DETERMINANTS OF CORPORATE CASH HOLDING IN TANZANIA

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Abstract: **This study aimed at identifying the determinants of corporate cash holding in Tanzania. Financial Institutions were excluded in this study because they are being regulated by the Central Bank of Tanzania. Two theories were used in identifying the factors that determine the level of cash held by Tanzanian companies; the pecking order theory and the trade-off theory. Secondary sources of data were used for the study. Relevant literature was reviewed while survey method was used to collect secondary data from 129 financial statements extracted from records of 129 companies in early 2015. Financial statements covered a period of 2012-2013 and were found at Business Registration and Licensing Authority (BRELA) headquarters offices in Dar es Salaam. The following variables were statistically analysed by using ordinary least square method in the light of pecking order and trade off theories: the firm size, leverage level, cash flow, net working capital and level of capital expenditure.**

Findings show that there are three significant variables that determine the level of cash to be held by a company. Specifically, size of the company, cash flow and level of capital expenditure has a significant effect on the level of cash of a company. The variable size of a company is related to the trade-off theory while variables cash flow and level of capital expenditure are in favour of pecking order theory.

It is recommended that the government of Tanzania, through her Central Bank, should establish some regulations or loan policies, which are going to favour small companies so that they can easily get loans from commercial banks. This is because smaller companies have been found to hold more cash (as a cheap source of finance) than big companies. These extra sources of funds from banks, obtained at a less strings attached, will enable these small Tanzania companies to prosper and grow.

Keywords: **Cash Holdings, Liquidity, trade-off theory, pecking order theory.**

1. INTRODUCTION

Cash is the most liquid asset that can be kept by any company (Van Horne, 1995). Cash is normally used for many purposes such as to pay daily expenses of the company, acquire inventories and pay dividend. Essentially, cash is a very important component of working capital management.

According to famous economist, Lord Keynes (1936), there are three motives for holding cash. These are transactions motive, precautionary motive and speculative motive. Many studies on cash holding show that companies maintain an important cash levels. The cash level held by companies do vary across countries. For example, French companies hold on average 13% of their total assets in cash (Saddour, 2006); Italian private companies hold 10% (Bigelli, Sanchez-Vidal and Javier, 2009) while Pakistan firms hold 13.1% (Talat and Adnan, 2007).

On researching about what determines the amount of cash to be held by a company, Miller and Orr (2002) developed a trade-off model. This model explains that there is an optimal level of cash holdings when the marginal cost of cash shortage equals the marginal cost of cash holdings.

On the other hand, pecking order theory by Myers and Majluf (1984) states that in presence of asymmetry information between managers and owners of companies regarding sources of finances, managers will establish a hierarchy in their use of funding sources rather than establishing an optimal cash level. There are several other hypotheses that contribute to the determinants of cash holdings.

1.1 Statement of the problem

In a perfect capital market, holding large amounts of cash is irrelevant because companies can easily go to capital markets to finance their profitable investment projects at negligible transaction costs. Because of imperfection of the market, companies will be forced to incur some transaction cost such as interest in order to obtain cash. As such, rational managers will opt for cheaper sources of finances. One of a cheap alternative source of finance for companies is to hold a certain level of their assets in a form of cash. But holding idle cash for sometime has an opportunity cost. This brings a dilemma as to how much of the company's total assets should be kept as cash, and how the company decides on how much cash to be held.

For the past ten years, the empirical analysis on the determinants for cash holdings in companies has become very popular among academics (Bigelli et al, 2009). Some of existing empirical findings on determinants of cash holdings are related to the United States listed companies (Opler et al. 1999), Italy (Bigelli et al, 2009), French companies (Saddour, (2006)), and Pakistan (Talat and Adnan, 2007).

It is yet not clear if the reasons for holding cash in developed economies are the same as those in less developed economies. To the best knowledge of the researcher, nothing so far has been researched in connection to determinants of corporate cash holdings in Tanzania. This study is expected to contribute in the field of Financial Management in Tanzania by providing an understanding as to what actually determines the amount of cash to be held by a Tanzania companies and in developing ecnomies.

1.2 Objectives of the study

The objective of this study was to identify the factors that determine the amount of cash to be held by Tanzanian companies.

2.   LITERATURE REVIEW

2.1 Keynesian Motives for holding cash

Lord Keynes (1936) asserts that there are basically three motives for companies and individuals to hold cash: transaction motive, precautionary motives and speculative motive. By transaction motive it means the need of cash for the current transaction of personal and business exchange. Mwisho (2002) adds that transaction motive refers to holding cash to meet anticipated payments whose timing is not perfectly matched with cash receipts.

Regarding the precautionary motive, firms need to keep cash for precaution due to the occurrence of unexpected payment needs. In an unstable economy like that of Tanzania, cash holding for precaution may be of higher importance.

Speculative-motive has the objective of securing profit from knowing better than the market about what the future will bring forth. Firms may keep cash in order to avoid shortage in cash when they believe that there is an opportunity for profitable investment alternatives. Hence, the firms with higher business prospects or expect to make capital investments hold cash based on the speculation motive.

2.2 Theories about determinants of cash holding

Servaes and Tufano (2006) argue that when the assumptions of the perfect economy are relaxed, there are two theories on optimal amount of cash to be held by a company. These are the pecking order theory and trade off theory.

2.2.1 The pecking order theory

This is basically based on the idea of asymmetric information between managers and shareholders. Myers and Majluf (1984) proved that, in the presence of information asymmetry, managers will establish a hierarchy in their use of funding sources. Normally, firms would prefer to fund themselves with resources generated internally before turning to the market. Thus, it can be said that managers would prefer to hold part of the firm's assets in form of cash as their fast and cheap source of financing company's activities. Under pecking order theory, cash level of a company is determined by its investment level, cash flow, trade credit and size of the firm (Saddour, 2006)

2.2.2 The trade-off theory

The trade-off theory claim that firms should trade off various costs and benefits of holding idle cash. In order to minimize transaction costs, Miller and Orr (2002) suggest that companies must determine the optimal level of cash holdings by

trading-off the marginal cost of holding cash with its marginal benefits. Under the trade off theory, determinants of cash holding are size of a company, cash flow, liquid assets substitutes, leverage and debts structure (Bigelli, et al. (2009) and Saddour, (2006)).

2.2.3. Econometric Settings

From the literature review; the study about the determinants of cash holdings in Tanzanian companies was planned to be done by running a regression analysis on panel data in order to estimate the effect of independent variables on the dependent variable. The cash holding was used as the dependent variable and the potential determinants as independent variables. The following econometric model was specified for estimating the effect of independent variables to the dependent variable:

$$CASH = \beta_{o} + \beta_1 SIZE + \beta_2 LEVERAGE + \beta_3 CFLOW + \beta_4 NWC + \beta_5 CAPEX + \mu$$

Where:

- β_{o} is a constant.

- *SIZE* stands for the size of the company and is used as a proxy for the ability of a company to access to sources of external finances such as capital markets.

- *LEVERAGE* denotes the leverage level of a company.

- *CFLOW* stand for cash flow of the company.

- *NWC* which stands for Net Working Capital and is used as a proxy for liquid asset substitutes.

- *CAPEX* denote capital expenditure and is be used to test the relationship between cash level and investments.

- μ is a random error.

The expected relationship between the dependent variable (Cash) against the potential determinants for cash holding (independent variables) based on Pecking Order Theory and Trade off Theory is as shown in Table 2.1 below:

Table 2.1: Summarised prediction of behaviour of variables

Variable	Pecking Order Theory	Trade Off Theory
Cash flow (*CFLOW*)	Positive	Negative
Leverage (*LEVERAGE*)	Positive	Positive
Size (*SIZE*)	Positive	Negative
Net Working Capital (*NWC*)		Negative
Capital Expenditure (*CAPEX*)	Negative	

Source: Author-from literature review

3. METHODOLOGY

3.1 Type of the study

This research study uses a survey research design. The research design was selected because According to Kothari (1990), surveys are concerned with describing, recording, analysing and interpreting conditions that either exist or existed. Since the study intended to analysing information contained in financial statements of companies, the design was thought to be very useful.

3.2 Study area

The study was conducted in Dar es Salaam region in Ilala district, Tanzania. The area was purposeful selected simply because the Business Registration and Licensing Agency (BRELA) headquarter offices is located and it is where all the data could be obtained.

3.3 Study population

The study population was all Tanzania companies that are listed at the BRELA office in Dar es Salaam. The decision to focus on Tanzanian companies rather than private business traders (sole traders), was based on the fact that it could be

easier to get some records (data) relating to these companies, especially their financial statements at one place. This is because it is mandatory for companies to deliver to the Registrar of Companies, a copy of the company's annual accounts, together with a copy of the Directors' Report for that accounting period and a copy of the Auditors' Report on those accounts as per Section 167(1) of the Companies' Act of 2002. Thus all data for this study were found in one place.

3.4 Variables and their measurements

From the data obtained from the financial statements, some computations were made so as to arrive at the values to be assigned to each variable in the model. The dependent variable in our study is the cash holdings *(CASH)*. This is defined as the ratio of total cash and equivalents to net assets, where net assets are computed as assets less total cash and equivalents. For the case of Tanzania companies, most of their "cash" as taken from the respective balance sheet was made up of actual cash in hand and cash at bank.

The first of the independent variables is *SIZE*. Literally this represents the size of a company. It is used as a proxy for a company's ability to access external sources of finances. It is computed as the natural logarithm of total assets. Another variable is *LEVERAGE*. Companies that are highly leveraged may be at a position of not obtaining loans. Here the leverage level is measured as the ratio of total debt (long and short-term debt) to the book value of total assets.

Next in the independent variables is the Cash flow to net assets ratio (*CFLOW*). This has been used to test the relationship between cash flow and cash holdings. Cash flow here has been defined as net operational income plus depreciation. *NWC* which stands for Net Working Capital is another independent variable in the model. This is calculated as the ratio of Net Working Capital to Net Assets. Net working capital here is defined as the difference between current assets (minus total cash and equivalent) and current liabilities.

The last variable in the model has been termed as the *CAPEX*. This has been used to test the relationship between cash level and investments in a form of capital expenditure. It has been computed as the ratio of capital expenditures to Net Assets. But capital expenditure is computed as Fixed Assets (t) less Fixed Assets (t−1) where 't' is current year balance of non-current assets and 't-1' is the previous year balance of non-current assets. Any increase in the balances of non current accounts for two consecutive years was taken to be caused by a new purchase of noncurrent assets (capital expenditure). Net Assets has been computed as Total Non-Current Assets minus Cash and Cash equivalent.

3.5 Sample size and sampling techniques

A sample size was 129 financial statements of 129 companies that were obtained at BRELA office in Dar es Salaam. It was expected 500 companies could be included in the sample and that each company could have a total of five years observation (financial statements) in order to make a total of 2500 financial statements. But since some companies had no all the financial statements for five years, then the total observed financial statements were reduced to 129.

The companies selected were randomly selected based on the availability of financial statements in the company's file at BRELA office. If a company contained a financial statement, then that company was included in the sample company and those financial statements were included in the dataset.

3.6 Types and sources of data

The survey covered a collection of secondary data of annual financial statements of various Tanzania companies covering a period from 2012-2013. All these financial statements were collected at BRELA offices in Dar es Salaam. From these financial statements, various elements in these financial statements such as sales, depreciation, net profit, current assets and others had to be used in the computation of various variables included in the model. Data collected were of secondary nature. To achieve this, copies of financial statements for the relevant companies were extracted from the files of the respective companies. The specific data that were to be extracted from these financial statements were: total assets, cash and cash equivalents, long and short term debts, operational income, depreciation, current assets, current liabilities and the values for noncurrent assets.

4. RESEARCH FINDINGS AND DISCUSSION

4.1 Determinants of cash holding: Regression analysis results

The objective of this study was to determine the determinants of cash holding in Tanzania companies. To achieve this, a regression an ordinary least square method was run using a computer data analysis package called *stata.9*. The equation of

the model contained five independent variables namely: *SIZE, LEVERAGE, CFLOW, NWC and CAPEX*. These were tested by applying a regression analysis. The regression analysis started with the full equation of the model which contained all the five independent variables. The variables in the model whose coefficients were found to be not significant were deleted. This was done in three rounds. The intention here was to test the stability of the outcome so that only variables with significant coefficients are selected.

Table 4.1 presents the results of the estimations of the model. The summary of the regression results (predicted and actual) are presented in table 4.2.

Table 4.1: Ordinary Least Square (OLS) estimations on the determinants Of cash holding (Dependent variable is CASH)

Variables	Model [1]	Model [2]	Model [3]
SIZE	-0.0411	-0.0417	-0.0413
	(0.001)***	(0.001)***	(0.001)***
LEVERAGE	-0.0744	-0.0836	
	(0.398)	(0.333	
CFLOW	0.3845	0.3909	0.3934
	(0.001)***	(0.001)***	(0.001)***
NWC	-0.0124		
	(0.584)		
CAPEX	-0.2374	-0.2263	-0.2600
	(0.102)*	(0.115)	(0.062)*
R-Squared	0.3139	0.3122	0.3070
Prob > F	(0.001)***	(0.001)***	(0.001)***
Number of Obs	129	129	129

OLS Regression is used. P-values are in parentheses below

The coefficients * and *** indicate significances at 10% and 1% respectively

Results from table 4.1 show that the value of the coefficient of determination (R-squared) is approximately equal to a 31%. The coefficient of determination measures the goodness of the fit of the model. The observed value implies that 31% of the variation of the dependent variable is explained by the variation of the independent variable.

Relating specifically to this study, it can be said that 31% of the variation in cash levels in Tanzania companies is explained by the variables included in the estimation model. This is somehow not an impressive figure because large portion of variation of the dependent variable has been explained by variables which are not included in the model (the error term).

Table 4.2 gives a summary of the regression results and the predicted results under the pecking order theory and the trade off theory.

Table 4.2: Summary of model prediction and results

Variable	Pecking Order Theory		Trade Off Theory	
	Prediction	Results	Prediction	Results
SIZE	Positive	Negative***	Negative	Negative***
LEVERAGE	Positive	Negative	Positive	Negative
CFLOW	Positive	Positive***	Negative	Positive***
NWC			Negative	Negative
CAPEX	Negative	Negative*	Positive	Negative*

Note: *** and * indicates levels of significances at 1% and 10% respectively.

4.2 Determinants of cash holding in Tanzanian companies

Results in the table 4.1 show that there are three significant variables that determine the level of cash to be held by a company. Specifically, *SIZE, CFLOW* and *CAPEX* have a significant effect on the level of cash of a company. One of these variables (i.e. *SIZE*) is related to the Trade off theory while two variables (i.e. *CFLOW* and *CAPEX*) are related to the Pecking order theory.

With respect to the trade-off theory, we find that smaller companies hold more cash than large companies do. This is confirmed by the negative and significance of the variable *SIZE*. This suggests that smaller companies are very constrained in obtaining finances from external sources in a form of loans. The reason is that smaller companies do not have many noncurrent assets that they can use as collateral to loan providers. That is why in order to overcome this problem of difficulty in obtaining loans; smaller companies do decide to keep more idle cash than big companies.

Under the trade off theory, big companies do not have to keep idle cash because they have more non current assets -which they can put as collateral for obtaining loans when they are in need of cash. Furthermore, large companies can easily ask for loans because they can manage to pay the costs associated with external finances due to presence of cash management economies of scale, which is usually enjoyed by large companies. Thus, the result confirms the predicted sign of the variable *SIZE* as explained under the trade off theory.

This result is also supported by a research made in France over the period 1998- 2002, by Saddour (2005) in which it was found that, there was a negative relation between cash and some growth firm's characteristics, among those characteristics was size of the firm.

Most of Tanzania companies are also growing companies due to the fact that private ownership of companies in Tanzania has just gained popularity in early nineties when the government adopted the privatisation program.

When we turn to the pecking order theory, it is found that, there are two variables that are significantly determining the level of cash holding of a company. The first variable is *CFLOW,* which measures the cash flow of a company. The regression results indicate that the sign of the coefficient of this variable is positive and is very much significant. The positive sign prove the predicted results and it indicate that, the level of cash for Tanzania companies depend very much on their cash flow. When the cash flow increases, the cash level also rises. In addition, this result support the main idea under the pecking order theory, that managers do arrange their sources of finance in a form of preference but first priority is put on internal sources-by utilising the cash balance available- and when this cash is exhausted, it is when they look for external sources of funds such as loans. This kind of behaviour very much seems to fit the practice of many Tanzania companies.

Due to some complicated procedures of obtaining loans from financial institutions, together with the high cost associated with those loans, many Tanzanian companies would prefer to use their internally accumulated cash flows to finance their operations rather than going for expensive loans.

The last variable that has been found to be in favour of the pecking order theory is *CAPEX,* which measures the level of capital expenditure of a company. As stated earlier, under the pecking order theory of capital structure; cash is accumulated in order to finance new investments in the first place, and when there is extra cash then can be applied otherwise. The regression results do not only confirm this argument but also support the predicted results of the sign of the coefficient of this variable. The predicted sign for variable *CAPEX* was negative. The negative sign implies that Tanzania companies do spend much of their cash flow in investing activities or in capital expenditure. This also supports the pecking order theory.

To sum up the discussion, the results show that in Tanzania, smaller companies hold higher levels of cash than large companies, which supports the trade off theory.

It has also been found that managers in Tanzania companies do reach their decision on how much cash to hold, by basing on pecking order theory. Based on this theory, the regression result has indicated that companies with high cash flow do experience to have a high level of cash while companies with high level of capital expenditure do experience to have low cash level since capital expenditure consumes a good sum of cash.

5.   CONCLUSION AND RECOMMENDATIONS

Findings show that there are three significant variables that determine the level of cash to be held by a company. Specifically, size of the company, cash flow and level of capital expenditure has a significant effect on the level of cash of a company in Tanzania. The variable size of a company is related to the trade-off theory while variables cash flow and level of capital expenditure are in favour of pecking order theory.

In other words it can be said that, cash flow is the main source of finance of Tanzania companies. Thus a company with high level of cash flow has demonstrated to have a high level of cash holding. This is in favour of the pecking order

theory. In addition, it was found the companies with high level of capital expenditure do hold a lower level of cash holdings because they spend most of their cash flows in financing their capital expenditure. This finding is in support of pecking order theory.

Since smaller companies have been found to hold more cash (as a cheap source of finance) than big companies, it is recommended that the government of Tanzania, through her Central Bank, should establish some regulations or loan policies, which favours small companies so that they can easily get loans from commercial banks. These extra sources of funds from banks, obtained at a less strings attached, will enable these small Tanzania companies to prosper and grow, hence have a positive impact to the economy of Tanzania.

Area for further research

It is recommended that further research should be done to find out other factors, (apart from those found in this research); that influence the level cash held by Tanzania companies since it has been found that, 31% of the variation in cash levels in Tanzania companies is explained by the variables included in the estimation model. This is somehow not an impressive figure because large portion of variation of the dependent variable has been explained by variables which are not included in the model (the error term). A big number of companies should also be involved comparing to only 129 companies that have been in the current study. Also measures of size of the company such as number of employees can also be used.

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