

**A SURVEY OF CORPORATE CASH MANAGEMENT PRACTICES
OF FIRMS LISTED AT THE NAIROBI STOCK EXCHANGE**

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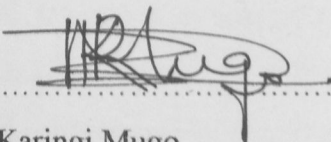
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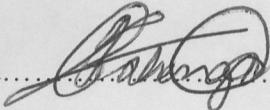
DECLARATION

This research project is my original work and has not been presented for degree or any other examination in any university.

Signed.....  Date 28/11/06

Mr. Roy Karingi Mugo

This research project has been submitted for examination with my approval as a university supervisor.

Signed.....  Date 28-11-06

Mr. Lishenga J. L.

DEDICATION

I dedicate this project to my dad, mom and brother. I shall always be grateful to my parents without whom I would never have made it to finish my undergraduate degree or master's degree program.

ACKNOWLEDGEMENTS

ABSTRACT

The objective of the study was to survey the cash management practices of firms quoted at the NSE and to assess the preferences of these companies on several cash management policies and investment criteria for marketable securities that one considers when investing idle cash in short-term securities. Data was gathered through questionnaires. The results showed that most of these corporations have departments dedicated to cash management and most of them have their cash management function centralized. These companies hardly consider keeping liquid cash for speculative motives but most of them maintain target bank cash balances. The short-term market is poorly developed in Kenya and these securities are not extensively purchased; it appears that there is a lack of aggressiveness in investing excess temporal cash. These companies consider default risk followed by yield as the most important characteristics to consider when investing idle cash in marketable securities. The results show that these corporations consider "speeding of receivables" to be a more important cash management policy than slowing of payables." Some of the methods used to speed up the receivables are: lock-box, concentration banking, net settlement system, depository transfer cheques and preauthorized debits. Some of the methods use to slow the payment of payables are: centralized payables, payable drafts, zero balance accounts, mailing cheques from distant post office, holding cheques for several days after its postmarked and writing cheques on distant banks. These corporations use banks to manage their payroll, invest in short-term securities and to transfer funds.

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CHAPTER ONE: INTRODUCTION

1.1 Background

According to Keown et al. (1996), cash management is part of treasury management. Treasury management concerns the handling of all financial markets, the generation of external and internal funds for the business, the management of currencies and cash flows and the complex strategies, policies and procedures of corporate finance. Treasury management involves: investing idle funds/pension management, cash management, debt management, and risk management.

In most organizations, the financial officer responsible for cash management also controls the transactions that affect the firm's investment in marketable securities. Cash is the currency and coins the firm has on hand in petty cash drawers, in cash registers, or in chequeing accounts at the various commercial banks where its demand deposits are maintained. Friedman (1959) stated that money is simply a way of holding funds that is affected by several demand factors (motives). Marketable securities are those security investments the firm can quickly convert into cash balance, also referred to as near cash. Taken together, cash and near cash are known as liquid assets.

Firms have temporary cash surpluses for these reasons: to help finance seasonal or cyclical activities of the firm, to help finance planned expenditure and to provide for unanticipated contingencies (Ross et al., 1988). Cash is a "non earning" asset in the sense that although it is needed to pay for labor and raw materials, to pay taxes, servicing debts, paying dividend etc, cash itself (as well as most commercial chequeing accounts) earns no interest. Thus the goal of cash management is to reduce cash holdings to the minimum necessary to conduct business (Weston and Brigham, 1990). As excess cash becomes temporary available, marketable securities are purchased. When cash is in short supply, a portion of the marketable securities portfolio is liquidated (Keown et al., 1996).

Cash management considers the short-term management of corporate cash balances (Mullins and Homonoff, 1976). Cash management refers to the management of cash from the time it starts its transit to the firm until it leaves the firm in payment (Scherr, 1989). The objectives of cash management involves the following issues: control the flow of money in and out, provide income from short-term investments, decreasing cost through

purchase timing, avoiding interest fees, taking discounts, seeking to maximize positive time value of money and reduce the negative time value of borrowing (Chastain, 1987).

A company wide cash management program must be concerned with minimizing the firm's risk of insolvency. The risk-return trade off can be reduced to two objectives for the firm's cash management system. (1) Enough cash must be on hand to meet the disbursement needs that arise in the course of doing business. (2) Investment in idle cash balances must be reduced to a minimum (Keown et al., 1996). Determining the appropriate target cash balance involves an assessment of the trade off between the benefit and cost of liquidity. The benefit of holding cash is the convenience in liquidity it gives the firm. The cost of holding cash is the interest income that the firm could have received from investing in treasury bills and other marketable securities. Firms must invest temporary idle cash in short-term marketable securities. These securities can be bought and sold in the money market. Money market securities have very little default risk and are highly marketable (Ross et al., 1988).

If a firm has achieved its target cash balance, the value it gets from the liquidity provided by its cash will be exactly equal to the value forgone on an equivalent holding of treasury bills. In other words, a firm should increase its holdings of cash until the present value from doing so is zero. After the optimal amount of liquidity is determined, the firm must establish procedures so that collection and disbursement of cash are done as efficiently as possible. This usually reduces to the dictum, "collect early and pay late" (Ross et al., 1988).

Firms with aggressive working capital policy will plan to minimize funds held and borrow whenever cash is needed. Firms with a defensive policy will set aside cash in an investment portfolio, which can be drawn upon when the need arises (Foulks, 2003). According to Collins and Frankle (1987), when the cash management function is perceived to be more aggressive there are greater improvements in the firm's liquidity and earnings. Earnings improvements would partially be due to the investment of a big percentage of excess cash that resulted from improved liquidity. As would be expected, the aggressive cash managers are willing to take on more default risk in search for greater yields.

Cash management involves determining the appropriate target cash balance, collecting and disbursing cash efficiently, and investing excess cash in marketable securities (Ross et al., 1990). According to Chastain (1987) specific functions of cash management includes the speeding up of receipts, controlling delaying of disbursements, obtaining accurate internal and external information for control and maximizing the yield on short-term investments within an acceptable level of risk and inexpensive transferring and mobilizing funds from distant banks to a central location for their effective use. According to Collins and Frankle (1985), cash management whether domestic or international operations consists of five key functions: cash budgeting and planning, cash gathering, cash mobilization, cash disbursement and actions to cover shortages or to invest surplus funds. The primary activities (Foulks, 2003) of cash management are: forecasting, monitoring, regulating the flow of money, preparing and use of cash budgets, management of short-term cash investments, management of overdrafts and bank loans, bank network administration, the use of cash management models and evaluating whether to use a centralized treasury department. Centralized treasury management often results in a highly skilled team, cheaper borrowing, lower bank charges and more effective hedging of currency risk but some motivational and local knowledge benefits may be lost.

This study was concerned with firms that are publicly quoted. This population was chosen in view of several reasons. Information about these companies is readily available both at registrar of companies and at NSE. Publicly quoted companies are also considered more open: that is, they release information more readily than non-quoted companies. Also the reliability and validity of information received from publicly quoted companies is better than non-quoted companies. These publicly quoted companies cover almost all sectors of the economy. The companies on the finance and investment sector were excluded since their cash balances are dictated by law, most significantly the banking act. Their level of cash holding is determined by the banking act as well as other rules regulating banks and financial institutions. Beside, the researcher is concerned with companies that use the cash management techniques mainly offered by banks e.g. concentration banking, use of drafts to manage disbursements, lockboxes for speeding receivables. The population of study was 36 after excluding the finance and investment section, City Trust and Hutching Biermer Ltd that was suspended.

1.2 Statement of the Problem

According to Keown et al., (1996), the management of the company's cash position is one of those problem areas where you are "criticized if you don't and criticized if you do". The production process will eventually be halted should too little cash be available to pay bills. But if excessive cash balances are carried, the value of the enterprise in the financial market place will be suppressed because of the large cost of income forgone. A large cash investment minimizes the chance of insolvency, but penalizes company's profitability. A small cash investment frees excess balances for investment in both marketable securities and longer-lived assets and hence increases the company's profitability and the value of the firm's common stock but increases the chance of running out of cash. In addition to the above problem, if the cash manager does not speed up receipts and control delaying of disbursement, then sizable amounts of working capital will be unavailable and this will lead to unnecessary interest cost from borrowing and eventually reduction in profits.

Studies done by Ouma (2001) and Lumbasyo (1976) concentrated on cash management models, while Muleri (2001) concentrated on budgeting and Mureithi (2003) concentrated on the determinants of cash holding. This study will take a different broad based approach by researching on most of the cash management functions which are: techniques of speeding up receivables and controlling delaying of disbursements, short-term investments, budgeting, cash planning and cash balances. Mugeru (1998) carried out a study on cash management practices in small scale enterprises. He found out that small scale firms had inherent characteristics that accounted for poor management of cash. The small scale enterprises had weak internal controls leading to poor cash management. The study on small scale enterprises cannot be taken to be representative of all firms in Kenya and to get a good picture on what is happening in Kenya, it is necessary to do a study that considers the bigger firms as well.

Therefore, it is paramount to carry out the study so as to find ways which managers are using to strike an acceptable balance between holding too much cash and too little cash and also the ways in which they use to control the delaying of disbursements and speeding up receipts for the effective and efficient use of the company's cash resources.

1.3 Objective of the Study

- 1) To survey the cash management practices of firms quoted at the NSE.
- 2) To assess the preferences of these companies on several investment criteria and cash management policies.

1.4 Importance of the Study

Academicians

This study is also hoped to stimulate further research in the area of cash management. This study will enable documentation of the extent in which cash management practices as suggested in textbooks and taught in finance courses, are in use in Kenya. It will highlight how close practice is to theory. Besides it will be of much interest to compare and contrast results of this study with similar research done by Gitman et al. (1979) and Collins and Frankle (1987) on several variables, specifically on the weighted average response to the questions on importance placed on investment attributes and ranking of the various cash management policies.

Corporations

According to Gitman et al. (1979), practitioners often criticize academicians for devoting too much research time to the development of theory and too little time to the development of mechanisms to link theory and practice. It is worthwhile to assess the techniques and preferences of practitioners in order to determine what, if any benefits they are deriving from the research efforts of academicians.

Although academicians have developed a great deal of theory on cash management, there may still be a gap (though perhaps narrowing) between theory and practice. The apparent failure of some firms to more correctly adopt cash management theories may be attributed either to a lack of quantitative sophistication required to understand and apply these theories. Another possible explanation may be that these differences in disposition towards cash management results from the fact that while academicians tend to develop precise theoretically correct models, practitioners need generalized easy-to-use managerial models whose application can be justified on the basis of cost (Gitman et al., 1979). The results of the study will provide some evidence as to how much benefit the practitioners are deriving from academic research.

The findings of the study will also help corporations come up with appropriate practices by analyzing what other corporation's cash management practices are. As showed by Zang (1990) in her analysis of General Nutrition Corporation (GNC), employing appropriate cash management practices can have much rewarding results. Been a retailing corporation, GNC faced a great challenge of collecting cash as effectively and inexpensively as possible due to having numerous cash deposit points and relatively small deposits at each location. GNC significantly improved its cash flow through the installation of customized electronic system that blended two cash management products ACH collections and electronic data processing. In its first four months of operation, the system had saved over \$300,000 in costs and shaved several days from the time required to collect cash receipts.

CHAPTER TWO: LITERATURE REVIEW

2.1 The evolution of cash management

Only during the great depression of the late 1920's and early 1930's were managers first concerned with liquidity. The severe decline in revenue experienced during the 1929 - 1933 period and the consequent failures of highly levered firms showed very clearly the importance of liquidity management (Gitman et al. 1979).

From Keynes through 1950

Keynes (1936) described the key motives for holding cash balances as transactions, precautionary and speculative. Transaction balances are maintained to meet the payment of known obligation such as meeting day-to-day operational requirements. There are two primary reasons for holding cash for transaction motives. Cash inflows (collections) and out flows (disbursements) are not perfectly synchronized, and some level of cash holdings is necessary to serve as a buffer. The second reason is to hold cash as a compensating balance with banks. Keynes (1936) identified the precautionary motive as the need for a safe stock of cash to act as a financial reserve or a cushion for unexpected business requirements. Keynes (1936) identified the speculative motive as the need to hold cash to exploit unanticipated business or investments opportunities. The speculative motive was identified as the need to be able to take advantage of bargaining purchases that might arise as a result of interest rates and of exchange rate fluctuations or expectation of purchasing desired financial instruments more cheaply (i.e. to yield a higher return) at some future date. Keynes did not deal with appropriate levels of these balances; he established the foundation for the development of cash balances theory. According to Gitman et al. (1979) study, the survey respondents were asked to indicate the percentage of their cash and marketable securities balances they held for transactions, precautionary, and speculative motives and 60% of the respondents held for transactions reasons while 27% for precautionary reasons and only 2% for speculative reasons. The remaining 10% was believed to be held for a combination of all the three motives. According to Ouma (2001), firms do not keep cash for speculative purposes. Firms keep cash mainly for transaction purposes with the next most important reason been holding cash for precautionary reasons.

During the late 1930's and early 1940's, firms expanded rapidly in order to fulfill diversified wartime needs. Predictability of cash flows and general liquidity of the firm improved during this period because the government was a major customer. During the period of economic expansion and readjustment following the war, the threat of another recession stimulated firms to devote greater attention to the preservation of cash flows. Forecasting and budgeting of cash was necessary to provide the liquidity necessary to maintain the firm's solvency. For the first time, managers paid as much attention to cash flows as to profits. Growing concerns over cash flows during this period may have provided the key base upon which the study of financial management was to become differentiated from the study of accounting. It was the attention first directed towards cash flows that provided the stimulation for the development of the body of knowledge currently referred to as "cash management". (Gitman et al. 1979)

From 1950 to present

According to Gitman et al. (1979), key developments in cash management began in the 1950's. The basic question was: "how do we provide adequate cash to meet bills and debt obligations at the minimum cost?" Greatly compounding this problem was the uncertainty attached to the receipt as well as the disbursement of cash. The tenets of cash management towards which most theory was developed therefore centered on "cash conservation" (Gitman et al., 1979).

Numerous theoretical (Gitman et al., 1979) contributions to cash management occurred simultaneously in a variety of areas during the period from 1950 to the present. These developments occurred in four areas: 1) cash balances; 2) cash collection; 3) cash disbursement; 4) cash planning and budgeting. Some of the major contributions in the area of cash balances were made by Baumol (1952), Tobin (1956), Beranek (1963), Archer (1966), Miller and Orr (1966, 1968), Weitzman (1968), Calman ((1968), Pogue, Faucett, and Bussard (1970), Orgler (1970), Neaver (1970), Sastry (1976), Eppen and Fama (1971), Hausman and Sanchez-Bell Levy (1975), and Mehta (1974). In the area of cash collections, Levy (1966), Stancil (1968), and Kraus, Janssen and McAdam (1970) made significant contributions. Notable contributions in the area of cash disbursements were provided by Shanker and Zolters (1972), and Gitman, Forrester and Forrester (1976). A large number of significant and interesting developments in the area of cash planning and budgeting can be found in the literature: key among them are those of Stone

and Wood (1977), Lerner (1968), Budin and Eapen (1970), Chervany (1970), Stone (1973), Moore and Scott (1973) and Gitman and Cook (1973). A review of this literature clearly points out the significant historical strides in cash management theory provided by academicians in the post – 1950 period.

2.2 Cash balances, planning and budgeting

2.2.1 Target Cash Balance

Similarly to previous findings in Opler et al. (1999) and Ozkan and Ozkan (2002) about the determinants of cash holdings, Ferreira and Vilela (2004) results indicate that the amount of cash held by firms is positively affected by the investment opportunity set and negatively affected by the amount of liquid asset substitutes and leverage. These findings are consistent with the trade-off model that postulates that firms identify their optimal level of cash holdings by weighting the marginal costs and marginal benefits of holding cash.

Large cash balances remove an important monitoring component from the investing process, often resulting in the destruction of shareholders value. The market appears to anticipate this, but for a variety of reasons not yet fully understood, external mechanisms do not act to correct the failures and internal mechanisms in cash rich firms (Harford, 1999).

To manage bank balance effectively the treasury manger must establish and maintain an effective target balance system for the overall banking network. This requires setting (and resetting) bank target balances and monitoring daily performance against the target. Maintaining target balances at major banks often requires a daily decision as to whether funds should be moved in or out of key accounts at each major bank for e.g. covering clearings of payroll and accounts payable disbursement funds or for concentrating deposits at a major bank for short-term investments (Kallberg and Parkinson, 1993).

It is generally a good idea for firms first to figure out how much cash held satisfies the transaction needs. Next, the firm must consider compensating balance cash requirements. Compensating balance is kept mainly for payment for banking services. Large corporations have thousands of accounts with several dozen banks. Sometimes it makes

more sense to leave cash alone than to manage each account daily and make daily transfers among them (Ross et al., 1988).

Another factor that influences the target cash balances is borrowing. A firm can obtain cash by borrowing. Borrowing introduces additional considerations to cash management. Borrowing is likely to be more expensive than selling marketable securities because the interest rate is likely to be higher. Also the need to borrow will depend on managements desire to hold low cash balances. A firm is more likely to have to borrow to cover an unexpected cash outflow the greater its cash inflow variability and lower its investment in marketable securities (Ross et al., 1988).

According to Ouma (2001), opportunity cost and cash cycle size are the principal factors that influence the setting of the minimum cash balance levels in the organization. These two factors explain 80% of the variability in the setting of the minimum cash balances in the organization. Sales trend is the major factor influencing the setting of the maximum cash balances in the organization. Other factors that influence the setting of the maximum cash balance in an organization are unexpected investment opportunities and variability in the setting of the maximum cash balances. Many of the quoted companies under Ouma's (2001) study have set specific cash balance levels they consider as optimal for their firms. The most significant factor they consider for setting the optimal cash balance levels is the possibility of cash-out. The numbers of these firms that keep buffer money is quite low, possibly because of availability of overdraft facilities.

Lumbasyo (1976) found out that the basic objective of holding cash in Kenyan firms was to avoid cash out. These companies did not consider costs related to cash balance. The firms did not have formal policies for making cash balance decisions and cash was viewed as a residual which results from other plans. The major variable that influences the level of cash balance is the level of working capital.

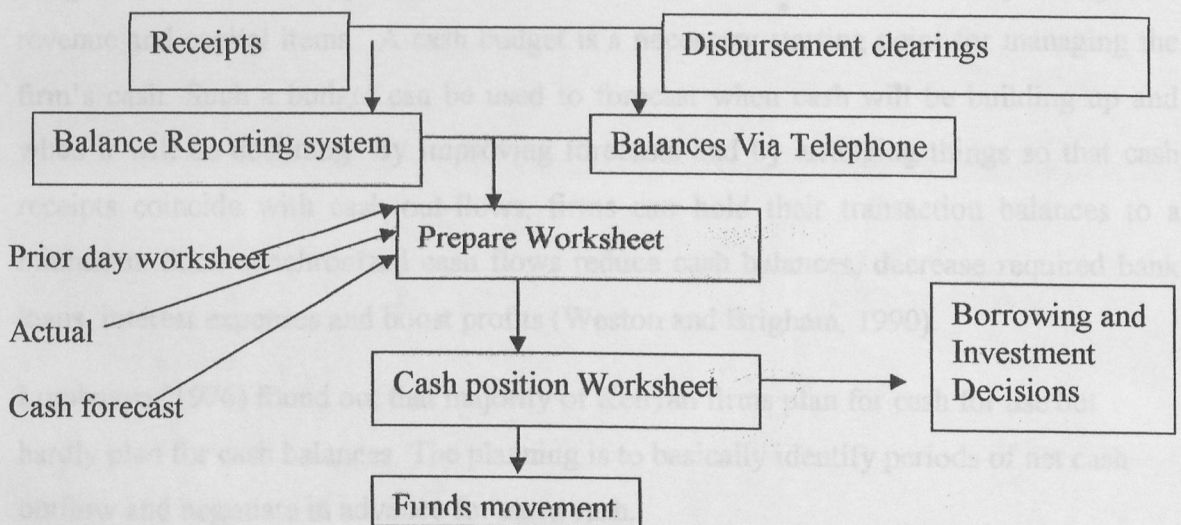
According to Mureithi (2003), firms adjust their cash holdings towards their target holding. His results suggest that higher cash holdings are associated with lower levels of debt in firms' capital structure. He found out that the factors of liquidity, cash flow variability, firm's size, profitability, cash flows and growth play a significant role in the determination of the firm's cash holding levels.

2.2.2 Managing the Cash Position

Cash scheduling is the determinant of the company's short-term cash position. It typically involves estimating cash collection and disbursements in order to develop and estimate the daily net cash position over the forecast horizon. Cash position management determines whether internal sources are available to fund the company's cash requirements. In most companies, the cash position must be determined daily by accumulating the inflows and outflows throughout the company's banking and cash management systems. This typically takes the form of a working sheet (Kallberg and Parkinson, 1993).

The treasury manager must review actual results with the worksheet to determine that what was supposed to occur did occur. Then the information from the company's banking network is entered on the new worksheet as the current days estimate. Transactions can be initiated to fill deficits or invest excesses (see exhibit 1). This activity is vital, extremely time sensitive and cash position management procedures must be organized in a logical and efficient manner to function smoothly in this dynamic, hectic environment (Kallberg and Parkinson, 1993).

Exhibit 1: Cash position management: (Kallberg and Parkinson, 1993).



Another reason for managing the cash position is to minimize borrowing and or to maximize investments. The use of internal funds to avoid having to borrow externally is important to the company's profitability. Mobilizing excess funds and investing them for as long as possible are positive financial actions for the company. Timing is everything.

For the treasury manager, this means that obtaining the information as early in the business day as possible (or better yet, as much before business begins) eases the timing crunch (Kallberg and Parkinson, 1993).

Cash is an important tool for firm's operating in imperfect capital markets. Cash reserves can provide a valuable source of funds for investment opportunities when current internally generated funds are insufficient. However, firms often build up much more cash than they need to meet expected financing requirements. The free cash flow hypothesis predicts that agency conflicts between managers and stockholders combined with a cash stockpile that insulates managers from monitoring by external markets produces value-decreasing investment decision (Harford, 1999).

2.2.3 Cash Budget

Cash flow forecasting is the initial step in an effective cash management program. This cash estimates are subject to variations. Two ideals or conditions that would allow the firm to operate for extended periods with cash balances near or at levels of zero are as follows: (1) a completely accurate forecast of net cash flow over the planning horizon and (2) perfect synchronization of cash receipts and disbursements (Keown et al., 1996).

The cash budget is a device used to forecast the cash flow over the planning period. Cash budget is a detailed budget of estimated cash inflows and outflows incorporating both revenue and capital items. A cash budget is a necessary starting point for managing the firm's cash. Such a budget can be used to forecast when cash will be building up and when it will be declining. By improving forecasts and by arranging things so that cash receipts coincide with cash out-flows, firms can hold their transaction balances to a minimum. Such synchronized cash flows reduce cash balances, decrease required bank loans, interest expenses and boost profits (Weston and Brigham, 1990).

Lumbasyo (1976) found out that majority of Kenyan firms plan for cash for use but hardly plan for cash balances. The planning is to basically identify periods of net cash outflow and negotiate in advance for extra cash.

According to Ouma (2001), most of the firms in her study carry out cash planning on annual, monthly and weekly planning periods. According to Muleri (2001) all the companies studied rated budgeting and budget management as very important on a five

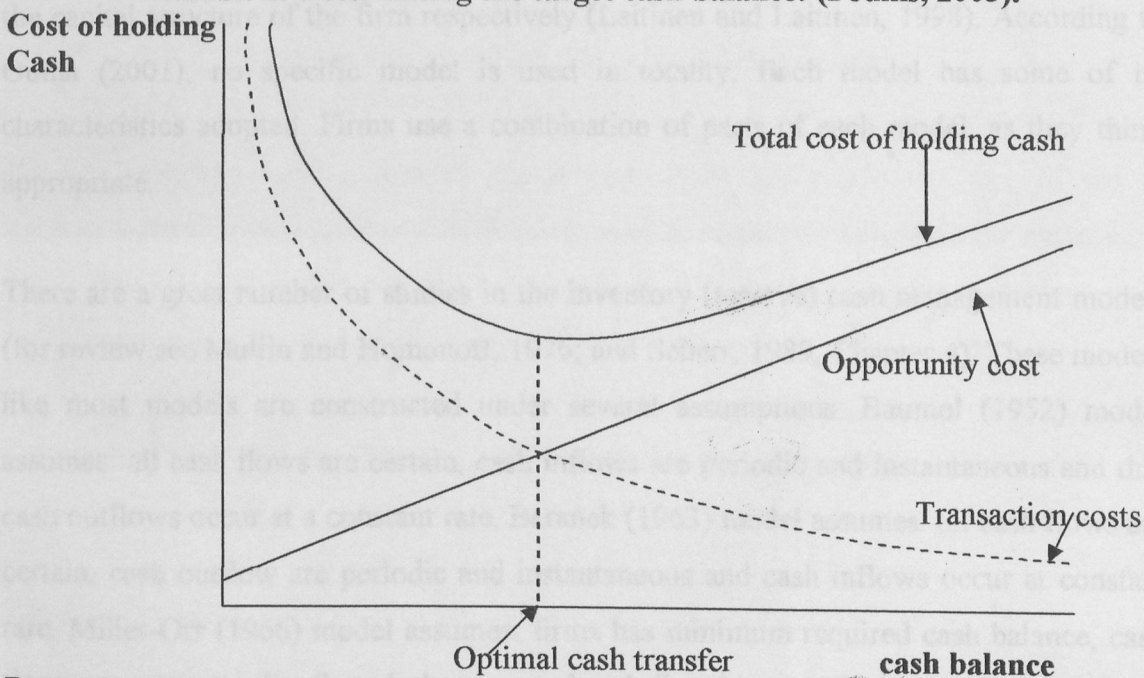
point likert scale. 90% these organizations surveyed mainly prepared annual budgets and 70% of them started their budgeting preparations exercise at least 6 months before the time budgets are expected to be operative. They all prepare annual plans and budgets to source funding and plan for operations of the subsequent years. All organizations prepared master budgets.

2.2.4 Cash Management Models

All models assume that a business will have a certain amount of ready cash available, in a bank current account, for day-to-day transactions. In addition, any amount of buffer funds will be invested in deposit accounts, marketable securities etc that can be used to top up the current account or absorb short-term surpluses from it as appropriate (Foulks, 2003).

Cash management models attempt to minimize the total cost (opportunity cost of lost interest plus transaction/trading costs) associated with cash movement between a current account and short-term investments by determining when and how much cash should be transferred each time. If the balance held in the current account is kept as low as possible, by frequent movement of cash in and out in order to minimize the holding costs, this may lead to excessive transaction costs. The models attempt to find optimal cash management strategy that will minimize the total of these costs.

Exhibit 2: Determining the target cash balance: (Foulks, 2003).



Baumol (1952) was the first to provide a formal model of cash management incorporating opportunity costs and trading costs (Foulks, 2003). According to Ouma (2001), majority of the firms under her study did not have a specific amount they regard

as optimal for transfer to or from marketable securities. Lumbasyo (1976) found out that before a model could be introduced in Kenyan firms certain conditions needed to be fulfilled for it to work such as efficient management policies at corporate level.

According to Laitinen and Laitinen (1998), there is a wide diversity of alternative cash management approaches (for a review see Srinivasa and Kim, 1986). Traditionally the cash management behavior of a firm is described by the different models of demand for money having their basis on cash reserve (inventory) models (for example Baumol (1952); Beranek (1963); Miller and Orr (1966); Eppen and Fama (1971); Dallenbach (1971); Stone (1972); and Constantinides (1976)

There are three main approaches to the demand for money. In the inventory cash management models (see Baumol, 1952; and Tobin, 1956) the demand for money is assumed to depend on the volume of transactions in production, in production cash management models, demand for money is dependent on production (see Friedman, 1959; Nadiri and Coates, 1976), and the wealth cash management models, demand for money is dependent on the wealth (see Meltzer, 1963a and 1963b and de Alessi, 1966). The objective in these models is subject to cash balance requirements, to minimize the cost of cash management, to maximize the present value of net cash flow, and to optimize the capital structure of the firm respectively (Laitinen and Laitinen, 1998). According to Ouma (2001), no specific model is used in totality. Each model has some of its characteristics adopted. Firms use a combination of parts of each model, as they think appropriate.

There are a great number of studies in the inventory (reserve) cash management models (for review see Mullin and Homonoff, 1976; and Scherr, 1989, Chapter 4). These models like most models are constructed under several assumptions. Baumol (1952) model assumes: all cash flows are certain, cash inflows are periodic and instantaneous and that cash outflows occur at a constant rate. Beranek (1963) model assumes: all cash flows are certain, cash outflow are periodic and instantaneous and cash inflows occur at constant rate. Miller-Orr (1966) model assumes: firms has minimum required cash balance, cash flows are normally distributed, the expected cash flow is zero, there is no autocorrelation in cash flows and that the standard derivation of cash flows does not change over time. Stone (1972) model assumes: firms have minimum required cash balance, and firms have

some knowledge of future cash flows, although this knowledge contains an error component (Source Scherr, 1989).

The present study will concentrate on the inventory cash management approach, which is simple and most popular approach and more specifically the study will focus on Baumol (1966) and Miller-Orr models, which are most famous. Kytonen (1986) has shown that inventory cash management models empirically explain the demand for money in Finnish industrial firms better than production or wealth cash management models.

Baumol (1952) first noted that cash balances are in many ways similar to inventories and that EOQ inventory model can be used to establish target cash balance. The model assumes the firm uses cash at a steady, predictable rate and cash inflows from operations occur at a steady predictable rate (Foulks, 2003).

If a company's cash resources are steadily used up by a constant daily demand for cash, Baumol suggested a constant daily demand for cash, and suggested that the EOQ stock model could be applied to the situation so that the optimum regular cash injected into the current account can be calculated as follows below. (Foulks, 2003)

$$\chi = \sqrt{\frac{2 * \text{annual cash disbursements} * \text{cost per sale of securities}}{\text{Interest rate of investment}}}$$

Baumol's model suggests that when interest rates are high, the cash balance held without earning interest should be low. The problem with the model is its unrealistic assumption that a firm faces a constant demand for cash. In practice cash will be net receipt one week and a net payment another week (Foulks, 2003).

Opportunity cost of cash balance must be equal to the average cash balance multiplied by the interest rate i.e.

$$\text{Opportunity cost (\$)} = (\text{initial cash balance} \div 2) * \text{interest rate}$$

$$\text{Trading costs} = \frac{\text{Total amount of disbursement during relevant period} * F}{\text{Initial cash balance}}$$

Where F is cost per sale of transaction or cost of selling and buying marketable securities and is assumed to be fixed (Ross et al., 1988).

Total cost = opportunity cost + trading cost

$$\left(\frac{C}{2}\right)K + \left(\frac{T}{C}\right)F$$

To precisely minimize total costs one must equate the marginal reduction in trading costs as balances rise with the marginal increase in opportunity cost associated with cash balances increases. The target cash balance should be the point where the two offset each other (Ross et al., 1988).

Marginal total cost = marginal opportunity cost + marginal trading cost

$$\left(\frac{dTC}{dC}\right) = \frac{K}{2} - \frac{TF}{C^2} = 0$$

The solution for the general cash balance (C) is solved by resolving the above equation

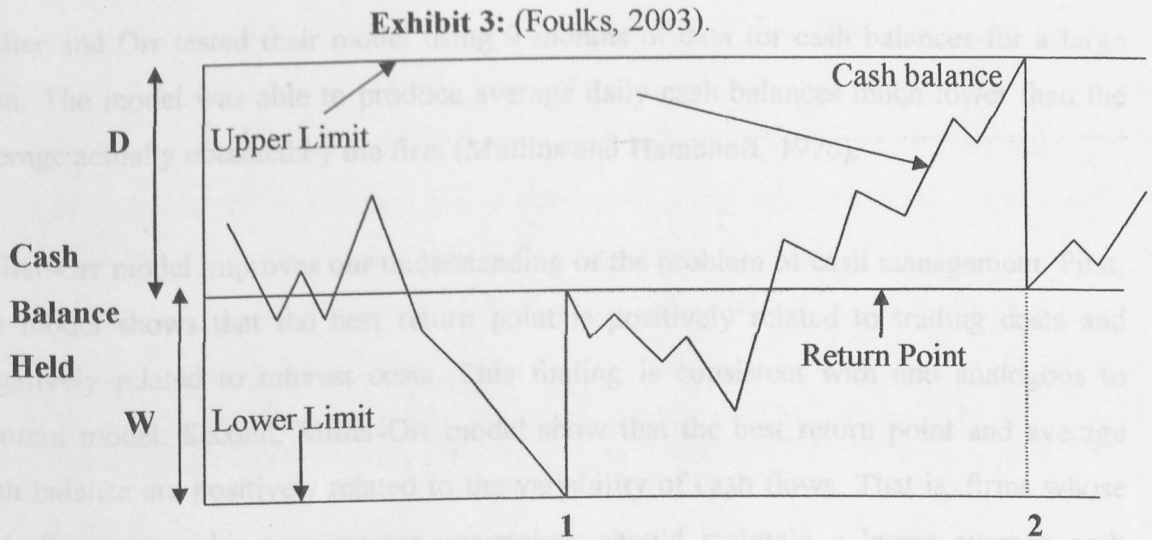
$$\text{Therefore } c = \sqrt{(2 * FT) \div K}$$

Baumol Model has several limitations. The model assumes the firm has a constant disbursement rate. In practice, disbursements can only be partially managed, because due dates differ and costs cannot be predicted with certainty. The model assumes there are no cash receipts during the projected period that is highly unlikely to be the case. No “safety stock” is allowed for. Firms probably will want to hold a safety stock of cash designed to reduce the probability of cash shortage or “cash out”. However, to the extent that firms can sell marketable securities or borrow in a few hours, the need for safety stock is minimal (Ross et al., 1988).

Miller and Orr (1966) developed a cash balance model to deal with cash inflow and outflows that fluctuate randomly from day-to-day. The model assumes that the distribution of daily net cash flow would follow a random walk over time as if it were drawn from a normal distribution with a mean of zero. Management sets the lower limit; depending on how much risk of a cash shortfall the firm is willing to tolerate. Unlike the Baumol model, the number of transactions per period is a random variable that varies from period, depending on the pattern of cash inflow and outflow. As a consequence,

trading costs per period are dependent on the expected number of transactions in marketable securities during the periods.

Miller and Orr (1966) model controls irregular movements of cash by the use of upper and lower limits on cash balances. The model takes into account uncertainty in both receipts and payments of cash. It is best explained with reference to exhibit 3.



All cash receipts and payments are met from the cash balance and as can be seen from exhibit 3, the cash balance of the firm is allowed to vary freely between two limits. The lower limit has to be specified by the firm and the model calculates the upper limit. If the cash balance of any day goes outside these limits, action must be taken. **At point 1**, the cash balance reaches the lower limit and must be replenished in some way e.g. by sale of marketable securities or withdraws from a deposit account. The size of the withdrawal is equivalent to (W). **At point 2**, the cash balance reaches the upper limit and an amount (D) must be invested in marketable securities or placed in a deposit account (Foulks, 2003).

The minimum cost upper limit is calculated by reference to brokerage costs, holding costs and the variance of cash flows. The model has some fairly restrictive assumptions e.g. normally distributed cash flow, but in test, Miller-Orr, (1966) found out it to be fairly robust and claimed significant potential cost savings for companies. The Miller-Orr model sets the spread between the upper and lower cash balance limits as shown below (Foulks, 2003).

$$3 \left(\frac{\frac{3}{4} * \text{transaction cost} * \text{variance of cash flow}}{\text{Interest rate per day of marketable securities}} \right)^{1/3}$$

The company sets the lower limit

Upper limit = lower limit + spread

Return point = lower limit + $\frac{1}{3}$ * spread

Miller and Orr tested their model using 9 months of data for cash balances for a large firm. The model was able to produce average daily cash balances much lower than the average actually obtained by the firm (Mullins and Hamonoff, 1976).

Miller-Orr model improves our understanding of the problem of cash management. First, the model shows that the best return point is positively related to trading costs and negatively related to interest costs. This finding is consistent with and analogous to Baumol model. Second, Miller-Orr model show that the best return point and average cash balance are positively related to the variability of cash flows. That is, firms whose cash flows are subject to greater uncertainty should maintain a larger average cash balance (Ross et al., 1988).

If the cost of selling treasury bills is lower than the opportunity cost of leaving money idle overnight, then many large firms will buy and sell securities many times a day before it will leave substantial amounts idle overnight (Ross et al., 1988).

Bagamery (1987) identified a correspondent relationship between Baumol-Tobin and Miller-Orr optimal cash balance framework and specifies the conditions under which both models imply the same level of optimal cash balances. The author demonstrates that if the correspondence relationship is satisfied, either the Baumol Tobin or the Miller-Orr cash balance model can be employed since both models imply the same results.

2.3 Short-Term Investments

Short-term investments opportunities present themselves when cash surpluses arise. The availability of surplus cash is temporally, awaiting employment either in existing operations or in new investment opportunities. The “temporary” period can be of any

duration from one day to the indefinite future date at which the new investment opportunity may be identified and seized (Foulks, 2003). The common short-term securities in Kenya are the treasury bills and the Repos. According to Ouma (2001), the firms studied in Kenya with the exception of a few, invest in marketable securities.

2.3.1 Objectives in the Investment of Surplus Cash

Foulks (2003), states that the objectives in the investment of surplus cash can be categorized as the need for liquidity, safety and profitability. Liquidity here implies the cash must be available for use when needed. If a company knows it will need the funds in three days or weeks or months, it can simply invest these funds for just that period at the best rate with safety. The problem is that at times the exact duration of the surplus is not always known e.g. if the surplus period depends on the progress of construction work. Bridging finance may need to be made available to bridge the gap between the time when the cash is needed and the subsequent date on which the investment matures. An investment may not need to be held to maturity if either an early withdrawal is permitted by the terms of the instrument without excessive penalty or there is a secondary market and its disposal in that market causes no excessive loss.

Safety in this content implies that no risk of loss must be taken. It involves more than the certainty of getting the original investment repaid at 100% of its original money value. This is because if cash is being held to meet a future commitment, the ultimate amount of the commitment may be subject to inflationary rises. A safe investment in such a case, maybe index-linked gilt-edged bonds with maturity date about the expected date of the payment. If the cash were being held to meet a future payment in foreign currency, the only risk-less investment would be one denominated in that currency.

Profitability is yet another objective. Subject to the above, the aim is to earn the highest possible after tax returns. When investing surplus cash, the objectives of liquidity and safety take precedence over that of profitability (Foulks, 2003).

2.3.2 Characteristics to Consider When Investing Idle Cash in Short-Term Marketable Securities

The factors one should consider when investing idle cash in short-term securities include: maturity, default risk, marketability, tax exceptions, interest rate risk, purchasing power risk, return on security and market price stability.

Maturity refers to the time period over which interest and principal payments are made. For a given change in the level of interest rates, the prices of longer maturing securities will change more than those for shorter maturing securities. Hence there is greater risk in long term maturing securities. This type of risk is called the interest-rate risk. It's advisable to invest in fixed interest investments with late maturity dates-subject to the liquidity rule, if there are good reasons to expect interest rates to fall. Also one should invest in fixed investments with early maturity dates or at variable rates if there are good grounds for expecting rates to go up. Most firms limit their investment in marketable securities those maturing in less than 90 days (Ross et al., 1988).

Default risk refers to the probability that the interest and principal will not be paid on the due date and in the promised amount. Given the purpose of investing idle corporate cash, firms typically avoid investing in marketable securities with significant default risk. Government treasury securities are regarded as being free from such risk (Keown et al., 1996).

Marketability is the ability to sell an asset for its face market value quickly and in large amounts without price pressures effect i.e. pressure to lower price to facilitate sale. If there is an active marketplace for a security, it has good marketability. It simply indicates that the security can be bought and sold easily (Ross et al., 1988).

Tax exceptions- several kinds of securities have varying of tax exemptions. There are many tax efficient investments for surplus cash that ensure the company optimizes on its net cash flow after tax e.g. use of tax havens or government securities, which may be exempted from capital gain tax (Ross et al., 1988).

Interest rate risk is the risk to which investors are exposed due to rising interest rates. It is the risk to earnings or market value of a portfolio due to uncertain future interest rates. Of

particular concern to corporate treasurers is the price volatility associated with instruments that have long as opposed to short, terms to maturity. A short-term security will be less affected than long-term securities (Keown et al., 1996).

Purchasing power risk is the risk that inflation will reduce the purchasing power of a given sum of money. Purchasing power risk is lower on assets whose returns tend to rise during inflation than on assets whose returns are fixed. Thus real estate, short-term debts and common stock are generally better hedges against inflation than bonds and other long term fixed income securities (Weston and Brigham, 1990).

Return on the security is yet another important factor to consider. The higher a security's risk the higher the expected and required return, therefore there is need to make a trade off between risk and return when choosing marketable securities portfolio. Most treasurers are unwilling to sacrifice safety for higher rates of return. In addition to all the above considerations, market price stability of a given security is usually considered before purchasing these marketable securities. If the price is highly volatile, the risks associated with that security increases.

In a study by Gitman et al. (1979), respondents were asked to rank their investment criteria for marketable securities. They ranked market price stability as the most important investment criterion, with marketability a close second. Yield and maturity were considered to be of secondary importance when evaluating possible marketable security investments.

2.4 Float Management

Float management involves controlling the collection and disbursement of cash. According to Ross et al. (1988), the difference between bank cash and book cash is called the float and represents the net effect of cheques in the process of collection. Keown et al. (1996) considers float as the length of time from when a cheque is written until the actual recipient can draw upon or use the "good funds". Cheques written by the firm generate disbursement float causing a decrease in book cash but no change in bank cash. In contrast, cheques received by the firm represent collection float, which increases book cash but does not immediately change bank cash. Disbursement float leads to a period of

time that cheques are cleared. An organization can obtain the benefit of this cash while the cheque is clearing. For example, the bank cash could be invested in marketable securities. The firm is in a good position with disbursement float and a bad position with collection float. The sum of disbursement float and collection float is called the net float i.e. $\text{net float} = \text{disbursement float} - \text{collection float}$ (Ross et al., 1988).

A firm should be concerned with net float and bank cash. If a financial manager knows that a cheque will not clear for several days, he or she will be able to keep low cash balance at the bank than might be true otherwise. This is called "playing the float game" and it can generate a great deal of money. The objective in cash collection is to speed up collection and reduce the lag between the time customers pay their bills and the time the cheques are collected. The objective in cash disbursement is to slow down payment and maximize the time between when cheques are written and when cheques are presented. In other words, collect early and pay late. Off course, to the extent to which the firm succeeds in doing this, the customer and suppliers lose money and the trade off is the effect on the firm's relationship with them (Ross et al., 1988). According to studies by Gitman et al. (1979) respondents ranked "speeding up collection of accounts receivable" as the most important cash management policy with "slowing payment of accounts payable as the least important. In their opinion academic literature has given more attention to cash collection than to cash disbursement and their findings is in line with this.

In general it is good to operate with a positive net float; this means that the firm is able to collect cheques written to it, and thus to get the use of money paid to it, relatively rapidly. Those to whom it writes cheques are relatively less efficient in clearing cheques, allowing the firm to use the funds for a while after it has written cheques (Weston and Brigham, 1990).

Keown et al. (1996) are of the opinion that effective cash management that reduces float can yield impressive opportunities for profit improvement. The reduction of float lies at the center of the many approaches employed to speed up cash receipts. Float has four elements: mail float, processing float, transit float and disbursement float. Mail float is caused by the time lapse from the moment a customer mails a remittance cheque until the firm begins to process it. Processing float is caused by the time required for the firm to

process remittance cheques before they can be deposited in the bank. Transit float is caused by the time necessary for a deposited cheque to clear through the commercial banking system and become usable funds to the company. Ross et al. (1988) refer to this float as availability float and defines it as time required to clear a cheque through the banking system e.g. using the clearinghouse. Disbursement float derives from the fact that funds are available in the company's bank account until its payment cheque has cleared through the banking system.

The cost of float is an opportunity cost because the cash is unavailable for use during the time cheques are tied up in the collection process. The cost of the float can be determined by (1) estimating the average daily receipts (2) calculating the average delay in obtaining the receipts and (3) discounting the average daily receipts by the "delay-adjusted" cost of capital (Ross et al., 1988).

The distinction between using float and kitting cheques should be made clear. Kitting is a situation in which a firm has accounts in two or more banks and it deposits a bad cheque written on one bank in another bank to inflate its balance in a second bank account to pay debts. Kitting requires a continuous process and it can only work if banks allow a firm to write cheques against deposits based on cheques that have not yet been cleared through the system. Kitting is illegal and those who engage in the practice can be sent to jail. Using float is perfectly legitimate-you can legally write a cheque on Saturday for more than the balance in your account, provided that you are sure you can deposit the funds to cover the cheque on Monday before the cheque you wrote clears (Weston and Brigham, 1990).

It is entirely proper to forecast what your bank will have recorded as your balance and then to make decisions based on the estimate, even if that balance is different from the balance your own books show. However, it is illegal to forecast an overdrawn situation but then tell the bank that you forecast a positive balance. This implies deliberately overstating end of day balances. As a result, one will chronically overdraw from the bank and earn interest on funds that really belong to the bank (Weston and Brigham, 1990).

Cash managers must work with collected bank cash balances and not the firm's book balances (which reflect cheques that have been deposited but not collected). If not a cash manager could be drawing on uncollected cash as a source for making short-term

investments. Generally, firms are scrupulous in investing only the cash they actually have on hand. In may 1985, Robert Fomon, chairman of E.F. Hutton pleaded guilty to 2000 charges of mail and wire fraud in connection to a scheme where the firm operated from 1980-1982 where Hutton employees wrote cheques totaling hundreds of million of dollars in uncollected cash, which was invested in short-term money market assets. E. F. Hutton paid \$2 million fine, reimbursed the US department of justice \$750,000 and reserved \$8 million for restitution to defrauded banks (Ross et al., 1988).

According to Kallberg and Parkinson (1993) the major elements of a control system in managing the flow of funds are: flow of funds, data flow and analytical complexity. The flows of funds i.e. frequency, occurrence and size will determine the level of control necessary. In addition, one must construct an accurate, timely and comprehensive information system that incorporates much of the relevant flows of cash management data. Analytical functions will vary in complexity, depending on the scope of the company's cash management system. As the number and diversity of operating points in the system increase, the need for some automated assistance increases as well. For example, the timing requirements for cash funding decisions in such systems cannot be deterred while laborious manual computations are performed.

Some of the cash management services (Gardener and Mills, 1994) offered by commercial banks includes assisting customers with collecting accounts, disbursing expenditures, forecasting cash balances and investing temporarily idle cash in money market instruments, transfer funds and provide information about the location and status of those funds. Cash management services (Saunders, 2000) needs have largely resulted from (1) corporate recognition that excess cash balances result in significant opportunity cost due to lost or forgone interest (2) corporate need to know its cash or working capital position on a real time basis. According to Saunders (2000), among the services modern banks provide to improve the efficiency with which corporate clients manage their financial position are: wholesale lockbox, funds concentration, electronic funds transfer, controlling disbursement account (these chequeing accounts are debited early each day so that corporations can get an early insight into their net cash position), account reconciliation (a chequeing feature that provides a record of which of the firms cheques have been paid by the bank), cheque deposit services (endorsing, microfilming and handling cheques of customers) and treasury management software.

Several of the techniques used in speeding up receivables and slowing down payables are discussed in the remainder of this section.

2.5 Techniques of Speeding up Collection

2.5.1 Lockboxes

According to Maier and Vander (1983) management of the firm cash collection and disbursement system is an important responsibility for the firm's treasurer. In fulfilling this responsibility, the treasurer's primary goal is to increase the amount of funds available for investment. On the cash collection side, this is frequently accomplished through the location of regional collection points known as lockboxes. Lockbox increases the amount of funds available for investment by reducing the delay between the time the customer mails the cheque and the time funds are credited to the firm's account. On the disbursement side, the goal of increasing the amount of funds available for investment is achieved by disbursing funds from either "remote" or "control" locations. This service to extend the delay between the time the firm mails the cheque and the time the cheque is presented to the bank for payment.

According to Ross et al. (1988) lockboxes are widely used devices to speed up collection of cash. They are special post office boxes set up to intercept account receivable payments. Companies usually use lockboxes in order to have remittances deposited through the same bank or group of banks and to avoid company personnel handling remittances but it increases bank-processing charges. The major types of lockboxes are wholesale, retail, automated and mixed media lockbox. Low volume levels but high value per items characterizes wholesale lockboxes. Retail lockboxes are characterized by high volume, low dollar cheques. Automated lockboxes are relevant to customer's remittance are captured in machine-readable form by bank and transmitted electronically to company for further data processing. Mixed media lockboxes combine paper based remittance and electronic remittance (Kallberg and Parkinson, 1993).

Lockbox network types include; processing centers, mail intercepts alliances, joint ventures, and non-bank vendors. Processing centers include having multiple lockbox service offered by banks with one or more major cities in their banking network e.g. bank in Nairobi offering combined lockboxes to Thika and Naivasha. Mail intercept networks

include the local post office segregating mails for picking up by courier, which are shipped to the banks central lockbox. Alliance type is a consortium of independent banks that have formed a corporate effort to offer lockbox collection points. Joint venture type is between banks and non-banks. In in-housing processing a company may choose to collect and process remittances at its own processing center. In outsourcing, banks can contract a third party to handle lockboxes they offer to corporate customers (Kallberg and Parkinson, 1993).

The collection process is started by customers mailing their cheques to a post office box instead of sending them to the firm. The local bank maintains the lockbox. The local bank collects the lockbox cheques from the post office several times a day. The bank deposits the cheques directly to the firms account. Details of the operations are recorded and sent to the firm (Ross et al., 1988). According to Keown et al. (1996), customers are instructed to mail their remittance cheques not to the company headquarter or regional office but to a numbered post office box. Typically, a large bank will collect payments from the lockbox at one to two hour intervals, 365 days of the year. During peak business hours, the bank may pick up mails every 30 minutes (Keown et al., 1996).

Once the mail is received at the bank, the cheque is examined, totaled, photocopied and microfilmed. The bank then prepares a deposit form and each batch of processed cheques is forwarded to the collection department for clearance. Funds deposited in this manner are usually available for company's use in one business day or less. At end of day, all cheques photocopies, invoices, deposit slips etc are mailed to the firm. If cheques are received from all over the country, several lockboxes could be used (Keown et al., 1996). A lockbox system reduces mailing time (time between customer mailing payment and time when payment is received) because cheques are received at a nearby post office instead of at corporate head quarter. Lockboxes also reduce firm processing time (time between receiving payment from customers and company depositing payment) because they reduce the time required for a corporation to physically handle receivables and to deposit cheques for collection. A bank lockbox should enable a firm to get its receipts processed, deposited and cleared faster than if it were to receive cheques at its headquarters and deliver those cheques to the bank for deposit and clearing (Ross et al., 1988).

According to Keown et al. (1996), advantages of using the lockbox include: (a) increased working capital (b) eliminates clerical functions - the bank takes over the task of receiving, endorsing, totaling, and depositing cheques. With less handling of receipts by the employees, better auditing control is achieved and the chance of the document becoming lost is reduced. (c) Early knowledge of dishonored cheques

The fixed and variable costs of using bank provided lockbox and disbursement services are such that it is rarely profitable for a firm to have lockbox or disbursement site in every city. Instead, the firm will work with a bank that do cash management studies to determine a smaller set of lockbox and disbursement locations that maximize difference between total system benefits and costs (Maier and Vander, 1983).

A lockbox study consists of two parts. First, the study samples the firm's current remittance to determine the locations of the firm's current remittance to determine the location of the firm's customers and mail and availability times associated with the firm's current collection system. Second, the study bank designs an optimal lockbox system. If the float and cost savings of the new system are substantial, the firm will change its current system as recommended by the bank (Maier and Vander, 1983).

The problem of choosing the best set of lockbox site is called the lockbox problem. Management scientists have extensively studied this problem. This work has produced a set of solutions procedures used by banks, during lockbox studies (Maier and Vander, 1983).

Disbursement studies are performed very much like lockbox studies. From a sample of the firm's cheques, the bank estimates the average clearing times for the firm's current disbursing system. Using a database of national wide clearing times and special optimization algorithms, the bank then determines the best set of disbursing banks as well as the assignment of vendors to these banks. This is called the disbursement bank location (Maier and Vander, 1983).

The environment today is so unpredictable that neither float nor control can be obtained without significant system risk in the form of instability. To solve the lockbox problem, the analyst needs to divide the firms customers into homogeneous groups, obtain data on

the fixed and variable cost of maintaining a lockbox system, the mail times from group i to group j , the availability times from lockbox j to group i drawee bank, the mail and availability times for the firm's current system and average daily incoming possible lockbox sites (Maier and Vander, 1983).

The analyst must employ his judgment to design groups that are relatively homogeneous relative to mail and availability times and at the same time, are not so refined or complex to substantially increase the cost of analysis (Maier and Vander, 1983).

According to Maier and Vander (1983), given the high cost of obtaining data on fixed and variable lockbox charges, the analyst must decide whether to obtain this information or not. Most analysts have decided not, partly based on their experience that float benefits between cities are frequently greater than cost differences between banks. These analysts approach the lockbox problem as follows: (a) Determine the dollar value of float benefits required justifying an additional lockbox site, for example a float reduction of \$ 50,000 might be needed to expand the system by one additional bank. (b) Start with opening one lockbox, then two, etc. Determine the optimal location of lockbox cities using average float values. Stop this sequential analysis when the additional of one more city fails to meet the test in step 1. (c) Select candidate banks in each city determined in step 2 based on credit relationships, service quality, interface capabilities, size of the lockbox operation, and other sometimes-intangible factors. (d) Re-optimize to determine specific banks and the assignment of customers to banks. Special consideration is also given to existing lockbox bank relationships. At an early stage in the lockbox study, the firm's customers are reassigned with the existing system of lockbox banks. This is called "current system optimal" is much less costly to implement than the addition of new lockbox bank (Maier and Vander, 1983).

Mails and availability times plays a key role in the analysis of lockbox systems. In comparing the firm's current collection system to the optimal lockbox system, the analyst needs to decide whether to use Phoenix Hecht survey mail times or any other patented method or use a sample of actual mail times to measure the mail float in the current system. To estimate the amount of incoming funds from customer region i the analyst typically collects a sample of the firm's incoming cheques covering a one month period (Maier and Vander, 1983).

Once the analyst has formed appropriate customer groups and gathered the requisite data, he must employ an algorithm to evaluate the float saving with each combination of lockbox sites (Maier and Vander, 1983).

In their award winning paper, Cornuejols, Fisher, and Nemhauser analyzed various exact and appropriate algorithms to the lockbox location problem. Their results maybe summarized as follows; (a) it is difficult to find an algorithm that always produces an optimal solution to the lockbox problem in reasonable amount of computer time (b) a theoretical analysis of the worst possible case indicates that heuristic algorithms are capable of producing poor solutions. (c) However, experience with some reasonable realistic data set indicates that heuristic algorithms produce very close to optimal solutions in practice (Maier and Vander, 1983).

According to Maier and Vander (1983), the mathematical description of the disbursement location problem is similar to that of the lockbox location problem. To solve the Disbursement Location Problem, the analyst need to divide the firms vendors into homogeneous groups: obtain data on the fixed and variable cost of maintaining a disbursement system, the mail times from regional offices to vendor groups to drawee banks, the mail and presentation times for the firms current system and the average daily payments to vendors groups j : and find an efficient algorithm for evaluating the set of possible mail and drawee bank sites. Attempts to implement the solutions to the Disbursement Location Problem may lead to deteriorating relationship with the firm's vendors or creditors. In one celebrated case, customers who were unable to get prompt refunds for security transactions sued Merrill Lynch. (Merrill Lynch had a practice of paying East Coast customers with cheques drawn on west coast banks). (Wall Street Journal December 18, 1978, p. 14)

2.5.2 Concentration Banking

Other than lockboxes, a company can speed up collection of cash through concentration banking which is a way of getting cash from the deposit bank to the firm's main bank more quickly. It is often combined with lockboxes (Ross et al., 1988).

In some companies subsidiaries may run their own cash management systems autonomous from corporate staff, only requesting funds or transferring excess funds daily to the corporate treasury department. Cash management systems that are more centralized tend to have fewer concentration points (Kallberg and Parkinson, 1993).

The firm's sales offices are usually responsible for the collection and processing of customer cheques. The sales office deposits the cheques into a local deposit bank to the concentration bank. The purpose of concentration banking is to obtain customer cheques from nearby receiving locations. Concentration banking reduces mailing time (time between customer mails cheque and cheque is received) because the firm's sales office is nearer than corporate headquarter to the customer. Bank clearing time is reduced because the customer's cheque is usually drawn on a local bank. The corporate cash manager uses the 'pool of cash' at the concentration bank for short-term investing or for some other purposes. Concentration banks also serve as the focal point for transferring funds to disbursement banks (Ross et al., 1988).

2.5.3 Wire Transfer

A transfer mechanism is a system for moving funds among accounts at different banks. The main transfer mechanisms are depository transfer cheques (DTC), electronic depository cheques (EDTC) and wire transfer (Weston and Brigham, 1990). Wire transfer is an electronic transfer of funds via a telecommunication network that makes funds collected at one bank immediately available from another bank. After the customer's cheque gets into the local banking network, the objective is to transfer the surplus funds (funds in excess of required compensating balances) from local deposit bank to the concentration bank. The faster and most expensive way is by wire transfer. Example of wire transfer is the CHIPS (Clearing House Inter-bank Payment System) (Ross et al., 1988). According to Kallberg and Parkinson (1993) developing automation strategy is an important consideration as part of the company's overall cash management strategy. According to studies by Collins and Frankle (1985), 85% of all the companies under study used this service while 97% of all companies studied by Gitman et al. (1979) used wire transfer.

2.5.4 Preauthorized Cheques (PAC)

Preauthorized cheques can be used effectively to (Keown et al., 1996) convert receipts into working cash. A PAC resembles the ordinary cheque but it does not contain nor require the signature of the person on whose account it is being drawn. It reduces both mailing and processing float. The customer no longer physically writes his or her own cheques or deposits such cheques in the mail. For firms that take advantage of a PAC system, the benefits are: having highly predictable cash flow, increased working capital, reduced expenses (billing and postage costs are eliminated and the clerical processing of customer payment is significantly reduced) and finally customer prefer this method since they prefer not to be bothered with regular billing.

The PAC operates as follows: (1) the firms customers authorizes firm to draw cheques on their respective demand deposit account. (2) Indemnification agreements are signed by the customer and forwarded to the bank where they maintain their demand deposits account. (3) The firms prepares a magnetic tape that contains all appropriate information about the regular payment. (4) The corporation retains a hard copy listing of all tape data for control purposes. (5) Upon receipt of the tape, the bank will produce PACs, deposit them to the firms account, forward them for clearing and return a control report to the firm (Keown et al., 1996).

The PACs system is advantageous when the firm regularly receives a large volume of payments of a fixed amount from the same customer.

2.5.5 Depository Transfer Cheques

Depository transfer cheques are a non-negotiable instrument that provides the firm with a means to move funds from local bank account to concentration bank account. It's usually unsigned. Rather than have funds sitting in multiple bank accounts in different geographical locations, most firms regularly transfer the surplus balances to one or more concentration banks. Centralizing the firm's pool of cash provides the following benefits. Firstly, it leads to a lower level of excess cash – these levels consider both compensating balance requirements and working levels of cash. Cash in excess of this target is transferred to concentration banks for deployment by the firm's top-level management.

Secondly, it results to better control- stricter control over available cash is achieved. Finally, it leads to more efficient investment in near cash assets (Keown et al., 1996). According to Weston and Brigham (1990), a DTC looks like ordinary cheque, except that it is restricted for deposit into a particular account at a particular bank. It provides a means of moving funds from local depository banks to regional concentration banks and then on to the firm's primary money center bank. An electronic depository transfer cheque is an electronic image transfer via clearinghouse. It is a combination of wire transfer and DTC. One example is the ACH-DTC, which instead of using paper cheques, magnetic tape files are processed by the ACH and all entries for a particular bank are placed on a single file that is sent to that bank. Some banks receive data on tapes while others have direct computer links to the ACH.

According to Keown et al. (1996), the firm files an authorization form with each bank from which it might withdraw funds. This form instructs the bank to pay the depository transfer cheques without any signature. It can be operated through the mail system or an automated system. If automated system, employees will make the deposit then allow this information to accumulate from all regional collection points till a cut off time when the information on the regional deposits is transmitted to the concentration bank. The concentration bank prepares the depository transfer cheque and credits it to the company account. The cheques are placed into the commercial banking clearing process and presented to the local bank for payment.

2.5.6 Pre-authorized Debit for speeding up collection

A pre-authorized debit allows funds to be automatically transferred from a customers account to the firms account on specific dates. These transactions are also called "cheque-less" or "paperless" transactions since they are accomplished without using traditional paper cheques. However, a record of payment does appear on both party's bank statements. Pre-authorized debit accelerates the transfer of funds because mail and cheque clearing times are totally eliminated and are frequently used for payment of mortgages, taxes, utility bills and payroll (Weston and Brigham, 1990).

2.5.7 Electronic collection system

Corporate trade payment involves electronic transmission of payments and related invoice data through the banking system (Electronic Data Interchange). Net settlement

system occurs where there are a large number of reciprocal payments among the major companies in the industry; the payments are netted out between companies on a predetermined date. Only the net amounts are actually transferred (Kallberg and Parkinson, 1993).

2.6 Techniques for effective management of disbursement

2.6.1 Zero Balance Account

Some firms set up a zero-balance account (ZBA) to handle disbursement activities. The account has a zero balance as cheques are written. As cheques are presented to the zero-balance account for payment (causing a negative balance), funds are automatically transferred in from a central account. The master account and the ZBA are located in the same bank. Thus the transfer is automatic and involves only an accounting entry in the bank (Ross et al., 1988). According to Keown et al. (1996), Employees write cheques on local banks zero balance account that at the end of the day will automatically be credited from the concentration (master) demand deposit account. Each morning a report is electronically forwarded to headquarters reflecting the balance in the master account as well as the previous day's activities in the zero balance account.

ZBA permits centralized control (at head quarters level) over cash outflows while maintaining divisional disbursing authority. It allows the firm to achieve better control over its cash payment, to reduce excess cash balances held in regional banks for disbursing purposes and to increase disbursing float. Management time spent on superficial cash management activities is reduced. Exercises such as observing the balances held in numerous accounts, transferring funds to those accounts short of cash and reconciling the accounts, demands less attention. The cost of cash management can be reduced as wire transfers to build up funds in outlaying disbursement accounts are eliminated. Funds may be made available for company use through an increase in disbursement float e.g. if paying a local supplier, the cheque may be drawn on a ZBA located in a more distant concentration bank hence will take more time to clear (Keown et al. 1996).

2.6.2 Draft

The main purpose of using a payable through draft system is to provide for effective control over field payments. Central office control over payment began by regional unit

is provided as the drafts are reviewed by central office in advance of final payment (Keown et al., 1996).

Firms sometimes use drafts instead of cheques. Drafts differ from cheques because they are not drawn on a bank but on the issuer (the firm) and are payable by the issuer. The bank acts only as an agent, presenting the draft to the issuer for payment. When the draft is transmitted to a firm's bank for collection, the bank must present the draft to the issuing firm for acceptance before making the payment. After the draft has been accepted, the firm must deposit the necessary cash to cover the payment. The use of draft rather than cheque allows a firm to keep lower cash balances in its disbursement accounts because cash does not have to be presented until the drafts are presented to it for payment (Ross et al., 1988).

2.6.3 Remote disbursing

A few banks will provide the corporate customer with a cash management service specifically designed to extend disbursing float. The firm's concentration bank may have a correspondent relationship with a smaller bank located in a distant city or remote area where frequent clearing of cheques drawn on local banks is not possible. The firm will then write the bulk of its payment cheques against this distant local account. A form of break-even analysis can help the finance officer decide whether a particular collection or disbursement service will provide an economic benefit to the firm. The benefit should outweigh the costs (Keown et al., 1996). Having a policy of centralized payables may have the same effect as remote disbursement if the bulk of the payables are made to customers far from headquarter.

According to Ross et al. (1988), devices to delay cheque clearing include: writing cheques on distant bank-for example a Nairobi supplier might be paid with a cheque drawn on a South Africa bank, holding payment for several days after postmarked in office e.g. postmark a cheque on Tuesday but mail on Thursday, call supplier firm to verify statement accuracy for large amounts, mail from distant or remote post office and finally mail cheques from post office that require a great deal of handling.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Research Design

This is a descriptive study carried out as a census survey on companies at the NSE. According to Wikipedia encyclopedia, descriptive research is also described as statistical research and describes data about the population being studied. Descriptive research answers the following questions: who, what, where, when and how. Quantitative primary data was used for this study to assess these companies' current cash management practices and also to assess the preferences of these companies on several investment criteria and cash management policies.

3.2 Population

The population of study consists of companies on the Nairobi Stock Exchange. Quoted companies are relatively well structured which makes them easy to study. They are more likely to have specific policies and procedures in place. Publicly quoted companies are also considered more open: that is, they release information more readily than non-quoted companies. Also the reliability and validity of information received from publicly quoted companies is better than non-quoted companies.

There are forty-eight companies listed on the Nairobi Stock Exchange. The companies on the finance and investment sector were excluded since their cash balances are dictated by law, most significantly the banking act. Their level of cash holding is determined by the banking act as well as other rules regulating banks and financial institutions. Beside, the researcher is concerned with companies that use the cash management techniques mainly offered by banks e.g. concentration banking, use of drafts to manage disbursements, lockboxes for speeding receivables. The population of study is 36, having excluded the finance and investment section, City Trust and Hutching Biermer Ltd that was suspended.

Since the population is small, no sampling was done. Although the results of this study are biased towards large firms listed at the NSE, these are exactly the group of participants that are on the frontier of cash management practice and are the first target for new products and services. As Jaffee (1989) puts it, these large businesses often use complex cash management policies because large amounts of money are involved.

Therefore these companies should give a feel for the type of cash management practices used by large and moderate size firms in Kenya.

3.3 Data Collection

The data was collected through a detailed questionnaire that was constructed using open-ended, closed ended and ranking-type questions. The questionnaires were administered to the finance department or the treasury department of the sixteen companies using a 'drop-and-pick-latter' technique. Considering the busy schedule of the respondents, six weeks was spent collecting back the questionnaires.

3.4 Data Analysis

On receiving the questionnaire, the data collected was thoroughly checked to ensure completeness, consistency, accuracy and uniformity. The data was labeled, coded and keyed into SPSS for analysis. To meet the first objective of the study which is to assess these companies cash management practices, analysis of frequency was done and also cross tabulation. To meet the second objective, which is, to assess the preferences of these companies on several investment criteria and cash management policies, weighted average response was calculated on these ranking type questions. This is calculated as the sum of the products of the number of respondents and each corresponding rank divided by the total number of respondents in each category. To facilitate conceptualization of the research findings, the survey data is presented in tables and pie charts.

CHAPTER FOUR: DATA ANALYSIS AND INTERPRETATION OF FINDINGS

4.1 Introduction

This study was carried out to survey corporate cash management practices. To assess the current cash management practices, a questionnaire type survey of publicly listed firms in Kenya was used. The objective of the study was to survey the cash management practices of firms quoted at the NSE and to assess the preferences of these companies on several cash management policies and investment criteria for marketable securities that one should consider when investing idle cash in marketable securities.

The survey was divided into four sections to facilitate the gathering of information on general information, techniques for speeding receivables, techniques for management of disbursement, and finally cash balances, budgeting and short-term investments. On receiving the questionnaire, the data collected was checked to ensure completeness, consistency, accuracy and uniformity. The data was labeled, coded and keyed into SPSS for analysis. To meet the first objective of the study, which is to assess these companies' cash management practices, analysis of frequency and also cross tabulation was done. To meet the second objective, which is, to assess the preferences of these companies on several investment criteria and cash management policies, weighted average response was calculated on these ranking type questions.

Although the results are biased towards larger firms, these are exactly the group of participants that are on the frontier of cash management practice and are the first targets for new products and services. According to Jaffee (1989), business firms often use complex cash management policies because large amounts of money are involved. Individuals in contrast, generally use relatively simple cash management policies because they are usually dealing with relatively small sums of money. The results of the survey should give a general feel for the type of cash management practices used by large-to-moderate size firms.

When embarking on the project the researcher targeted 36 companies that are listed at the Nairobi stock exchange. At the end of the study, only 20 companies had filled the questionnaire, this is a 56% response rate. 18 out of 20 respondents who filled the questionnaire were active in financial management decision-making and this included treasurers, financial controllers, finance directors, chief accountants and chief finance

officers. The other two were not active in financial management but validated their facts from relevant authorities before filling out the questionnaire.

Exhibit 4: Activeness in financial decisions

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	18	90.0	90.0	90.0
No	2	10.0	10.0	100.0
Total	20	100.0	100.0	

Some of the questions were not answered due to several reasons with the main reason been that the questions did not apply to them. Some companies declined to answer the questions since they did not want to give away more information than is publicly available. The names of responding companies are withheld in the document because of confidentiality of information given. About six weeks was spent dispersing and collecting back these questionnaires.

4.2 Findings and Interpretation of Findings

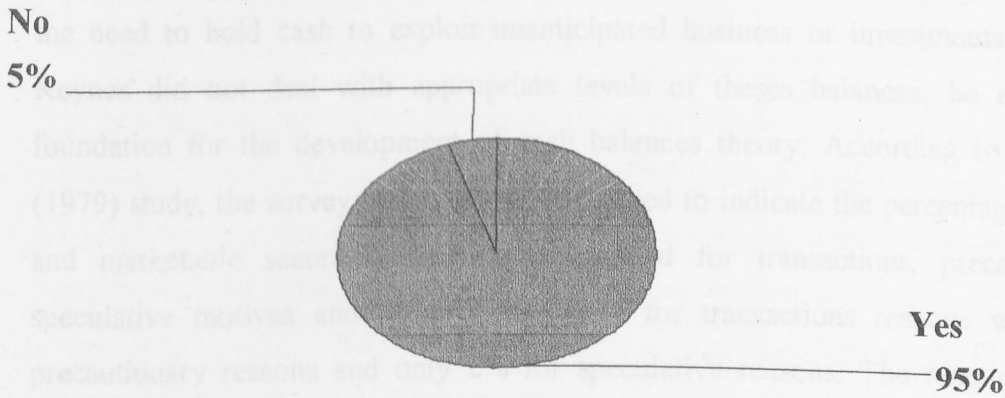
Eighty percent of all the companies that responded to the questionnaire were established more than 21 years ago. These companies should naturally be expected to have

Exhibit 5 Length of operation

No of years in existence	Frequency	Percent	Valid Percent	Cumulative Percent
Less than 10 years	3	15.0	15.0	15.0
Between 11 and 20 years	1	5.0	5.0	20.0
More than 21 year	16	80.0	80.0	100.0
Total	20	100.0	100.0	

established financial systems and controls for the effective management of cash resources. This is evidenced by the fact that 95% of the respondents had departments dedicated to cash management.

Exhibit 6: Existence of a department dedicated to cash management

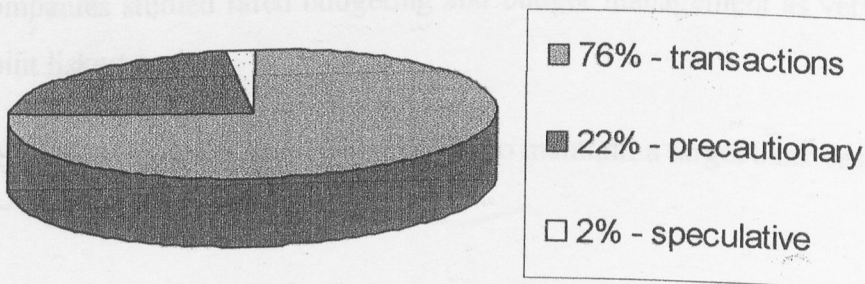


75% of these firms were organized with a centralized finance department dedicated to cash management. Centralized treasury management often results in a highly skilled team, cheaper borrowing, lower bank charges and more effective hedging of currency risk but some motivational and local knowledge benefits may be lost.

The companies under study were asked to state down the percentage of cash and marketable securities they hold for transactions, precautionary and speculative purposes. The results indicated that they hold 76% of their liquid assets for transactions motives, 22% for precautionary motives and 2% for speculative motives.

Exhibit 7

Percentage of cash and marketable securities held for transactions, precautionary and speculative motives



Transaction balances are maintained to meet the payment of known obligation such as meeting day-to-day operational requirements. Keynes (1936) identified the precautionary motive as the need for a safe stock of cash to act as a financial reserve or a cushion for unexpected business requirements. Keynes (1936) identified the speculative motive as the need to hold cash to exploit unanticipated business or investments opportunities. Keynes did not deal with appropriate levels of these balances; he established the foundation for the development of cash balances theory. According to Gitman et al. (1979) study, the survey respondents were asked to indicate the percentage of their cash and marketable securities balances they held for transactions, precautionary, and speculative motives and 60% of was held for transactions reasons while 27% for precautionary reasons and only 2% for speculative reasons. The remaining 10% was believed to be held for a combination of all the three motives. According to Ouma (2001), firms do not keep cash for speculative purposes. This study is similar to the above studies since it shows that the respondents hardly consider keeping their liquid assets for speculative purposes important as seen by the 2% cash holding for speculative motives. Firms keep cash mainly for transaction purposes with the next most important reason been holding cash for precautionary reasons.

According to Keown et al. (1996), cash flow forecasting is the initial step in an effective cash management program. Forecasting and budgeting of cash is necessary to provide the liquidity necessary to maintain the firm's solvency. This study found out that 100% of the respondents prepared detailed cash budgets. Lumbasyo (1976) found out that majority of Kenyan firms plan for cash for use but hardly plan for cash balances. The planning is to basically identify periods of net cash outflow and negotiate in advance for extra cash. According to Ouma (2001), most of the firms in her study carry out cash planning on annual, monthly and weekly planning periods. According to Muleri (2001) all the companies studied rated budgeting and budget management as very important on a five point likert scale.

18 of the companies studied (i.e. 90%) do maintain a target bank cash balance.

Exhibit 8**Maintenance of a target cash balance**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	18	90.0	90.0	90.0
	No	2	10.0	10.0	100.0
	Total	20	100.0	100.0	

Maintaining a target balance system for the overall banking network requires setting (and resetting) bank balances and monitoring daily performance against the target. Maintaining target balances at major banks often requires a daily decision as to whether funds should be moved in or out of key accounts at each major bank for e.g. covering clearings of payroll and accounts payable disbursement funds or for concentrating deposits at a major bank for short-term investments (Kallberg and Parkinson, 1993). According to Ferreira and Vilela (2004), their study concluded that firms identify their optimal level of cash holdings by weighting the marginal costs and marginal benefits of holding cash.

It is important to maintain a target bank balance so as not to keep cash idling about since cash is a “non earning” asset in the sense that although it is needed to pay for labor and raw materials, to pay taxes, servicing debts, paying dividend etc, cash itself (as well as most commercial chequeing accounts) earns no interest. Enough cash must be on hand to meet the disbursement needs that arise in the course of doing business but also at the same time investment in idle cash balances must be reduced to a minimum (Keown et al., 1996). Thus the goal should be to reduce cash holdings to the minimum necessary to conduct business (Weston and Brigham, 1990).

According to Ouma (2001), opportunity cost and cash cycle size are the principal factors that influence the setting of the minimum cash balance levels in the organization. Sales trend is the major factor influencing the setting of the maximum cash balances in the organization. Other factors that influence the setting of the maximum cash balance in an organization are unexpected investment opportunities and variability in the setting of the maximum cash balances.

According to Mureithi (2003), firms adjust their cash holdings towards their target holding. His results suggest that higher cash holdings are associated with lower levels of

debt in firms' capital structure. He found out that the factors of liquidity, cash flow variability, firm's size, profitability, cash flows and growth play a significant role in the determination of the firm's cash holding levels. Though 90% of the companies studied in this paper maintain target bank balances, Ross et al. (1988) concluded that since most large corporations have numerous accounts with several dozen banks, sometimes it makes more sense to leave cash alone than to manage each account daily and make daily transfers among them.

This study showed that the market for marketable securities is poorly developed as compared to other first world countries. Marketable securities are those security investments the firm can quickly convert into cash balance, also referred to as near cash. Firms have temporary cash surpluses for the following reasons: to help finance seasonal or cyclical activities of the firm, to help finance planned expenditure and to provide for unanticipated contingencies (Ross et al., 1988). In Kenya, the most common short-term security is treasury bills with 50% of the respondents using it.

Exhibit 9: Short-term Securities

Short-term securities	Frequency	Percentage
Treasury Bills	10	50
Repos	0	0
Foreign short-term securities	3	15

The next common short-term security is foreign securities. The two companies that indicated that they use short-term securities usually operate beyond the Kenyan borders and see more opportunities abroad. The opportunity cost of not maximizing on the short-term investment of temporal surplus cash is high considering that not only are many short-term securities not traded in Kenya but also the few short-term securities traded at the stock exchange are not extensively used.

It also appears that most of these companies are not aggressive towards the management of their cash resources as seen from the percentage of the excess cash invested.

Exhibit 10**Percentage of excess cash invested**

	Frequency	Percent	Valid Percent	Cumulative Percent
1% - 10%	10	50.0	55.5	55.5
10.1% - 25%	2	10.0	11.1	66.6
50.1% - 75%	3	15.0	16.7	83.3
75.1% - 100%	3	15.0	16.7	100.0
Total	18	90.0	100.0	
Missing	2	10.0		
Total	20	100.0		

10 out of 18 respondents who answered this question invested between 1% and 10% of their excess cash while only 3 respondent companies appeared to be aggressive since they invested 75.1% - 100% of their excess cash. This lack of aggressiveness is evidenced by the low purchase of short-term securities with none of the companies investing in Repos, only 15% on foreign short-term securities and only 50% of the respondents investing in treasury bills.

This study has similar results to studies done by Frankle & Collins (1987) and Kamath et al. (1985) on the question asking the respondents to rate several investment criterions. The factors one should consider when investing idle cash in short-term securities include: maturity, default risk, marketability, tax exceptions, interest rate risk, purchasing power risk, return on security and market price stability.

Exhibit 11: Ranking of Investment criteria for marketable securities (1=most important; 4= least important)

Investment Criterion	1	2	3	4	Weighted average response	Rank
Market price stability	7	6	4	0	1.823529412	3
Marketability	0	6	6	3	2.8	6
Maturity	6	2	3	3	2.214285714	5
Yield	10	4	0	2	1.625	2
Default risk	11	2	0	0	1.153846154	1
Purchasing power	1	7	3	0	2.181818182	4

This study shows that default risk is the most important characteristic with yield being second. This shows that these companies are risk averse. Given the purpose of investing idle corporate cash, firms typically avoid investing in marketable securities with

significant default risk. Government treasury securities are regarded as being free from such risk, no wonder treasury bills are the most common forms of marketable securities in the country. Marketability appears to be least important with other characteristics such as market price stability and maturity being more important. Frankle and Collins concluded that default risk is the most important characteristic with both yield and maturity being more important than marketability or liquidity. Kamath et al. (1985) reported that preservation of capital is most important followed by rate of return, company policies, and liquidity.

The results show that many of the respondents, i.e. 16 out of 20, use cash management models. Cash management models attempt to minimize the total cost (opportunity cost of lost interest plus transaction and trading costs) associated with cash movement between a current account and short-term investments by determining when and how much cash should be transferred each time. The four respondents who said they don't use cash management models told the researcher that they do not usually invest in short-term securities even when they have temporal excess cash. One of the respondents who did not use cash management models avoided all the questions related to short-term securities and stated that the company operates on an overdraft facility and they normally have no surplus funds for investment since all sales are made to an associated company. According to Ross et al. (1988), a firm is more likely to have to borrow to cover an unexpected cash outflow the greater its cash inflow variability and lower its investment in marketable securities. Two other respondents who avoided all the questions related to short-term securities stated that they put all their excess cash in call deposits and never invest in short-term securities. All the 16 companies that use cash management models (see exhibit below) usually assign an opportunity cost to cash when evaluating alternative levels of liquidity.

Exhibit 12: Cross tabulation between the use of cash management models and assigning of an opportunity cost

		Use of cash management models		Total
		Yes	No	
Assigning of a opportunity cost	Yes	16	3	19
	No	0	1	1
Total		16	4	20

Exhibit 13: Cross tabulation between the use of cash management models and maintenance of a target cash balance.

	Maintenance of a target cash balance		Total
	Yes	No	
Use of cash management models	16	0	16
Yes	2	2	4
No	18	2	20
Total			

As would naturally be expected, all the companies that use cash management models maintain a target cash balance at their banks by deciding whether funds should be moved in or out key accounts. See exhibit 12 above.

This study had similar result with Gitman et al. (1979) on the ranking of some cash management policies. The results as seen from the exhibit below show that these corporations consider “speeding up collection of receivables” been a more important cash management policy than “slowing of accounts payables.” Somewhat greater importance was placed on minimizing investment in inventory than on minimizing bank balances.

Exhibit 14: Ranking of Cash Management Policies (1 = Most Important; 4 = Least Important)

Cash management policies	1	2	3	4	Weighted average response	Rank
Speeding collection of accounts receivables	13	6	0	1	1.45	1
Minimizing bank balance	9	3	3	5	2.2	3
Slowing payment of accounts payable	0	13	7	0	2.35	4
Minimizing investment in inventory	6	12	2	0	1.8	2

The objective in cash collection is to speed up collection and reduce the lag between the time customers pay their bills and the time the cheques are collected. The objective in cash disbursement is to slow down payment and maximize the time between when cheques are written and when cheques are presented. In other words, collect early and pay late. Off course, to the extent to which the firm succeeds in doing this, the customer

and suppliers lose money and the trade off is the effect on the firm's relationship with them (Ross et al., 1988).

Considering the above raking it was interesting to find out the techniques used to speed up the collection of receivables. The use of pre-authorized cheques is the most unpopular with virtually all the companies not using this technique to speed up receivables. A pre-authorized cheque resembles the ordinary cheque but it does not contain nor require the signature of the person on whose account it is being drawn. It reduces both mailing and processing float. The customer no longer physically writes his or her own cheques or deposits such cheques in the mail. For firms that take advantage of a Pre- authorized cheque system, the benefits are: having highly predictable cash flow, increased working capital, reduced expenses (billing and postage costs are eliminated and the clerical processing of customer payment is significantly reduced) and finally customer prefer this method since they prefer not to be bothered with regular billing. However, according to the results of this study, this is a service not used to speed up receipts in Kenya.

Exhibit 15: Systems used to speed the collection of receivables

Systems	Number	Percentage
Lock-box	2	10
Concentration banking	9	45
Net settlement system	4	20
Pre-authorized cheques	0	0
Depository transfer cheques	8	40
Pre-authorized debits	6	30

According to Gitman et al. (1979) nearly all the companies that were studied used lock-boxes, i.e. 87% used lock-boxes. But the use of lock-box is unpopular in the country with only 10% of the respondents using this service. According to Ross et al. (1988) lockboxes are widely used devises to speed up collection of cash. They are special post office boxes set up to intercept account receivable payments and are maintained by the local bank. The local bank collects the lockbox cheques from the post office several times a day. The bank deposits the cheques directly to the firms account. Details of the operations are recorded and sent to the firm. A lockbox system reduces mailing time (time between customer mailing payment and time when payment is received) because cheques are received at a nearby post office instead of at corporate head quarter. Lockboxes also reduce firm processing time (time between receiving payment from customers and

company depositing payment) because they reduce the time required for a corporation to physically handle receivables and to deposit cheques for collection. A bank lockbox should enable a firm to get its receipts processed, deposited and cleared faster than if it were to receive cheques at its headquarters and deliver those cheques to the bank for deposit and clearing (Ross et al., 1988). Despite the benefits that accrue from the use of lockbox, it's unpopular in Kenya but fairly commonly used in first world as seen in Gitmans et al. (1979) study.

Use of pre-authorized debits, appears to be fairly common with 30% of the respondents using this service. A pre-authorized debit allows funds to be automatically transferred from a customers account to the firms account on specific dates. Pre-authorized debit accelerates the transfer of funds because mail and cheque clearing times are totally eliminated.

Depository transfer cheques also are fairly used with 40% of the respondents using this service. According to Weston and Brigham, (1990), Depository transfer cheque looks like ordinary cheques, except that it is restricted for deposit into a particular account at a particular bank. It provides a means of moving funds from local depository banks to regional concentration banks and then on to the firm's primary money center bank. It's usually unsigned. Rather than have funds sitting in multiple bank accounts in different geographical locations, most firms regularly transfer the surplus balances to one or more concentration banks. Firstly, it leads to a lower level of excess cash – these levels consider both compensating balance requirements and working levels of cash. Cash in excess of this target is transferred to concentration banks for deployment by the firm's top-level management. Secondly, it results to better control- stricter control over available cash is achieved. Finally, it leads to more efficient investment in near cash assets.

Concentration banking appears to be fairly commonly used with 45% of the respondents using this service. The purpose of concentration banking is to obtain customer cheques from nearby receiving locations. Concentration banking reduces mailing time i.e. time between customer mails cheque and cheque is received. Bank clearing time is also reduced because the customer's cheque is usually drawn on a local bank. Besides, the corporate cash manager uses the 'pool of cash' at the concentration bank for short-term

investing or for some other purposes. Though net settlement system has the potential of speeding up receivable and avoiding much clerical work, it appears that it's not a fairly common practice.

Companies don't seem to lay much emphasis on slowing down the payment of accounts payable. From verbal interview with two treasurers, the researcher found out that these two companies don't use any method to slow down payables and have no intention of doing so, no wonder the overall results of the ranking type questions showed that slowing down payment of payables is the least favored out of the four cash management policy.

Exhibit 16: Systems used to slow the payment of accounts payable

Systems	Number	Percentage
Centralized payables	7	35
Payable drafts	6	30
Mailing cheques from distant post office	1	5
Holding cheques for several days after postmarked	8	40
Writing cheques on distant banks	2	10

The most unpopular method of slowing down accounts payable is by means of mailing cheques from distant bank and writing cheques drawn on distant banks. According Keown et al. (1996), a few banks will provide the corporate customer with a cash management service specifically designed to extend disbursing float. The firm's concentration bank may have a correspondent relationship with a smaller bank located in a distant city or remote area where frequent clearing of cheques drawn on local banks is not possible. The firm will then write the bulk of its payment cheques against this distant local account. Having a policy of centralized payables may have the same effect as remote disbursement if the bulk of the payables are made to customers far from headquarter and this appears to be fairly used with 35% of the respondents using this method to extend disbursement float. From the exhibit above, the most popular method of increasing disbursement float is by holding cheques for several days after they are postmarked.

Firms sometimes use drafts instead of cheques. 30% of the respondents use this method to manage payables. Drafts differ from cheques because they are not drawn on a bank but on the issuer (the firm) and are payable by the issuer. The bank acts only as an agent, presenting the draft to the issuer for payment. When the draft is transmitted to a firm's

bank for collection, the bank must present the draft to the issuing firm for acceptance before making the payment. After the draft has been accepted, the firm must deposit the necessary cash to cover the payment. The use of draft rather than cheque does allow these firms to keep lower cash balances in its disbursement accounts because cash does not have to be presented until the drafts are presented to it for payment. According to Keown et al. (1996), the main purpose of using a payable through draft system is to provide for effective control over field payments. Central office control over payment began by regional unit is provided as the drafts are reviewed by central office in advance of final payment.

The exhibit below shows that virtually 100% of the respondents use banks for wire funds transfer. According to studies by Collins and Frankle (1985), 85% of all the companies under study used wire transfer while 97% of all companies studied by Gitman et al. (1979) used wire transfer. Wire transfer is an electronic transfer of funds via a telecommunication network that makes funds collected at one bank immediately available from another bank. After the customer's cheque gets into the local banking network, the objective is to transfer the surplus funds (funds in excess of required compensating balances) from local deposit bank to the concentration bank and wire transfer is one of the fastest methods of doing this.

Exhibit 17: Banking Services Used by respondents

Banking Services	Number	Percent
Wire fund Transfer	20	100
Payroll Management	14	70
Zero-Balance Account	4	20
Short-term Investing	12	75

70% and 75% of these companies use banks to manage their payroll and short-term investments. Zero balance accounts appear not to be a popular banking service in the country with only 20% of these companies using this service. The zero balance account has a zero balance as cheques are written; as cheques are presented to the zero-balance account for payment (causing a negative balance), funds are automatically transferred in from a central account. Zero balance accounts permits centralized control (at head quarters level) over cash outflows while maintaining divisional disbursing authority. It

allows the firm to achieve better control over its cash payment, to reduce excess cash balances held in regional banks for disbursing purposes and to increase disbursing float.

5.1 Summary and conclusion

The objective of the study was to survey the cash management practices of firms quoted at the NSE and to assess the preferences of these companies on several cash management policies and investment criteria for marketable securities that one should consider when investing idle cash in short-term securities. The results of the survey should give a general feel for the type of cash management practices used by large-to-moderate size firms. The survey questionnaire was divided into four sections to facilitate the gathering of information on general information, techniques for speeding receivables, techniques for management of disbursement, and finally cash balances, budgeting and short-term investments.

When embarking on the project the researcher targeted 36 companies that are listed at the Nairobi stock exchange. At the end of the study, only 20 companies had filled the questionnaire; this is a 56%-response rate. Eighty percent of all the companies that responded to the questionnaire were established more than 21 years ago. 95% of the respondents had departments dedicated to cash management while 75% of these firms were organized with a centralized finance department dedicated to cash management. This shows that these companies highly prioritize their cash management function.

The companies under study were asked to state down the percentage of cash and marketable securities they hold for transactions, precautionary and speculative purposes. The results indicated that they hold 76% of their liquid assets for transactions motives, 22% for precautionary motives and 2% for speculative motives. Keynes (1936) identified the speculative motive as the need to hold cash to exploit unanticipated business or investments opportunities. According to Ouma (2001), firms do not keep cash for speculative purposes. This study is similar to the above studies since it shows that the respondents hardly consider keeping their liquid assets for speculative purposes important as seen by the 2% cash holding for speculative motives. Firms keep cash mainly for transaction purposes with the next most important reason been holding cash for precautionary reasons.

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This study found out that 100% of the respondents prepared detailed cash budgets with 90% of these corporations maintaining a target bank cash balance. Normally the target bank balance is identified by first weighting the marginal costs and marginal benefits of holding cash and entails setting (and resetting) bank balances and monitoring daily performance against the target. The goal should be to reduce cash holdings to the minimum necessary to conduct business. Enough cash must be on hand to meet the disbursement needs that arise in the course of doing business but also at the same time investment in idle cash balances must be reduced to a minimum (Keown et al., 1996). Although 90% of the companies studied in this paper maintain target bank balances, Ross et al. (1988) concluded that since most large corporations have numerous accounts with several dozen banks, sometimes it makes more sense to leave cash alone than to manage each account daily and make daily transfers among them.

This study showed that the market for marketable securities is poorly developed as compared to other first world countries. In Kenya, the most common short-term security is treasury bills with 50% of the respondents purchasing them. The next common short-term security is foreign securities. The opportunity cost of not maximizing on the short-term investment of temporal surplus cash is high considering that not only are many short-term securities not traded in Kenya but also the few short-term securities traded at the stock exchange are not extensively purchased. It appears that most of these companies are not aggressive towards the management of their cash resources as seen from the percentage of the excess cash invested. 10 out of 18 respondents who answered this question invested between 1% and 10% of their excess cash while only 3 respondent companies appeared to be aggressive since they invested 75.1% - 100% of their excess cash. This lack of aggressiveness is evidenced by the low purchase of short-term securities, with none of the companies investing in Repos, only 15% on foreign short-term securities and only 50% of the respondents investing in treasury bills.

This study has similar results to studies done by Frankle and Collins (1987) and Kamath et al. (1985) on the question asking the respondents to give a rating on several investment criteria that one should consider when investing idle cash in short-term securities. These are: maturity, default risk, marketability, purchasing power risk, return on security and market price stability. This study shows that default risk is the most important characteristic with yield being second. This shows that these companies are risk averse;

given the purpose of investing idle corporate cash, firms typically avoid investing in marketable securities with significant default risk. Government treasury securities are regarded as being free from such risk, no wonder treasury bills are the most common forms of marketable securities in the country. Marketability appears to be least important with other characteristics such as market price stability and maturity being more important. Frankle and Collins concluded that default risk is the most important characteristic with both yield and maturity being more important than marketability or liquidity. Kamath et al. (1985) reported that preservation of capital is most important followed by rate of return, company policies, and liquidity.

The results show that many of the respondents, i.e. 16 out of 20, use cash management models. According to Ouma (2001), no specific model is used in totality. Each model has some of its characteristics adopted. Firms use a combination of parts of each model, as they think appropriate. Cash management models attempt to minimize the total cost (opportunity cost of lost interest plus transaction or trading costs) associated with cash movement between a current account and short-term investments by determining when and how much cash should be transferred each time. All the 16 companies that use cash management models usually assign an opportunity cost to cash when evaluating alternative levels of liquidity. As would naturally be expected, all the companies that use cash management models maintain a target cash balance at their banks by deciding whether funds should be moved in or out key accounts.

This study had similar result with Gitman et al. (1979) on the ranking of some cash management policies. The results of this study show that these corporations consider "speeding up collection of receivables" been a more important cash management policy and "slowing of accounts payables" as least important of the four areas listed. Somewhat greater importance was placed on minimizing investment in inventory than on minimizing bank balances. The objective of cash collection is to speed up collection and reduce the lag between the time customers pay their bills and the time the cheques are collected. The objective of cash disbursement is to slow down payment and maximize the time between when cheques are written and when cheques are presented. To the extent to which the firm succeeds in doing this, the customer and suppliers lose money and the trade off is the effect on the firm's relationship with them (Ross et al., 1988).

Considering the above raking, it was interesting to find out the techniques used to speed up the collection of receivables. The use of pre-authorized cheques is the most unpopular with virtually all the companies not using this technique to speed up receivables. For firms that take advantage of a pre-authorized cheques system, the benefits are: having highly predictable cash flow, increased working capital, reduced expenses (billing and postage costs are eliminated and the clerical processing of customer payment is significantly reduced) and finally customer prefer this method since they prefer not to be bothered with regular billing. However, according to the results of this study, this is a service not used to speed up receipts in Kenya.

According to Gitman et al. (1979) nearly all the companies that were studied used lock-boxes, i.e. 87% used lock-boxes. But the use of lock-box is unpopular in the country with only 10% of the respondents using this service. According to Ross et al. (1988) lockboxes are widely used devices to speed up collection of cash. They are special post office boxes set up to intercept account receivable payments and are maintained by the local bank. A bank lockbox should enable a firm to get its receipts processed, deposited and cleared faster than if it were to receive cheques at its headquarters and deliver those cheques to the bank for deposit and clearing. Despite the benefits that accrue from the use of lockbox, it's unpopular in Kenya but highly used in first world as seen in Gitmans et al. (1979) study.

Use of pre-authorized debits, appears to be fairly common with 30% of the respondents using this service while 40% of the respondents use Depository transfer cheques. A depository transfer cheque leads to a lower level of excess cash since excess cash is transferred using this method to concentration banks for deployment by the firm's top-level management.

Concentration banking appears to be fairly commonly used with 45% of the respondents using this service. The purpose of concentration banking is to obtain customer cheques from nearby receiving locations. Though net settlement system has the potential of speeding up receivables and avoiding much clerical work, it appears that it's not a common practice.

Companies don't seem to lay much emphasis on slowing down the payment of payables. From verbal interview with two treasurers, the researcher found out that these two companies don't use any method to slow down payables and have no intention of doing so, no wonder the overall results of the ranking type questions showed that slowing down payment of payables is the least favored out of the four cash management policy.

The most unpopular methods of slowing down payment is by means of mailing cheques from distant bank and writing cheques drawn on distant banks. According Keown et al. (1996), a few banks will provide the corporate customer with a cash management service specifically designed to extend disbursing float. Having a policy of centralized payables may have the same effect as remote disbursement if the bulk of the payables are made to customers far from headquarter and this appears to be fairly used with 35% of the respondents using this method to extend disbursement float. The most popular method of increasing disbursement float is by holding cheques for several days after they are postmarked.

Firms sometimes use drafts instead of cheques. 30% of the respondents use this method to manage payables. Drafts differ from cheques because they are not drawn on a bank but on the issuer (the firm) and are payable by the issuer. The bank acts only as an agent, presenting the draft to the issuer for payment. The use of draft rather than cheque does allow these firms to keep lower cash balances in its disbursement accounts because cash does not have to be presented until the drafts are presented to it for payment.

Virtually 100% of the respondents use banks for wire funds transfer. According to studies by Collins and Frankle (1985), 85% of all the companies under their study used wire transfer while 97% of all companies studied by Gitman et al. (1979) used wire transfer. 70% and 75% of these companies use banks to manage their payroll and short-term investments respectively. Zero balance accounts appear not to be a popular banking service in the country with only 20% of these companies using this service. Zero balance accounts permits centralized control (at head quarters level) over cash outflows while maintaining divisional disbursing authority. It allows the firm to achieve better control over its cash payment, to reduce excess cash balances held in regional banks for disbursing purposes and to increase disbursing float.

5.2 Limitations

The researcher had a chance to be with some of the respondents while they filled the questionnaire and was able to learn that clarification was needed on several terminologies considering that Kenya is an emerging economy and some of the cash management practices and terminologies are not applicable. Clarification in writing would have made the questionnaire long and this would have discouraged the respondents. Therefore there was little room for clarification and this affected the quality of responses. Interviews could have probably been used to give such clarification.

Sixteen companies never answered the questionnaire. This had an adverse impact on the conclusions and achievement of the research objective. Generalization of the research findings would have been more authentic had all the companies responded.

5.3 Recommendations

Academicians will benefit from the findings of this study. They should critique the findings of this study and compare them to other empirical studies so as to bring to light other facets that were not adequately covered by this study. The findings of the study should help corporations come up with appropriate practices by analyzing what other corporation's cash management practices are.

Though much has been done by these companies to improve the management of their cash resources, there still exists room for much improvement of the cash management function in Kenya. The banks and the government need to ensure that there are several securities in the market that corporations can invest their temporal excess cash in and be able to convert them into cash promptly whenever need arise. Organizations need to consider investing much more of their excess cash if they are to maximize shareholders value. Much more also need to be done to utilize the means of speeding receivables; several tools are in the market that can speed collection of account receivables.

5.4 Suggestions for further research

This study is hoped to stimulate further research in the area of cash management. It would be interesting to follow up the history of a company by doing a case study of one particular company that had some poor cash management practice but updated and improved its practices and ended cutting costs and improving on profits. This paper

considered several cash management practices, studies can be carried out to find out the financial and other benefits that have accrued to these corporations as a result of implementing these practices.

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APPENDICES

APPENDIX 1: POPULATION

Industrial and allied

- 1) Athi River Mining
- 2) B. O. G. Kenya Ltd
- 3) Bamburi Cement Ltd
- 4) British American Tobacco Kenya
- 5) Carbacid Investments
- 6) Crown Berger Ltd
- 7) Olympia Capital Holdings Ltd
- 8) E. A. Cables Ltd
- 9) E. A. Portland Cement Ltd
- 10) East Africa Breweries Ltd
- 11) Sameer Africa Ltd
- 12) Kenya Oil Co Ltd
- 13) Mumia Sugar Co. Ltd
- 14) Kenya Power & Lighting Ltd
- 15) Ken Gen Ltd
- 16) Total Kenya Ltd
- 17) Unga Group Ltd

Agricultural

- 1) Unilever Tea Kenya Ltd
- 2) Kakuzi
- 3) Rea Vipingo Plantation Ltd
- 4) Sasini Tea & Coffee Ltd

Commercial and Services

- 1) Car & General (K) Ltd
- 2) CMC Holdings Ltd
- 3) Kenya Airways Ltd
- 4) Marshalls (E.A.) Ltd
- 5) Nation Media Group
- 6) TPS Eastern Africa Ltd
- 7) Uchumi Supermarket Ltd

Alternative investment market

- 1) Baumann & Co. Ltd
- 2) Eaagad Ltd
- 3) Express Ltd
- 4) Williamson Tea Kenya
- 5) Kapchorua Tea Co. Ltd
- 6) Kenya Orchards Ltd
- 7) Limuru Tea Co.
- 8) Standard Group Ltd

Yes No

4) Are the cash management operations within your organization centralized or decentralized? _____

Section B: Cash balances, planning, budgeting and short-term investment

- 5) Do you prepare a detailed cash budget? Yes No
- 6) Do you assign an opportunity cost (i.e. interest rate) to cash when evaluating alternative levels of liquidity? Yes No

7) Cash management models attempt to minimize the total cost associated with cash movement between a current account and short term investments (the opportunity cost of lost interest plus transaction costs) by determining when and how much cash should be transferred each time. Do you use cash management models to determine this optimal cash? Yes No

8) Maintaining target cash balances at banks requires a daily decision as to whether funds should be moved in or out key accounts. Do you establish and maintain effective target balance system and monitor daily performances against the target? Yes No

APPENDIX 2: QUESTIONNAIRE

The questionnaire seeks to ascertain the cash management practices of corporations listed at Nairobi Stock Exchange. The questionnaire is divided into four sections.

Section A: General information

- 1) How long has your corporation been in operation? Less than 10 years ; between 11 and 20 years ; more than 21 years
- 2) Are you active in financial management decisions within your firm?
Yes No
- 3) Does your corporation have a department / section dedicated to cash management?
Yes No
- 4) Are the cash management operations within your organization centralized or decentralized? _____

Section B: Cash balances, planning, budgeting and short-term investment

- 5) Do you prepare a detailed cash budget? Yes No
- 6) Do you assign an opportunity cost (i.e. interest rate) to cash when evaluating alternative levels of liquidity? Yes No
- 7) Cash management models attempt to minimize the total cost associated with cash movement between a current account and short term investments (the opportunity cost of lost interest plus transaction costs) by determining when and how much cash should be transferred each time. Do you use cash management models to determine this optimal cash? Yes No
- 8) Maintaining target cash balances at banks requires a daily decision as to whether funds should be moved in or out key accounts. Do you establish and maintain effective target balance system and monitor daily performances against the target?
Yes No

9) Please rank by ticking the below investment criteria for marketable securities based on the importance your corporation places on them. (1= most important; 2= next most important; 3= less important; 4= Least important).

Investment criteria/attributes	Most important (1)	Next most Important (2)	Less important (3)	Least important (4)
Market price stability				
Marketability				
Maturity				
Yield				
Default risk				
Purchasing power risk				
Others				

10) Indicate the type of marketable securities the company purchases

- a) Treasury bills
- b) Repos
- c) Foreign Short-term securities
- d) Others _____
- e) N/A

11) Please tick where applicable to your company on the percentage of excess cash invested. Please tick once.

- a) 0%
- b) 1% - 10%
- c) 10.1% - 25%
- d) 25.1% - 50%
- e) 50.1% - 75%
- f) 75.1% - 100%

12) What percentage of your cash and marketable securities balances are held for transactions, precautionary and speculative motive.

- a) Transaction motive _____
- b) Precautionary motive _____
- c) Speculative motive _____

Section C: Techniques for speeding up receivables

- 13) Where there are large numbers of reciprocal payments among major companies in the industry, payments are netted out between companies on a predetermined date. Only the net amounts are actually transferred. Do you operate a net settlement system with other large corporations? Yes No
- 14) Lockbox are special post offices boxes mainly maintained by the banks and are set up to intercept account receivable payments. The bank receives customer's checks and directly credits to the corporations account. Does your corporation use lockbox? Yes No
- 15) Concentration banking helps in speeding up of collection of cash through getting cash from several local deposit banks to the firm's main bank more quickly. Does your corporation use concentration banking? Yes No
- 16) A Pre-authorized Check (PAC) resembles an ordinary check but does not require the signature of the person whose account it is being drawn and can be used effectively to convert receipts into working cash. Does your corporation use PAC? Yes No
- 17) Depository transfer checks are non-negotiable instruments that provide the firm with a means to move funds from local bank account to concentration (Master) bank account. Do you use this service? Yes No
- 18) Pre-authorized debits allow funds to be automatically transferred from a customer account to a firms account on specific dates. Do you use this service to accelerate receipts? Yes No

Section D: Management of Disbursement

19) Zero Balance Accounts (ZBA) is used to handle disbursements and reduce levels of cash in regional checking accounts. Employees write checks on local banks zero balance account that at the end of the day will automatically be credited from the master/concentration current account. Do you use ZBA? Yes No

20) Please indicate by ticking if you use any of the below bank services. You can tick more than once.

- a. Wire fund transfer
- b. Payroll management
- c. Short-term investing

21) Do you delay payments by doing the following? You can indicate more than once.

- a) Write checks on a distant bank. Yes No
- b) Use of Drafts. Yes No
- c) Hold payment for several days after it's postmarked in office? Yes No
- d) Mail from distant post office or a post office that requires great deal of handling?
Yes No
- e) Other _____
- f) None.
- g) Centralized payables Yes No

22) Please rank by ticking the cash management policies below based on the importance your corporation places on them (1= most important; 2= next most important; 3= less important; 4= Least important).

Cash management policies	Most important (1)	Next most Important (2)	Less important (3)	Least important (4)
Speeding collection of accounts receivable				
Minimizing bank balances				
Slowing payment of accounts payable				
Minimizing investment in inventory				

APPENDIX 3: LETTER OF INTRODUCTION TO RESPONDENTS

University of Nairobi
Faculty of Commerce
P. O. Box 30197
Lower Kabete

Dear Sir / Madam,

TO WHOM IT MAY CONCERN

I am a postgraduate student at the University of Nairobi undertaking an MBA finance option and as a partial requirement to complete my degree program, I am undertaking a survey on the cash management practices of firms listed at NSE.

This therefore, is to kindly request that the person most informed about cash management decisions within your firm to assist me to collect data by filling out the accompanying questionnaire. The information provided will be exclusively for academic purposes and will be treated with strict confidence; at no time will the name of your organization appear in my report.

Your cooperation is highly appreciated.

Yours faithfully,

Roy Mugo.
(Student)

Mr. Lishenga J. L
(Supervisor)