THE EFFECT OF LIQUIDITY ON PROFITABILITY OF SMALL AND MEDIUM SIZE ENTERPRISES IN KENYA

BY

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DECLARATION

I declare that this research project is my own original work and to the best of my knowledge it has not been submitted for a degree award in any University or institution of higher learning.

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LIST OF ABBREVIATIONS

CCC	Cash Conversion cycle
CMA	Capital Markets Authority
COGS	Cost of Goods Sold
COS	Cost of Sales
EBIT	Earnings Before Interest and Tax
EOQ	Economic Order Quantity
EU	European Union
EVA	Economic Value Added
ICP	Inventory Conversion Cycle
KSE	Karachi Stock Exchange
NSE	Nairobi Securities Exchange
PCP	Payables Conversion Cycle
RCP	Receivables Conversion Cycle
ROA	Return on Assets
ROE	Return on Equity
ROI	Return on Investments
SBA	Small Business Administration
SME	Small and Medium size Enterprises
USA	United States of America
USD	United States Dollar
WC	Working Capital
WCM	Working Capital Management

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ABSTRACT

With small and medium size companies operating informal and informal sectors of the economy, they are likely to face challenges in managing their liquidity which in turn could impact of their profitability. A large number of these enterprises are faced with various challenges and in particular financial management expertise. Small and medium-sized enterprises (SMEs) are generally small size; have greater likelihood of bankruptcy; have greater ability to change the nature of their assets; and also are less transparent in the information provided to creditors about their specific characteristics. They are there more likely to face difficulties in accessing external funding, limiting their investment options and possibly leading to sharp falls in performance in general, and profitability in particular. Therefore, the objective of this research is to establish the relationship between liquidity and profitability on SMEs in Kenya. The study used a descriptive research design, a research design in which the major emphasis is on determining the frequency with which something occurs or the extent to which two variables co-vary. The population of interest in this study was made up of at least companies and/or establishments registered and operating in Kenya considered being small and medium size, which is 41, 371 according to the Economic Survey, Kenya National Bureau of Statistics - Statistical Abstract 2013. The study sample was selected based on convenience sampling. The study used secondary data which was obtained from annual reports and financial statements of the sampled. To determine the relationship between liquidity/working capital management and profitability of the selected SMEs, the study used two types of data analysis techniques, i.e descriptive and quantitative. The study findings conclude that liquidity has a positive but insignificant effect on profitability. It also concludes that leverage had a positive but insignificant effect on performance, thus leverage does not affect profitability of SMEs in Kenya. The findings also conclude that growth as well as size of the firm has a positive but insignificant effect on profitability and thus these do not affect their profitability. The study recommends that SMEs should not be concerned much with their levels of liquidity since such levels do not influence their profitability. However, given that there was an indication of a positive relationship; higher levels of liquidity may be preferred to lower levels of liquidity if the concern is to improve firm profitability.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Small and medium size companies operate in formal and informal sectors cutting across all sectors of the economy. Quite a number of these enterprises are faced with various challenges and in particular financial management expertise. As such, there could be challenges in managing their liquidity which in turn could impact of their profitability.

Small and medium-sized enterprises (SMEs) have special characteristics (Vasiliu and Dobrea, 2013; Ţigu and Călăreţu, 2013): i) small size; ii) greater likelihood of bankruptcy; iii) greater ability to change the nature of their assets; and iv) less transparency in the information provided to creditors about companies' specific characteristics. When internal finance is insufficient, these characteristics of SMEs may mean particular difficulties in accessing external funding, limiting their investment options and possibly leading to sharp falls in performance in general, and profitability in particular.

Research into the effects of liquidity of the profitability of SMEs in Kenya has not been widely conducted. First of all, this study aims to fill that gap in the literature, analysing what the effect of liquidity on the profitability of Kenya's SMEs would be. The choice of SMEs in Kenya as the subject of study is appropriate for two fundamental reasons: i) SMEs in Kenya are relatively small firms, and are therefore appropriate in dealing with the non-existence of studies about the effects of liquidity on their profitability in this type of service SME; and ii) SMEs are important drivers of Kenya's economy and thus the study of their profitability determinants being particularly relevant in order to suggest measures of economic policy to support this type of firms.

1.1.1 Liquidity

The firm's liquidity refers to its ability to meet its current obligations as and when they fall due. It can also be referred to as current assets management. Investment in current assets affects the firm's liquidity, profitability and risk. The more current assets a firm has, the more liquid it is. This implies that the firm has a lower risk of becoming insolvent. Liquidity is therefore the proportion of a firm's current assets as compared to current liabilities. This gives rise to net

current assets and/or net current liabilities position which, overall is referred to as working capital (WC).

Liquidity management can be defined as the planning and controlling of cash flow by owner-managers in order to meet their day-to-day commitments, Collins and Jarvis (2000). Liquidity refers to the level of cash and near-cash assets held, as well as cash inflows and outflows of these assets, McMahon and Stanger (1995).

According to Renato (2010), liquidity measures the company's ability to meet its short-term obligations using its most liquid assets. That is, accounting liquidity is the ease with which a company can pay its bills and liabilities over the next year, especially if it must convert its assets into cash in order to do so. Two common ways to measure accounting liquidity are the current ratio and the quick ratio. (financial-dictionary.thefreedictionary.com (2010).

1.1.2 Profitability

Profitability is a measure of the net of revenue and expenses. Revenue is money generated from the activities of the business, while expenses are the expenditures incurred in the process of carrying out of the activities of the business. Operating profit is a measure of a company’s earning power from its ongoing operations, equal to earnings before deduction of interest and taxes. Profitability is the most important measure of the success of the business. A business that is not profitable may not survive while a business that is highly profitable has the ability to reward its owners with large returns on their investment Kithii (2008). A firm that is profitable is also able to expand and increase its value.

Profitability is thus the primary goal of all business ventures. Without profitability, the business will not survive in the long run. So measuring current and past profitability and projecting future profitability is very important. Gross profit is the profit before selling expenses, general and administrative costs like depreciation and interest; it is the sales less direct cost of goods (or services) sold (COGS) while net profit is the sales of the firm less costs like wages, rent, fuel, raw materials, interest on loans and depreciation. Costs such as depreciation and amortisation tend to be ambiguous, Mathur (2002). Measures of profitability include Return on Equity (ROE), determined by taking net income divided by average shareholder’s equity and Return on Assets (ROA), determined by taking the company’s net income divide by average total assets.

1.1.3 The Effect of Liquidity on Profitability

Efficient working capital management has got a positive relationship with a firm's profitability and return on assets. According to Deloof and Jegers (1996), firms may have an optimal level of working capital that maximises their value. Large inventory and generous trade credit policy may lead to high sales; larger inventory reduces the risk of stock-outs; trade credit may stimulate sales since it allows customers to assess product quality before paying; and delaying payments to suppliers allows a firm to assess the quality of the products, and can be an inexpensive and flexible source of financing for the firm. All the above working capital management procedures are aimed at improving profitability and consequently a higher return on assets.

Working capital management (WCM) is very important due to many reasons. WCM is an important component of corporate finance because it directly affects the liquidity and profitability of firms. The top-line (sales) of the company may grow in a given year, but the bottom-line (net profit) could have been weighed down by various factors like rising inventory levels, higher levels of accounts receivable, resulting in increased borrowing to finance the operations, and hence higher interest payments Murali (2000). This would lead to reduced profitability and hence low return on assets.

From a shareholder's perspective, the most important aspect is the effective management of working capital by a company. Prudent and effective management of working capital becomes necessary as neither does it come free nor does it come cheap. There is an opportunity cost attached to management of working capital besides the inevitable interest burden that comes due to short term bank borrowings. The cost of working capital can be especially high during times of economic slowdowns as inventories and receivables would rise, bloating the current assets considerably. In addition, current liabilities would not keep pace with current assets as creditors would shy away in such cases. With a wide gap building up between current assets and current liabilities, it becomes more expensive to finance working capital, and the result is a huge hit on the profitability, Murali (2000).

Kiprono (2004) studied the relationship between cash flows and earnings performance measures for companies listed in the Nairobi securities Exchange (NSE). The results showed that there is a negative or indirect association between cash flows from financing and investing activities and returns performance indicators. There was a weak relationship

between cash flows and performance indicators. Hirigoyen (1985) argues that over the medium and long run, the relationship between liquidity and profitability could become positive, in the sense that a low liquidity would result in a lower profitability due to greater need for loans, and low profitability would not generate sufficient cash flows, thus forming a viscous cycle.

Eljelly (2004), in the study of the relationship between profitability and liquidity as measured by current ration and cash gap (cash conversion cycle – CCC), found significant negative relation between the firm's profitability and its liquidity level. This relationship was more evident in firms with high current ratios and longer conversion cycles. At the industry level, however, the study found that the cash conversion cycle or the cash gap was of more importance as a measure of liquidity than the current ratio that affects profitability. According to him, the management of working capital becomes even more important during crises periods.

Various studies have been carried out on the effect of liquidity on profitability of various organisations. These studies have often resulted to mixed results. It is however expected that there exists a positive relationship between liquidity and profitability on SMEs in Kenya, at least in the long run.

1.1.4 Small and Medium Size Enterprises in Kenya

According to Mwarari (2013, Small and Medium Enterprises are businesses in both formal and informal sector employing 1-50 workers. These enterprises cut across all sectors of employment and provide one of the most prolific sources of employment creation, income generation and poverty reduction. To the World Bank, SMEs are enterprises that employ between 5 and 199 permanent employees (1978), while EU defines SMES as those enterprises that employ less than 500 employees, Mulhern (1995); Smallbone (1995). In the United States of America (USA), Small Business Administration (SBA) has defined SMEs according to various economic sectors taking into account the annual turnover to the maximum of USD 22 million, Hashim and Abdullah (2013).

SMEs in Kenya cuts across almost sectors of the economy and sustain majority of households economically. They form the base upon which businesses are set up which grows to maturity in respect to size. Most local large companies operating today started as an SME, employing

less 50 employees before expanding their operations to employ more and more employees. This growth is dependent largely on WCM resulting to continued reporting of profitability and positive liquidity. These SMEs are in most cases unable to access credit from commercial banks unless they are able to demonstrate their ability to repay these loans; and this is demonstrated through assessment of liquidity and profitability.

1.2 Research Problem

The basic objective of a company's existence is to make profit and maximise shareholders' wealth. Managing liquidity of the firm is also an important objective. The problem is that increasing profits at the cost of liquidity can bring serious problems to the firm. Therefore, there must be a balance between these two objectives. For this reason, working capital management should be given proper consideration and will ultimately affect the profitability of the firm.

Liquidity has got a positive relationship with a firm's profitability and return on assets and return on capital. According to Deloof and Jegers (1996), firms may have an optimal level of working capital that maximises their value. This is achieved through various working capital management procedures that are aimed at improving profitability and consequently maximisation of shareholders' wealth. Therefore, a key task for the financial manager is to determine the level of working capital which balances the risk and return and maximise shareholders' wealth.

From the global perspective, studies have been carried out on various aspects of working capital management. Lazaridis and Tryfonidis (2006), studied on the relationship between working capital and profitability of listed companies in the Athens Stock exchange and concluded that there is a statistically significant negative relationship between profitability, measured through gross operating profit and cash conversion cycle. Padachi (2006), in Mauritius carried out a study on the impact on accounts receivable days, accounts payable days, inventory days and cash conversion cycle on return on total assets and found out that a high investment in inventories and receivables is associated with lower profitability.

Viera (2010), in the study of the relationship between liquidity and profitability of airline companies in the world found that there was a significant positive correlation between liquidity and profitability on the short run. Enqvist et.al (2013), carried out a study on the impact of working capital management on firm profitability in different business cycles in

Finland and concluded that, overall the results indicate that investing in working capital processes and incorporating working capital efficiency into everyday routines is essential for corporate profitability. As a result, firms should include working capital management in their financial planning processes.

From the local front, Mathuva (2009) examined the influence of working capital management components on corporate profitability. The key findings of his study were that: there exists a highly significant positive relationship between the period taken to convert inventories into sales (the inventory conversion period) and profitability, and there exists a highly significant positive relationship between the time it takes the firm to pay its creditors (average payment period) and profitability. Nyakundi (2003), conducted a survey of working capital management policies among public companies in Kenya and found that these companies commonly practiced aggressive policy and that there were no significant differences in return on equity among companies that practiced different working capital management policies.

Nganga (2009), studied the relationship between working capital and profitability of listed companies in the NSE. The study found out that managers can create value if the adopt a conservative approach towards working capital investment and working capital financing policies. It was also found out that investors have a positive opinion on those firms that adopt an aggressive approach to managing their short-term liabilities.

Various studies have been carried out on the various aspects of working capital management and profitability both locally and globally. Some of these studies have resulted to mixed outcomes. However, no study has been carried out specifically on the relationship between liquidity/working capital management and the profitability on SMEs in Kenya. The purpose of this study is therefore to establish if there is a statistically significant relationship between liquidity/working capital management and profitability on SMEs in Kenya. This study therefore seeks to answer the following research question; what is the effect of liquidity on profitability of small and medium size enterprises in Kenya?

1.3 Research Objective

To establish the relationship between liquidity and profitability on SMEs in Kenya.

1.4 Value of the Study

The findings of this study will have various contributions to the theory and practice of finance.

Companies and finance managers are faced with challenges of determining optimal levels of liquidity and or working capital. This study will identify the optimal levels of liquidity that will help firms in creating shareholders' wealth. The results will provide management with a useful guide on which finance managers can rely when making liquidity/working capital management decisions.

Local entrepreneurs will find the results of this research very useful in helping them to determine the level of liquidity that they need to maintain in order for their enterprises to report profitability.

Financial consultants can use the research results as a guide in advising their clients on matters relating to liquidity and working capital management. The research will also be a useful source of material for academicians and students on liquidity and working capital management.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews theories of cash management as developed by various scholars as well as empirical studies carried out on liquidity and working capital management in the recent past. These theories include the Cash Conversion Cycle model, Baumol model, the Miller – Orr Model, Keynesian Theory of Money, Lockyer's Model and Simulation models.

2.2. Theoretical Review

This section describes the various theories that have been developed explaining how the various components of working capital and liquidity impacts on the financial performance of an organization.

2.2.1 The Cash Conversion Cycle Model

Brigham and Houston (2007), states that the cash conversion cycle (CCC) focuses on the length of time between when the firm makes payments and when it receives cash inflows. The key terms used in the model are; inventory conversion period, which is the average time required to convert materials into finished goods and then to sell those goods, receivables collection period, which is the average length of time required to convert the firm's receivables into cash, payables deferral period, which is the average length of time between the purchase of materials and labour and the payment of cash for them. CCC, therefore nets out the periods just defined and which thus equals the length of time between the firm's actual cash expenditures to pay for productive resources and its own cash receipts from the sale of products: that is, the length of time between paying for labour and materials and collecting on receivables.

Cash forecasting is an estimate and projection of the business' cash needs on a daily, weekly, monthly, and annual basis by considering factors such as sales, fixed assets, inventory requirements, times when payments are made, and collections received. The cash forecast can be combined with the daily, weekly and monthly actual bank balances, Barney (1991), and forms part of the business' cash control system and cash budget enabling firms to plan for

unexpected surpluses or deficits. A shorter cash conversion cycle would lead to profitability of the firm but the firm has to exercise caution to avoid negative effects on the firm's other operations. The cash conversion cycle can be shortened by reducing the inventory conversion period and accounts receivable collection period and by lengthening the payables deferral period.

2.2.2 Baumol Model

According to Baumol (1952), Baumol Model of cash management aids to determine the optimum amount of cash for a company to hold under conditions of certainty. The objective is to minimize the sum of the fixed costs of transactions and the opportunity cost of holding cash balances that do not yield a return. This is similar to the EOQ model used in inventory management.

This model is used in determining target cash balance. It assumes constant flow of cash disbursements and assumes that the firm only receives cash at the end of a specified period. It further assumes that the timing of the inflows is at the end of the period. With the inflows and outflow patterns determined, then the firm is able to set average cash balance which is the target cash, Weston (1998).

Baumol Model of cash management makes the following assumptions:

The firm is able to forecast the cash needs with certainty; the firm's cash payments occur uniformly over a period of time; the opportunity cost of holding the cash is known and it does not change over time; the firm will incur the same transaction cost whenever it converts securities to cash; and the costs can be expressed as follows, according to his model:

$F (T/C) + I (C/2)$

Where: F = Fixed costs of a transaction

T = Total cash required for the specified time period

I = Interest rate on marketable securities

C = Cash balance

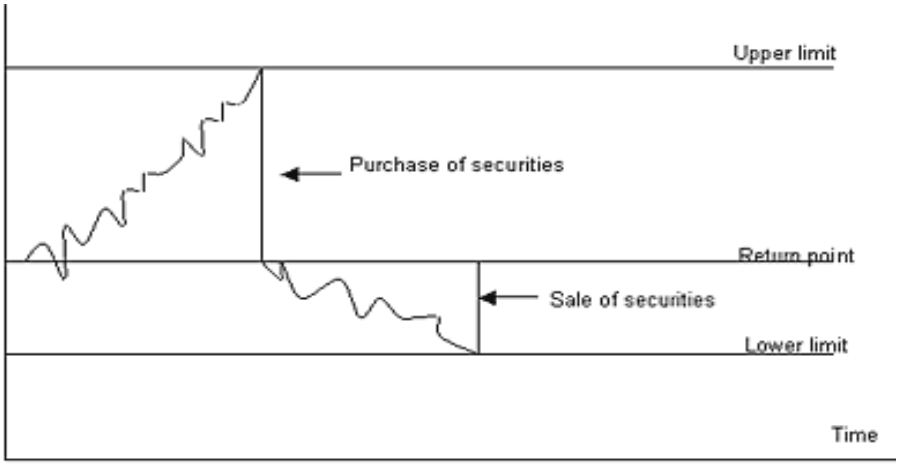
Optimal level of cash = $\sqrt{(2FT / I)}$

2.2.3 The Miller- Orr Model

The model was developed by Miller and Orr (1996), to address a limitation of Baumol Model which does not allow cash flows to fluctuate. In practice, firms do not use their cash balance uniformly nor are they able to predict cash inflows and outflows. Miller – Orr Model overcomes this limitation by allowing for daily cash flow variations. The model controls two limits, the upper limit and the lower limit, as well as a return point which is the target cash balance. When the cash balance of a firm touches the upper limit, it purchases a certain number of sellable securities that enable the firm to come to the desired cash levels, i.e. target cash balance. If the cash balance touches the lower limit, then the firm trades its saleable securities to gather enough cash to fix the problem; to get to the target cash balance, Miller and Orr (1996).

The essence of this model assumes that firms set a lower limit on cash holdings based on the likelihood of cash short fall and the firm's willingness to tolerate the risk of a short fall, and then an upper limit is set by applying this model. This is a better model than the Baumol model because it recognises the fact that cash flows are uncertain. This model is also advantageous in that it can also be adjusted for seasonal trends by construction of cash flow distributions that take into account probabilities of increases and decreases in the cash balance. Chastain (1987), reports that the model performed extremely well in companies that adopted it.

Fig.2.1 Cash movements between the two limits:



Source: Brigham and Houston, (2007).

The difference between the upper limit and the lower limit depends on the following factors; the transaction cost, the interest rate and the standard deviation.

The upper and the optimal limits can be derived as follows:

Upper Limit = $3Z - 2$(Lower Limit)

Optimal/Return Point = $3\sqrt{\frac{3*\sigma 2*F}{4*K}}$ +Lower Limit

σ2 – Variance of daily cash flows

K – Daily marketable securities

F- Optimal cost

Lower limits are set by management.

The net effect is that the firms hold the average cash balance equal to:

Average Cash Balance = Lower Limit +4/3Z.

2.2.4 Keynesian Theory of Money

Keynes (1936) discussed that the level of cash and Money and marketable securities held by a firm is determined by the motives of holding them. The speculation motive is the need to hold cash to be able to take advantage a bargain purchase and favourable exchange rate fluctuations. For most firms, reserve borrowing ability and marketable securities can be used to satisfy speculative motives.

The precautionary motive is the need for safety supply to act as a financial reserve. However, there is no need of holding such substantial amounts of money given that money market instruments are quite liquid.

Cash is also required for transaction motive. Firms will have the need to hold cash to enable them settle bills and obligations when due. The disbursement of cash includes payments of salaries, trade payables, taxes and dividends.

2.2.5 Lockyer's Model

Lockyer (1973), developed the Baumol model further by bringing in the idea of bank overdrafts. He, however, like Baumol assumed that receipts are instantaneously converted into interest earning assets. This model assumes the availability of overdraft facility as an extra source of cash. The minimum cost of financing will thus be determined by comparing overdraft interest with any short term interest income. One of the weaknesses of the model is the assumption that the overdraft is always available while the actual fact is that the firm has no control over the facility since the bank can recall it at any time.

2.2.6 Simulation Models

Archers (1972) and Gibbs (1978) have used Monte carlo simulation to develop models that incorporate uncertainty in setting the target cash balance. In the preparation of the cash budget, sales are subject to a probability distribution about the expected value. This contrast with the traditional cash budget which use expected values (the mean values of probability distribution of sales). The greater uncertainty faced by an enterprise means the greater is the risk of running out of cash and a higher cash balance. Archers model incorporates the precautionary balances and calls for plotting of cash inflows and outflows on a graph to be able to determine the maximum and minimum cash required. Gibbs (1976), suggested that the pattern of determination of optimal cash balances involves a combination of investment and financing decisions.

2.3 Determinants of Profitability

Just as Adams and Buckle (2003), and Maçãs et al. (2012), this study considers profitability as the dependent variable, given by the ratio of operational results to total assets. As independent variables, similarly to Maçãs et al. (2012), the study consider: i) liquidity; ii) size; iii) long-term debt; and v) growth opportunities;

2.3.1 Liquidity

The Economic Times (2014), defines Liquidity as "Liquidity means how quickly you can get your hands on your cash. In simpler terms, liquidity is to get your money whenever you need it". Renato (2010) observed that there exists a significant and positive correlation between the

liquidity and the profitability variables. The results indicated that for the studied companies, on the short term the higher the liquidity level of the company, the higher its profitability. He also observed that companies with a poor indicator of liquidity or profitability are usually not able to upkeep the other indicator in a high level; also the companies with both high or low liquidity and profitability were stable in the same position after a few years. According to Shim and Siegel (2000), accounting liquidity is the company's capacity to liquidate maturing short-term debt (within one year). Maintaining adequate liquidity is much more than a corporate goal. It is a condition without which it would not reach the continuity goal of a business.

2.3.2 Size

According to Nousheen and Arshad (2013), "if the size of the firm increases the profit-ability also increases. We measure size of the firm by the taking the natural log of the sales as this measure smoothens the variation in the figure over the periods of time. So large size of firm tends to be more profitable. Thus we expect a positive relationship between size and profitability of firm. From there study, they concluded that Size has a positive significant relationship to profit-ability. The coefficient value is 0.347 means that one unit change in size will lead to increase in profitability by 0.347. These findings come according to our hypothesis that there is positive relationship between size and profitability of firm. So it accepts our hypothesis that profitability has positive significant relationship with size".

2.3.3 Leverage

Nousheen and Arshad (2013), pointed out that, according to pecking order theory firms firstly prefer to use internal funds and then doing external financing. This entails that profitable firms will have less extent of leverage. There is an expectation of a negative relationship between profitability and debt to equity ratio. Debt to equity ratio is measured by taking total liabilities divided by shareholder's equity. From the study, correlation analysis shows that profitability is negatively correlated with debt to equity ratio and tangibility and positively related to size and growth.

2.3.4 Growth

Better growing firms increase their profitability. If there is an increase in total assets it means it has a high growth and it tends to be more profitable. We measure growth as a percentage increase in total assets. Thus we expect positive relationship between growth rate and profitability of firm Nousheen and Arshad (2013).

2.4 Empirical Review

Padachi (2006) conducted a study to examine trends in working capital management and its impact on firms' performance. He performed his study by using different variables like profitability as a dependent variable and account receivable ratio in number of days, account payable ratio in number of day, inventory turnover ratio in number of days, and cash conversion cycle are independent variables. Size, gearing ratio, gross working capital turnover ratio, current assets to total assets ratio are included in control variables. His study showed that the management of various components of working capital has a positive impact on profitability.

Raheman and Nasr (2007) studied the effects of selected WCM and liquidity measures on the profitability of 94 Pakistani companies listed on Karachi Stock Exchange over the period 1999-2004. They ran pooled least squares and generalized least squares regression models with cross section weights to test the relationship between profitability; the dependent variable, measured as the net operating income deflated by total assets and the following independent variables; the RCP, the ICP, the PCP, the CCC, and the current ratio. They have also used size, leverage, and the ratio of financial assets to total assets as control variables. The results showed significant and negative relationships between profitability and all WCM and liquidity measures. Furthermore, size showed a significant and positive relationship with profitability, leverage and the ratio of financial assets to total assets showed significant and negative sign with profitability.

Pandey (2008) studied the working capital components and the impact of working capital management on profitability of Hindalco Industries Limited for period from 1990 to 2007. Results of the study showed that current ratio, liquid ratio, receivables turnover ratio and working capital to total assets ratio had statistically significant impact on the profitability of Hindalco Industries Limited. However, this study was limited to one particular industry and hence generalization of the findings to other industries would be a challenge.

Zariyawati et al (2009), tried to pay attention to the relationship between profitability and working capital management in Bursa Malaysia. The panel of Malaysian firms over the period from 1996 to 2006 was selected to investigate the relationship between cash conversion cycle as a working capital proxy and ROA as a profitability ratio. The result of using Pooled OLS regression indicated a negative relationship between working capital proxy and profitability which means that managers can increase profitability by decreasing the length of cash conversion period.

Nazir (2009), made an attempt in order to investigate the traditional relationship between working capital management policies and a firm's profitability for a sample of 204 non-financial firms listed on Karachi Stock Exchange (KSE) for the period 1998-2005.The study found significant difference among their working capital requirements and financing policies across different industries. Moreover, regression result found a negative relationship between the profitability of firms and degree of aggressiveness of working capital investment and financing policies. They suggested that managers could create value if they adopt a conservative approach towards working capital investment and working capital financing policies.

Mathuva (2009) examined the influence of working capital management components on corporate profitability by using a sample of 30 firms listed on the Nairobi Stock Exchange (NSE) for the periods 1993 to 2008. The key findings of his study were that: i) there exists a highly significant negative relationship between the time it takes for firms to collect cash from their customers (accounts collection period) and profitability, ii) there exists a highly significant positive relationship between the period taken to convert inventories into sales (the inventory conversion period) and profitability, and iii) there exists a highly significant positive relationship between the time it takes the firm to pay its creditors (average payment period) and profitability.

Apiyo (2010) assessed the relationships between working capital management policies and profitability for companies quoted at the Nairobi Securities Exchange. The study was done in 55 companies listed in the NSE as at 31st December 2009; he narrowed down to 19 companies which represented all the sectors i.e Agricultural, Commercial, Banking, Investment, Construction and allied and the alternative investment market segment. He used regression analysis model to find if there was a relationship between the long term financing of current assets and the return on total assets for the firms in the sample. He also further

analyzed the data using co-efficient of determination (r^2) to know the strength of the relationship the variables. He found that the firm's profitability increased with the firm's size, gross working capital efficiency and with a lesser aggressiveness of asset management.

Soimo (2010) did a study to find out the relationship between working capital management and profitability of stated owned commercial enterprises in Kenya. The population consisted commercial enterprises in Kenya consisting of 29 companies in various sectors of the economy. The researcher used secondary data obtained from financial reports of commercial state corporations for duration of 5 years between the years 2005 to 2009. The analytical model was to determine the relationship between working capital and profitability of state owned corporations. Data was analyzed using current ratio, current assets to total assets; day's sales, outstanding days inventory outstanding days payable outstanding and the cash conversion cycle. Then an arithmetic mean would be calculated for each of firm's working capital management policy metric for 5 years.

He concluded that firms that take long to pay their current and long days inventory obligations hence grossly violating their own credit outstanding terms are likely to make negative returns. Lower current assets to total asset ratio is better working capital mix.

Mathura (2010) carried out a survey on the working capital management components on corporate profitability among the Kenyan listed firms. The findings from a sample of 30 listed firms at the Nairobi Securities Exchange (NSE) revealed a negative relationship between the time firms took to convert receivables into cash (collection of debts from their customers) and profitability. Firms with shorter collection period were found to be more profitable.

The survey also revealed that a positive relationship existed between inventory conversion period and the firms' profitability. Firms with shorter inventory conversion period were more profitable. It was also noted that firms that took longer time to pay their creditors were also more profitable.

Khan et. al (2011) carried out a study to investigate the hypothesis that working capital management has effect on profitability and there exist a trade-off between risk and return. They used a sample of 92 Pakistani firms from textile sector for the period 2001 to 2008. Descriptive Statistics, Correlation and Regression Analysis were used for investigation. The findings of the study concluded that there exist a moderate risk-return trade off in between

profitability and liquidity hypothesis. Moreover working capital management has significant impact on profitability regarding to textile sector of Pakistan. Further there exists a positive relationship between size and profitability. This study was limited to the textile industry with a sample of 92 companies, which may not be fully generalized to the entire economy of Pakistan.

Vahide (2013) carried out a study the effect of financial ratios on the financial performance of the companies in the special context of cement industry in Iran. The study empirically examined the relationship between working capital management and profitability by using data of 28 Iran cement companies. The study was based on secondary data collected from financial reports which is accepted in Tehran Stock Exchange for the period of six years from 2004-2009. The data was analysed using the techniques of correlation coefficient and multiple regression analysis. The results of the study showed that the return on investment is very weak negatively correlated with the current ratio, inventory turnover ratio. While, investments is very weak positively correlated with the liquid ratio and credit turnover ratio. The result concluded that there is a weak relationship between working capital management and the companies' profitability.

Mohammad (2013) carried out a study on the relationship between Working Capital Management and Profitability in Industrial Jordanian Companies listed in Amman Stock Exchange. The effect of different variables of working capital management have been studied including the Average collection period, Inventory turnover in days, Average payment period and Net Trade Cycle on the return of assets for Jordanian companies. The study sample consisted of 39 companies for the 8 years period from 2004-2011. The study applied correlations and multiple regression analysis. The result shows that there are significant negative associations between working capital variables with firm's profitability and so it highlights the importance of managing working capital to improve firm's profitability. The study concluded that if a firm is able to reduce time periods then that firm is efficient in managing its working capital. That efficiency will lead to an increase in profitability and that also indicated that the two goals of liquidity and profitability have an inverse relationship.

2.5 Summary of Literature Review

Research has been carried out on working capital management in general. Further research may be extended to the working capital components management including cash, marketable securities, receivables, and inventory management and their benefits or effects on the performance of the firm, profitability and maximization of shareholder's wealth.

Studies have been carried out on the relationship between working capital management and corporation performance for organizations in a single sector. There is still need in the future to indentify the sector wise relationship between working capital management and firms' performance and comparative studies on companies across many sectors. Further, the scope of further research may be extended to profitability measures' including cash, marketable securities and return on assets, return on equity respectively.

From the theoretical review, these theories hold certain assumptions constant and or with certainty. Baumol model assumes an optimal amount of cash a company can hold ender conditions of certainty, thus does not allow cash flow fluctuations. This case is never that case in practice. Miller – Orr model assumes that there is a set upper and lower limit of cash in a firm, and that a firm reacts to restore the cash within these limits. However, there may arise conditions that are beyond the control of the firm that will lead to cash flows operating beyond these limits.

The empirical studies conducted and reviewed show some mixed results. For example, studies by Zariyawati et al (2009), and Raheman and Nasr (2007), indicated a negative relationship between working capital and liquidity measures and profitability; while Mathuva (2009), Apiyo (2010), and Mathura (2010), indicated a positive relationship between liquidity measures and profitability. These mixed results enhance the need to carry out further studies in this area.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter covers research methodology, Population, sample, data collection and data analysis methods. The chapter takes into consideration the theoretical framework, reviewed literature, experience and knowledge of the researcher to discuss how the study will be done, how data will be analysed and results presented to arrive at conclusions and recommendations.

3.2 Research design

Cooper and Schindler (2005), observes that a design is a plan for selecting the sources and types of information used to answer the research questions a framework for specifying the relationships among the other variables. The study will use a descriptive research design. Descriptive research design is a design in which the major emphasis is on determining the frequency with which something occurs or the extent to which two variables co-vary. It is usually concerned with describing a population with respect to important variables, Descriptive research according to Cooper and Schindler (2005), tries to explain relationship among variables and fact finding enquiries of different kinds. The design will be used since it will enable the sampling of different characteristics exhibited by members of the defined population. It is characterized by its flexibility with respect to the way it can be used to gain an understanding and develop hypothesis.

3.3 Population

The population of interest in this study will be made up of at least companies and/or establishments registered and operating in Kenya considered being small and medium size, with annual turnover of between KShs. 200 million and KShs. 2 billion for the last six years from 2008 to 2013. With the guidance of the definition of SMEs as shown on section 1.1.4 above, the entire population of these SMEs is 41, 371 according to the Economic Survey, Kenya National Bureau of Statistics - Statistical Abstract 2013. The population of the SMEs with this level of turnover is considered not to significantly exceed or fall short of 1,000

entities, and thus consider the population of 1,000 to be reasonable in the circumstances. The six year period has been selected in line with past similar studies including Deloof (2003), Padachi (2006), Raheman and Nasir (2007), and Kithii (2008), which resulted in reliable results.

3.4 Sample

The study sample will be selected based on convenience sampling. Of the sample estimate above, the study will cover a sample size of 40 firms spread across various sectors of the economy. The sample size was determined based on the convenience of availability of the financial statements of these firms. Because of the specific nature of their activities, firms in the financial sector, banking and finance, insurance, pension schemes, leasing, business services, renting and other services will be excluded from the sample because of the nature of the components of the liquidity/working capital. In constituting the sample, the firms with information on current assets, current liabilities, profit before tax, equity, and total assets will be included in the sample.

3.5 Data Collection

The study will use secondary data to be obtained from annual reports and financial statements of the sampled firms found at their registered places of business and/or with their auditors. A data collection form will be designed to record details of current assets, current liabilities, profit before tax, equity, and total assets and any other information that may be considered necessary for the study.

3.6 Data Analysis

To determine the relationship between liquidity/working capital management and profitability of the selected SMEs, we shall use two types of data analysis techniques, i.e descriptive and quantitative.

3.6.1 Analytical Model

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Where Y = Profitability as measured Return on Assets (ROA) – (Net income/Average total assets)

X_1 = Liquidity as measured by current ratio (current assets/current liabilities)

X_2 = Leverage as measured by the ratio of total liabilities to shareholder's equity.

X_3 = Growth as measured by the percentage increase in total sales

X_4 = Size as measured by taking the natural log of the firm's total assets.

The descriptive analysis will be applied on qualitative data on comparison basis on the respective variables and merging those that are similar in narrative form.

3.6.2 Test of Significance

A correlation and a multiple regression analysis will be carried out to test the presence of multicollinearity in the data. This will help show any serial correlations. A multiple regression analysis will then be carried out. ANOVA and F-test will show the fitness of the model used in the study. The coefficients will show how each of the variables influence performance. The results of significance will be interpreted at 5% level of significance. Both p-values and t-tests will be interpreted.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

The chapter presents the results of the study. The chapter presents the descriptive analysis results, the correlation analysis results, and the regression analysis results.

4.2 Descriptive Analysis

Table 4.1 presents the descriptive statistics in terms of the number of observations, mean and standard deviation.

Table 4.1: Summary Descriptive Statistics

	N	Mean	Std. Deviation
Profitability	112	0.0719	0.47210
Liquidity	137	6.0899	22.93614
Leverage	137	1.1285	5.29144
Growth	112	0.1123	0.34596
Size	137	17.4985	3.26253

Source: Research Findings

The results in Table 4.1 shows that the mean performance (ROA) was 0.0719 with a standard deviation of 0.472. The mean liquidity was 6.0899 with a standard deviation of 22.94. The mean leverage was 1.1285 with a standard deviation of 5.29. The mean growth was 0.1123 with a standard deviation of 0.35. Finally, the mean size of the firm was 17.4985 with a standard deviation of 3.26.

4.3 Correlation Analysis

Table 4.2 presents the correlation analysis results in a correlation matrix with all the variables in the study. The essence of the correlation analysis was to examine the interrelationships between the independent variables to check for multicollinearity.

Table 4.2: Correlation Matrix

	Profitability	Liquidity	Leverage	Growth
Profitability	1			
Liquidity	.030	1		
Leverage	-.004	-.049	1	
Growth	.098	-.110	-.184	1
Size	.090	.188*	.030	.137

*. Correlation is significant at the 0.05 level (2-tailed).

Source: Research Findings

Table 4.2 shows that the correlations between the variables were very low. This means that there multi-collinearity was not a problem with the present dataset and therefore all the variables could be used in the regression model for analysis without further transformations.

4.4 Regression Analysis

Table 4.3 shows the results for the regression model summary. This presents the results of R, R^2, adjusted R^2 and the standard error of estimate.

Table 4.3: Regression Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.143	.020	-.016	.45591

Source: Research Findings

The results in Table 4.3 show that the independent variables had a low influence on performance (R = 0.143) and the variables accounted for only 2% of the variance in performance (R^2 = 0.02). Thus, the variables accounted for very little in the performance of firms. This means that most of the variance in performance of firms was as a result of other factors not examined in this study.

Table 4.4 presents the analysis of variance (ANOVA) results from the OLS regression analysis. Of importance are the F-statistics and the significance of F-statistic.

Table 4.4: ANOVA Results

	Sum of Squares	df	Mean Square	F	Sig.
Regression	0.460	4	.115	0.554	0.697
Residual	22.033	106	.208		
Total	22.493	110			

Source: Research Findings

Table 4.4 shows that the F-statistic was 0.554 and was insignificant at 5% level, p = 0.697. These results mean that the model used in the study was not fit to explain the relationship between liquidity and financial performance of firms.

Table 4.5 presents the regression coefficient (β) results for the independent variables in the study. Further, the t-values and the p-values are also shown.

Table 4.5: Regression Coefficients

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-.192	.246		-.783	.435
Liquidity	.001	.002	.030	.306	.761
Leverage	.001	.009	.010	.104	.918
Growth	.118	.131	.090	.902	.369
Size	.013	.014	.094	.945	.347

Source: Research Findings

Table 4.5 shows that liquidity has a positive but insignificant effect on performance (β = 0.001, p = 0.761). The study found that leverage had a positive but insignificant effect on performance (β = 0.001, p = 0.918). Growth was found to have a positive but insignificant effect on performance (β = 0.118, p = 0.369). The study also revealed that size of the firm had a positive but insignificant effect on performance (β = 0.013, p = 0.347).

4.5 Interpretation of the Findings

The study examined the effect of liquidity on profitability of SMEs in Kenya. Profitability was measured as return on assets (ROA) while liquidity was measured as the ratio of current

assets to current liabilities. The results showed that liquidity has a positive but insignificant effect on profitability ($\beta = 0.001$, $p = 0.761$). This means that profitability of SMEs in Kenya is not influenced by the liquidity. This can be attributed to the fact that except for one firm, most of the firms had very low liquidities (less than 2) and thus the lower liquidities could not influence the level of profitability.

The study also sought to determine the effect of leverage on profitability of SMEs in Kenya. Leverage was measured as the ratio of liabilities to equity. The study found that leverage had a positive but insignificant effect on performance ($\beta = 0.001$, $p = 0.918$). This means that profitability of SMEs in Kenya is not affected by the leverage ratios. This can be explained by the fact that on average, SMEs maintain very lower leverages and therefore such levels of leverages do not have a significant impact on profitability.

The study further examined the effect of growth on the profitability of SMEs in Kenya. Growth was measured as the percentage increase in total sales. Growth was found to have a positive but insignificant effect on performance ($\beta = 0.118$, $p = 0.369$). This means that profitability of SMEs in Kenya is not affected by growth of firms. This may also be attributed to the low growth levels of SMEs in general.

The study also examined the effect of size of the firm on profitability of SMEs. Size was measured as the natural logarithm of total assets. The study revealed that size of the firm had a positive but insignificant effect on performance ($\beta = 0.013$, $p = 0.347$). This is because most of the firms were generally small in size and therefore low variability which led to non-significant effect on the levels of firm profitability.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of findings, conclusion of the study, limitations of the study, recommendations for policy, and suggestions for further research.

5.2 Summary

This study sought to examine the effect of liquidity on the financial performance of SMEs in Kenya. Secondary data was collected from SMEs in Kenya with a majority of them being from Nairobi. These were mainly the annual financial reports of the SMEs and the data is shown in appendix 1. The collected data was analysed using SPSS version 22 using descriptive analysis, correlation analysis, and OLS regression analysis.

The descriptive results showed that mean performance (ROA) was 0.0719 with a standard deviation of 0.472, the mean liquidity was 6.0899 with a standard deviation of 22.94, the mean leverage was 1.1285 with a standard deviation of 5.29, the mean growth was 0.1123 with a standard deviation of 0.35, and the mean size of the firm was 17.4985 with a standard deviation of 3.26. The correlation results showed that the correlations between the independent variables were very low thus multicollinearity was not a problem with the present dataset and therefore all the variables could be used in the regression model for analysis without further transformations.

The OLS regression results showed that the independent variables had a low influence on performance ($R = 0.143$) and the variables accounted for only 2% of the variance in performance ($R^2 = 0.02$). The F-statistic was 0.554 and was insignificant at 5% level, $p = 0.697$. The results further showed that liquidity had a positive but insignificant effect on

performance (β = 0.001, p = 0.761), leverage had a positive but insignificant effect on performance (β = 0.001, p = 0.918), growth had a positive but insignificant effect on performance (β = 0.118, p = 0.369), and size of the firm had a positive but insignificant effect on performance (β = 0.013, p = 0.347).

5.3 Conclusion

The study examined the effect of liquidity on profitability of SMEs in Kenya. The results showed that liquidity has a positive but insignificant effect on profitability (β = 0.001, p = 0.761). The study concludes that liquidity does not affect profitability of SMEs in Kenya. This is consistent with the findings of Renato (2010) who found a positive relationship between liquidity and profitability.

The study also sought to determine the effect of leverage on profitability of SMEs in Kenya. The study found that leverage had a positive but insignificant effect on performance (β = 0.001, p = 0.918). The study concludes that leverage does not affect profitability of SMEs in Kenya. This is inconsistent with the findings of Nousheen and Arshad (2013) who found a negative relationship between leverage and profitability. This can be attributed to low levels of use of debt for financing by SMEs in the sample.

The study further examined the effect of growth on the profitability of SMEs in Kenya. The study found that growth had a positive but insignificant effect on performance (β = 0.118, p = 0.369). The study concludes that growth does not affect profitability of SMEs in Kenya. This is consistent with the findings of Nousheen and Arshad (2013) who found a positive relationship between growth and profitability.

The study also examined the effect of size of the firm on profitability of SMEs. The study revealed that size of the firm had a positive but insignificant effect on performance (β =

0.013, p = 0.347). The study concludes that size does not affect profitability of SMEs in Kenya. This is consistent with the findings of Nousheen and Arshad (2013) who found a positive relationship between size and profitability.

5.4 Limitations of the Study

The study focused on SMEs in Kenya, but a significant proportion of the sample was from Nairobi. This therefore limits the applicability of the findings to other SMEs in other parts of the country. Further, a focus on SMEs means that the results are limited to the SMEs and cannot be applied to larger firms in Kenya.

This study used secondary data. As such, it was not possible to evaluate some issues deeper such as reasons why no effects were felt. This can be gathered better qualitatively. Thus, the type of data used in the study limited to scope of data analysis and reporting.

The study further tested a profitability model with liquidity as the predictor and a few other variables as control variables. This model was found to be unfit suggesting that the variables in the model were not sufficient to provide significant results. Thus, this limits the application of the model to SMEs in Kenya.

A few variables were used to control for the effect of liquidity on financial performance. These were not exhaustive and this may limit the application of the model and the results on the SMEs in Kenya. Further, the results showed that this model accounted for only 2% of the variance in profitability. Thus many other variables were left out rendering the model inefficient to predict firm profitability.

The study further faced challenges in respect to the number of respondents. Not all the target sample responded positively with the data requested. This limited the number of the sample population. On the other hand, some respondents did not approve of their legal names going

into public domain with the specific financial information. This therefore resulted to my use of numbering as opposed to specific SME names as a mode of identity in the research data tableau under appendix 1.

5.5 Recommendations for Policy

The study recommends that SMEs should not be concerned much with their levels of liquidity as such levels do not influence their profitability. However, given that there was an indication of a positive relationship, higher levels of liquidity may be preferred to lower levels of liquidity if the concern is to improve firm profitability.

The Government of Kenya also needs to put up incentives to enhance growth of SMEs in order for them to improve on their profitability and further provide employment to the unemployed youth. This can help relieve the Government of the burden to employ the growing population.

5.6 Suggestions for Further Research

The study suggests that this study be scaled up to include more SMEs in Kenya and not just within Nairobi metropolis. Such a study would help improve the reliability of the findings as well as applicability to other SMEs.

Further studies need to be done on this subject by replicating the study and using both primary and secondary data in order to enhance the quality of data collected and enable the results to be more in-depth. A mixed study methodology of this study is therefore proposed.

More studies should replicate this study and include more firm specific variables to control for the effect of liquidity on the performance of firms. Further, a longer data period can be

selected, say 10 years, in order to provide more robust and accurate results for the effect of liquidity on the profitability of SMEs in Kenya.

Further studies should also employ panel data analysis techniques rather than the current use of OLS regression techniques to examine how liquidity affects financial performance of SMEs in Kenya. Panel techniques would provide more reliable results.

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APPENDICES

Appendix 1: Research Data

SME	Year	Profitability	Liquidity	Leverage	Growth	Ln Assets
1	2008		1.312	- 6.26		20.0
1	2009	0.016	1.205	- 8.67	0.32	20.2
1	2010	0.012	1.230	- 9.69	0.02	20.3
1	2011	0.001	1.104	- 19.21	1.06	21.0
1	2012	-0.004	1.118	15.52	- 0.36	20.5
2	2008		1.588	1.31		17.9
2	2009	-0.090	1.198	3.02	0.32	18.1
2	2010	0.163	1.400	2.03	0.33	18.4
2	2011	0.235	1.232	2.30	1.41	19.3
2	2012	0.086	1.008	2.61	0.48	19.7
2	2013	0.224	1.258	2.22	0.96	20.4
3	2009		3.851	- 11.23		11.3
3	2010	0.021	4.179	- 29.06	0.89	12.0
3	2011	0.081	1.016	21.50	0.28	12.2
3	2012	-0.024	2.127	6.89	0.04	12.3
3	2013	0.038	2.298	2.24	0.06	12.3
4	2008		0.394	- 2.07		11.5
4	2009	-1.605	0.080	- 1.36	- 0.13	11.3
4	2010	-2.324	0.067	- 1.11	- 0.47	10.7
4	2011	-0.931	0.073	- 1.11	0.03	10.7
4	2013		0.236	1.04		10.5
5	2008	1.564	1.481	2.08		15.7
5	2009	0.177	1.761	1.31	0.20	15.9
5	2010	0.903	0.671	- 3.04	- 0.49	15.2
5	2011	2.877	0.161	- 1.19	- 0.49	14.5
5	2012	1.661	0.136	- 1.16	0.10	14.6
5	2013	0.121	0.156	- 1.18	0.19	14.8
6	2008		1.303	3.12		14.3
6	2009	0.089	1.378	2.67	0.26	14.6
6	2010	-0.064	1.506	1.80	- 0.38	14.1
6	2011	-0.008	1.637	1.47	- 0.28	13.7
6	2012	0.020	2.342	0.72	- 0.27	13.4
6	2013	0.049	2.740	0.55	- 0.03	13.4
7	2008		3.463	0.10		21.6
7	2009	0.041	3.189	0.10	- 0.01	21.6
7	2010	0.091	2.404	0.07	0.15	21.7
7	2011	0.164	2.036	0.07	0.08	21.8
7	2012	0.311	1.879	0.12	0.66	22.3
8	2009		1.975	0.80		17.0
8	2010	0.348	2.718	0.39	- 0.11	16.9
8	2011	0.192	2.354	0.49	- 0.06	16.8
8	2012	0.463	2.196	0.69	0.68	17.4
8	2013	0.310	1.637	0.91	0.25	17.6
9	2008		1.306	3.72		13.0
9	2009	0.048	1.194	4.47	0.13	13.1
9	2010	0.082	1.167	4.87	0.21	13.3
9	2011	0.059	1.105	6.05	0.03	13.3
9	2012	0.092	1.227	2.59	0.14	13.5

9	2013	0.070	1.189	3.12	0.17	13.6
10	2008		1.184	2.86		20.8
10	2009	0.040	1.036	2.69	- 0.03	20.7
10	2010	0.026	1.081	3.31	0.09	20.8
10	2011	-0.033	1.021	2.54	0.36	21.1
10	2012	0.017	1.083	2.15	- 0.05	21.1
10	2013	0.035	1.057	2.20	0.15	21.2
11	2009		1.895	0.77		13.5
11	2010	0.035	1.745	0.97	0.19	13.7
11	2011	-0.055	1.424	0.88	0.76	14.3
11	2012	0.041	1.796	0.53	0.45	14.6
11	2013	0.005	1.905	0.57	- 0.24	14.4
12	2008		1.014	21.75		16.4
12	2009	0.024	1.043	16.25	0.23	16.6
12	2010	0.086	1.151	5.92	- 0.88	14.4
12	2011	0.923	1.318	3.12	1.58	15.4
12	2012	0.031	1.422	2.23	- 0.66	14.3
12	2013	-0.039	1.258	3.37	0.17	14.5
13	2012		0.856	- 15.71		13.9
13	2013	-0.064	0.813	- 8.96	0.03	14.0
14	2008		55.131	0.02		20.6
14	2009	0.078	136.472	0.03	0.02	20.6
14	2010	0.090	130.186	0.01	0.01	20.6
14	2011	0.180	61.915	0.03	- 0.00	20.6
14	2012	0.184	167.360	0.02	- 0.19	20.4
14	2013	0.202	75.687	0.03	- 0.21	20.2
15	2009		0.611	1.45		14.1
15	2010	0.090	0.759	0.96	- 0.02	14.1
15	2011	0.035	0.843	0.84	- 0.05	14.1
15	2012	0.059	1.052	1.15	0.02	14.1
15	2013	0.001	0.895	0.73	0.20	14.3
16	2008		0.770	0.64		20.0
16	2009	0.037	0.886	0.72	0.02	20.0
16	2010	0.042	1.347	1.30	0.29	20.3
16	2011	0.060	1.339	1.12	0.16	20.4
16	2012	0.068	1.450	1.07	0.20	20.6
16	2013	0.070	1.228	1.82	0.27	20.9
17	2008		3.274	0.39		18.7
17	2009	-0.007	2.581	0.48	0.01	18.7
17	2010	0.026	2.388	0.42	0.08	18.8
17	2011	0.093	2.850	0.43	0.11	18.9
17	2012	-0.004	2.550	0.46	- 0.05	18.9
17	2013	-0.062	1.898	0.44	- 0.13	18.7
18	2008		1.382	1.92		18.5
18	2009	-0.052	1.135	3.89	0.30	18.8
18	2010	-0.046	1.197	4.49	- 0.12	18.6
18	2011	-0.001	1.034	6.79	0.41	19.0
18	2012	0.026	1.160	5.96	0.06	19.1
18	2013	-0.018	1.140	7.19	0.01	19.1
19	2008		1.558	1.27		20.1
19	2009	-0.076	1.210	2.04	0.10	20.2
19	2010	-0.005	1.055	1.77	- 0.10	20.1
19	2011	0.075	1.151	1.57	0.13	20.2

19	2012	0.091	1.452	1.47	0.21	20.4
19	2013	-0.113	1.147	2.37	- 0.02	20.4
20	2008		1.200	2.88	- 0.20	20.1
20	2009	-0.067	1.234	5.50	0.19	20.3
20	2010	-0.008	2.123	1.34	0.02	20.3
20	2011	-0.007	2.209	1.25	- 0.06	20.3
20	2012	-0.013	2.820	1.31	- 0.00	20.3
20	2013	0.018	3.492	1.28	0.03	20.3
21	2008		1.061	0.91		21.0
21	2009	0.048	1.192	1.02	0.10	21.1
21	2010	0.088	1.349	0.95	0.11	21.2
21	2011	0.053	1.548	0.56	- 0.20	21.0
21	2012	0.062	1.520	0.55	0.23	21.2
21	2013	-0.026	1.526	0.59	- 0.04	21.1
22	2008		1.628	1.35		19.6
22	2009	0.085	2.429	0.56	- 0.25	19.3
22	2010	0.092	2.001	0.86	0.37	19.7
22	2011	0.108	1.977	0.88	0.24	19.9
22	2012	0.060	2.003	0.85	0.10	20.0
22	2013	-0.150	1.357	2.18	0.20	20.2
23	2008		1.480	1.89		13.3
23	2009	0.175	1.878	1.10	0.10	13.4
23	2010	0.048	1.534	1.65	0.28	13.7
23	2011	0.055	1.388	2.22	0.43	14.0
23	2012	-0.009	1.429	1.84	- 0.18	13.8
23	2013	-0.031	1.552	1.51	- 0.19	13.6
24	2008		1.878	0.64		20.0
24	2009	0.127	1.957	0.40	0.37	20.3
24	2010	0.072	1.854	0.48	0.13	20.4
24	2011	0.077	1.479	0.82	0.36	20.7
24	2012	0.065	1.686	0.68	- 0.02	20.7
25	2008		7.203	0.13		17.7
25	2009	-0.072	4.835	0.22	- 0.01	17.7
25	2010	-0.161	2.555	0.48	- 0.18	17.5
25	2011	-0.210	1.433	1.47	0.12	17.6
25	2012	-0.181	1.020	4.91	0.29	17.9