ROE_{it} = \beta 0 + \beta 1\ CCC_{it} + \eta i + \lambda t + \varepsilon i$

Model 4 = $ROCE_{it} = \beta 0 + \beta 1\ CCC_{it} + \eta i + \lambda t + \varepsilon i$

Where!

(EVAM): Economic Value Added Momentum, ROA: Return on Assets, ROE: Return on Equity and ROCE: Return on capital Employed. The subscript i denotes firms (cross section dimensions) ranging from 1–69 and "t" denoting years (time-series dimension) ranging from 2007 – 2017. In all regressions, robust standard errors are used as a remedial measure for heteroskedasticity (Soekhoe, 2012) and cluster form is used to avoid the serial correlation.

IV. EMPIRICAL RESULTS

Table 4.1: Goodness of fit test OR F-Test

Model	D.V	IND.V	R^2.	F	Prob > F
Model 1	EVAM	CCC	0.0012	13.73	0.0004
Model 2	ROA	CCC	0.0024	1.84	0.1758
Model 3	ROE	CCC	0.0051	3.91	0.0484
Model 4	ROCE	CCC	0.0065	4.96	0.0262

To reduce the heteroskedasticity in the data, robust standard error has been used. Fixed Effect Model is used for the relationship between cash conversion cycle (measure of working capital management) and economic value added momentum (EVAM). While for the other three measure, the general regression is used to examine the relationship.

Published by: The Mattingley Publishing Co., Inc.

In Table 4.1, relative information content is evaluated by comparing the goodness of fit test result or f-statistic for each of the four models. The relative information shows that three out of four models are significant at 5% level of significance while model related to ROA is not significant (17.58%). From the f-statistic value or the result of goodness of fit test EVAM is significant at 1% level of significance while ROE & ROCE are significant at 5% level of significance (4.84%)(2.62%) respectively. From the result recorded we noticed that EVAM is has the best result as per F-statistic or goodness of fit test followed by ROCE and ROE respectively while the model for relationship of CCC with ROA, the fit is not good.

Table 4.2: Individual Significance Test OR T-test

Model	D.V	IND.V	Co-eff.	t	P > t
Model 1	EVAM	CCC	0.4810	3.71	0.000
Model 2	ROA	CCC	0.0292	1.36	0.176
Model 3	ROE	CCC	0.0992	1.98	0.048
Model 4	ROCE	CCC	0.0581	2.23	0.026

From Table 4.2, the relative information content is evaluated by comparing the individual significance test results or t-statistic for each of the profitability measure. From each of the model regression we recoded that the relationship of CCC with EVA is significant at 1% level of significance (0.000), while the relationship of CCC with ROA is insignificant (0.176). The relationship of CCC with ROE & ROCE is significant at 5% level of significance (0.048) (0.026) respectively.

Based on the results of t-test or individual significance test EVAM has the best possible result as significance at 1% level of significance followed by ROCE and ROE respectively.

Results recorded from both good of fit test and individual significance test has almost the same results.

From Table 4.2, we also examined the relationship by examining the value of the beta coefficient of the CCC for all the four measure of profitability. The results shows that EVAM has the highest value of 0.4810 means that if there is 2.674 unite change in CCC there will be 0.4810 unite change in EVAM. While the ratio for ROA is 11.253: 0.0273, for ROE is 61.069:0.3153 and for ROCE is 16.4552:0.1079.

V. CONCLUSION, LIMITATIONS AND FUTURE RECOMMENDATIONS

To examine and provide empirical evidence about the EVA momentum' comparison with other traditional financial measures with respect to working capital management, we examined the relationship by analyzing the data collected from a sample of 69 non-financial sector firms listed with Pakistan Stock exchange for a period of 11 years (2007-2017). Secondary data is used available on the SBP website and verified with the consolidated financial statements of the firms. This study tests the hypothesis that Economic Value Added Momentum (EMAM) is more highly associated with the value of non-financial firms than other traditional performance measures with respect to working capital management. The purpose of the study is to provide empirical evidence on the relative and incremental information content of EVAM and other traditional measures, Return on Assets (ROA), Return on equity (ROE) and Return on Capital Employed (ROCE) with respect to working capital management (measured by CCC). Statistical tools regression analysis is used for the analysis. F-

statistic, T-statistic and respective Beta coefficients are take into consideration to check to superiority of the EVM. The results are robust to the presence of endogeneity, demonstrate that that there is a significant relationship between Working capital management and the firm's Economic Value Added Momentum, and managers can create value by reducing their firm's cash conversion cycle. It has been proved from the overall analysis that EVAM is more superior to other traditional financial performance measures in relations with working capital management. Like every other study this study also has its limitation, as firstly its only focus on short term investment of financiering as working capital management, hence in future the researcher should include others variable to bring under consideration for the comparisons of these performance measures. Secondly the data has been collected from non-financial sector of Pakistan, hence the future study should focus on industry wise comparison and also country wise comparison has to be considered to bring the best possible result.

REFERENCES

1. Afza, T., & Nazir, M. S. (2007). Is it better to be aggressive or conservative in managing working capital. Journal of quality and technology management, 3(2), 11-21.
2. Agha, H. (2014). Impact of working capital management on profitability. European Scientific Journal, 10(1).
3. Arnold, G. (2008). Corporate financial management: Pearson Education.
4. Arshad, Z., & Gondal, M. Y. (2013). Impact of working capital management on profitability a case of the Pakistan cement industry. Interdisciplinary Journal of Contemporary Research in Business, 5(2), 384-390.
5. Bacidore, J. M., Boquist, J. A., Milbourn, T. T., & Thakor, A. V. (1997). The search for the best financial performance measure. Financial Analysts Journal, 53(3), 11-20.
6. Baker, H. K., & Powell, G. (2009). Understanding financial management: A practical guide: John Wiley & Sons.
7. Brealey, R., Myers, S. C., & Allen, F. (2006). Corporate finance. Eight edition. McGraw-Hill, 84(143), 244-272.
8. Brigham, E. F., & Ehrhardt, M. (2005). Financial Management Theory and Practice: Thomson.
9. Cinnamon, B., & Helweg-Larsen, B. (2010). How to understand business finance: Kogan Page Publishers.
10. Damodaran, A. (2002). Investment valuation, 2. Aufl., New York, 817.
11. De Wet, J., & Du Toit, E. (2007). Return on equity: A popular, but flawed measure of corporate financial performance. South African Journal of Business Management, 38(1), 59-69.
12. Deloof, M. (2003). Does working capital management affect profitability of Belgian firms? Journal of business finance & Accounting, 30(3-4), 573-588.
13. Ding, S., Guariglia, A., & Knight, J. (2013). Investment and financing constraints in China: does working capital management make a difference? Journal of Banking & Finance, 37(5), 1490-1507.
14. Dolfe, M., & Koritz, A. (2000). CASH MANAGEMENT-HOLD ON TIGHT! TREASURY MANAGEMENT INTERNATIONAL, 13-19.
15. Dong, H., & Su, J.-t. (2010). The relationship between working capital management and profitability: a Vietnam case.
16. Enqvist, J., Graham, M., & Nikkinen, J. (2014). The impact of working capital management on firm profitability in different business cycles: Evidence from Finland. Research in International Business and Finance, 32, 36-49.

17. Gill, A., Biger, N., & Mathur, N. (2010). The relationship between working capital management and profitability: Evidence from the United States. Business and Economics Journal, 10(1), 1-9.
18. Hovězáková, I. (2010). The project of the Economic Value Added implementation into the management of the company XY sro in order to raise its economic performance.
19. Joibary, A. R. M., & Nagaraja, N. (2010). The survey of the value engineering indexes in the function of the sari region petroleum (oil) products distribution company in Iran. Asian Journal of Development Matters, 4(3).
20. Karaduman, H. A., Akbas, H. E., Ozsozgun, A., & Durer, S. (2010). EFFECTS OF WORKING CAPITAL MANAGEMENT ON PROFITABILITY: THE CASE FOR SELECTED COMPANIES IN THE ISTANBUL STOCK EXCHANGE (2005.
21. Khidmat, W., & Rehman, M. (2014). Impact of liquidity and solvency on profitability chemical sector of Pakistan. Economics Management Innovation, 6(3), 34-67.
22. Leach, J. C., & Melicher, R. W. (2011). Entrepreneurial finance: Cengage Learning.
23. Lin, C., & QIAO, Z.-l. (2009). Empirical study of integrated EVA performance measurement in China. Canadian Social Science, 4(2), 41-48.
24. Mathuva, D. (2015). The Influence of working capital management components on corporate profitability.
25. Napompech, K. (2012). Effects of Working Capital Management on theProfitability of Thai Listed Firms. International Journal of Trade, Economics and Finance, 3(3), 227.
26. Pantea, M. I., Munteanu, V., Gligor, D., & Sopoian, D. (2008). The managerial performances evaluation through the economic value added. European Research Studies Journal, 11(4), 83-100.
27. Pouraghajan, A., & Emamgholipourarchi, M. (2012). Impact of Working Capital Management on Profitability and Market Evaluation: Evidence from Tehran Stock Exchange. International Journal of Business and Social Science, 3(10).
28. Raheman, A., Afza, T., Qayyum, A., & Bodla, M. A. (2010). Working capital management and corporate performance of manufacturing sector in Pakistan. International Research Journal of Finance and Economics, 47(1), 156-169.
29. Raheman, A., & Nasr, M. (2007). Working capital management and profitability–case of Pakistani firms. International review of business research papers, 3(1), 279-300.
30. Ray, S. (2012). Evaluating the impact of working capital management components on corporate profitability: evidence from Indian manufacturing firms. International Journal of Economic Practices and Theories, 2(3), 127-136.
31. Raza, M. Y., Bashir, M., Latif, K., Shah, T. S., & Ahmed, M. (2015). Impact of working capital management on profitability: Evidence from Pakistan oil sector. International Journal of Accounting and Financial Reporting, 5(1), 286-299.
32. Rehman, M. U., & Anjum, N. (2013). Determination of the impact of working capital management on profitability: an empirical study from the cement sector in Pakistan. Asian Economic and Financial Review, 3(3), 319.
33. Shakoor, F., Khan, A. Q., & Nawab, S. (2012). The Inter-Linkages of Working Capital and Profitability in Pakistan (2001-2010). Academic Research International, 3(2), 562.
34. Sharma, A., & Kumar, S. (2011). Effect of working capital management on firm profitability empirical evidence from India. Global Business Review, 12(1), 159-173.
35. Stewart, B. (2009). EVA momentum: The one ratio that tells the whole story. Journal of Applied Corporate Finance, 21(2), 74-86.

Published by: The Mattingley Publishing Co., Inc.

36. Tabachnick, B., & Fidell, L. (2007). Multivariate analysis of variance and covariance. Using multivariate statistics, 3, 402-407.
37. Tong, Y., Yao, Y., & Xiong, X. (2010). Performance evaluation of logistics enterprises based on Economic Value Added and Balanced Scorecard. Paper presented at the Logistics Systems and Intelligent Management, 2010 International Conference on.
38. Tufail, S., & Khan, J. (2013). Impact of working capital management on profitability of textile sector of Pakistan. Paper presented at the Proceedings of 3rd International Conference on Business Management.
39. Uyar, A. (2009). The relationship of cash conversion cycle with firm size and profitability: an empirical investigation in Turkey. International Research Journal of Finance and Economics, 24(2), 186-193.
40. Van Oorschot, P. C., Ford, W. S., Hillier, S. W., & Otway, J. (1997). Method for efficient management of certificate revocation lists and update information: Google Patents.