CASH MANAGEMENT IN NEPALESE ENTERPRISES

A THESIS SUBMITTED TO

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By

Basudev Sharma Poudel

TU Regd. No. 5797-82

TRIBHUVAN UNIVERSITY

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DECLARATION

I, hereby declare that the present study entitled “Cash Management in Nepalese Enterprises” is based on my original research work. The results presented in the study have not been submitted elsewhere for the award of any degree.

Basudev Sharma Poudel
Kathmandu, Nepal
May, 2012

Recommendation of the supervisors

We certify that the thesis entitled **"Cash Management in Nepalese Enterprises"** submitted by Basudev Sharma Poudel to the Faculty of Management, Tribhuvan University for the degree of the Doctor of Philosophy (Ph.D.) of this university is completed under our supervision and guidance. This thesis is the candidate's original research work. We have read it carefully, and are fully satisfied with the language and substances of this thesis.

To the best of our knowledge the candidate has fulfilled all other requirements of the Ph.D. program of the Faculty of Management, Tribhuvan University. We, therefore, recommend this thesis be considered and approved for the award of the Ph.D. Degree.

Prof. Dr. Subarna Lai Bajracharya
Public Youth Campus
Tribhuvan University, Nepal
Date

Prof. Dr. Rajendra Prasad Shrestha
Saraswoti Multiple Campus
Tribhuvan University, Nepal
Date

VIVA -VOCE SHEET

We have conducted the Viva-Voce examination of the thesis submitted by Basudev Sharma Poudel entitled “Cash Management in Nepalese Enterprises” is found to be an original work of the student and written according to the prescribed format. We recommend the thesis be accepted as the fulfillment of the requirements for the degree of Doctor of Philosophy (Ph.D.) in Management.

Viva- Voce committee

Chairperson: .....

Supervisor: .....

Supervisor: .....

External Expert .....

External Expert .....

Internal Expert .....

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Basudev Sharma Poudel
204/12, chandan marg
Ghattekulo, Kathmandu

Acronyms

ACP	Average collection period
AIC	Agriculture Inputs Company Limited
AVCASH	Average cash balance
AVU	Arun Vanaspati Udyog Limited
BANKD	Bank loan to total debt ratio
BBCL	Bishal Bazaar Company Limited
BN	Bottlers Nepal Limited
CASH	Cash to total assets ratio
CATA	Current assets to total assets ratio
CATR	Current assets turnover ratio
CCA	Cash to current assets ratio
CCL	Cash to current liabilities Ratio
CEO	Chief Executive Officer
CFLOW	Cash flow
CFVAR	Cash flow variability
CONCASH	Average cash balance at constant price
CR	Current ratio
CRR	Cash reserve ratio
CS	Cash to sales ratio
CQA	Cash to quick assets ratio
CTA	Cash to total assets ratio
CTC	Cash to total capital ratio
CTOR	Cash turnover ratio
DDC	Dairy Development Corporation
D.F	Degrees of freedom
DTR	Debtors Turnover Ratio
EBIT	Earnings before interest and taxes
EBT	Earning before tax
GROWTH	Growth opportunities for enterprises
GRY	Gorakhkali Rubber Udyog Limited

HC	Hetaunda Cement Industries Limited
HPP	Herbs Production and Processing Company
IMF	International Monetary Fund
INT	Interest rate of commercial bank
ITR	Inventory turnover ratio
JCF	Janakpur Cigarette Factory
LEV	Leverage
LIQ	Liquidity
MOF	Ministry Of Finance
NAL	Nepal Ausadhi Limited
NBB	Nepal Bitumin and Barrel Udyog Limited
NFC	Nepal Food Corporation
NLO	Nepal Lube Oil Limited
NOC	Nepal Oil Corporation
NRB	Nepal Rastra Bank
NSC	National Seeds Company Limited
NTL	National Trading Corporation Limited
NWC	Nepal Welfare Company Limited
OLS	Ordinary least square
QR	Quick ratio
SEBON	Securities Board of Nepal
SIZE	Size of enterprises
SOE	State owned enterprises
STA	Sales to total assets ratio
SSM	Sriram Sugar Mills Limited
STC	Salt Trading Corporation Limited
UNI	Unilever Nepal Limited
WCS	Working capital to sales ratio
WCTR	Working capital turnover ratio

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Chapter 1
INTRODUCTION

1.1 General background

The history of corporate finance as one can find in finance literature provides that there is no uniform theoretical development across all areas of financial management. This is also not uniform across companies and countries. In some areas, these developments are many and varied, while in other areas, they are only a few and limited. The cash management has become one of the areas in finance which requires a detailed study under different contexts.

The subject of cash management has also become an immense interest to all professionals, and practitioners. Practicing managers are interested in this subject because, among the most crucial decisions of the firm, cash- related decisions always lie in the centre of financial activities. It requires the understanding of the theory of cash management which provides conceptual and analytical insights to make productive decisions. Research on cash management is essential to take appropriate financial decisions. However, a limited empirical study has been made to meet the growing needs of companies.

In recent years, there has been a growing research interest in corporate cash holding. Practitioners and academicians both are interested in analyzing structure and utilization of cash position of the firm for better cash management. This interest has been especially motivated by the fact that corporations hold significant amount of cash. As cash is also considered as a resource with cost, the business firm should hold appropriate amount of cash. Excessive cash and insufficient cash both affect negatively in business performance. If holding of cash is excess, it increases the opportunity cost of business which reduces profit. And if holding of cash is insufficient it creates problems for business operations. Therefore, the study of cash management is important.

Cash management is one of the important financial functions and is considered to be a major task of financial managers of companies. It plays a crucial role in the growth

and survival of the enterprises. According to Larsson (2000), cash management is concerned with effective handling of liquid capital and cash flow. Lee (2001) states cash management as “the administration of current assets and liabilities” and use of funds to perform business activities. It is concerned with the management of cash inflow, outflow and cash balance held by the business concern at any point of time.

Davidson (1992) describes cash management as a term which refers to the collection, disbursement and utilization of cash. It encompasses level of liquidity, size of cash balance and determinants of cash holdings in corporations. Pindado (2004) states cash management as a part of working capital that makes up the optimal level needed by a company. Bort (2004) notes cash management as an important function for both new and growing business. Beranek (2000) states companies may suffer cash problems when actual expenses deviate from anticipated expenses, lack of margin of safety and problems in finding the funds for innovation and expansion. Ross (2000), states it is natural that the major business expenses are incurred in the production of goods or the provision of services. In most cases, a business incurs such expenses before the corresponding payment is received from customers. In addition, employee salaries and other expenses drain considerable funds from most businesses. This indicates the requirement of effective cash management and cash operating cycle. According to Bort (2004), cash is the lifeblood of business.

In this regard, the key to successful cash management lies in realistic projections of cash balance, collections disbursements and monitoring of cash, establishing effective cash management policy, and adhering to budgetary parameters because cash flow can be a problem to the business organization. Cash management is intended to serve two basic purposes: one is to keep minimum cash balance, and another is to maintain optimum liquidity. While maintaining minimum cash balance, if the firm faces cash shortage in the market, it fails because of liquidity crisis. Again, if the company maintains high liquidity, the value of unused fund reduces the purchasing power of money and dilutes earnings in the form of opportunity cost of cash. The idea behind cash management is, therefore, maintaining adequate liquid assets whenever and wherever required by the firm.

For the firms, cash management is one of the key mechanisms to manage current assets and current liabilities. It is concerned with the management of cash inflow, outflow, and cash balance held by the business concern at any point of time. Cash management policies affect procurement, production, selling, marketing, research and development, and other functions of enterprises. Almost every activity of business or anything that happens during the business course is related to cash decisions.

No area of business is so intimately related to its other areas as the area of cash management. According to Lester (1976), managers spend much time and effort in planning cash receipts and disbursements to ensure a desirable level of cash and they take great care to prevent cash from being lost, stolen or misused. Today the financial managers' prime function is not only to manage cash resources of the firm efficiently, but also at the same time it has to set a minimum level of cash so that the firms' liquidity is not jeopardized and the firm’s profitability is maximized (Srivastava, 1979).

According to Walter (1957), business enterprises should maintain optimum level of cash to carry business transactions. Shortage of cash in business enterprises could lead to liquidity crunch and financial crisis where as excess cash collects an unproductive, non remunerative cash in business to generate loss. Thus shortage and excess of cash both affect the survival, growth and expansion of business. Especially for small firms, cash management determines their success or failure. In large firms, cash management affects risk, return, and market value. Past reviews have explained numbers of business are reported to have failed in the recent years because of inability to plan and control current assets and liabilities of their respective business. In these contexts, cash holding is important because it provides corporations with liquidity that is, corporations are able to pay off their obligations on time even if bad times hit. To grow sales and profits, a corporation needs to build up cash reserves by ensuring that the timing of cash movements creates an overall positive cash flow situation. Thus, cash is the essential ingredient that enables a business to survive and prosper.

The theory on the demand for money started with Fisher's (1909) quantity theory of money from macro-perspective which entails that quantity of money supply multiplied by velocity of circulation equals to goods and services exchanged for

money multiplied by price level (MV=PT). This theory opposes the flow of money to the flow of goods and services. It implies that the volume of current transactions determines the demand for cash (European Central Bank, 2009). In Fisher's theory, interest rates are irrelevant, presumably because the quantity theory of money neglects the financial transactions. The cash balance approach, which is also known as Cambridge approach on demand for cash, is associated with Pigou (1917) and Marshall (1923). In this approach, demand for cash is a function of price level, the velocity of transaction, and rates of returns on assets.

Since 1930s, there has been a concentrated effort by financial analysts and monetary economists to analyze the cash management within the context of money demand and money supply. Keynes (1936) accepted the Pigou and Marshal views concerning the demand for cash and introduced three motives for holding cash: the transaction, the speculative, and the precautionary motive. Transaction motive and precautionary motives are determined by money income while speculative motive is determined by interest rate. However in Keynes' analysis, the transactions and precautionary demand for cash is positively related to real income whereas speculative demand for cash is negatively related to interest rate.

The studies regarding demand for cash from micro - perspective relate to the firms' level variables like growth, leverage, liquidity, size, and structure and utilization ratio of cash management. In 1950s, studies were conducted on demand for cash by Baumol (1952), Tobin (1956), and Friedman (1959). Baumol and Tobin applied the inventory-theoretic approach to the transaction demand for cash by establishing relationship between the optimal stock of real cash balance and real income (sales revenue) of the firms and inverse relationship with the rate of interest. Friedman (1959) employed rate of interest as the determinant for the demand for cash. Meltzer (1963) considered wealth as an explanatory variable of cash balance determination and sales as the measure of wealth. He hypothesized that the amount of cash held by firms is the function of the market rate of interest and wealth. Whalen (1965) considered the speculative demand for cash as a function of wealth measured in terms of sales revenue. Assets and sales are the explanatory variables to determine the cash balance of the firm. Miller and Orr (1966) focused on transaction costs as the primary determinant of corporate cash levels. Nadiri (1969) employed wealth, interest rate, the

expected rate of change in the general price level, and factor prices as the independent variables in real cash balance study. The empirical implications of many of the studies are similar, that is optimal stock of real cash balances is positively related to income and is inversely related to interest rate.

Ungar and Zilberfarb study (1980) on cash management functions established relationship between cash holding and sales and wealth. The sales elasticity was close to unity, while the wealth elasticity was less than one but not significant. Falls and Natke (1988) found that the sales elasticity of liquid assets of Brazilian manufacturing firms were about 0.9 after controlling for foreign ownership, industry structure, and macroeconomic variables. Thus, a general conclusion drawn from this later literature is that economies of scale in cash management are negligible.

The demand for cash is an important area of research in the financial literature. According to Miller (1966) cash oriented businesses (fast food restaurants, discount retailers) demand more cash for operations than firms that operate in credit-oriented businesses. Every firm needs cash for the operations of their business but the requirement of cash is likely to be different according to nature and size of transaction. However the cash transactions, its operating cycle, and cash flow system help in designing cash management policy and strategy. Different cash ratios reveal the structure and utilization of cash in the enterprises. Cossin and Hricko (2004) describe that the study on cash holdings allow for optimal timing of an investment and avoid the under- pricing issue. However, holding excessive cash also affects negatively the performance of the company.

Therefore, financial managers need to understand the determinants of cash holdings in a corporation. According to Dittmar et al., (2003), cash balance represents about 9 percent of corporate assets in UK. Japanese firms' cash balance represents 18 percent, which represents about three times higher as compared to other countries with a similar institutional and legal profile. The need for effective cash management has thus become greater concern in recent years. Viewed in this perspective, the study devoted to cash management may be very relevant for Nepalese enterprises.

1.2 Statements of the Problem

Many of the studies on demand for cash explain the effect of sales, interest and price level changes on cash holding by firms. The theoretical development on demand for cash is still limited and not sufficient for effective management of cash in different contexts like nature and size of business, size of financial market, etc. Many of the studies on demand for cash are conducted in developed and big financial markets but their relevance in the context of small markets and developing countries have yet to be analysed. Moreover, the available studies on demand for cash also provide conflicting views. The studies conducted by Baumol (1952), Tobin (1956), Friedman (1959), Miller and Orr (1966) Selden (1961) Frazer (1964) Mulligan (1997) Bover and Watson (2005) Liu, Tsou and Wang (2008) showed economies of scale in corporate cash holding, while the studies of Meltzer (1963), Vogel and Maddala (1967) Falls and Natke (1988) came with the conclusions of diseconomies of scale in corporate cash holdings. The findings of the study on cash holding are against each other not yet resolved.

Cash shortage in business enterprises could lead to liquidity crunch and financial crisis. Numbers of business are reported to have failed in the recent years because of inability to plan and control current assets and liabilities of their respective business. Shortage and excess of cash both affect the survival, growth and expansion of business. Especially for small firms, cash management determines their success or failures. In large firms, cash management affects risk, return, and market value. The study on optimal cash by Mulligan (1997) stated that larger firms keep lower cash. The study of Baskin (1987), Wessels (1988) and Opler et al., (1999) revealed that growth opportunities, liquidity, leverage, and profitability, affects the cash holding decisions of enterprises.

Similarly, Mauer and Sherman (1998) demonstrated that growth opportunities, volatility in cash flows and profitability determine position of cash in the enterprises. Mikkelson and Partch (2002) stated that operating performance of large amounts of cash was greater than firms that had low cash holdings. Their study found no unusual operating performance for high cash firms and concluded that persistent policies of large holdings of cash did not lead to poor performance and did not represent a

conflict between managers and stockholders' interests. Study of Kim (1998), Ferreira and Vilela (2004) demonstrated a reduction in cash levels when firms increase their financial leverage.

Determining the appropriate level of cash holdings is one of the important financial decisions a manager has to make. Opler, et al., (1999), Koshio, and Cia, (2003) investigated the determinants of corporate cash holdings in the public and private limited companies in Japan and Kenya. Their findings showed explanatory variables, firm size, operating income, variation in net fixed assets, variation in capital investment, bank debt, inventories, accounts payables, debt to assets ratio, dividend and growth opportunity are the major determinants of cash holding. Among the variables, size, bank debt, operating income and dividend payment showed negative relationship with cash holding, whereas growth opportunity, variation in fixed assets, variation in investment, account payable gave a positive relationship with cash holding.

In the cross - section analysis of corporate cash holding, Drobtz and Gruninger (2006) identified the determinants of non-financial firms' cash holdings. Their result indicated that asset tangibility and firm size both were negatively related to cash holdings and there existed a non-linear relationship between the leverage ratio and cash holdings. The study revealed operating cash flows with a positive relation to cash reserves but it did not detect a significant relationship between growth opportunities and cash holdings. Hofmann (2006) examined the determinants of corporate cash holdings of non -financial firms in New Zealand. His findings suggested growth opportunities, the variability of its cash flows, leverage, dividend payments, and the availability of liquid asset substitutes are the main determinants of corporate cash holdings, while growth opportunities and the variability of cash flows were positively related to cash holdings. The empirical researches revealed that firm’s specific factors’ affecting corporate cash holdings shows contradictory relationship across different countries and firm sizes. However, in the Nepalese context, the short run and long run demand for cash are limited and not adequately verified with the findings of the studies made in other countries. Therefore the major research problems to be addressed in this study are as follows:

- What is the status and size of cash holding in different types and sizes of enterprises?
- What is the status of cash position in assets structure and how they are being changed over a period of time?
- What is the trend of utilization of cash in different types and sizes of enterprises?
- What are the determinants of corporate cash holding in the Nepalese context?
- What is the speed of adjustment between actual and desired cash holding in the different groups of enterprises?
- What is the perception of professionals and practitioners regarding cash management practices in Nepal?

1.3 Objectives of the study

The main purpose of this study is to examine the cash management behavior of enterprises in Nepal. The specific objectives are:

- To examine the position of cash holding in Nepalese enterprises;
- To analyze the structure and utilization of cash in relation to nature and size of enterprises ;
- To examine the determinants of cash holding in Nepalese enterprises;
- To undertake an opinion survey on cash management practices of Nepalese enterprises; and
- To suggest appropriate cash management policy for improvement;

1.4 Focus of the study

Maintaining appropriate level of cash in the organization is fundamental towards the smooth operations of firms. The size of cash balance which a firm maintains is characterized by its policies regarding capital structure, working capital requirements, cash flow management, dividend payments, investments and asset management. The theoretical developments on the determinants of cash holding are not sufficient to explain under various conditions, such as in the context of developed and developing countries, big and small financial markets and also in the context of different nature and size of enterprises. The present study, therefore, focuses on determining the level

of cash holdings of Nepalese firms across different firm sizes and different enterprises together with the structure and utilization of cash in the various sampled enterprises.

Past several studies conducted in some countries included a number of firm - specific factors to explain demand for cash. The most common factors introduced as explanatory variables are sales as a proxy of wealth, interest, and price level change. The more recent studies included cash flow variability, leverage, dividend payment, growth opportunities, firm size and operating income as explanatory variables. The present study employs sales to total assets ratio, average collection period, current ratio, quick ratio and liquidity in addition to the above variables in the model. While using liquidity and current ratio as an independent variable may present multicollinearity problem. But their joint effect maybe very strong. Therefore they are included in the model. However a test of multicollinearity is used to use them in the model.

Cash management is related to the ability of enterprises to purchase assets, service debt, pay employees and control operations. Thus effective cash management correlates with the ability of entities to realize its mission goal and objectives. Different approaches are used in business enterprises to plan and control different areas of cash management, organizational and technological issues on cash management, cash planning budgeting and forecasting. To know the practice of cash management in the Nepalese context, this study analysed the opinion survey of different executives attached to different types and sizes of public and private sector enterprises.

1.5 Importance of the study

Cash is the most liquid assets and it measures the corporation's ability to pay bills on time. It is considered an important element of current asset for executing business activities. To keep cash means liquidity for a company and the ability to pay back debt. It also gives a company the financial flexibility to make inventory purchases or even make strategic acquisitions. Graham and Harvey (2001) states cash is the most liquid assets of financial institution which is required to maintain reserve ratio and statutory requirement. According to Hunt (1978), to keep pace with the demand and

supply of cash, it is necessary to keep in view of the volume, place, time and cost of cash. No doubt the nature, volume and frequency of cash receipt and disbursement differ from enterprises to enterprises. However, the optimal cash balance of firm is influenced by various factors.

The corporate finance literature has traditionally focused on the study of long-term financial decisions, such as the structure of capital, investments, dividends and firm valuations. However, Smith (1980) suggested that cash management is important because of its effects on the firm's liquidity, solvency, profitability, risk, and value. Cash management is particularly important for those companies which make sales as well as purchase on credit, since creditor can demand money anytime, and therefore, it is important for a company to manage cash.

Cash management assumes greater importance when company has taken debt, because interest payments are fixed and company has to pay it, and any delay in interest payment or principal repayment of debt can even result in company becoming bankrupt. Therefore cash should be there for payment of such expenses. Since global commodity prices are fluctuating, companies need cash in order to take advantage of decline in the raw material prices for the company's product. It is also necessary to deal with contingencies.

Firms need cash to manage day-to-day operations. It can be held in bank account to earn interest or to invest in risky securities (stocks or bonds), to earn capital gain and assets appreciation in future. Transfer of cash from bank to stock incurs a broker's commission and other opportunity costs. Whatever may be the options, cash management deals with the problem of managing cash demand for various purposes and maintain minimum cash balance desired by firms at minimum cost. The financing, investment, and dividend decisions of the firms which are the main theme of corporate finance, depends on cash management. It indicates the significance of cash management in the enterprises.

Cash management is one of the important areas of financial management that deals with short term financing and investment decision of the firms. Requirement of cash balance in the enterprises depends on the performance of firms’ specific variables such

as, growth opportunity, liquidity, cash flow, leverage, sales revenue and interest which affect demand for cash. This study therefore attempts to establish the theoretical relationship between cash holding with firm's different specific variables and confirm the relationship. Such relationship is a test between the dependent variables and firms' specific variables using econometric tools and confirms the relationship. This theoretical relationship helps in managing various financial activities of the enterprises efficiently and enables firms to manage their current assets and liabilities effectively.

The study of cash management is significant in financial management. It helps in designing basic cash management policy, short term and long term cash planning, budgeting and forecasting. It provides basic guidelines for controlling cash resources and investment of idle funds. The present study provides conceptual clarity on estimating demand for cash. With the help of this structural relationship, executives can find themselves comfortable in managing cash cautiously in changing environment.

The structure and utilization of cash which state the position of cash balance and its use in Nepalese enterprises depicts efficiency of the firms. Cash management ratio like current ratio, quick ratio, current assets to total assets, cash to current assets and cash to total assets ratio shows the structure of cash management. Different turnover ratios such as cash to current liabilities ratio, cash to total liabilities ratio and cash to sales ratio show the utilization of cash in the enterprises. With the help of ratio analysis, it helps financial managers in planning and controlling financial activities of the enterprises efficiently.

The sample opinion survey of executives of selected enterprise provides practice regarding various aspects of cash management. Theoretical test and the response of the executives derived from opinion survey helps in formulating cash management policy, program, strategy techniques and method. From the opinion survey, it makes clear about the knowledge, attitude and practice of financial and cash managers to solve organizational and technological issues, cash requirements and its determinants problem, balancing sales, purchase and payment policy, investment and utilization of cash, and to deal with financial institutions when cash is needed.

1.6 Structure of the study

The present study is organized in seven different chapters. Chapter one describes introduction, the major issues to be investigated along with the objectives, and importance and limitations of the study. Chapter two provides review of literature on cash management which includes a discussion on demand for cash. The review of related literature conducted in this part provides a framework to design the model and analyze the issue relating to cash management. Chapter three describes the methodology employed in the study. This chapter includes research design, nature and sources of data, sample size and the selection of enterprises and the framework for identifying determinants of cash holding. Chapter four describes structure and utilization of cash management across the firms and the state of their financial liquidity position. Chapter five presents the determinants of cash balance in Nepalese enterprises. Chapter six includes the analysis of survey results bearing on the cash management policies and practices. Lastly, chapter seven presents summary and conclusion of the study.

1.7 Limitations of the study

This study covers time series and cross section data of twenty enterprises during ten years their starting from 1999 to 2008. Since cash holding of the enterprises may change over a period of time depending upon the changing situation of financial markets, there may be limitation in the use of the findings of the study in the context of financial conditions and financial advancement that take place in future.

Demand for cash maybe a function of several firms' specific factors together with external macro variables. However this study considers some of the variables employed by other studies with some additional variables for the purpose of determining cash holding in Nepalese enterprises. The present study considers only twelve firms' specific variables. Therefore the findings of the study can be a model but the use may be limited.

One of the important aspects of cash management is cash inflow and outflow analysis and cash operating cycle. For the analysis of cash holding, timing of cash inflow, cash outflow and conversion of non- cash item in to cash requires monthly and weekly data. But, due to lack of such data, cash balance at the end of the financial year (point of

time) is included in the study. Regarding cash management practice in Nepalese enterprises, this study only analyzes the opinion of some of the selected executives of Nepalese enterprises. The opinion may be changed at different points of time and at different occasions and financial conditions.

Chapter 2
REVIEW OF LITERATURE

This chapter presents various theoretical approaches to cash management and provides the main results reported in the empirical literature. The theoretic approach pays special focus on the structure and utilization aspect of cash. The model of the demand for cash by firms as a description of cash management behavior is included for review in the empirical part of the study. The chapter deals with theoretical frame work, motives of cash holding, studies on demand for cash, approach of cash management, corporate cash holding behavior of the firm and determinants of corporate cash holding factors, respectively.

2.1 Theoretical foundation

Cash management refers to the collection, concentration, and disbursement of cash. It encompasses a company's level of liquidity, its management of cash balance, and its short-term investment strategies (Davidson et.al., 1992). Managers spend much of their time and effort on planning cash receipts and disbursements to ensure a desirable level of cash and they take great care to prevent cash from being lost, stolen or misused (Srivastava, 1979). Cash and its substitute is one of the key components of working capital management. It is required in the enterprises to fulfill various needs. The cash balance theory developed by Marshall (1923), Pigou (1917) and Fisher (1911) recognized interest rate, wealth owned by the individuals, expectations of future prices and future rate of interest in the determination of demand for cash. They, however, believed that changes in these factors remain constant or they are proportional to the changes in individual's income.

2.2 Motives of cash holding

Cash is crucial for the operation of the firm continuously. Firms need cash to manage day-to-day operations. Every activity in an enterprise revolves round the cash because it cannot be raised as and when one needs it. Cash management plays a crucial role in the growth and survival of the enterprises. As Lee (2001) states cash management as the administration of liquid assets and liabilities for raising required funds to finance a business. Its functions are intended to serve two basic purposes: one, to maintain

liquidity, another, to keep minimum cash balance. While maintaining minimum cash if the firm faces liquidity problems it fails because it is technical insolvency. Again, if the company maintains high liquidity, the value of unused fund reduces the purchasing power of money and dilutes earnings in the form of opportunity cost of cash.

Cash can be held in bank account for earning interest or invested in risky securities (stocks or bonds) for earning possibly a higher rate of return than the bank interest. Transfer of cash from bank to stock incurs a broker's commission. Cash management deals with the problem of managing cash demand for various purpose and maintain minimum cash balance at minimum cost. The idea behind cash management is, therefore, maintaining adequate liquid assets whenever and wherever required by the firm.

The literature on corporate finance emphasizes four major motives for holding cash: (i) Transaction motive, (ii) Precautionary motive, (iii) Speculative motive, and (iv) Compensating balance motive. However, Keynes (1936) stated that the empirical investigation on the properties of demand for cash has shifted from the aggregate to the individual firm level. The Keynesian approach to the demand for cash distinguishes three different motives for holding cash: the transactions-motive, precautionary-motive and the speculative-motive.

In transactions motive the company holds cash to meet their routine expenses which are incurred in the ordinary course of business. Transaction motive states that as transaction costs rises, the companies will hold more cash to avoid these costs. In precautionary motive, the company holds cash to cover unanticipated expenses or to meet unspecified contingencies. In speculative motive, the company needs cash to take advantage of possible future investment opportunities.

The transaction motive for holding cash is based on Baumol, (1952) and Miller and Orr (1966) who supported the fact that firm hold cash for daily transactions to make payments for purchase, wage, expenses, etc. The transaction motive leads to several predictions about a firm's cash holdings. For example, large firms have faces less constraint therefore economies of scale usually exist in large firms. Mulligan (1997) favors transaction motive in which a firm's cash holdings are based on its activity, technological sophistication and opportunity costs.

In the precautionary motive, firms hold cash in order to continue to invest in positive net present value generating projects during the periods when external finance is costly. This situation is of particular importance to firms that have good investment opportunities but are unable to generate enough internal cash to take advantage of them. This implies a benefit to holding cash for firms that may have limited access to capital when they need to invest. Opler, et al. (1999) supported the precautionary motive of cash holding. Firms hold cash to be in a better position to cope with adverse shocks when access to capital markets is costly.

The speculative motive relates to the holding of cash for investing in profit making opportunities as and when they arise. Harford (1999) documented the tendency of firms with unusually large holdings of cash to undertake diversifying and value decreasing acquisitions.

Corporations hold cash for several important reasons: pay a firm's obligations, take immediate advantage of business opportunities, and provide self-insurance against unknown hazards (Baskin, 1987). Titman and Twite (2007) observed that U.S. corporations that incurred a tax consequence associated with repatriating foreign earnings hold higher levels of cash. The agency motive as pointed out by Jensen (1986) entrenched that managers would rather retain cash than increase payouts to shareholders when the firm has poor investment opportunities.

2.3 Studies on demand for cash

The study on demand for cash was encouraged by the earlier studies of Fisher, Marshal, and Pigou. Fisher (1911) analyzed the payment mechanism and the velocity of circulation of money rather than the motives for holding money. He examined the link between the total quantity of money M and the total amount of spending on final goods and services produced in the economy (P x Y), where P is the price level and Y is aggregate output, V is the velocity of money. Velocity V is defined more precisely as total spending P*Y divided by the quantity of money M i.e. *(P*Y/M).* The equation states that quantity of money multiplied by the number of times that the money is spent in a given year must be equal to nominal income, when M changes, and nominal income PxY changes in the same direction.

The classical economists Marshal and Pigou (1917) thought that two properties of money as a medium of exchange and a store of wealth, and make people want to hold it. Marshal and Pigou agreed with Fisher that demands for money would relate to the level of transactions. The transaction component of money demand is proportional to nominal income. As far as the money function as a store of wealth is concerned, the classical economists suggested that the level of people's wealth also affected the demand for cash. They believed that the wealth in nominal terms appeared to be proportional to nominal income. Classical economist also expressed the demand for cash as a function of value of output as expressed in the following equation:

$$M_d = k \times PY \quad (1)$$

where k is the constant of proportionality

Although the classical economists often treated k as constant and agreed with fisher that nominal income is determined by the quantity of cash, and the Cambridge approach allowed individuals to choose how much cash they wished to hold. This approach allowed for the possibility that k could fluctuate in the short run because the decisions about using money to store wealth depended on the yields and expected returns on other assets that also function as stores of wealth.

2.4 Keynes's liquidity preference theory

The General Theory of Employment, Interest, and Money by Keynes (1936) developed a theory of cash demand, which is known as liquidity preference theory at macro level. Keynes abandoned the classical view and gave importance to interest rates. He postulated three motives for holding cash: the transactions motive, the precautionary motive, and the speculative motive. Keynes (1936) developed the following demand for cash equation, known as the liquidity preference function, which says that the demand for real cash balances, M_d/P is a function of interest, I and income, Y:

$$M_d/P = f(I, Y) \quad (2)$$

Theoretically, the demand for real cash is inversely related to interest rate and positively related to income. Keynes argued that the demand for cash was not only related to

income, but also to interest rates. Because the transaction motive and precautionary motive of demand for cash is positively related to real income Y, while speculative motive of demand for cash is negatively related to interest rate I. Thus the demand for real money balances Md/P can be rewrite as:

$$M_d/P = L_I(Y) + L_2(I) \quad (3)$$

where L_1 means the transactions demand for money; L2 means the speculative demand for money. By deriving the liquidity preference function for velocity PY/M, it can be seen that Keynes's theory of the demand for money shows fluctuation in velocity of circulation not constant. The liquidity preference equation can be rewritten as:

$$P/M_d = \frac{1}{f(i,y)} \quad \text{or} \quad \frac{P}{M} = \frac{1}{f(i,y)} \quad (4)$$

Multiplying both sides of this equation by Y and replacing M^d by M, as it must be equal in money market equilibrium, then the equation appears as:

$$V = \frac{PY}{M} = \frac{Y}{f(i,y)} \quad (5)$$

Keynes's liquidity preference theory of the demand for cash shows that velocity could have substantial fluctuations. However it is argued that there are other factors like productivity and time preferences which affect liquidity preference theory.

2.5 Inventory theoretic approach to cash management

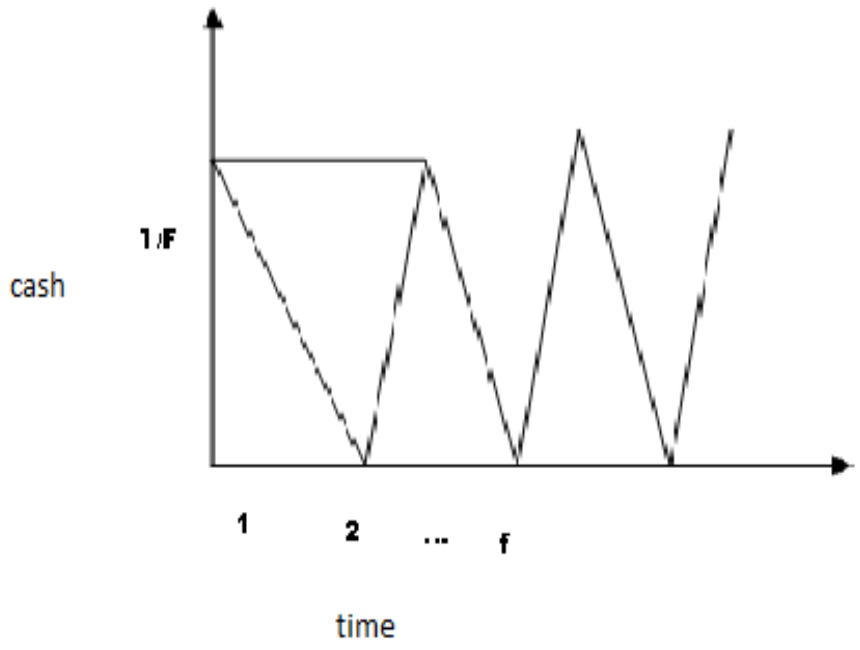
Numerous theories have been developed to explain the cash management behaviour of the firms. Almost all of them can be generalized into a proposition of the existence of a relationship between a few important independent variables and the stock of cash. The two basic transaction models, most commonly accepted in the financial literature, are the deterministic Baumol-Tobin and the stochastic Miller Orr inventory models. These models present monetary theory and are considered consistent with the theory of the firm.

The inventory theoretic approach, first developed by Baumol (1952) and Tobin (1956), served as one of the most important theoretical frameworks in monetary economics. The influential idea implied by this approach was that people hold cash to reduce the resource costs of money transaction. This idea existed in most of the existing cash demand frameworks. One of the most appealing insights of the approach is that the income and interest elasticity of cash demand are constant and both equal to 0.5. Income elasticity and interest elasticity are the key parameters for determining the demand for cash. This leads to the famous square-root formula with average cash holdings as given by:

$$M = \sqrt{\frac{2BT}{I}} \qquad (6)$$

where M is optimum cash balance; T is the amount of consumption expenditure that the individual spends over the period; I is the interest rate on bank deposits; and B is the fixed brokerage fee. Equation (6) is obtained by minimizing the sum of interest forgone on total money holdings and total transaction costs. It indicates that the consumer operates on the intensive cash management margin (chooses the cash holding period) to equate the marginal interest forgone on cash holdings to the fixed transaction cost.

Figure 2.1 Saw-toothed cash holdings



As illustrated in Figure 1.1, equation (6) suggests that the consumer's cash holdings exhibit the so-called saw-toothed pattern: reaching the peak amount after every cash withdrawal, while gradually returning to zero before the next one. In Figure 2.1, f denotes the number of cash withdrawals by the consumer, and T/f is the amount of each cash withdrawal. Last, but not less importantly, equation (6) suggests that cash demand has constant income and interest elasticity, which are both equal to 0.5.

Miller and Orr (1966) introduced the precautionary motive into the demand for money. In their model, two assets money and bonds are used to explain demand for cash. A fixed transaction cost is incurred per conversion between the two assets. The crucial feature is that the firm's cash flows are stochastic in a fixed time period (say 1/f of a day). In the simplest case, cash flows fluctuate in a complete stochastic manner and that they form a normal distribution as the number of observation increase with an equal probability of a positive or negative cash flow of m dollars.

The firm's optimal cash management decision consists of an upper bound of money balances, H, and a return level, S. When the lower bound of money balances is reached, S dollars of bonds are converted to cash; when the upper bound is reached, (H-S) dollars of cash are converted to bonds. By minimizing the sum of expected daily transaction costs and interest forgone on money balances, Miller and Orr showed that the optimal size of average money balances as:

$$M^* = \frac{4}{3}\left[\frac{3B}{4i}\ \sigma^2\right]^{1/3},\ \sigma^2\ > M^2 f, \qquad (7)$$

where M is the average size of each cash flow; f is the average daily frequency of transactions; and a^2 denotes the daily variance of changes in money balance.

Like the approach of Baumol-Tobin, Miller and Orr's model yields constant interest elasticity, with a value of $\frac{1}{3}$ rather than $\frac{1}{2}$. The income elasticity is somewhat ambiguous as there is no direct scale variable corresponding to income. If one thinks in terms of the 2 size of each cash flow, M, then the income elasticity is $\frac{2}{3}$; however,

if one thinks in terms of (f), the frequency of transactions, then the scale elasticity is $\frac{1}{3}$. This ambiguity regarding the scale variable made the (M-O) framework ill-suited for empirical estimation.

This approach permits net cash flows to fluctuate in a completely stochastic way. Unfortunately, this feature is offset by the fact that the model is only capable of dealing with two types of assets: cash and marketable securities, and does not incorporate payables. Both models referred to as above imply that there are economies of scale in cash demand by firms and the elasticity of cash demand with respect to transactions is less than one. In these models, the scale operator is transactions volume which is mostly measured by sales. Both B-T and (M-O) frameworks have the implication of constant elasticity. These models assume that the variables entering the cash demand function are mutually independent.

In a comparative study of the inventory theoretic approach, Karin (1973) investigated the impact of possible inter-dependence among the variables entering the B- T square root formula (6) on income and interest elasticity. The inter-dependence comes from the assumption that the money transaction involves costs in pecuniary terms and forgone earnings represented by time. Under this assumption a change in the marginal value of time affects both the transaction cost of assets conversion and total income (through changing wage income). The production technology of money transactions takes the following form:

$$b = p^{r}X + \gamma\, w \qquad (8)$$

where b denotes the fixed brokerage fee measured by units of commodities; X denotes a vector of commodities used as inputs in the production of the exchange at a unit level; p' is the corresponding deflated price vector; *y* is the amount of time spent in producing the exchange at a unit level; and w is the real hourly wage rate.

$$T = Vi+LW \qquad (9)$$

In the simplest form, income T is composed of labor income, denoted by WL, where L is

the number of hours worked, and interest income, denoted by Vi, where V is the amount of interest bearing assets, which is assumed to be independent of the use of time. Taking logs on both sides of equation (6) minus equation (9) and then manipulating the terms, with constant p' X, γ and V (assumed to be independent of the real wage rate W and the interest rate i), we can derive the expressions for partial income elasticity and partial interest elasticity, respectively:

$$\frac{\partial \log M}{\partial \log T} = \frac{\partial \log M}{\partial \log W} \Big/ \frac{\partial \log T}{\partial \log W} = \frac{1 - S_X}{2(1 - Sv)(1 + e_L)} + \frac{1}{2} \tag{10}$$

$$\frac{\partial \log M}{\partial \log i} = \frac{1}{2}(s_v - 1) \tag{11}$$

where Sv = (Vi/T) denotes the share of non-labor income to total income; Sx (=p' X/b) denotes the share of resource costs to total transaction costs; and e_L (=∂ log L/ ∂ logW) denotes labor supply elasticity.

Two implications can be drawn from these two expressions. First, the income elasticity suggested by the square root formula that depends on the nature of transaction costs. When the money transaction costs are only composed of the resource costs measured in units of consumption goods, i.e. S_x, =1. The income elasticity reaches 0.5 as the lower limit; but when the money transaction costs involve part of the time costs, the income elasticity is greater than 0.5. Second, equation (11) suggests that the interest elasticity of money demand is always negative as $0 \leq S \leq 1$ as interest increases, money demand decreases too.

These inventory theoretic approaches which are mentioned above are not adequate to account for monetary equilibrium, as these approaches implicitly assume that the conduct of monetary policy (the money supply) is exogenous to the first order effects of a shift in the money demand curve. Moreover, due to the lacking of microeconomics foundation, partial equilibrium framework cannot be used to examine the interactions between monetary (prices) and real phenomena (real allocations).Hence, it is important for researchers to examine the inventory theoretic approach in general equilibrium settings.

2.6 General equilibrium inventory theoretic framework

The general equilibrium inventory theoretic model, which can be used to study the demand for cash by firms, was developed by Jovanovic (1982) and Romer (1986). According to Jovanovich (1982), minimizing the sum of output forgone on capital and total transfer costs of resource yields approximately the same square root formula as mention in equation 6. This result is not surprising, as suggested by Kami (1973), when the fixed cost is a resource cost, and the B-T square root formula approximately holds.

Romer (1986) considered an overlapping generation model (OLG). In the model, two assets are considered - money and bank deposits. There are N generations, of equal size. At each moment, a new generation with size 1/N is born and lives for N period. Each generation is only endowed at birth with an endowment of amount E of non storable consumption goods and a lump sum transfer of real amount, S of fiat money, but wishes to consume throughout its life. At the beginning of its life, the individuals sell their endowment for money and then keep some wealth in the form of bank deposits. It costs agents a fixed utility cost, which can be thought of as a time cost to convert bank deposits into money. Like the approach of Jovanovic (1982), as every generation is exactly the same as others except for their date of birth, at each instance a distribution always exists across generations of goods and money.

Under the assumptions of no time discount for the agent and the use of log utility function, Romer's model (1986) predicted that the income elasticity of money was no longer 0.5, but 1. Romer argued that this could be explained by the fixed money transaction cost being a time cost instead of a resource cost. The result on the interest elasticity of money demand depends on the agent's preference over the disutility of money transaction costs. Since Romer did not specify how agents value their time (The wage rate) in the model, the disutility time cost by construction directly enters and affects the agent's optimal cash management rule. With a linear disutility cost of money transactions, Romer derived a similar square root formula, which takes the following form:

$$M = T \sqrt{\frac{2b}{i}} \qquad (12)$$

where b is the real fixed cost measured in units of the agent's utility. Equation (12) suggests that the interest elasticity of money is O.5.- The results of both models depend on the assumption that the economy always stays at one steady state (without the ability to transit to other steady states). There are, however, also alternative measures presented in the demand for money literature, such as wealth, production, and market capitalization.

Attanasio et al. (2002) in searching of transaction costs with the time costs, explain that cash manager is needed time to make transactions, where money is saved on transaction time, and optimal money balance is chosen in order to trade off the time cost of transactions against the cost of holding money instead of an interest-bearing asset yielding a nominal return per period. The cash manager chooses cash balance, *m,* to minimize the sum of the cost of transaction time $T\omega$ (the product of transaction time T and the time of cost transaction ω) and foregone interest rates *Rm,* subject to a transaction technology:
They presented the behavioral cash management models as follows:

$$\text{Min} \quad T\omega + Rm \qquad (13)$$

T, m

$$\text{Subject to } T = Ac^{\gamma} \left(\frac{C}{M}\right)^{\beta}$$

where, (A) measures technology improvements and (c), consumptions. The internal solution of the minimization problem in (13) implies that the average holding of real cash balance is equal to

$$m = \left(\frac{\omega A \beta}{R}\right)^{\frac{1}{1+\beta}} c^{(\beta+\gamma)/(1+\beta)} \qquad (14)$$

where m is the real cash balances, β is the transaction cost, R is the nominal rate of return, A is a measure of technology improvements, and c is the scale operator. The equation is based on an assumption that the cash manager behaves as min *min* τω +

Rm, subject to $\tau = Ac^{\gamma} (c/m)^{\beta}$ (where $\tau\omega$ = transaction time, τ = the time cost of transaction ω, and *Rm* = forgone interest). This equation encompasses several models. By setting $\gamma = 0$ and $\beta = 1$, one obtains the Baumol-Tobin square root formula. If $\gamma = 0$ and $\beta = 2$, Equation (12) reduces to Miller –Orr solution (Attanasio et al. 2002). This yields the benchmark specification for the cash demand equation as:

$$\text{Log } m_{i,t} = \frac{1}{1+\beta} \text{ Log ß} + \frac{1}{1+\beta} \log \omega_{i,t} A_{i,t} - \frac{1}{1+\beta} \log R_{i,t} + \frac{\beta+\gamma}{1+\beta} \log c_{i,t} \quad (15)$$

This equation assumes that the parameters of equation (15) are common among individuals who possess at least a bank or postal account. Moreover, it assumes that log $\omega_{i,t} A_{i,t}$ depends on time. The effects of the exogenous factors on the strategic cash management decisions can be examined by transforming Equation (14) to the estimation form and testing its stability. In the empirical equation, the variable *A* can be seen as error term as well as index of the state of financial sophistication in the firm (Mulligan 1997). If transaction costs and the value of time of the cash manager are supposed to be constant, the long run model can be presented in its conventional form as presented for example by Coates (1976) as follows:

$$M^*t = AT_t^{\alpha 1} I_t^{\alpha 2} \quad (16)$$

Where M* is the desired nominal cash balances, *A* is the fixed transaction cost; α_1 and α_2 are the elasticities of M* with respect to the value of transactions *(T* = the scale operator), and the rate of interest (I).

2.7 Production function approach to cash management

Friedman (1959) stated that firms hold cash as a resource and that cash balances are similar to fixed capital rather than to inventories. In Friedman's study of the behavior of aggregate cash balances and velocity, the definition of money included time deposit also. His empirical results indicated that permanent income elasticity of 1.8 and the effect of interest rate on the demand for cash was in the expected direction, but was too small to be statistically significant. His study concluded that the demand for cash is not statistically sensitive to changes in the rate of interest.

According to Nadiri (1969), real cash balance serves as productive inputs. Like any other capital investment, an increase in cash balance results in a decrease in cash flow, and vice versa. Holding adequate cash balance reduces the uncertainty of meeting current payments and avoids unnecessary and unprofitable liquidation of other assets. Nadiri presented his model in a multiplicative form as follows:

$$M^*_t = A_o X_t^{*1/\rho} v_t^a (c/w) \beta \qquad (17)$$

where m* is the desired level of real cash balances, A_o is constant; ρ, a, and β are the elasticities of m* with respect to the explanatory variables of the model, i.e. the expected level of output *(X*),* the opportunity cost of money (v), and expected future relative prices *(c/w).*Firms are assumed to minimize their expected total costs, which are hypothesized to be C=wL + cK + vm, where w, c, and v are the cost of labor L, capital K, and real money balance m. The cost of real cash balance (the opportunity cost of money), v, is defined to be v = r + p'b/pb + p'/p, where r is the interest rate, pb, is the price of securities, p'b, is the expected change in the price of securities, and p' is the expected change in the general price level.

Nadiri (1969) as cited in Pradhan (1986) assumed the following reasonable a priori hypotheses: $p > 0$, $\alpha < 0$, and $\beta > 0$, i.e. the elasticities of output and expected future relative prices with respect to desired cash balance is positive and the elasticity of the opportunity cost is negative. After allowing for adjustment for desired and actual real cash balance of the firm and others, the final form of estimating equation was stated as follows:

Restricted model:

$\ln mt = a_0 = a_1 \ln v_t + a_2 \ln (c/w)_t + a_3 \ln x_t + a_4 \ln x_{t-1} + a_5 \ln m_{t-1} + \ldots\ldots\ldots\ldots\ldots\ldots e_{it}$

Where, m_t = Actual level of cash, v_t = the cost of real cash balance, $(c/w)_t$ = expected future relative price, x = volume of output.

Unrestricted model:

$\text{Ln } m_t = b_0 + b_1 \ln r_t + b_2 d \ln r_t + b_3 d \ln p_t + b_4 \ln (c/w)_t + b_5 \ln x_t + b_6 \ln x_{t-1} + b7 \ln m_{t-1} + \ldots\ldots\ldots\ldots\ldots e_{2t}$

where current values of the changes in the interest rate (d ln r_t) and the changes in the price level (d ln p_t) were used as proxies for expected capital gains (losses), pb'/ pb, and the expected reduction in purchasing power, p'/p. Output was measured in terms of sales, deflated actual output and deflated capacity output. With these, Nadiri observed that the interest rate elasticity had a negative coefficient and was statistically significant at the 5 % level of significance. The short term interest elasticity of real cash balance was about -0.10 in the unrestricted version of the model. The coefficient of V_t in the restricted form of the model was negative but statistically significant and about 0.04. The expected capital gains (losses) variable, d In r_t in the equation of unrestricted model had a priori positive and statistically significant coefficient.

The performance of the expected relative factor price variable suggested that real cash balances are substitutes for capital or labor in the asset structure of the firm. The income elasticities of real cash balances are consistently less than unity. This finding supported the theoretical proposition of Baumol and Tobin and contradicted Friedman's high income elasticity and Meltzers unitary income elasticity hypothesis of real cash balances with respect to scale variable of income or wealth.

Coates (1976) assumed that the management of a firm wishes to maximize the present real value of the firm. He derived the necessary conditions for such value maximization and resolved the marginal productivity conditions for labor, capital, and money. Changes in the cash balance are directly reflected as changes in the discounted stream of cash flows. These cash flows are equal to a firm's market value, and their maximization is the main goal of management as presented in financial theory.

In order to derive an explicit cash management function Coates (1976) assumed that the firm's production function could be defined by a Cobb-Douglas production function. The desired money stock was derived by combining the production function with the marginal productivity condition for real balances (i.e. the amount of real cash balances for which the marginal value product after taxes is equal to the tax adjusted cost of capital). The model is taken as in the following form

$$m^* = [(1 - x)\ \gamma\ \pi\ q]/(r + d_P/P) \qquad (18)$$

It can be expressed in simple form m* = $\frac{(1-x)\gamma\pi q}{r+dp/p}$, where m* is desired real cash balances, x is the corporate tax rate, *n* is the real price of output *q, γ* is the elasticity of production with respect to real balances, *r* is the cost of capital and *dp/P* is the percentage change in the price level. For the estimation, Coates presented the model in nominal terms as follows (the tax rate was excluded for reasons of comparability with earlier studies and due to problems in determining it from accounting data of firms)

$$M_t^* = \gamma\,(\pi\, q)_t^{\alpha 1}\, i_t^{\alpha 2} \qquad (19)$$

Coates used the treasury bills rate as the cost of real capital $i = r + dP/P$ (i.e. the real rate of interest plus the percentage change in the price level). He found that the elasticity of the demand for money (cash balance) with respect to sales or production were equal to unity. This finding was not consistent with the Baumol model, but the elasticity of money with respect to the Treasury bill rate did not differ significantly from -0.5. This finding was however consistent with Baumol model.

2.8 Wealth theoretic approach to cash management

The wealth theoretic approach is also widely accepted in literature. Meltzer (1963) hypothesized that the amount of cash held by firms is a function of the market rate of interest and wealth as follows:

$$M = k\, r^{\alpha}\, W^{\beta} \qquad (20)$$

where *M* is cash, the sum of currency and demand deposits of the public, *r* is the market rate of interest and *W* is the net wealth of the public. Meltzer defined wealth as the firm's total assets. He argued that the amount of cash held was subject to a wealth constraint as well as being dependent upon the yield of a variety of alternative assets (r is a proxy for these returns). When he estimated the equation (20) he observed that the value of "α" was approximately -0.90 and "β" was approximately 1.0. Meltzers used sales as aproxy for the firm's wealth. He assumed that the sales of the i_{th} firm in the j_{th} industry are equal to $S_{ij} = (K_{ij}\,\rho j\, W_{ij})$, where K_{ij} is a measure of the capital/labor ratio and of the intensity of capital use and ρ_j is the internal rate of return. Both of

these latter variables were assumed to be constant for all firms in the same industry. Wealth as a scale operator has been used by Nadiri (1969) and Ungar and Zilberfarb (1980).

In the cross-section study, DeAlessi (1966) used the Meltzer's model and examined the British business firms' demand for cash and measured the wealth of each firm directly in the market place as the present value of the market-weighted net exposed income stream of that firm. The nominal wealth (W) of each firm was estimated by multiplying the number of ordinary shares outstanding (N) by their market price (P), and $W_t = N_t P_t$. The estimating regression equations were:

$$\ln M_t = \alpha_0 + \alpha_1 w_t + \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots u_t$$

where M_t = cash balance at time t, W_t = wealth (measured by market value of total shares) of the firms. His findings showed that cash balance held by a business firm was positively associated with its wealth and the wealth elasticity was around unity.

2.9 Economies of scale in cash holding

Meltzer's work can be regarded as one of the important contributions dealing with the theory of the demand for cash by business firms. The results reported by Melzer (1963) suggested that the demand for money by firms showed a function of sales C_d = f (Sales). Considering money held as part of a portfolio of assets, Meltzer mentions that the decision about the aggregate amount of money to be held can be considered as subject to a wealth constraint, dependent on the yields of a variety of alternate assets. On this basis, he specifies the demand for money function as;

$$M = f(r, w) \qquad (21)$$

For empirical investigation, he develops the function in the following form

$$M = Kr^{\alpha} W\beta \qquad (22)$$

where M= Money (Currency and demand deposit held by the public)

r= market rate of interest

w= net wealth of the public

K= constant, α and β coefficient on r and w

Meltzer used sales as a proxy for the firm's wealth and justified such usage by assuming that the sales S of the i_{th} firm in the j_{th} industry are equal to $S_{ij} = f(K_{ij} P_{ij} W_{ij})$, where K_{ij} is the measure of the capital/ labor ratio and of the intensity of capital use and P_{ij} is the internal rate of return on assets in the industry. He however, assumed both k_{ij} and p_{ij} to be constant. His result indicated the rejection of the model of transaction demand with economies of scale suggested by Baumol and Tobin, and Friedman's findings that cash balances increase more than proportionately with permanent income.

Frazer (1964) also conducted a study on demand for cash, where he used cross-section data for the period of 1956 to 1961. Among others, his conclusion was that there do appear to be significant economies in precautionary balances since cash varies less than proportionately with the assets of the firms. But his results could not be compared with others. It was also recognized by Vogel and Maddala (1967). Farzer found that corporate liquidity, defined as the ratio of cash and government securities to current liabilities, rises with the size of the firm, while cash falls relative to sales. With this, he wanted to show the importance of the precautionary motive for holding money and the existence of economies of scale. However, his results are difficult to interpret clearly.

Vogel and Maddala (1967) showed the difficulties in distinguishing between wealth and transaction models. Contrary to Meltzer's conclusions, a strong argument could be made for economies of scale in cash demand. As manufacturing corporation increases in size, they appear to substitute short-term securities for cash. Vogel and Maddala (1967) attributed a downward trend in relative money balances to rising rates and innovations in financial management.

2.10 Partial adjustment of cash balance

The model mentioned assumes that the real cash balances are adjusted to a desired level immediately. However, there are possible lags in the adjustment of actual cash balances to their desired level. The lag could be due to uncertainty about the demand conditions, incomplete information about financial markets and disequilibrium in other assets of the firm. Therefore, modifications can be made on the basic equation introducing a partial adjustment mechanism by which actual holding is adjusted to

desired levels. The use of this model implies that cash manager finds it optimal to adjust cash balances by only some fixed fraction of the desired adjustment in each period. It is assumed to behave this way because of the existence of adjustment costs, which make change more costly on the average adjustment. Since the desired cash balance variable is not directly observable, the adjustment process of actual to desire cash balance level should be specified. Nadiri (1969) employed a Nerlove partial adjustment mechanism to depict the adjustment process from actual to desired cash balances, i.e.

$$\frac{m_t}{m_{t-1}} = \left(\frac{m^*_t}{m_{t-1}}\right)\lambda \qquad \text{.....(23)}$$

where $0<\lambda<1$, (m_t) = is the actual cash (m^*_t)= is the desired cash and the coefficient λ is the adjustment coefficient which measures speed of actual cash holding to desired cash. The model hypothesizes that from the difference between the actual and desired cash balances a fixed percentage is eliminated during one period. This equation states that changes in current year's cash holding is a certain fraction (λ) of the difference between desired cash balance and actual cash balance of the previous year. Rewriting the equation;

$m_t = \lambda\,(m_t^* - m_{t-1}) + m_{t-1}$, since $m_t^* = f(S_t)$

We have, $m_t = (f(S_t) - m_{t-1}) + m_{t-1}$ Or $m_t = f(S_t) + 1-\lambda)\, m_{t-1}$

Putting this function into estimating regression equation we have:

$$m_t = \lambda\ a_0 + \lambda\ a_1 m_t + (1-\lambda)\ m_{t-1} + \lambda u_t \text{……. .....} \qquad (24)$$

This equation can be extended to include other explanatory variable also. This simple partial adjustment mechanism is generally applied in most empirical studies on the demand for cash by firms (Nadiri 1969, Coates 1976, Ungar and Zilberfarb 1980, Natke 2001, and Robles 2002.)

From the above discussion, it is clear that the interest in the study of demand for cash was, in fact, raised by Keynes (1936) Baumol (1952), Tobin (1956), Friedman (1959) Miller and Orr (1966). Baumol and Tobin suggested that there existed economies of scale

in cash holding and that elasticity of transaction cash holding was 0.5. Friedman's result showed a permanent income elasticity of 1.8. Most of the other cross section and time series studies on the demand for cash by business firms were in contrast to both the Baumol and Tobin models. The major conclusion of these studies drawn was that they were similar because the elasticity of cash with respect to sales was reported to be approximately in unity.

Various studies reviewed above like Keynes (1936) Liquidity preference theory, Baumol (1952), Tobin (1956) Miller and Orr (1966), inventory theoretic approach to cash management, Jovanovic (1982) and Romer (1986) general equilibrium inventory theoretic frameworks, Friedman (1959), Nadiri (1969), Coates (1976) production function approach to cash management, Meltzer (1963), DeAlessi (1966) Ungar and Zilberfarb (1980) wealth theoretic approach to cash management used sales interest and opportunity costs as explanatory variables . These studies only concentrated on sales, interest, and opportunity cost to explain cash demand function and elasticity of cash with respect to sales and partial adjustment of cash balance.

2.11 Review on the size of cash holding across the countries and companies

Cash to a company is very important for its survival and growth. A firm without sufficient cash will starve to death, i.e. go bankrupt. However, a firm with too much cash will have other problems like irresponsible spending and opportunity costs of idle cash. Cash provides liquidity, which is vital to business operations. The issues of cash holdings on firm's financial performance are of long standing nature and lie at the heart of corporate finance.

Contemplating the record of amount of cash stockpiled by U.S. firms, the finance profession started to worry about these hoards. In particular, observers' casted serious doubt on the rationale for holding so much cash[1]. This concern led to the importance of research to clarify the multi- faceted dimensions of firms' cash policy.

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[1] "Behind Those Stockpiles of Corporate Cash," by Mark Hulbert, *Wall Street Journal*, October 22, 2006. "Looking for Trouble," *The Economist*, April 21, 2005. "The Corporate Savings Glut", *the Economist*, July 7, 2005. "Companies Are Piling Up Cash", by Diana B. Henriques, New York Times, March 4, 2008.

Although rapid developments considerably enriched our understanding of the factors driving firms' cash holdings, the literature paid little attention to whether cash policy could have a real effect on firms' day-to-day operations. This study helps bridging that gap by examining whether and how cash holding affect firms' performance.

In perfect capital markets, investment decisions are independent of financing decisions on whether to finance with internal or external sources of fund. However, in practice external finance may be more expensive than internal finance due to information asymmetry and other fixed and variable costs. The fixed cost component induces a firm to hold cash. Similarly, to meet unanticipated cash shortfalls, uncertainty of imperfect capital market, and to finance on positive net present value investment projects firms hold cash for buffer stock as reserve (Gitman et.al, 1979).

Traditionally, the focus of corporate finance was on the study of long-term financial decisions such as the capital structure, investments, dividends, and firm valuations. However, Smith (1980) focus on proper handling of cash management because of its effects on the firm's profitability and risk. as a possible consequence for its performance, liquidity plays an important role in corporate financial decisions.

The study on behavior of firm's corporate cash holding has received increasing attention in the financial management. In a frictionless world, a firm would not have to hold cash. However, in reality, frictions will, in fact, cause cash holdings to matter. A firm with sufficient cash holdings will not have to forego positive net present value of the projects because of market imperfections, transaction costs, and asymmetric information. Moreover, cash holdings reduce the probability of financial distress.

Purpose of cash holding may be country specific. Kalay (1982) demonstrated that firms tend to hold cash to mitigate the conflict of interest between equity holders and debt holders. Kalay's empirical work favours the precautionary motives of holding cash and suggests that firms in the Netherlands like to hold excess cash equivalent to an average of 11.7 percent of the firm's market value. Kester (1986) compared the cash holdings of The Japanese and US firms. In 1983 the average US firms hold only 8.6 percent of their assets in cash, whereas in Japan the average was 18.7 percent.

Similarly, Kim, Mauer, and Sherman (1998) found that firms liked to hold cash equivalent to an average of 11.7 percent of the firm's market value, and approximately 8 percent of a firm's total assets. Further, they state that at the end of 1998, the largest corporations around the world hold $ 1.5 trillion of cash and cash equivalent, which is almost 9 percent of the book value of their assets and slightly above 9 percent of the market value of their equity. These figures indicate that investments in cash are important for corporations. Industrial firms in the U.S. hold a substantial portion of their total assets in cash and marketable securities. The median US firm possessed more than 13 percent of its total assets as cash and marketable securities. This ratio was 7 percent in Canada, 16 percent in Germany, 18 percent in France and 14 percent in Great Britain.

According to Rajan and Zingales (1995), Japanese firms hold a lot more cash than their counterpart countries. The average cash to assets ratio of Japanese industrial firms was nearly twice as much among firms in any other G7 countries in 1991. Pinkowitz and Williamson (2001) also found that Japanese firms hold more cash than U.S. or German firms in between 1974 and 1995. Dittmar, Malirt-Smith, and Servaes (2003) documented that average cash holding ratio of Japanese firms was the highest among firms from other 45 countries in 1998. Pinkowitz and Willamson (2001) explained the differences between Japanese and US cash holdings by the monopoly power of Japanese banks that persuade firms to hold large cash reserves.

The differences in cash holdings are attributable to differences in the corporate governance structures across countries. Firms in countries with poor minority shareholder protection hold up to twice as much cash reserves than firms in countries with strong shareholder protection rights. In a similar vein, Ferreira and Vilela (2004) stated that in late 2000 the amount of cash and marketable securities held by firms in the European Monetary Union amounted to 14.8 percent of their total assets. Thus, the cash to total assets ratio differs from country to country. However, in the Nepalese manufacturing and trading company, cash ratio is not identified. It is still a matter of discussion and digging out its status.

The level of cash holdings is one of the elements of the asset structure. Cash and cash equivalent normally constitute an important component of a firm's assets. According to

Opler et al., (2003), firms hold a significant portion of their assets in the form of cash. Their study showed at the end of 1998, corporate cash holdings of the S&P 500 companies' alone amounted to $716 billion in 1994. Microsoft reported a cash balance of $60 billion in its 2004 fourth quarter earnings announcement, and is reported to have accumulated cash at a rate of $ 1 billion per month. In April of 2006, Apple Computer had 59 percent of its total assets in the form of cash and short-term investments. Moreover, there appears to be a significant variation in liquid asset holdings across firms as well as countries. Dittmar et al., (2003) reported the median cash-holdings of $19.5 million in the U.S. per firm and $31.5 million in Switzerland. Cash holdings ranged from 0.3 percent of assets in Kenya to 15.5 percent in Japan and 29.6 percent in Egypt. Hence, it shows controversial and conflicting views regarding the cash holding position in terms of percentages in international studies.

Ditimar et al., (2003) compared the median cash ratio of firms from 45 countries, and only median firm of seven countries hold more cash than the median Swiss firm. However, there are not significant differences in cash holdings across countries. Jani et al., (2004) analyzed the cash holdings behavior of Swiss firms for the period 1990-2000. He found that Swiss firms, on an average, hold much larger cash reserves than firms in most other countries. The median cash ratio of a sampled 156 Swiss non-financial publicly listed firms showed a variation between 10 percent and 15 percent over the period from 1995 to 2004.

According to Bates, Kahle, and Stulz (2006), cash holdings are an important component of a firm's capital structure. Cash holdings of U.S. companies are varied with and growing over time. As of fiscal year 2004, non financial and non utility firms reported aggregate cash holdings of over 2 trillion dollars, representing 11 percent of the total market value of equity of those firms. Similarly, the average ratio of cash to assets of listed U.S. industrial firms increased by 129 percent from 1980 to 2004, and the average cash to assets ratio for American public companies increased from 10 percent in 1980 to 24 percent in 2004.

Dittmar and Marth-Smith (2007) stated that in 2003, the sum of all cash and marketable securities represented more than 13 percent of the sum of all assets for large publicly traded US firms. From another perspective, the aggregate cash holding by publicly

traded US firms in 2003 represented approximately 10 percent of annual US GDP. Consequently, the cash reserves held by a firm are a relevant factor that affects firm's performance.

All these previous studies focused their analysis on the size of cash holdings and cash ratio in large firms listed on the financial markets of advance economy. Studies revealed controversial result in size and cash ratio across countries and companies.

2.12 Review of studies on the determinants of corporate cash holding by firms

Maintaining appropriate level of liquidity within the organization is fundamental towards the smooth operations of firms. Business enterprises hold large proportion of firm assets in the form of cash and cash equivalent in order to invest on physical assets, payments to stockholders and to keep cash inside the firm. The level of cash that a firm maintained is characterized by its policies regarding capital structure, working capital requirements, cash flow management, dividend payments, investments, and assets management.

The decision to keep assets in liquid form may be motivated by many considerations. Of those, the most prominent are speculative motive and precautionary motive in addition to transaction motive. John (1993) favored the precautionary motives of holding cash. He found positive and significant relationship between optimal liquidity maintained by a firm and the costs of illiquidity of its assets. The firms with larger amount of direct costs of financial distress hold higher level of cash with respect to their total assets, as compared to the firm having small amount of direct cost of financial distress.

There are two different effects of cash holding on firm value. At lower levels of cash, transaction and precautionary motives will predominate, and an increase in cash levels is followed by increase in firm value. On the other hand, at higher levels of cash, the free cash flow and opportunity cost will predominate, and then an increase on cash levels is followed by reductions in firm value.

Thus, there is a non linear relationship (concave) between cash holdings and value of the firm (Fama and French, 1998). The inflexion point (maximum of the quadratic function) will represent the maximum value of the company. The main assumption of

this model is that there is an optimal cash level that maximizes the value of firm, and the deviations both above-optimal and below-optimal cash holding will reduce firm value.

Garcia-Teruel and Martinez-Solano Study (2008) applied Quadratic model to explain firm value and cash holdings where the market value in firm i at time t depends on cash holdings and its square as well as on control variables as follows:

$$V_{it} = \beta_0 + \beta_1 (CASH)_{it} + \beta 2 (CASH^2)_{it} + \beta 3 (GROWP)_{it} + \beta 4 (SIZE)_{it} + \beta 5 (LEV)_{it} + \eta_i + \lambda_t + \varepsilon_{it} \quad \text{.....} \quad (25)$$

The ratio of the firm's market value to the replacement cost of its assets (Tobin's Q) is used as a proxy for firm value V_{it} **.**Tobin's Q is often used in corporate finance studies to measure firm valuation (Tong, 2008; McConnell, Servaes and Lins, 2008; Lin and Su, 2008; De Miguel, Pindado and De la Torre, 2004). The key independent variable CASH is measured as cash and cash equivalent to total assets.

To test the existence of a non linear model they included CASH and $CASH^2$ (Cash square) and expected a positive relationship between cash and firm value when they are below the optimal cash holding levels. In other words, in those situations where firms are the left side of the quadratic function. Similarly, they expected a negative association between the cash and value when they were above the optimal cash holding level. For this reason, they expected CASH to take a positive sign, and $CASH^2$ a negative one. They also included control variables in the model, in particular, intangibles, size, and leverage. Intangible is the ratio of intangible assets to total assets. They tried to capture the firm's growth opportunities; they did not include other more common proxies, for example Tobin's Q or market to book because of the multicollinearity problems. To measure firm size, they used the natural logarithm of gross sales. Finally, leverage is total liabilities and debt divided by shareholder equity.

The independent variables are CASH, which measures cash and cash equivalent to total assets holding by firm i at time t, and $CASH^2$ in order to test a non-linear relation cash-value. $GROWP_{it}$, $SIZE_{it}$, and LEV_{it} are control variables; $GROWP_{it}$, proxy for growth opportunities is intangible assets to total assets; $SIZE_{it}$ is the natural logarithm of gross

sales; and LEV is total liabilities and debt divided by shareholder equity, ηi is the unobservable heterogeneity. It measures both firms' particular characteristics and the characteristics of the sector in which they operate, λ_t are dummy variables that change in time, but are equal for all firms in each of the periods considered and ε_{it} is the error term. The result showed an optimal level of cash holding around 14%, which maximizes firm value, and the deviations from this level reduce firm value.

It shows that firms can increase their market value merely by being around the optimal level of cash, which seems rational according to the trade-off between benefits and cost of cash holdings. Consistent with the expectations, CASH is positive and statistically significant, while $CASH^2$ is negative and significant at 1 percent level. This means that cash holding increases the value of the firm up to the breakpoint, after which increases in the cash holding reduce the firms' value. The cut-off point could be determined through a quadratic function $(\frac{\beta_1}{-2*\beta_2})$, where the optimal point, as one that maximizes firm value is 13.81 per cent of cash over total assets. From the point of view of cash, and considering that the mean value for cash holding is around 8 percent, it could be considered that, on an average, US industrial firms could increase their value by increasing their cash balances.

Consistent with previous empirical studies, control variables employed in the study are in line with other papers which study firm value. LEV is positively related to firm value, proxy as Tobin's Q, BOMK (Book-to-market ratio) and EQUITY. De Miguel, et al., (2004) found a similar relation between debt and firm value. The coefficient of the variable SIZE is negative, but not always significant. There is a negative relationship between firm size and firm value when they proxied as BOMK and EQUITY and significant at 5percent level and 10 percent level, respectively. Contrary to what might be expected, growth opportunities had a negative and significant impact on firm value. This is in line with Lin and Su (2008), who found a negative relation between growth opportunities (Proxy as the ratio of intangibles to total assets).

The determinants and implications of corporate cash holdings developed by Opler et al., (1999) was a milestone to explain the corporate cash holding by firms. In their approach, a firm short of liquid assets cuts back investment and dividends, or raises funds

by selling securities or assets/Specifically, investment at time t, I_t, the firm cash on hand equal to lagged liquid assets i.e. Lt-i, plus the return on these liquid assets, $rS(_t)\ L_t.i$, and the cash flow from operations, CS_t. Out of the cash in hand, the firm must pay taxes, TSt, make required payments on existing financial contracts, PS_t, and dividend payments, DS_t. Required payments on existing financial contracts include not only contractual payments on debt contracts and bond issues, but also required payments on derivatives. In this setting, a firm is short of cash, if

I(s (t)) > L (t-1) (1+r(s (t))) + C(s (t)) -T(s (t)) -P(s (t)) - d(s (t)), and

$$\frac{\partial I(s(t)}{\partial L(t-1)} = (1+\text{r(s (t)))} \qquad (26)$$

The first equation indicates that the firm uses up all of the liquid assets available before financing and the second indicates that if it had more liquid assets available, it would invest in them. Models of optimal holdings of liquid assets can differ in terms of the costs of being short of cash in each state of the world and in terms of the marginal cost of holding cash.

The above framework has important implications. The firm can avoid being short of liquid assets in a particular state of the world by holding more liquid assets or by engaging in financing activities that reduce PS_t in that state of the world. For instance, the firm could hedge so that in some states of the world, PS_t might be negative. Alternatively, the firm could have more equity so that it would have to make fewer payments to bondholders, in which case PS_t would be lower.

Therefore, an optimal theory of liquid asset holdings has to address the issue as to why it is more efficient for the firm to hold an additional dollar of liquid assets instead of decreasing leverage by some amount or by hedging. These results are consistent with the view that firms hold liquid assets to ensure that they will be able to keep investing when cash flow is too low and outside funds are expensive. Their analysis provides limited support for the view that positive excess cash leads firms to spend more on investment or acquisitions.

Dechow and Dichev (2002) explained the relation between cash holdings and accounting information quality regressing current working capital accruals *(WCA_t)* on cash flow from operations of the previous fiscal year *($CFO\ t_{-1}$),* of the current year *(CFO_t),* and the subsequent fiscal year *(CFO_{t+1})*, all deflated by average total assets.

$$\frac{WCA_{it}}{AvgAssets_{it}} = \beta_0 + \beta_1 \frac{CFO_{it-1}}{AvgAssets_{it}} + \beta_2 \frac{CFO_{it}}{AvgAssets_{it}} + \beta_3 \frac{CFO_{it+1}}{AvgAssets_{it}} + \varepsilon_{it.} \quad (27)$$

where: WCA_{it} is working capital accruals of firm i on in year t, calculated as the change in current assets(ΔCA), minus the change in cash and cash equivalents *(ΔCash),* minus the change in current liabilities *(ΔCL),* plus the change in short term bank debt *(ΔDebt).*$CFO_{it,}$ CFO_{it-1} , and CFO_{t+i} signify cash flow from operations of firm i in years t, t-1 and t+1, respectively, calculated as the difference between net income before extraordinary items *(NIBE)* and total accruals *(TA).* Total accruals are calculated for each firm in year t, following Dchow, Sloan and Sweeney (1995), as working capital accruals *(WCA_{it}),* minus depreciation and amortization expenses for the period *(Dep_{it}).*

All variables are defined in terms of ratio of average total assets in order to avoid problems of heteroscedasticity. Average total assets are calculated for firm i in year t as the mean of the firm's total assets in years t-1 and t. The model is estimated in its cross-sectional version for each industry-year combination, based on the industry classification of the Madrid Stock Exchange. The residual vector reflects the variation in working capital accruals unexplained by cash flows of the previous, current and subsequent periods. Therefore, the absolute value of the residual for each firm-year observation is an inverse measure of accruals quality *(*AQ _DD*)* $_{it} = |i_{it}\ \varepsilon^{\wedge}|$ (the higher the residual, the lower the accruals quality).

Considering the impact of information quality on cash levels, and including other cash determinants variables, Ozkan and Ozkan (2004) and Garcia and Martinez (2007) estimated the following partial adjustment model:

$$(CASH)_{it} = B_0 (CASH)_{it-1} + B_1 (AQ\_DD)_{it} + B_2 (GROWP)_{it} + B_3 (SIZE)_{it} + B_4 (LDTEBT)_{it} + B_5 (BANKD)_{it} + B_6 (RSPREAD)_{it} + B_7 (LEV)_{it} + B_8 (LIQ)_{it} + B_9 (CFLOW) + B_{10} (ZSCORE)_{it} + B_{11}(DIV)_{it} + \eta_i + \lambda_t + \upsilon_{it} \quad \ldots\ldots\ldots\ldots\ldots\ldots \quad (28)$$

where $CASH_{it}$ measure cash holdings; AQ_DD_{it} is an inverse proxy of information quality; $GROWP_{it}$ measures growth options; $SIZE_{it}$ firm size; $LTDEBT_{it}$ long term leverage; $BANKD_{it}$ bank debt; $RSPREAD_{it}$ opportunity cost of cash; LEV_{it} leverage; LIQ_{it} investment in other liquid assets; $CFLOW_{it}$ cash flows; $ZSCORE_{it}$ the probability of financial distress; DIV is a dummy variable that takes the value 1 if the firm has paid dividends otherwise zero; η_i represents firms specific effects (unobservable heterogeneity); λ_t temporary effects; and υ_{it} random disturbances, η_i is designed to measure unobservable characteristics of the firms that have a significant impact on the firm's cash holdings. They vary across firms but are assumed to be constant for each firm. Examples include attributes of managers such as ability and motivation. They may also include industry-specific effects such as entry barriers or market conditions. The parameters λt are temporary dummy variables that change over time, but are equal for all firms in each period considered.

In this way, they tried to include the economic variables, which the firms cannot control (interest rates and prices, for example). They found that AQ_DD has a positive and significant effect on the level of cash holdings at the 10 percent level on cash to assets ratio CASH. Considering the control variables, they found a positive relationship between CASH and LTDEBT where as variable BANKD is negative and significant at the 1 percent level. As expected, firms which can easily get funds from banks keep lower levels of cash. They also found that the level of cash is lower for more indebted firms, since those firms incur higher costs for keeping cash. Variable LEV is significant at 1 percent level; LIQ is significant at 1 percent level. In addition, the relationship between CASH and CFLOW is positive and significant at the l percent level; R^2 of the regression is 0.931 indicating a strong explanatory power. On the other hand, they did not find any significant relationship between cash holdings and (GROWP), (SIZE), (RSPREAD), and (DIV).

Garcia et.al (2008) further analyzed the determinants of cash holding in Finland based on previous studies of (Opler et al., 1999; Kim et al., 1998; Ozkan and Ozkan, 2004).

They argued that cash holding was a function of Cash flow, Leverage, Assets size, Ratio of bank loan and Growth opportunity which can be depicted as;

$$(CASH)_{it} = \beta_0 + \beta_1 (CFLOW)_{it} + \beta_2 (LIQ)_{it} + \beta_3 (LEV)_{it} + \beta_4 (SIZE)_{it} + \beta_5 (BANKD)_{it} + \beta_6 (GROWP)_{it} + \eta_i + \lambda_t + \varepsilon_{it} \quad (29)$$

Where, $(CASH)_{it}$ is cash and cash equivalent to total assets. $(CFLOW)_{it}$ is earnings after tax minus depreciation/amortization divided by gross sales. $(LIQ)_{it}$, proxy for liquid assets is defined as working capital less total cash and short-term investment to total assets. $(LEV)_{it}$, leverage is total liabilities and debt divided by shareholders ´equity; $(BANKD)_{it}$ is the ratio of bank loans (long term) to total debt; $(GROWP)_{it}$, proxy for growth opportunities is intangible to total assets; and $(SIZE)_{it}$ is the natural logarithm of gross sales. η_i is the unobservable heterogeneity. λ_t are dummy variables that change in time but are equal for all firms in each of the periods considered and εit is the error term.

The sign of the coefficient was as per their expectations. Result showed inverse relationship of cash with firm value, since its coefficient is negative and significant at 1 percent, R^2 is 0.871. It confirmed the existence of a point at which firm value is maximized is 13.81 per cent of cash over total assets, and as it moved away from this point, firm value decreases. This means that cash holding increases the value of the firm up to the certain point, after which increases in the cash holding by a firm reduces its value.

A number of empirical studies provided evidence on the determinants of corporate cash holdings, such as Jensen and Meckling (1976) discussed the agency costs theory of cash holding. Harford (1999) discussed on the relationship between corporate governance and cash holdings and find out negative relationship between corporate governance and cash hoding. Pinkowitz and Williamson (2001) discussed on the interrelation between monopoly power of bank and managerial ownership with cash holding. Claessens et al., (2000), explained the relationship between ownership control and cash holding in the East-Asian countries, including Singapore and Malaysia. All these studies focused on the determinants of cash by firms, but there is a controversy among these studies regarding cash holding.

Size of cash in enterprises is determined by different factors. Among them, John (1993) suggested that for firm-level, cash flow volatility, leverage, growth opportunities and investment were determinants of cash. Kim et al., (1998) analyzed a sample of 452 US firms over 1975 to 1994. They documented that cash holdings increases with higher market-to-book ratios and cash flow volatility. Their results also revealed that cash holdings decreased with firm size, leverage, the length of the cash conversion cycle, and the probability of financial distress. Finally, they reported a significant relationship between measures of future economic conditions and liquidity, implying that firms accumulate cash to be able to undertake future investment opportunities. IONA et al., (2004) suggested that managerial ownership, board composition and ownership concentration to some extent influenced cash holding in enterprises.

Harford et al., (2006) employed the corporate governance index (G-Index) as a proxy of shareholder rights and found that firms with higher G-Index (which implies weaker shareholder rights) hold smaller cash balances and these firms typically spent their cash quickly through acquisitions. But the approaches to cash holding were different and contradicted with the opinion of Dittmar et al's (2003) and Ozkan and Ozkan (2004). They found an inverse relationship between country-level shareholder protection and cash holdings. They suggested that firms associated with poor governance hold large cash holdings as compared to strong governance. Lins and Kalcheva (2006) examined similar issues in a sample of 31 countries. They found a positive relationship between management control and cash holdings, and suggested that firms associated with poor governance hold larger cash. Almost of these studies provide contradictory and conflicting version regarding cash holding and its determinants.

Nguyen (2005) investigated the precautionary motive of cash. Their results showed that cash holdings appeared with positive relationship with firm level risk, but negatively with industry risk. Cash holdings were found to be decreasing with the firm's size and debt ratio, and increasing with its profitability, growth prospects, and dividend payout ratio.

Guney et al (2006) examined the impact of leverage on cash balances of firms, their results suggested a significant non-linear relationship between cash holding and leverage. Drobetz and Griininger (2006) examined the determinants of Swiss non-financial firms'

cash holdings over the 1995 to 2004 period. They found a negative relationship between asset tangibility and cash holdings, and a non-linear relationship between leverage and cash holdings. Dividend payments were positively related to cash reserves. However, they could not prove a significantly positive relationship between growth opportunities and cash holdings. Beiner et al., (2006) examined the cross-sectional variation in the marginal value of corporate cash holdings. They found that larger the cash holdings, lesser the marginal value of cash.

Guney et al. (2007), studied the leverage effect on cash-holding behavior of firms from France, Germany, Japan, the UK, and the US using data for 4,069 companies over the period between 1996 and 2000 without drawing a line between large firms and small ones or investigating the nonlinear impact of leverage on corporate cash holdings across a spectrum of different firm sizes. They argued that the relationship between cash reserves and leverage could be non monotonic, implying that the marginal effect of increased leverage depended on the current level. That is, firms having higher leverage are more likely to face financial distress and, thus, accumulate larger cash holdings in order to minimize the risk of bankruptcy and financial distress.

Garcia-Terual PJ. and Martinez-Solano P. (2008) assessed on corporate cash holding and firm value, and found a concave relation between cash holdings and firm value. Specifically, they showed that the optimal level was around 14 percent for a sample of listed US industrial companies over the period from 2001 to 2007. Deviations from the optimal level reduce firm value. Their results imply a positive marginal value of cash in the situations in which they are below optimal cash level, and a negative marginal value of cash when they are above optimal cash level. It shows that firms can increase their market value merely by being around the optimal level of cash.

Bates, Thomas W., Kathleen M. Kahle, & Rene Stulz (2009) studied on financial policies and the financial crisis. They found three factors affecting the financial policies of firms during the financial crisis: (1) a contraction in credit supply, (2) a loss of investment opportunities, and (3) an increase in risk. Firms increase their cash holdings sharply by 17.8 percent from September 2008 to the end of 2010. It shows that firms increase their level of cash holding during and after financial crisis.

Huasheng Gao, Jarrad Harford, and Kai Li (2010) examined on determinants of corporate cash Policy. Using a sample of 7,092 private firm-year observations and 35,213 public firm-year observations from 2000-2010, they found that despite greater financing frictions in private firms, due to strong agency conflicts, public firms hold more cash. Among firms that have accumulated excess cash holdings, public firms spend more of it than do private firms.

Thus, public firm managers are more aggressive in both accumulating and dissipating cash reserves. This aggressive spending of excess cash, relative to the private firm baseline can be viewed as a measure of the agency cost of excess cash in a public firm. Consistent with the presence of financing frictions, they found that private firms' cash-to-cash flow sensitivity is higher than that of public firms. They also found that due to agency conflicts and financing frictions, private firms hold less cash than similar public firms. The implication of this is that the public firms hold about twice as much cash relative to assets as done by private firms in a very conservative estimate of the agency costs effect on cash policy.

The empirical researches reveal that that the firm specific factors affecting the corporate cash holdings have differing relationship across different countries and firm sizes. Moreover, the behavior of these variables has been changing over time. The literature does not provide considerable research on determinants of corporate cash holdings in developing countries.

2.13 Review of the studies in the Nepalese context

Limited studies are available in Nepalese context to analyze cash demand function and cash management in the Nepalese enterprises. The studies are concentrated only on public enterprises, but do not cover the listed private companies. Among the studies, Pradhan (1986) studied on management of working capital highlighted the behavior of the demand for cash by business firms while Bajracharya (1990) in cash management focused on cash management policy and practice in Nepalese enterprises.

Pradhan (1986) studied the demand for cash in the Nepalese context using average cash balance as dependent variable and sales, short term interest rate, and capacity

utilization rate as independent variables. The estimated pooled regression result of nine enterprises indicated the effect of capacity utilization on the demand for cash and the speed with which actual level of cash is adjusted to its desired level. The result contradicted unitary or more than unitary sales elasticity hypothesis of Friedman, Meltzer, Whalen, De Allessi, and Vogel and Maddala.

The finding was consistent with the conclusion of Baurnol, Tobin, Frazer, Nadiri and coates. The results show that cash balance is affected by volume of sales. However, the coefficient is less than one indicating one percent change in volume of sales would lead to less than one percent in cash balance. Since the computed coefficient is significant, the study confirmed the presence of the economies of scale in cash holdings.

Regarding interest, the study showed that fluctuations in cash balance depend on fluctuations in interest rate. This was statistically confirmed. The finding is consistent with the results of Selden, De Allessi, Nadiri and Coates and contradicts with Friedman.

In the partial adjustment model, the regression result indicates 0.75 value of the coefficient of the lagged dependent variable. The adjustment coefficient which is known as speed of adjustment is equal to (1-0.75) i.e. 0.25. The adjustment speed of actual to desired level of cash is 25 percent. It means that only 25 percent of the adjustment of actual to desired real cash balance is completed within a year. The results thus contradict the high speed of adjustment observed by Nadiri and Coates. The long run observed coefficient is 0.72 for sales and 2.76 for interest. The estimated results showed that the inclusion of capacity utilization variable in the model did not contribute to the demand for cash.

Besides estimating demand functions of working capital, Pradhan studied structure and utilization of working capital in the Nepalese manufacturing public enterprises using various financial ratios. Among the ratio, current assets to total assets, cash to total assets, receivable to total assets, inventory to total assets, cash to current assets, receivable to current assets and inventory to current assets ratio were used to analysed structure of working capital. Current assets turnover, working capital turnover, cash turnover, receivable turnover, and inventory turnover ratio were used to analyse utilization of working capital.

He found that, on an average, Nepalese manufacturing public enterprises have half of their total assets in the form of current assets and of all the different component of current assets the share of inventories in the total assets on an average was largest. It indicates less qualitative current assets. The average turnover ratio computed over a time indicates an improvement in utilization of current assets.

Similarly, Bajracharya (1990) studied the cash management in Nepalese public enterprises using cash balance as a dependent variable and sales, receivable, inventories, current liabilities, total assets, interest rate, inflation, lagged sales, and trend variable as an independent variable. The cross- section regression result of 18 public enterprises in aggregate was reported consistent with the individual time series regression results. Sales, total assets and current liabilities were found to have positive and significant impact on cash balances. However, the sign of coefficients on receivable and inventories were found contrary to the hypothesis. The regression of cash with time trend variable showed a positive and statistically significant relationship between time variable and cash holding.

The most interesting finding of the study was the disassociation between cash balance and the opportunity cost of holding cash (3 Months Treasury bill rate). Neither interest rate nor the rate of inflation had any effect on cash balance of the public enterprises. However, in the cross- section analysis sales, inventory, total assets and current liabilities were found to have positive and significant impact on cash balance.

Further, the study also reported that there was very little evidence of the effect of economies of scale on cash balance holding in most cases. Regarding the partial adjustment model, the result showed that lagged cash balance had a very significant influence over current level of cash balance. The speed of adjustment of actual cash balance to its desired level varies over enterprises. It was also shown wide variations over time in the state of financial health of enterprises in terms of the composition of current assets and current liabilities as revealed by the relevant financial ratio.

From the survey of cash management policies and practices, Bajracharya observed that there was no uniformity, among the enterprises, with regard to cash budgeting,

forecasting, credit term, payment behavior of customer and investing excess cash balance. However, both these studies in the Nepalese context are unable to examine the factors determining corporate cash holdings, comparison between public and private, grouping them in to size portfolio and analyzed trend thereof.

2.14 Research gaps

From the review of the literature, it is found that many of the studies in cash management are conducted with reference to developed and big financial markets and in the context of developed countries. The relevance of the theoretical development so far made by those studies has still remained as a debatable issue in the context of small financial market and developing countries.

Many of the studies relating to cash demand function formulate modeling with a limited number firm's specific variables. However, there could be a number of variables affecting demand for cash. Therefore, there is a need for the inclusion of relatively larger number of firms specific variables in the model and identify variables affecting cash demand so that cash management could be effectively done.

There is no unanimity in establishing relationship between cash holding and some of the firms' specific variables. The results of the empirical studies are contradictory across the countries and firm size.

The findings of the available studies in demand for cash also provides conflicting views specially in the case of presence of economies of scale in cash holding and another with diseconomies of scale in cash holding. The study on optimal cash balance demonstrates that there are economies of scale associated with larger firm maintaining smaller cash balance.

This is also note worthy that the findings of the studies conducted in one point of time may change in another point of time. The behaviour of the variables may change over a period of time. Therefore, there is a need for undertaking studies in demand for cash in other point of time, too.

Many of the studies also differ in modeling of cash demand function and the inclusion of firms' specific variables as independent variables in the model. Even in the uniform models, the findings are different across the countries and the firm size. It is therefore needed to study in Nepalese enterprises. The studies so far made are limited and inadequate for efficient cash planning in the changing environment.

Chapter 3
RESEARCH METHODOLOGY

This chapter explains the methodology which includes conceptual framework, research design, variable defined and expected relationship, population, sample size and sample selection, data sources, data collection procedure, selection of practitioners, questionnaire preparation, specification for static and dynamic models, test of autocorrelation, multicollinearity, portfolio analysis, ratio analysis, and data limitations.

3.1 Conceptual framework

As discussed in the review section, Keynes (1936) states three motives for holding cash: (i) the transactions-motive, i.e., the need of cash for the current transaction of personal and business exchanges; (ii) the precautionary-motive, i.e., the desire for security as to the future cash equivalent of a certain proportion of total resources; and (iii) the speculative-motive, i.e., the object of securing profit from knowing better than the market that the future will bring forth. These three motives of corporate cash holdings are usually explained under three models, namely,, tradeoff model, pecking order model and free cash flow model.

Among the three motives for holding cash the transaction motive refers to payments of various regular expenditures, tax and dividend (PAY), sales transactions of the enterprises (SALES), sales growth during the time intervals of two- year (GROWTH), nature of the enterprises concerned with cash or credit oriented business (NATURE), size of the enterprises in terms of total assets (SIZE), cash conversion cycle (CCC), relationship with financial institution (BANKD), and short term investment opportunities specially on treasury bills, short term bond (INV), and return on assets (ROA).

The precautionary motive refers to balance of cash is required to meet emergency. It focuses on cash balances that are held to provide a cushion for unexpected events such as business decline. This motive for holding cash includes such variables as liquid assets substitute (NWC), level of liquidity maintained by enterprises (LIQ),

current ratio (CR), quick ratio (QR) credibility in the financial market to get required capital in terms of debt maturity structure (BANKD), cash flow structure (CFLOW), variability of cash flow in terms of cash flow uncertainty (CFVAR), financial distress faced by the enterprises through the use of leverage (LEV), long term investment (INV), average collection period (ACP), the opportunity cost of the capital invested in liquid assets (RSPREAD), and competitive environment of business (COMPET).

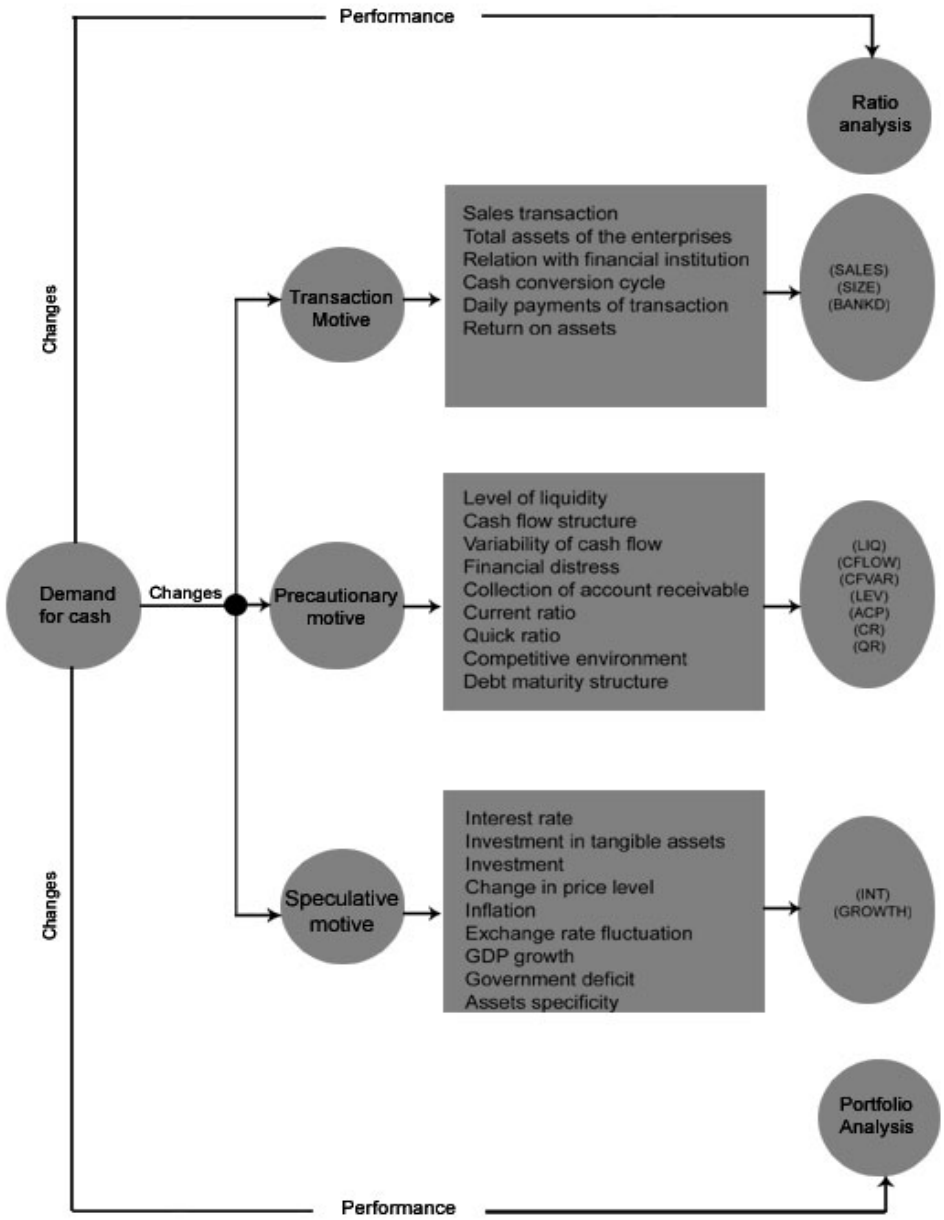
The speculative motive balance of cash is required to take advantage of temporary opportunities such as a sudden decline in the price of a raw material or sudden window of opportunity for buying an asset or making an investment. Such motive for holding cash takes into account variables such as short term and long term interest rate (INT), changes on price level (DP/P), inflation (INF), exchange rate fluctuation (EXF), changes in GDP growth in percentage (GDP), government deficit financing as a percent of GDP (DEFFIN), variation in assets specificity (ASPECIF), and investment on short term marketable securities to get immediate benefit (INV)

These three specific motives of cash holdings which are explained under the three models, combinedly depends on sales transactions of the firms (SALES), short term interest rate treasury bill and long term commercial interest rate (INT), the cash flow (CFLOW) and the cash flow variability of the firms (CFVAR), the level of liquidity to be maintained (LIQ), average collection period (ACP), current ratio (CR), quick ratio (QR) growth opportunity of the firms (GROWTH), the size of the firms (SIZE), and relationship with financial institutions and debt maturity structure (BANKD). It is described and presented in Figure 3.1.

The conceptual framework describes the relationship between demand for cash balance with firms' specific variables. The framework also provides the indicators of the variables and how they interact in different conditions for analyzing their relationship. Likewise, if the changes in the value of the variables under different motives take place, they attempt to explain how do they affect average cash holding. The changes in cash holding affect the performance of the firms where the performance is analyzed through structure and utilization of cash and by portfolio formation.

The relationship between cash holding and the external and internal factor is explained by the formulation of regression model. The framework for testing the relationship is given in the diagram below.

Figure 3.1 Conceptual framework of the study



3.2 Research design

This study is descriptive, co-relational, causal and comparative research based on both primary and secondary data. This study is a fact-finding operation searching for adequate information. This study also surveys the opinion of eighty executives of selected Nepalese enterprises consisting of chief executives, and other executive staff like (financial and cash managers, sales managers, and procurement and inventory manager) to examine the cash management practices in Nepal. The study used secondary and primary data drawn from the published annual reports of Nepalese enterprises for the ten year period from 1999 to 2008. The data have been re-arranged, classified and tabulated as per the requirement of the study.

The study is designed to describe and explain demand for cash, structure and utilization of cash and cash management practices in Nepalese enterprises. Demand for cash balance is estimated on the basis of regression model developed by Baumol (1952), Tobin (1956), Friedman (1959), Opler et al., (1999), Dechow and Dichev (2002), Ozkan and Ozkan (2004), and Garcia and Martinez (2007). The structure and utilization of cash management is analyzed using different cash management ratios at individual enterprises level and by portfolio formation.

The econometric model involves static and dynamic specification which provides long run and short run relationship. The equation specifies cash balance as a function of sales revenue, interest rate, growth opportunity, size of the firm, cash flow, cash flow variability, bank debt, liquidity, leverage, current ratio, quick ratio, and average collection period under dynamic model. The model takes care of the hypothesis relating to a desired and actual level of cash balance.

In the present study, to find out the status and trend of cash balance, comparison has been made between the size of cash balance and net working capital of the enterprises. Similarly, structure and utilization of cash has been applied to assess the short term financial position and performance of cash management. Some important parameters used to examine the different aspects of liquidity (short term financial position) are: current ratio, quick ratio, current assets to total assets ratio, cash turnover ratio, current assets turnover ratio, working capital turnover ratio, debtors turnover ratio,

inventory turnover ratio, average collection period, and working capital to sales ratio. In the same way, to test the qualitative efficacy of cash management six major cash ratios have been employed .They are: cash to current assets ratio, cash to quick assets ratio, cash to total assets cash to current liabilities ratio, cash to total capital ratio, and cash to sales ratio.

Portfolio formation is one of the important tools used in the study to find out the consistency in the behavior of various scales of enterprises and compare across the countries. To analyze the cash balance determinant factors in Nepal, this study formed a portfolio into small, medium, and large scale assets size of enterprises. Portfolios are formed on the basis of an average balance of total assets. On the basis of these portfolios formulation, performance is analyzed through regression analysis and cash utilization ratio analysis.

The study is designed to get the answer on research questions mentioned in the introduction section. Specifically, the study attempts to estimate the demand for cash by the Nepalese enterprises and to show how cash management behaves as the firm size of assets varies. Besides, this study uses simple comparison to show the trend of cash position and its utilization.

3.3 Nature and sources of data

For the purpose of this study, population has been defined as the sum total of manufacturing, processing and trading enterprises operating as a state owned entity and those enterprises listed in the Securities Board of Nepal (SEBON).

Table 3.1
Selection of enterprises from government and non government sector

Sector	Total Enterprises*	Total Manufacturing processing and trading*	Sample enterprises	Sample size in percentages
Public enterprises (PEs)	36	13	10	76
listed companies	157	22	10	45
Total	**193**	**35**	**20**	**57**

*Notes: * Economic Survey (2009/10) and Securities Board of Nepal Annual Report (2008/09) (PEs) refers to fully state owned enterprises and None (PEs) enterprises are listed manufacturing processing and trading companies in Securities Board of Nepal.*

A list of manufacturing, processing and trading enterprises has been obtained from the Ministry of Finance and Securities Board of Nepal. There are altogether 193 enterprises in Nepal, among them are 36 government owned enterprises and 157 private enterprises listed in SEBON. Out of these 193 enterprises, only 35 enterprises, including 13 (PEs) and 22 listed companies are manufacturing processing and trading enterprises from public and private sectors. 20 of 35 enterprises have been selected for the purpose of this study. The selected sample represents equal number of state owned and listed enterprises.

There are thirty six public enterprises operating in Nepal, among them 13 are manufacturing, processing and trading enterprises (Economic survey, 2009). Among these thirteen enterprises, Udayapur Cement Udyog, Oriend Magnesite and Timber Corporation did not submit their financial statements timely and were unable to audit the financial statements regularly. Therefore, only 10 (76%) government-owned enterprises have been selected for the study. Similarly, there are 157 manufacturing and trading as well as hotels, financial institution, and hydropower related companies listed in the Securities Board of Nepal (SEBON, 2009). Of these 157 enterprises, only 22 represent manufacturing, processing and trading categories. Among the 22 enterprises only three trading enterprises are in operation and only seven manufacturing and processing enterprises submit their financial statements regularly and fulfill required regulatory provision. Therefore, only 10 (45%) private sector enterprises have been selected for the study.

Table 3.2 shows the total enterprises related to manufacturing processing and trading and a sample size in each of the groups of public and private sector. The sample size of 20 enterprises included 13 manufacturing processing and 7 trading enterprises. Since there are only seven trading enterprises listed in SEBON, all of them are included for the study. The selected sample enterprises represent more than 10 percent of total population, and 51 percent of manufacturing, processing and trading enterprises. In addition the sample size provides 200 observations which are sufficient to undertake statistical tests and running regression.

Table 3.2

List of Nepalese enterprises selected for the Study

S.no	Name of enterprise	Nature of enterprise	Type	Study period	No .of observations
1	Dairy Development Corporation	Manufacturing	Public	1999-2008	10
2	Herb Production and Processing Company Ltd	Manufacturing	Public	1999-2008	10
3	Hetaunda Cement Industry Ltd	Manufacturing	Public	1999-2008	10
4	Janakpur Cigarette Factory Ltd	Manufacturing	Public	1999-2008	10
5	Nepal Ausadhi Ltd	Manufacturing	public	1999-2008	10
6	Agriculture Iinputs Company Ltd	Trading	Public	1999-2008	10
7	Nepal Food Corporation	Trading	Public	1999-2008	10
8	National Seeds Company Limited	Trading	Public	1999-2008	10
9	National Trading Corporation Ltd	Trading	Public	1999-2008	10
10	Nepal Oil Corporation	Trading	Public	1999-2008	10
11	Arun Banaspati Udyog Ltd	Manufacturing	Private	1999-2008	10
12	Bottlers Nepal Ltd	Manufacturing	Private	1999-2008	10
13	Gorakhakali Rubber Udyog Limited	Manufacturing	Private	1999-2008	10
14	Nepal Welfare Company Limited	Trading	Private	1999-2008	10
15	Nepal Bitumen and Barrel Udyog Limited	Manufacturing	Private	1999-2008	10
16	Nepal Lube Oil Ltd	Manufacturing	Private	1999-2008	10
17	Shree ram Sugar Mills Limited	Manufacturing	private	1999-2008	10
18	Bisal Bazer Company	Trading	Private	1999-2008	10
19	Salt Trading Corporation Ltd	Trading	private	1999-2008	10
20	Unilever Nepal Ltd	Manufacturing	private	1999-2008	10
Total number of observations					200

3.4 Data sources

The Office of the Auditor General (OAG) for their final audit and reporting to parliament brings out the official annual reports are all public enterprises in Nepal, which contain the balance sheets, and profit and loss account of the enterprises. The necessary data on cash management and other related variables used in this study collected mostly from those reports. Data of the corporate sector enterprises are collected from the Securities Board of Nepal (SEBON). Information has also been

drawn from the publications such as "Quarterly Economic Bulletin" published by the Nepal Rastra Bank (NRB). "The Economic Survey" and annual progress report of public enterprises published by the Ministry of Finance (MOF).

3.5 Data collection procedure

The data relating to the study were collected from two sources. One is primary data that focus on the problems, policies, procedure, and practices on cash management obtained through the survey. The survey questionnaires were sent to Chief Executive Officer, Finance and Cash Manager, Sales and Credit Manager, Purchase and Store Manager. The respondents were selected from the twenty enterprises, selected for sample. Altogether eighty respondents from those twenty enterprises who were directly or indirectly involved in cash management were selected for opinion analysis. The information contained in various components of balance sheet and profit and loss account of the state owned enterprises derived from the final audit report of the Office of the Auditor General. Data were also collected from Economic Survey, annual progress report of public enterprises published by the Ministry of Finance, and unpublished profit and loss account and balance sheet of selected enterprises. Similarly, data related to interest rate were collected from quarterly Economic Bulletins of the Nepal Rastra Bank.

3.6 Selection of practitioners

In order to analyse cash management practices in Nepalese enterprises, an opinion survey of the executives was made on how cash management being practiced. In this process, altogether 80 executives, four from each enterprise were included for interview.

Table 3.3
Selection of respondents from the selected enterprises

Respondent position	No of respondents
Chief executive officer	20
Financial/Cash manager / Account officer	20
Sales / Credit officer	20
Purchase/ Inventory officer	20
Total	80

The four respondents represent executives of four different divisions, chief executive officer, financial manager, sales manager and store manager. The questionnaire was distributed to 80 executives of the 20 sampled enterprises who are currently engaged in their respective organizations as chiefs of their particular department or section.

Among the 80 respondents, 20 executives were chosen in equal proportion from each of the positions for questionnaire survey. Among the selected respondents, chief executive officer is responsible for overall management function, account, finance or cash officers are responsible for cash management function. Sales and credit officer's deal for collection, inventory or purchase manager engaged on procurement management in their respected enterprises. These respondents were involved in different aspects of cash management either in policy level or in operating level. Therefore, the respondents from those positions were picked up for interview. This study verifies how far secondary data analysis and results are consistent with the finding of opinion analysis.

3.7 Questionnaire preparation

A structured questionnaire containing 53 open and close questions concerning cash management in Nepalese enterprises were prepared to collect opinion of professional and practitioners. The questionnaire includes different aspects of cash management such as, background information of the respondents, area of cash management, factors affecting demand for cash, utilization of cash and cash management policy and practices. Questionnaires were distributed to respondents through personal visit, fax, and email. In order to elicit the desired information and discuss related issues in detail, personal visits were also made to the registered/corporate offices of the enterprises in Kathmandu, Gorkha, and Hetauda. The questions were duly responded to the respondents of the selected enterprises.

3.8 Specification for static and dynamic models (partial adjustment model)

Two cash determinant models, static and dynamic have been formulated for an empirical estimation. The dependent variable in the study is cash balance in current, and constant price, and the exogenous variables used to evaluate the cash balance of the firms included sales revenue, interest rate, opportunity cost, inflation, growth and

investment opportunities, gross domestic product, real size of the firm, cash flow, liquidity requirements, current ratio, quick ratio, leverage, cash flow uncertainty, average collection period and relationship with bank. These variables are linked with another form of dependent variable of cash to total assets. In order to describe the behavior of cash demand under static model, it involves the inventory theoretic transaction approach. As a first approximation to the theory, the general function may be written as:

$M = f(W, i, p)$

Where "M" is a real cash balance, "W" is real desired wealth defined in terms of sales, i is the interest rate defined in terms of capital cost and p is the price level changes. The model in an equation form is as follows:

$M = \alpha + \beta_1 w + \beta_2 i + \beta_3 p + u_t$

In a power functional form, the equation is specified as follows

$m_t = A\, s_t^{\alpha 1}\, Rt^{\alpha 2}\, (dp/p)_t^{\alpha 3}$ ……..(3.1)

In logarithm the expression of the equation is as follows:

$\text{Log}(m)_t = A + \alpha_1 \text{Log}(S)_t + \alpha_2 \text{Log}(R)_t + \alpha_3 \text{Log}(dp/p)_t + e_t$ …… (3.2)

Where, *A* is constant and *al, a2,* and *a3,* are the elasticities of cash balances (m) with respect to the explanatory variables of the model, i.e. the level of real value of sales *(s),* and the opportunity cost of money *(R).* The real interest rate is replaced by nominal rate, and following Natke (2001) and several other researchers, an additional variable for price level change (dp/p) is included. It is assumed that the percentage change in the price level (dp/p), which equals to the expected change in the price of securities, influences the cash management behavior independently of the opportunity cost of cash, and, therefore, it should enter the function as a separate variable.

Generally, there is a time lag between the actual and desired real cash balance of the firm. The lag could be due to uncertainty and incomplete information (Market imperfection) about financial markets. It may also reflect the disequilibrium in other assets of the firm. Evidently, adequate cash balance is needed to facilitate and lower the adjustment costs of other assets. A partial adjustment mechanism by which actual

balance adjusts to the desired levels is presented. A Koyck distributed lag mechanism with further specification by Nerlove and used by Nadiri (1969), provides the adjustment process of actual to desired cash balances, i.e.

$$\frac{m_t}{m_{t-1}} = \left(\frac{m^*_t}{m_{t-1}}\right)\lambda \quad \text{where, } 0 < \lambda < 1 \qquad \ldots\ldots\ldots\ldots\ldots\ldots\ldots \qquad (3.3)$$

According to Nadiri (1969), the adjustment of actual real cash balance to their desired level seemed to be very rapid. The OLS estimates indicated that adjustment is rapid with approximately 80 percent of the desired change in cash balances completed in one quarter. Coates (1976) found that the OLS estimates indicated firms' adjust their cash balance slowly. Natke's (2001) evidence also suggested that only partial adjustment of actual balances to desired balances is achieved in one-year period. The results revealed that Brazilian firms adjust actual to desired balance faster than multinational firms. Following Nadiri (1969), equation (3.3) can be expressed logarithmically as follows (see e.g. Laumas and Mehra 1976, Carr and Darby 1981, and Fair 1987):

$$\ln m_t - \ln m_{t-1} = \lambda (\ln m^*_t - \ln m_{t-1}) \qquad (3.4)$$

In this form, the adjustment coefficient, *X* measures the rate at which adjustments are made to bring actual cash balance in line with the current desired level cash balance. The elasticity of desired real cash balances, m*, with respect to the sales is certainly positive. The relation between m* and R, the opportunity cost of holding cash balance, is negative. A negative sign for the relation of m* and dp/p suggests that firms will find it worthwhile to improve their cash management practices in the face of rising inflation. The variable m* is not observable. Substituting separately the static equations (3.2) into the adjustment equation (3.4) and rearranging them provide dynamic cash balance functions as follows:

$$\ln m_{it} = \lambda \ln \alpha_0 + \lambda\alpha_1 \ln s_{it} + \lambda\alpha_2 \ln R_{it} + \lambda\alpha 3 \ln (dp/p)_{it} + (1-\lambda)\ln m_{it-1} + \ldots e_{it} \qquad (3.5)$$

In the above equation, λ is calculated from the coefficient estimate of the lagged dependent variable. The long-run cash balance functions can be obtained if the coefficients of other variables are divided by the λ. In the models, the dependent

variable is real cash balances (m_{it} = cash balance on hand of the i_{th} firm at the end of the t_{th} year). The nominal interest rate (R_{it} = the 5-year development bond rate) could be included in the cash balance function as a proxy for opportunity cost of money. In addition, measures of inflation or the price level are added (and estimated separately) to above models of cash balance. The wholesale price index (p_{it}) is used to measure the price level and to calculate the inflation rate.

Opler et al., (1999) used growth opportunities, risks of cash flow, access to the capital markets, and costs of raising funds through asset sales and dividend cuts, capital expenditures, R&D expenditures and regulatory dummy as an independent variables. The Opler model did not use sales revenue, interest rate, current ratio; quick ratio, and average collection period in their model.

The present model is the extension of above model. However, some of the variables such as research and development (R&D) expenditure and regulatory variables as included in Opler et.al. (1999) have been dropped in the present specification. The present specification involves two different forms of dependent variables, viz. cash to total assets (CASH), average cash balance (AVCASH), in current and constant price. The above two dependent variables have been regressed with an independent variables, investment in tangible assets (GROWTH), debt to assets (LEV), before tax profit to total assets (CFLOW), sales to total assets (STA), interest rate of commercial bank (INT), average collection period (ACP), current ratio (CR), quick ratio (QR), cash flow variability (CFVAR), bank debt (BANKD) fixed assets as a proxy for scale of operation (SIZE). The additional variables included in the model as factor affecting dependent variables are sales revenue, interest rate, current ratio, quick ratio and average collection period. In equational term it is expressed as:

$$(CASH_{it}) *= \alpha + ß_1 GROWTH_{it} + ß_2 LEV_{it} + ß_3 CFLOW_{it} + ß_4 LIQ_{it} + ß_5 STA_{it} + ß_6 INT_{it} + ß_7 ACP + ß_8 CR + ß_9 QR + ß_{10} VAR_{it} + ß_{11} BANKD_{it} + ß_{12} SIZE_{it} + \ldots\ldots\ldots\ldots \varepsilon_{it} \quad (3.6)$$

This specification involves under static condition. The implicit assumption of this model is that it is all along cash adjustment to a change in a variable affecting them during the time period under consideration. This is a static model which does not consider importance of lag in the adjustment process. In order to incorporate dynamic

adjustment relationship where, a distinction is made between short term and long term effect as well as role of expectations. Following Nadiri, (1969) the proposed static model is transformed in to a dynamic model. The cash balance in any one period is assumed to adjust partially towards the desired or targeted level, i. e., expectations are not static.

As it has been discussed above, a desired target level of cash of an enterprise will not be equal to its optimum actual cash level. Only a partial adjustment towards the optimum level is considered with in any one period. The partial adjustment model is used to indicate the speed with which a corporation adjusts their actual cash level to desired cash level (Ozkan and Ozkan, 2004). Firms adjust their cash balance for their current cash ratio to be close to the target ratio that leads to a partial adjustment mechanism, which is given by

$$CASH_{it} - CASH_{it-1} = \lambda\,(CASH^{*}_{it} - CASH_{it-1}) \quad (3.7)$$

Alternatively it can be written as

$$CASH_{it} = \lambda\, CASH^{*}_{it} - (1-\lambda)\, CASH_{it-} \quad (3.8)$$

This shows that the observed cash balance at a time t is an average of the desired cash balance at that time and cash balance in previous time period is adjusted with a factor λ and $(1-\lambda)$ being weight. $CASH_{it}$, is the actual cash ratio, as discussed above, λ lies between zero and one. $(CASH^{*}_{it} - CASH_{it-i})$, can be interpreted as the target change where only a fraction λ of the target change is achieved. The coefficient λ captures the significance of cost associated with the adjustment of cash holdings to the target level. If it is equal to one, it follows that firms are able to adjust to the target cash ratio immediately. That is, adjustment costs are zero having no impact on firm's cash holding decisions regardless of the past, i.e. $CASH_{it} = CASH^{*}_{it}$ On the other hand, if λ equals zero, the model implies that the adjustment costs are so large and firms cannot change their existing cash structures, i.e. $CASH_{it} = CASH_{it-1}$. These values that lie between zero and one would, therefore, capture the ability of firms to adjust toward their target levels of cash holdings. Thus, substituting (3.6) into the equation (3.7) that explains the cash level kept by firms is as follows:

$$CASH_{it} = \gamma_1 CASH_{it-1} + \sum_k \gamma_k x_{kit} + u_{it} \quad (3.9)$$

Where $\gamma_1 = 1 - \lambda$, $= \gamma_k = \lambda\beta_k$ and $\varepsilon_{it} = u_{it}$. (Where, u_{it} has the properties of serially uncorrelated with mean zero and standard deviation constant and no heteroskedasticity). $\sum_k \gamma_k x_{kit} + u_{it}$ represents the sum of all independent variables of i_{th} company at time t. Similarly, the equation described above could be applied in average cash balance and cash balance at constant price. The presence of the lagged dependant variable makes allowance for the adjustment of the current cash ratio to the target cash ratio (Myers, 1984 and Fischer et al., 1989). In addition, it introduces the firms' unobservable individual effects into the model. Substituting equation 3.6 to 3.7 the model to estimate becomes:

$$CASH_{it} - (1-\lambda) CASH_{it-1} = \lambda\alpha_0 + \lambda\alpha_1 GROWTH_{it} + \lambda\alpha_2 LEV_{it} + \lambda\alpha_3 CFLOW_{it} + \lambda\alpha_4 LIQ_{it} + \lambda\alpha_5 STA_{it} + \lambda\alpha_6 INT_{it} + \lambda\alpha_7 ACP + \lambda\alpha_8 CR + \lambda\alpha_9 QR + \lambda\alpha_{10} CFVAR_{it} + \lambda\alpha_{11} BANKD_{it} + \lambda\alpha_{12} SIZE_{it} + \varepsilon_{it} \quad (3.10)$$

Rewriting above equation:

$$(CASH_{it}) = ß_0 + ß_1 GROWTH_{it} + ß2 LEV_{it} + ß_3 CFLOW_{it} + ß_4 LIQ_{it} + ß_5 STA_{it} + ß_6 INT_{it} + ß_7 ACP_{it} + ß_8 CR_{it} + ß_9 QR_{it} + ß_{10} CFVAR_{it} + ß_{11} BANKD_{it} + ß_{12} SIZE_{it} + ß_{13} CASH_{it-1} + \varepsilon_{it} \quad (3.11)$$

Where $ß_0 = \lambda\alpha$, $ß_1 = \lambda\alpha_1$, $ß_2 = \lambda\alpha_2$, $ß_3 = \lambda\alpha_3$, $ß_4 = \lambda\alpha_4$, $ß_5 = \lambda\alpha_5$, $ß_6 = \lambda\alpha_6$, $ß_7 = \lambda\alpha_7$, $ß_8 = \lambda\alpha_8$, $ß_9 = \lambda\alpha_9$, $ß_{10} = \lambda\alpha_{10}$, $ß_{11} = \lambda\alpha_{11}$, $ß_{12} = \lambda\alpha_{12}$, $ß_{13} = (1-\lambda)$. The error term ε_{it} indicates λu_{it} and if u_{it} satisfies the assumption of classical linear regression model so will ε_{it}. One can, therefore, expect OLS to yield consistent estimates, although there might be some bias in small samples. Although $CASH_{it-1}$ depends on ε_{it-1} and all previous disturbance terms, it is not related to current error term u_t. Therefore, as long as u_t is serially independent $CASH_{it}$ will also be independent or at least serially zero correlation with u_t, thereby, satisfying OLS assumption between independent variables and error terms. In the same way, the specification has been made for other form of dependent variable average cash holding (AVCASH) in current and constant price.

3.9 Variables defined and expected relationship

The dependent variable in this study is cash balance defined in two different forms average cash balance (AVCASH) in constant and current price, and cash ratio (CASH). AVCASH and CONCASH are computed by adding cash balance of the enterprises at the beginning and end of the fiscal year divided by two. Cash balance is often used in corporate finance studies to measure the demand for cash (Keynes 1936, Baumol 1951, and Tobin 1956). The second form of dependent variable, cash ratio (CASH) is defined as the ratio of cash and cash equivalent to total assets as measured by cash balance divided by total assets. In corporate cash holding decisions, to determine corporate cash determinant factor (Opler et al., 1999) and Ozkan and Ozkan (2004), used this variable as a dependent variable. The higher the value of this ratio, the more is expected in the firm's cash holdings. The explanatory variables and their relationship with cash holding are discussed below.

3.9.1 Growth opportunities

Growth opportunity ***(GROWTH)*** is considered as independent variable in the model. The indicator of this growth variable is the ratio of depreciation divided by assets. This indicates investment in tangible assets. Logically, it is assumed that larger investment in tangible assets lead to lesser development opportunities, i.e. inverse relationship. In this study, given that the sample comprises public and private companies' small, medium and large enterprises about which no information about their market value is available, we cannot use the book-to-market ratio, as is commonly used to measure growth. Instead, the variable is measured by investment in tangible assets, used by Scherr and Hulburt (2001).

3.9.2 Leverage

Leverage ***(LEV)*** is an indication of higher debt in enterprises. It has been measured by the ratio of debt to assets .The leverage ratio is defined as total debt divided by net assets. In the study of corporate cash holdings, Kim et al., (1998) find that cash holdings are inversely related to debt ratios while Opler et al., (1999) argue that firms with greater likelihood of financial distress should hold more cash. Baskin (1987) finds that the cost of funds used to invest in liquid assets increases as a firm's debt ratio increases, and John (1993) argues that firms use borrowing as a substitute for

maintaining stocks of liquid assets. Guney, Ozkan, and Ozkan (2007) find a non-monotonic relationship between cash holdings and leverage. Therefore, there are different assumptions regarding the relationship between cash holding and leverage. In the Nepalese context, higher debt level can increase the likelihood of financial distress. Therefore, it is expected that a firm with a high leverage increases its cash holdings and decreases in the case of the likelihood of financial distress. Accordingly, we would induce a positive relation between cash holdings and leverage.

3.9.3 Cash flow

The cash flow ***(CFLOW)*** has been approximated by dividing pre-tax profits plus depreciation over total assets. Cash flow of the enterprises depends on business activities and transactions. Larger business transactions lead to larger cash flow. Enterprises with larger cash flow hold more cash balance to support transactions. According to Myers and Majluf (1984) and Opler et al., (1999), the firms first use internal resources to support cash flow instead of debt capital. It shows that cash flow has positive relation with cash holdings. This study also assumed positive relation between cash flow and cash balance. It is expected that the firms with larger cash flows hold more cash.

3.9.4 Cash flow variability

Cash flow variability **(CFVAR)** is an indication of uncertainty and volatility in cash flow. Opler et al., (1999) used this variable to explain corporate cash holding decisions. In their arguments the more volatile the firm's cash flows, the higher the likelihood that the cash flows are insufficient to cover the outlays. Therefore, cash flow uncertainty positively affects cash holdings. The variability on cash flow measures cash inflow and outflow volatility, and measures the variance or uncertainty of cash. Variability is determined by standard deviation of difference between cash flow divided by total assets and positive relationship between cash balance and cash flow volatility. Higher the uncertainty or volatility, greater will be the cash ratio.

3.9.5 Liquidity

Opler et al. (1999), Ferreira and Vilela (2004) and Ozkan and Ozkan (2004) argue the ratio of current assets minus cash to total assets or ***(LIQ)*** is used to measure the existence of other liquid assets that may substitute cash and have a negative

relationship between cash and liquidity. It has been argued that a non-cash liquid asset, LIQ, is a substitute for cash holding. It is, therefore, is expected that firms with more liquid assets require less cash. Thus, there is a negative relationship between liquidity and cash holding.

3.9.6 Sales

In their study on demand for cash, Keynes (1936), Baumol (1952) and Tobin (1956) considered sales as an important independent variable to explain cash demand. In most of the theories on demand for cash, sales is the major determinants of cash holdings. In this study also, sales is considered as an independent variable to explain the relationship between cash balance and wealth of the firms represented by sales ratio **(STA)**. STA is a real desired wealth defined in terms of sales to total assets ratio. Higher STA shows more sales transactions and related to transaction motives for holding cash. As a result, there is a positive relationship between cash holdings and sales ratio.

3.9.7 Interest

Interest **(INT)** is another major factor to determine cash holding decision of the enterprises. Generally, in cash demand studies, short term interest rate is taken as an explanatory variable. But, in this study, one year lending interest rate of commercial bank is taken for INT, as it represents market rate of interest. An increased at this rate, discourages the demand for cash balance for manufacturing and trading enterprises. It indicates negative relationship between cash demand and interest, Many studies show that interest rate in the cash demand function for developing countries have indicated the existence of a negative relationship between the interest rate and the demand for cash, for Arab countries as indicated by Swelem's (1974), Teleb's (1985), and Hemaya's (1990) studies, the interest rate as an opportunity cost for holding cash has a highly significant negative effect on the demand for cash in Egypt. Moosa's (1983), Basha's (1984), and Amr and Al Mahmeed's (1987) studies found out inter-bank interest rate having a significant effect on the demand for cash in Kuwait. In similar situations as the above countries this study expects negative relationship in the Nepalese enterprises.

3.9.8 Average collection period

Average Collection Period **(ACP)** is used as an independent variable. It is calculated by dividing account receivable by sales and multiplying the result by 360 (number of days in a year). Schilling (1996) used this variable to show the relationship between ACP and needs for working capital. His studies assume positive relationship between ACP and cash balance requirements stating that higher the average collection period, more cash balance will be required. Lower average collection periods mean collecting accounts receivable more quickly. As long as average collection period decreases, enterprises hold less cash. Shorter the ACP, lower will be the demand for cash. Thus, it shows positive relationship between cash and ACP.

3.9.9 Current ratio

Current ratio **(CR)** is one of the important controversial variables in cash demand theory.CR is derived from current assets divided by current liabilities, it measures liquidity position of firms and has a positive relationship with cash balance (Sharma, 1967). CR shows the relationship between current assets and current liabilities. Higher current ratio indicates more cash balance requirement for the enterprises, when all items of current assets cannot be used as cash substitute. Thus, the relationship between current ratio and cash will be positive.

3.9.10 Quick ratio

Quick ratio **(QR)** is calculated by dividing quick assets by current liabilities. The quick assets include such current assets which can be converted into cash immediately. Quick ratio is considered as a fair indication of good liquid position of business to be used as a substitute for cash (Wick, 1974). Higher, quick ratio stands for additional amount of cash which reduced the demand of cash balance. Higher quick ratio encourages to lower cash holding by enterprises. Thus negative relationship is expected between cash holdings and quick ratio.

3.9.11 Bank debt

Bank debt **(BANKD)** is the ratio of total bank debt to total debt. It shows the relationship of enterprises with financial institutions. Ozkan and N. Ozkan (2004) used this variable as an independent variable assuming that the bank debt can serve as a substitute for holding high levels of cash because the bank debt is more easily

renegotiated when firms needed. BANKD has been approximated by considering the debt levels that the firms maintain with' their banks. Specifically, the expected relation between this variable and a firm's cash holdings is negative.

3.9.12 Size

Assets size **(SIZE)** is another significant variable that affects cash holdings. The studies (Baumol: 1952, Miller and Orr: 1966, and Mulligan: 1997) used this variable as an independent variable. It is measured by natural log of total assets. In this study, size is measured by fixed assets instead of total assets log. Fixed assets explained the real size of the enterprises in terms of land, building, machinery and plant. In economic theory, plants refer to size of the firms, there by the firms' economies of scale are defined. Due to economies of scale, large size firms maintained low cash balance. Therefore, negative relationship is expected between fixed assets and cash requirement.

3.10 Test of autocorrelation

One of the basic assumptions of the regression model is that the error in previous year and error of present time is considered as independent. This assumption is often violated when data are collected over sequential period of time because a residual at any one point in time may tend to be similar to residuals at adjacent points in time. Such a pattern in the residuals is autocorrelation. When substantial auto correlation is present in a set of data, the validity of a regression model can be in serious doubt. Auto correlation is detected and measured by using the DW. Again as DW test is not applicable in the case of lagged dependent variable appearing as independent variable, DW "h" test is used to test autocorrelation. DW "h" test is being used in the case of regression under dynamic model.

3.11 Multicollinearity

Multicollinearity occurs when two or more independent variables are highly (but not perfectly) correlated across observations. In this study also multicollinearity may occurs due to the presence of highly correlated explanatory variables such as liquidity, current ratio and quick ratio. These variables are correlated and measure the same thing. A unique method of detecting multicollinearity does not exist, but possible

diagnostics may be correlation matrix between independent variables, high "r" square, with insignificant "t" eigenvalues, condition index, and variance inflation factor (VIF). Multicollinearity has been checked in this study using some of these diagnostic tools.

3.12 Portfolio formation

Various rules for the grouping of enterprises in different portfolios have been proposed in the literature. The available literature shows that portfolio could be sort out from different bases such as risk (beta), earning (yield), different ratio net profit ratio, return on equity, sales revenue, market value of share, dividend yield, capital gain yield, price earnings ratio, book to market ratio, and average value of total assets. Sharpe (1964), Lintner (1965) and Black (1972) have used risk (beta) to form portfolio. Fama and MacBeth (1973) sort the firms on the basis of market beta. Ross (1976), Chan, Hamao and Lakonishok (1991) used earning, yield and assets size. Campbell (1996) and Chen and Knez (1996) used ratios of book value to market value and total assets of the firm. Similarly, Westhead, and Howorth (2007) and D'Mello et al. (2008) used assets value to sort out portfolio.

Similar to these fundamentals of portfolio formation, this study sorts out portfolio on the basis of total assets values as given in table 3.4. This will facilitate for also cross country comparison. The portfolio in the present study has been formed on the basis of two different criteria, nature of enterprises and scale of operation. The portfolio formation on the basis of nature of enterprises involves public and private sector enterprises while in terms of scale of operation it is categorized as small, medium and large enterprises. In categorizing enterprises in three different scales, small, medium and large, the study has considered the value of average total assets of the enterprises from 1999 to 2008 which is given in the table 3.4.

The enterprises which have less than 200 million of average total assets are categorized as small enterprises. Similarly, enterprises having more than 500 million total assets to 900 million are classified as medium enterprises and enterprises having more than 900 million total assets have been considered as large scale enterprises.

Table 3.4

Formation of portfolio on the basis of assets value

Small enterprises		**Medium enterprise**		**Large enterprises**	
Average amount of total assets for the period of 1999and 2008 (> Rs 200 million of total assets) Include seven enterprises		Average amount of total assets for the period of 1999and 2008 (< 500 million > Rs 900 million of assets) Include seven enterprises		Average amount of total assets for the period of 1999and 2008 (< RS 900 million of assets) Include six enterprises	
HPP	Rs126246500	DDC	Rs 747806553	HC	Rs 1462097500
NAL	146138780	JCF	560723500	AIC	1097359000
AVU	189740121	NSC	577650500	NFC	966850000
NWC	3850248	NTL	874635500	NOC	3998233473
NBB	154054893	GRY	740368323	BN	952118000
NLO	126225402	SSM	874313793	STC	2320196277
BBCL	103448758	UNI	560723500		

Source: Profit and loss account and balance sheet of respected enterprises
(HPP)= Herbs production & processing company limited, (NAL) = Nepal ausadhi limited, (AVU) = Arun vanaspati udyog limited, (NWC) = Nepal welfare company limited, (NBB) =Nepal bitumin and barrel udyog limited, (NLO) = Nepal lube oil limited, (BBCL) = Bishal bazar company limited.

(DDC) = Dairy development corporation, (JCF) = Janakpur cigarette factory, (NSC) =National seeds company limited, (NTL) = National trading corporation limited, (GRU)=Gorakhkali rubber udyog limited, SSM =Sriram sugaimills limited, (UNI)= Unilever nepal limited.

(HC)= Hetaunda cement industries limited, (AIC) = Agriculture inputs company limited, (NFC) = Nepal food corporation, (NOC) =Nepal oil corporation limited. (BN)=Bottlers Nepal limited, (STC) = Salt trading corporation limited.

As per this category, six enterprises come under large scale, and seven enterprises each come under medium and large enterprises. Splitting enterprises into more than three reduces the number of observations affecting degree of freedom. Therefore the sampled enterprises have been grouped under three different scales only. On the basis of these portfolios, regression has been done to ascertain the behavior of cash holding of the firm and cash management ratio analysis to examine the performance of firm. The three portfolios on the basis of average total assets of the firm have been devoted for analysis purpose.

3.13 Assessment of corporate liquidity

The effectiveness of cash management policies and practices has both direct and indirect bearing on various aspects of liquidity, solvency, and the management of current assets and liabilities. Relevant financial ratio and the trend thereof are indicators of short term as well as long term state of financial health. Attempt has, therefore, been made to appraise the effectiveness of cash management by using the technique of ratio analysis. Cash itself is one of the measures of determining liquidity. An enterprise with more cash is considered more liquid than one with less cash. However, there is no guarantee that it always provides as a good measure of liquidity. It may sometimes give a misleading result. Four measures (current and quick ratio, cash to assets and net working capital) are widely used in assessing the liquidity position.

Ratio analysis is an important technique of financial analysis. It is the process of determining and interpreting the numerical relationship between figures of various items of the financial statements. Financial ratio quantifies many aspects of a business and is an integral part of the financial statement analysis. Financial ratios are categorized according to the financial structure of the business as measured by (Guthman and Dougall, 1955).

3.14 Structure and utilization of cash

In the present study, analysis is made on structure and utilization of cash applying cash management ratio. Financial analysis technique has been applied to assess the short term cash position of the enterprises. Different ratios have been calculated to evaluate the enterprises' ability to meet its current obligation out of current resources and overall performance of the enterprises. Cash management being an integral part of liquidity management, affects overall performance of the enterprises. The various ratio analyzed in this study may be grouped into liquidity ratio, working capital ratio, turnover ratio and cash management ratio. These ratios are briefly stated hereafter.

Current ratio (CR):

It is a most commonly used ratio which is defined as current assets by current liabilities. This ratio measures the liquidity position of the firm.

$$CR = \frac{\sum aj}{\sum lj} \quad \text{..... (3.12)}$$

where $j = 1, 2, 3,$ types of assets with their value. Σaj and Σlj indicate current assets and current liabilities respectively. The higher ratio indicates greater ability to pay current liabilities. The current ratio of 2:1 is generally considered as an acceptable standard although it is a rule of thumb.

Quick ratio (QR):

A quick ratio ignores inventory from the current assets. It represents more liquidity position of the company than the current ratio. A higher ratio indicates more liquid position than lower quick ratio. The quick ratio of 1:1 is generally considered as an acceptable standard although it is also a rule of thumb. A quick ratio is defined as,

$$QR = \frac{\sum aj - i}{\sum lj} \quad \text{..... (3.13)}$$

where, i indicate inventories. The numerator of this ratio is known as quick assets and denominator is quick liquidity. To avoid the deficiency of current ratio, this ratio is used to measure liquidity.

Current assets to total assets ratio (CA/TA)

This ratio of current assets to total assets is generally an indicator of risk and profitability. The higher this ratio, the lower is the risk of insolvency, and also the lower the profitability of the enterprises. The ratio is computed as follows:

$$CA\ TA = \frac{\sum a_m}{TA_m} \quad \text{..... (3.14)}$$

where a_m and TA_m represents current assets and total assets of the firm.

Working capital to sales ratio (WC/S)

Working capital to sales ratio tested the efficiency with which the short term funds were used. A high ratio was a sign of possible inefficiency in the use of short term financial resources by the company. A lower ratio implied by and large a more efficient use of funds. The ratio is computed as follows:

$$\text{WCTS} = \frac{\sum WC}{\sum S} \quad \text{..... (3.15)}$$

where, *S* and *WC* represent sales and working capital of the firm.

Cash turnover ratio (CTO)

The cash turnover ratio measures the number of times that the average cash balance of a firm turns over, in terms of sales, in a specified period. Higher the average cash turnover, the greater the number of times that cash is used for normal operation, and lower is the level of cash holding. A very high turnover ratio may sometimes lead to insufficiency of cash balance and has direct impact on the liquidity of the firm. On the other hand, low cash turnover also indicates the firm's inability to make profitable use of cash. This ratio is calculated as

$$\text{CTO} = \frac{\sum s}{\sum (oc + cc) \div 2} \quad \text{..... (3.16)}$$

Where *s* refers to sales income, oc, and *cc* opening and closing cash balance respectively. An average cash balance is derived by adding opening and closing cash balance divided by two.

Current assets turnover ratio (CATR)

Current assets turnover ratio indicates how effectively current assets are being utilized by the concern. This ratio is applied to measure turnover and profitability of the total current assets employed to conduct the operation of a firm. The ratio is calculated by dividing the amount of sales by the amount of current assets. The higher the turnover, the better is the use of current assets. The lower the turnover of the current assets, the worse is the utilization of current assets. The ratio is computed as follows:

$$\text{CATR} = \frac{\sum S}{CA_m} \quad \text{..... (3.17)}$$

where, S and CA_m represents current assets and total assets of the firm.

Net working capital turnover ratio (WCTR)

The net working capital turnover ratio is derived as the quotient of sales divided by the average net working capital. It measures the capacity of a firm to utilize its net working capital in relation to sales over a period of time. Higher the turnover better is

the utilization of the resources. It also measures the liquidity position of the firm. The ratio is computed as follows:

$$\text{WCTO}= \frac{\sum S}{\sum NWC} \text{ ……………………………………………………… (3.18)}$$

where, *S* and *NWC* represent sales and net working capital of the firm.

Debtors' turnover ratio (DTR)

The debtor's turnover ratio indicates the speed with which debtors are converted into cash. It throws light on the credit and collection policy adopted by a concern, this ratio measures the rapidity or slowness of debtors' collection. Generally, the higher the turnover, the more efficient is the trade credit management. On the other hand, low debtors turnover implies inefficient management of debtors and less liquid debtors. The ratio is computed as follows:

$$\text{DTR}= \frac{\sum S}{\sum D} \text{ ………………………………………………………………… (3.19)}$$

where, *S* and *D* represent sales and debtors of the firm.

Average collection period (ACP)

The average collection period refers to the average time lag between sales and collection, in terms of number of days. It is significant measure of the collection activity and quality of account receivable. Prolonged collection period owing to delays and other reasons create hazards in the way of sustaining business operations because of financial scarcity. A shorter collection period signifies better credit management and liquidity of account receivable. The ratio is computed as follows:

$$\text{DTR}= \frac{\sum D * d}{\sum S} \text{ …………………………………………………………….. (3.20)}$$

where, D represent debtors, d represents days in a year and, S represent sales of the firm.

Inventory turnover ratio (ITR)

This ratio shows the relationship between the costs of goods sold and the average stock held by a company (Brigham and Houston, 2001). It indicates the speed with which the stock is rotated into sales during the year (Finnerty, 1986). A higher ratio

means the stock is converted into sales quickly, while a lower ratio shows that the stock is converted into sales in longer duration, and inventories remain lying in the warehouse for a long time (Bhattacharya, 2003). The ratio is computed as follows:

$$\text{ITR}=\sum \frac{S}{1} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (3.21)$$

where, *S* and I represent sales and inventory of the firm.

3.15 Cash management ratio

Cash management ratios and the trend thereof are indicators of short term as well as long-term state of financial health. Attempt has therefore been made to appraise the effectiveness of cash management by using cash management ratio. Investment in cash and its trend can be assessed with the help of cash to total assets ratio. Position and structure of cash can be observed by studying the relation of cash with current assets and total assets. Effective use of cash depends on firm's performance and its ability to mobilize idle cash. Utilization of cash analysis in this study is organized to know about the use of cash in the Nepalese enterprises. Effective utilization of cash can be found by studying the percentage of cash used in current liabilities and relation between cash and sales ratio. Cash management ratio in this study is grouped into (a) cash ratio, (b) ratio of cash to total assets, (c) ratio of cash to current assets, (c) ratio of cash to quick assets, (e) ratio of cash to current liabilities, and (f) ratio of cash to sales.

Cash ratio (CAR)

The cash ratio is a formula for measuring the liquidity of a company by calculating the ratio between all cash and cash equivalent assets and all current liabilities. It excludes both inventory and account receivable in comparison to current ratio. The cash ratio measures only the most liquid of all assets against current liabilities, and is, therefore, seen as the most conservative of the three liquidity ratio. This cash ratio is also known as the liquidity ratio and cash assets ratio. It is to be noted that the cash ratio formula is used it ignores timing of both cash received and cash paid out.

$$(\text{CAR}) = \sum \frac{(CE + C)}{CL} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (3.22)$$

where CE = Cash equivalent, C= Cash and CL= Current liabilities

A cash ratio is a measure of company's cash and liquid assets to its total liabilities. It measures company's liquidity and how easily it can provide debt service and cover short-term liabilities if the need arises. As a result, potential creditors use this ratio in determining whether or not to make short-term loans. It is also called the liquidity ratio and the cash asset ratio.

Cash to current assets ratio (C/CA)

According to Pinkowitz and Williason (2001), cash is the ratio of cash to operating assets. Cash is defined as "cash and deposits plus bank balances." Ratio of cash to current assets plays an important role in liquidity and performance of the firm. The ratio states what percentage of current assets is in the form of cash. The computation of the ratio is given by,

$$\text{CCA}=\frac{\sum C_1}{\sum aj}*100 \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (3.23)$$

where C_1 refer to cash balance at the end and a_j refer to total current assets of the firm. This ratio should be as low as it can be justified in accordance with trading requirements. A large ratio may be taken as a sign of poor cash management. The percentage of cash to current assets is a measure of efficiency with which cash is employed to support the operations of an enterprise. The acceptable level of cash to current assets may be based on inter firm comparison or industry averages. There is no other recognized conventional norm.

Cash to quick assets ratios (CQA)

The ratio of cash to quick assets may be worked out as a measure of the degree of corporate liquidity. A high ratio of cash to quick assets may be a good sign of corporate strength, rather than its weakness. The ratio is given by the following equations.

$$\text{CQA} = \quad \frac{\sum C_1}{\sum Q_1} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (3.24)$$

where, C_1 refers to cash balances of the firm and Q_1 refers to total quick assets in the firm.

Cash to total assets ratio of (C/TA)

Cash to total assets ratio analysis in this study shows the size of investment of cash

and its trend of cash over a period of time. This ratio indicates what percentages of total assets are in the form of cash. This ratio is called cash ratio and it is defined as

$$CTA= \sum \frac{C_i}{T_{aj}} *100 \quad \text{(3.25)}$$

where, C denotes the amount of cash in hand and at bank and TA represents fixed assets current assets and investment. A higher ratio indicates the position of cash is well- built in the enterprises, and its volume is large and lower ratio presents vice versa. The increase in the ratio would decrease both risk and return in cash management.

Cash to Current Liabilities ratio (C/CL)

Kevin (2005) investigates how Japanese firms maintain high/low cash holding position during the late 1980s and early 1990s and find that firms pile cash because there is no profitable project and outstanding liabilities. On the other hand, firms maintain a low cash holding position due to lower claims. Also, the excess cash holdings significantly affect firms' performance. Ratio of cash to current liabilities indicates utilization of cash in current liabilities. This ratio tests the availability of cash to pay short-term obligation. It shows whether the level of cash maintained by the enterprises is greater or less than the current liabilities. This ratio is calculated using formula cash to current liabilities. It is defined as

$$CCL=\frac{\sum a_1}{\sum lj} \quad \text{(3.26)}$$

where, a_1 indicates cash and I_j current liabilities respectively. This ratio indicates how much cash is available to pay current obligation. It is stated the higher ratio indicates greater assurance of liquid assets over current liabilities.

Cash to sales ratio (C/S)

Miller and Orr (1966) suggested that transactions such as sales ought to help account for the observed levels of corporate cash. Kuttner (1992) concludes that "there is no close or reliable relationship between money and non financial economic activity". Despite such claims, the cross sectional estimates of the parameter relating company sales to company cash holdings are almost the same, year after year, over the twenty year period. Cash to sales ratio shows the efficiency of cash utilization in sales

transaction. The Ratio shows what percentage of cash balance is maintained on sales. This ratio tests the availability of cash on sales transaction. It is defined as:

$$CS= \sum \frac{C_i}{S_J} * 100 \quad \text{..... (3.27)}$$

where, C_i denotes the closing balance of cash and S_j indicates sales income. A lower ratio points out lower level of cash balance on sales transaction and firm is able to do maximum transaction with minimum level of cash, at lower risk with higher performance of cash.

3.16 Data limitations

The Office of the Auditor General's annual report and the Ministry of Finance have their own format, for publishing the financial data of public enterprises. The data are, more or less, uniform.-Similarly, Nepal Stock Exchange Limited compiles data on their own format for publishing the some of the listed companies. However, these government entities have their own practices to define headings and sub headings of their financial statements to compile and analyses the data. For example, in the annual performance review of public enterprises published by the Ministry of Finance defines stock as a total of finished goods, semi finished goods, raw material, good in transit inventory and spare parts. However, the Nepal Stock Exchange does not include all these items in stock. It is, therefore, difficult to define some key terms such as current assets, current liabilities and stock to avoid misunderstandings in the interpretation of the data. Some companies were about to close down during the study period whereas some went in liquidation. The pattern of the data is quite volatile before and after 2002 due to political conflict and economic instability in the country. Data of the different enterprises are not consistent with their own previous format.

Chapter 4
STRUCTURE AND UTILIZATION OF CASH MANAGEMENT

Cash management is one of the functional areas of finance that covers all the items showed in current accounts of the firm (Agrawal, 1983). It is thought in terms of overall liquidity needs of the firm, specifically its current assets and liabilities. Being an integral part of liquidity management, the effectiveness of cash management policies and practices has both direct and indirect bearing on various aspects of liquidity, solvency, efficiency, and profitability. Some of the cash management ratio and their trend are the indicators of short term as well as long-term state of financial health. Therefore, an attempt has been made to analyze the trend and structure of cash management with its effective utilizations in Nepalese enterprises individually and as a group (public, private, small, medium and large enterprises).

4.1 Structure of cash management

Cash is the most liquid portion of an enterprise's current assets, which is employed in a short-term operation. It includes cash in hand and cash at bank. Structure and position of cash is one of the important aspects of corporate cash management. The level of cash of an enterprise has an important effect on its operation and performance. Myers and Majluf (1984) opined that as the size of cash increases, both the enterprise's operation and performances increases, and vice versa, According to Williamson (1999), external financing is more costly than internally generated cash funds to meet the need for investment expenditures therefore; it may be optimal for firms to hold a certain level of cash.

Since the volume of cash affects operation as well as performance of the firm, the study of its structure appears to be one of the important areas of study on cash management. Structure of cash is concerned with the size of cash balance, working capital, liquidity, and percentage of cash invested in different assets. This section describes the size of investment of cash in terms of current ratio, quick ratio, current assets to total assets ratio, cash to current assets ratio, cash to quick assets ratio, cash to total assets ratio in selected Nepalese enterprises.

4.1.1 Size of cash balance

Cash is the most important asset that a business should possess because payment of bills has to be made in cash. If cash is not available in sufficient quantity at proper time, obligation cannot be discharged and the company will become insolvent. Due to such circumstances, the aim in cash management should be maintained with enough amounts. The extent of cash and bank balance affects overall performance of the enterprises. Requirement of cash balance depends on the performance of the firms.

The financial performance of the firm with reference to liquidity can be measured through forming portfolio into small, medium, and large size. Cash balance supports to solve liquidity crunch of enterprises. It further helps to avoid financial crisis in the economy (Bolton, Chen, and Wang, 2009). Size of cash balance and its trend educate finance manager to determine the appropriate amount of cash balance for cash planning and its proper utilization. The size of cash balance shows whether the company is utilizing its cash efficiently or not. Further, it shows whether the company is earning profit with the minimum balance of cash or not (Steijvers and Voordeckers2009).

Tables 4.1 and 4.2 indicate the size of average cash balance of Nepalese enterprises in current and constant price for the period of 1999 to 2008. Among the enterprises, Nepal Oil Corporation has higher amount of cash balance of Rs 118379 thousand but Nepal Welfare Company has lower amount of cash balance of Rs 168 thousand. Throughout the study period, the pattern of cash balance is on fluctuating trend. It varied from Rs. 8390 thousand to Rs 14350 thousand in aggregate. The cash balances of all groups of Nepalese enterprises were lowest in initial years 1999 and highest in 2000 as compared to other years. This shows that the cash need trend is fluctuating over the period.

Among the companies formed under public and private, the size of cash balance of private sector is lower as compared to public sector group of enterprises. According to various portfolios, small scales enterprise has smaller cash balance as compared to medium and large size. This shows small enterprises utilizing cash very efficiently than other enterprise groups. These companies earned a lot with the minimum balance of cash. The size of the enterprises reflects amount of cash balance. Generally, larger

size companies are found to have more cash balance than smaller size companies. Most of the private enterprises fall under small category having lower cash balance. The average growth of cash balance in percent is higher in private group of enterprises as compared to public group of enterprises.

Table 4.1

Average amount of cash balance at current price (Rs in thousands)

Year / Co	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	Average
DDC	11110	13300	10812	8772	11278	11679	16701	20763	24792	26530	15574
HPP	610	149	184	135	224	472	430	459	689	701	405
HC	801	451	4	382	237	608	3067	8769	8424	12782	3553
JCF	4224	4241	5739	4990	4140	5359	4960	4566	4563	5802	4858
NAL	1979	667	317	415	372	335	2423	2468	432	2178	1159
AIC	11932	16336	17473	20088	40639	37026	15002	13376	13110	9286	19427
NFC	9823	9242	6644	7258	7843	7799	8501	9405	11364	13926	9181
NSC	11932	16336	17473	6105	1397	1674	1264	1055	789	658	5868
NTL	3825	4292	4165	4656	3632	2495	12786	12408	30103	30314	10867
NOC	96122	199326	123892	215220	92068	97367	93815	58288	81053	126639	118379
AV	382	685	1284	1069	404	546	796	610	346	229	635
BN	2136	2543	2588	1670	1740	955	784	1892	1970	295	1657
GRY	5613	6670	6950	4938	3300	2675	1554	2002	3063	2991	3976
NWC	145	671	660	82	42	33	19	6	11	9	168
NBB	157	99	114	75	111	309	385	368	1513	1530	466
NLO	276	171	135	156	236	205	181	305	260	281	221
SSM	903	935	734	730	451	494	629	402	934	2595	881
BBCL	255	16	231	239	130	363	855	1198	1041	707	504
SALT	3891	4905	5845	4618	4868	6768	6411	5838	7268	7162	5757
UNI	1751	5978	5269	3430	18987	3.5447	41742	25117	8031	10030	15578
Total	**8390**	**14350**	**10530**	**13970**	**9600**	**10630**	**10620**	**8460**	**9S90**	**12730**	**10930**
Public	15240	26430	18670	26240	16180	16480	15890	13160	17530	22880	18870
Private	1550	2270	2380	1700	3030	4780	5340	3770	2440	2580	2980
Small	540	350	420	310	220	320	730	770	610	800	510
Medium	5620	7390	7310	4000	6170	8550	11380	9470	10330	11270	8150
Large	20780	38800	26070	41540	24570	25090	21260	16260	20530	28350	26330

Source: Derived from balance sheet of the concerned enterprises

In scale, large portfolio group of enterprises have higher growth percent of cash balance as compare to medium and small portfolio group of enterprises.

Amount of cash balance in constant price also has the same pattern as revealed in table 4.2 among the individual companies, public and private sectors of enterprises and different scales of enterprises. The minimum cash balance of Rs l90 thousand of small company in 2003, which happens to be Rs 3740 thousand in medium scale enterprises in 2002 and Rs 16850 thousand in the large-scale enterprises. The average growth of cash balance is higher in private group of enterprises as compared to public group of enterprises.

Table 4.2

Average amount of cash balance at constant price (Rs in thousands)

Year / Co	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	Average
DDC	11402	13300	10406	8190	10105	9898	13234	15334	17349	16030	12525
HPP	626	149	177	126	201	400	341	339	482	423	326
HC	822	451	4	357	212	515	2430	6476	5895	7723	2489
JCF	4335	4241	5523	4659	3710	4542	3930	3372	3193	3506	4101
NAL	2031	667	305	387	333	284	1920	1823	302	1316	937
AIC	12245	16336	16817	18757	36415	31378	11887	9879	9174	5611	16850
NFC	10081	9242	6395	6777	7028	6609	6736	6946	7953	8414	7618
NSC	12245	16336	16817	5700	1252	1419	1001	779	552	398	5650
NTL	3925	4292	4008	4348	3254	2114	10131	9164	21066	18316	8062
NOC	98647	199326	119242	200952	82498	82515	74338	43048	56720	76519	103381
AV	392	685	1236	998	362	463	631	450	242	138	560
BN	2192	2543	2491	1559	1559	809	621	1397	1378	178	1473
GRY	5760	6670	6689	4611	2957	2267	1231	1478	2144	1808	3561
NWC	149	671	635	76	38	28	15	5	7	5	163
NBB	161	99	110	70	100	262	305	271	1059	924	336
NLO	284	171	130	146	211	174	143	225	182	170	184
SSM	927	935	706	682	404	418	498	297	654	1568	709
BBCL	262	16	222	224	116	308	677	884	729	427	387
SALT	3994	4905	5626	4312	4362	5736	5080	4311	5086	4328	4774
UNI	1796	5978	5071	3203	17013	30040	33076	18550	5620	6060	12641
Total	**8610**	**14350**	**10130**	**13040**	**8610**	**9010**	**8410**	**6250**	**6990**	**7690**	**9310**
Public	15640	26430	17970	24500	14500	13970	1259	9720	12270	13830	16140
Private	1590	2270	2290	1590	2710	4050	4230	2790	1710 .	1560	2480
Small	560	350	400	290	190	270	580	570	430	490	410
Medium	5770	7390	7030	3740	5530	7240	9010	7000	7230	6810	6680
Large	21330	38800	25100	38790	22010	21260	16850	12010	14370	17130	22760

Source: Derived from balance sheet of the concerned enterprises

In scale of operations, large-scale portfolio of enterprises have higher average growth percent of cash balance as compared to medium and small scale portfolio of enterprises. When the size of cash balance in public and private enterprises groups is compared, public enterprises cash size is larger than private enterprise group. A large gap in cash balance occurs between public and private sectors enterprises. The size of cash balance in small enterprise group is constant throughout the study period, but the size of medium and large enterprise groups is fluctuating. It means that small enterprises have to run under constraint, which does not allow to fluctuate. Among the enterprises, the structure of cash in large enterprises is similar to public enterprise groups. It is because of the portfolio of large-scale enterprises in public sector. Public enterprise groups are government- owned enterprises, therefore, government provides cash to them in terms of investment and sometime in the forms of grant and subsidies to pay the current obligation. Private enterprise group's cash position is decreasing from 2006 because of political instability, financial problems and unionism. The figure shows same pattern of cash size in both the cases of current and constant price.

4.1.2 Size of net working capital

To assess the qualitative efficacy of the cash management during the study period, the comparison on the size of working capital has been done in table 4.3. As the analysis based only on the size of cash balance is not sufficient to examine the liquidity position, size of networking capital has also been used to explain the liquidity position of the firm in net balance of liquid assets. Of the several measures, net working capital itself provides the one, which indicates a 'margin of safety' or 'cushion' of protection provided for creditors (Burton, A. Kolb, 1983). The greater the amount of net working capital, the greater is the liquidity. Liquidity refers to the ability to pay in cash against the obligations that are due. If sufficient liquidity is not maintained, the enterprises technically fail (Riddick and Whited, 2008).

Table 4.3 shows that among the enterprises, Salt Trading Corporation has larger amount of working capital of Rs 56168thousand but Agriculture Inputs Company has smaller amount of negative net working capital of Rs 19715thousand. Both the enterprises are from public sector. The average size of working capital for all groups of enterprises was Rs. 17670 thousand where as it was Rs 12070 thousand for public enterprises, and Rs 5590 thousand for private enterprise group. Similarly, small,

medium and large size enterprises comprise of Rs 2020, Rs 4260, and Rs 22110, thousand working capital, respectively. The period of study and the quantum of working capital showed a volatile trend. All enterprises groups are found to face with positive net working capital during 1999 to 2004, but after 2004 net, working capital is negative except in the case of small enterprise group.

Table 4.3

Size of working capital (Rs in thousands)

Year / Co	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	Average
DDC	12381	11914	599	-6699	437	5592	5797	3673	12691	5030	5142
HPP	2599	1959	7454	7599	7666	7640	6328	6377	6406	6453	6048
HC	-16344	46719	48711	51857	55654	56793	49074	46476	69406	74298	48264
JCF	10784	11806	14814	12665	17096	19549	16553	1836	-734	22728	12710
NAL	6328	4423	2276	5141	-1414	-1698	3609	-80	3559	6236	2838
AIC	39283	23916	27113	7923	-45586	-46847	-50263	-53921	-51089	-47682	-19715
NFC	28865	41842	35620	21569	14779	12171	16735	-25652	-29726	-27654	8855
NSC	39283	23916	27113	3098	3205	3612	3599	38S8	3860	5644	11722
NTL	8373	44064	17881	15646	15544	15717	15246	19062	19649	20091	19127
NOC	174256	235870	400197	260296	282641	131814	-170564	-417781	-412127	-226627	25797
AV	8125	-5091	-4551	-5826	-6339	-7047	-973	-3583	-29742	-2091	-5712
BN	8833	12095	10880	16631	33836	33469	22422	16056	-18055	-2659	13350
GRY	25965	8275	2362	-81	-5032	-10301	-21687	-24249	-29644	-31118	-8551
NWC	236	240	241	140	73	55	15	89	86	73	125
NBB	5638	5132	5637	6311	4809	5391	7386	7065	18612	12880	7886
NLO	4378	5632	1579	1872	1878	2040	2275	2442	2673	3130	2790
SSM	5687	8398	-11538	-10726	-13410	-19608	-25377	-19594	-36041	-35119	-15733
BBCL	473	782	562	84	-1830	67	680	696	657	-396	177
SALT	56857	71342	79591	81661	129494	117528	9679	1928	6967	6637	56168
UNI	8500	14707	14951	17593	16343	18054	939	-18428	-12780	-5319	5456
Total	**43040**	**56790**	**68140**	**48670**	**50980**	**34390**	**-10850**	**-45370**	**-47530**	**-21540**	**17670**
Public	30580	44640	58170	37900	35000	20430	-10380	-41610	-37810	-16140	12070
Private	12460	12150	9970	10760	15980	13960	-460	-3750	-9720	-5390	5590
Small	3960	1860	1880	2180	690	920	2760	1850	320	3750	2020
Medium	15850	17580	9450	4490	4880	4650	-700	-4830	-6140	-2580	4260
Large	48620	71960	10030	73320	78460	50820	-20480	-72140	-72430	-37280	22110

Source: Derived from balance sheet of the concerned enterprises

The highest working capital reached at Rs.3960 thousand in small enterprises group in 1999 while it reached at Rs78460 thousand in large enterprise group in 2003. Similarly, it has reached at Rs 17580 thousand in medium scale enterprises group in 2000. Such structure of working capital is due to the impact of economic liberalization at the initial period of the study and later was the result of payment of cash obligation for privatized public enterprises and decreasing the transaction of private enterprises as well as amount paid for current obligation of material labor and other expenses. Besides, the Maoist conflict, political instability and delay in peace process might be indirect causes for such trend. Because of the weak financial position, most of the state own enterprises in Nepal has shown negative working capital. They are not able to pay their current obligation in time. Their current liabilities are more than their current assets. At the initial period of the study, the trend of working capital in private enterprise group was positive but it declined after 2005. Political instability and unionism made negative impact in private sector enterprises. As a matter of fact, they reduced the level of working capital.

The table above shows the trend of working capital of different groups of Nepalese enterprises, both public, and private enterprises, and in terms of scale of operation (small, medium and large size enterprises). Trend of working capital is decreasing, and is even negative, in all groups of enterprises except small enterprise group. The size of working capital is more fluctuating in public enterprises group, in comparison to private groups of enterprises. Similarly, the negative trend is also greater in public enterprises group. In the public sector, decreasing trend started from 2000, but in private sector enterprises, decreasing trend starts from 2003. Status of working capital is better in private enterprise group as compared to public enterprise group. The size of working capital in large enterprises, as a group, is highly negative as compare to medium and small enterprises as a group. Size of working capital in large enterprises group is in volatile trend but the trend of small and medium enterprises group is constant. The decreasing trend started in large enterprises group from 2003.

4.1.3 Current ratio (CR)

Current ratio shows relationship between current assets and current liabilities of the enterprises. It shows the proportion of current assets available per unit of current liability. It is calculated by dividing current assets by current liabilities. It indicates

the extent of soundness of the current financial position of an enterprise and the degree of safety and security provided for the creditors. This ratio is used to evaluate a firm's ability to meet its short-term liabilities on time (Hampton, 2003). John et.al. (1986) describes the current ratio as one which is generally recognized as the patriarch among ratios.

Table 4.4
Current assets to current liabilities ratio (Times)

Year / Co	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	Average
DDC	1.54	1.44	1.01	0.83	1.01	1.16	1.16	1.09	1.29	1.12	1.17
HPP	1.85	1.55	2.53	2.3	2.23	2.14	1.86	1.77	1.76	1.66	1.97
HC	0.77	1.65	1.56	1.6	1.63	1.62	1.53	1.49	2.08	2.28	1.62
JCF	1.44	1.47	1.57	1.48	1.67	1.87	1.9	1.06	0.98	1.78	1.52
NAL	2.08	1.79	1.26	2.2	0.86	0.85	1.42	0.99	2.11	2.58	1.62
AIC	1.97	1.36	1.37	1.08	0.69	0.57	0.57	0.46	0.48	0.43	0.9
NFC	1.52	1.74	1.66	1.43	1.28	1.22	1.26	0.77	0.77	0.72	1.24
NSC	1.97	1.36	1.37	5.04	2.8	2.62	2.26	2.04	1.74	1.94	2.31
NTL	1.23	2.56	1.34	1.27	1.3	1.33	1.2	1.36	1.18	1.2	1.4
NOC	2.21	1.73	2.17	2.73	2.82	1.6	0.68	0.49	0.38	0.6	1.54
AV	2.14	0.78	0.83	0.81	0.79	0.86	0.98	0.89	0.19	0.73	0.9
BN	1.42	1.63	1.38	1.49	2.02	2.92	1.98	1.58	0.72	0.94	1.61
GRY	5.57	1.32	1.08	1	0.83	0.69	0.51	0.51	0.46	0.44	1.24
NWC	8.42	1.17	1.25	2.98	1.74	1.47	1.16	2.57	2.5	2.28	2.55
NBB	2.88	2.32	2.99	2.94	2.37	2.56	2.61	2.14	9.37	2.88	3.31
NLO	2.02	2.16	1.2	1.25	1.18	1.27	1.26	1.23	1.27	1.29	1.41
SSM	2.19	1.48	0.6	0.65	0.68	0.5	0.34	0.48	0.49	0.4	0.78
BBCL	1.35	1.93	1.68	1.08	0.43	1.04	1.38	1.38	1.34	0.84	1.25
SALT	3.13	3.3	3.92	3.74	4.4	3.78	1.06	1.01	1.04	1.04	2.64
UNI	1.32	1.48	1.36	1.79	1.38	1.33	1.01	0.75	0.83	0.93	1.22
Total	**2.35**	**1.71**	**1.61**	**1.88**	**1.61**	**1.57**	**1.31**	**1.2**	**1.55**	**1.3**	**1.61**
Public	1.66	1.67	1.59	2	1.63	1.5	1.38	1.15	1.28	1.43	1.53
Private	3.04	1.76	1.63	1.77	1.58	1.64	1.23	1.26	1.82	1.18	1.69
Small	2.96	1.67	1.68	1.94	1.37	1.46	1.52	1.57	2.65	1.75	1.86
Medium	2.18	1.59	1.19	1.72	1.38	1.36	1.2	1.04	1	1.12	1.38
Large	1.83	1.9	2.01	2.01	2.14	1.95	1.18	0.97	0.91	1	1.59

Source: Derived from balance sheet of the concerned enterprises

He states that at one time, it commanded such widespread respect that many businesspersons regarded it as being endowed with the infallibility of nature's law. It was a law of gravity applied to the balance sheet. A good current ratio may mean a good umbrella for creditors against the rainy day, but to the management, it reflects bad financial planning or the presence of idle assets. Although there is no hard and fast rule, conventionally a current ratio of 2:1 is considered satisfactory. According to accounting principles, a current ratio of 2:1 is supposed to be an ideal ratio, the higher the ratio, the better it is, because the firm will be able to pay its current liabilities more easily (Mishra, 1975).

A 2:1 current ratio is supposed to be the indicators of the satisfactory liquidity position of a business concern. Ratio exceeding this prescribed standard should generally indicate that firm has locked up excessive cash in current assets, and a reduction in the requirements for cash is possible through the careful regulation of current asset. However, a higher ratio than 2:1 may indicate the poor liquidity policy of the management (Panday, 2007). On the other hand, if the current ratio is less than the ideal ratio, it indicates lack of liquidity and shortage of working capital (Horngren et al., 2002). Attempts have been made to measure the liquidity and position of the enterprises by the computation of this ratio.

Table 4.4 shows the current ratio in various categories of Nepalese enterprises. Among the enterprises, Nepal Bitumin and Barrel Udyog limited has higher ratio of 3.31:1, but Sriram Sugar Mills Limited has lower ratio of 0.78:1. Both enterprises are from private sector. An average current ratio for Nepalese enterprises is 1.61:1. The average current ratio of a group of private enterprises is 1.69:1 which is higher than the ratio of a group of public enterprises 1.53:1. It is apparent that this ratio is less than the standard norm of 2:1 except in the year 1999. In the case of scale of operation, a group of small-scale enterprises average current ratio 1. 86:1 is higher than a group of large enterprises 1.59:1, and a group of medium enterprises 1.38:1. It indicates small companies' liquidity position is sound than the medium and large enterprises.

The average current ratio in Nepalese enterprises over a period fluctuates and falls between 3.04 times (1999) and 0.91 times (2007). It shows that the liquidity position

of the companies is found to be very good from the creditor's point of view, but to the management's point of view, it reflects bad financial planning and inefficient tie up of funds.

Looking at the average current ratio of different sized enterprises as a group the small-scale enterprises groups are close to the standard. Although, no definite inference could be drawn from this analysis about the liquidity position of the company, as the current ratio is quantitative rather than qualitative index of liquidity. The table also indicates that the current ratio in Nepalese enterprises is volatile as it is fluctuating over the period of time. The average current ratio of a group of private enterprises is stronger than a group of public enterprises in Nepal. Similarly, groups of small enterprises have better current ratio as compared to a group of large and medium enterprises. The current ratio was developed many decades ago as a means of deriving an idea of the liquidity. However, there may be some current assets in the firm, which cannot be converted in to cash immediately. Therefore, the current ratio does not provide a sufficient index of the weakness or soundness of the liquidity. It fails to serve as a realistic guide to the solvency of the firm. Therefore, the quick ratio is calculated to X-ray the liquid position of the business.

4.1.4 Quick ratio (QR)

The quick ratio is also known as acid- test ratio or liquid ratio. It is calculated by dividing quick assets by current liabilities. It indicates whether a firm is in a position to pay its current liabilities immediately and signifies the ability of a firm to settle down all its current liabilities (Parasher, 1996). The quick assets include such current assets, which can be converted in to cash immediately. This ratio is considered as a better test of short-term financial position of the enterprises than the current ratio. C.A West Wick (1974) observes; "The current ratio is one test of liquidity, whereas the quick ratio is another, more stringent, test of liquidity which concentrates on those assets which can be quickly turned in to cash debtors, marketable securities and cash itself, stock is excluded". The 1:1 of quick ratio is considered as a fair indication of the good liquid position of the business, which means for every rupee of current liability, the firm should have an equal amount of liquid funds available all the times (Keown et al., 2003). This ratio is a more penetrating test of liquidity than the current ratio. Therefore, management should try to maintain sufficient liquid resources in the firm.

However, effort should be made to avoid excessive liquid resources, as it also hampers the financial position.

Table 4.5
Quick assets to current liabilities ratio (Times)

Year / Co	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	Average
DDC	1.54	1.44	1.01	0.83	1.01	1.16	1.16	1.09	1.29	1.12	1.17
HPP	1.85	1.55	2.53	2.3	2.23	2.14	1.86	1.77	1.76	1.66	1.97
HC	0.77	1.65	1.56	1.6	1.63	1.62	1.53	1.49	2.08	2.28	1.62
JCF	1.44	1.47	1.57	1.48	1.67	1.87	1.9	1.06	0.98	1.78	1.52
NAL	2.08	1.79	1.26	2.2	0.86	0.85	1.42	0.99	2.11	2.58	1.62
AIC	1.97	1.36	1.37	1.08	0.69	0.57	0.57	0.46	0.48	0.43	0.9
NFC	1.52	1.74	1.66	1.43	1.28	1.22	1.26	0.77	0.77	0.72	1.24
NSC	1.97	1.36	1.37	5.04	2.8	2.62	2.26	2.04	1.74	1.94	2.31
NTL	1.23	2.56	1.34	1.27	1.3	1.33	1.2	1.36	1.18	1.2	1.4
NOC	2.21	1.73	2.17	2.73	2.82	1.6	0.68	0.49	0.38	0.6	1.54
AV	2.14	0.78	0.83	0.81	0.79	0.86	0.98	0.89	0.19	0.73	0.9
BN	1.42	1.63	1.38	1.49	2.02	2.92	1.98	1.58	0.72	0.94	1.61
GRY	5.57	1.32	1.08	1	0.83	0.69	0.51	0.51	0.46	0.44	1.24
NWC	8.42	1.17	1.25	2.98	1.74	1.47	1.16	2.57	2.5	2.28	2.55
NBB	2.88	2.32	2.99	2.94	2.37	2.56	2.61	2.14	9.37	2.88	3.31
NLO	2.02	2.16	1.2	1.25	1.18	1.27	1.26	1.23	1.27	1.29	1.41
SSM	2.19	1.48	0.6	0.65	0.68	0.5	0.34	0.48	0.49	0.4	0.78
BBCL	1.35	1.93	1.68	1.08	0.43	1.04	1.38	1.38	1.34	0.84	1.25
SALT	3.13	3.3	3.92	3.74	4.4	3.78	1.06	1.01	1.04	1.04	2.64
UNI	1.32	1.48	1.36	1.79	1.38	1.33	1.01	0.75	0.83	0.93	1.22
Total	**2.35**	**1.71**	**1.61**	**1.88**	**1.61**	**1.57**	**1.31**	**1.2**	**1.55**	**1.3**	**1.61**
Public	1.66	1.67	1.59	2	1.63	1.5	1.38	1.15	1.28	1.43	1.53
Private	3.04	1.76	1.63	1.77	1.58	1.64	1.23	1.26	1.82	1.18	1.69
Small	2.96	1.67	1.68	1.94	1.37	1.46	1.52	1.57	2.65	1.75	1.86
Medium	2.18	1.59	1.19	1.72	1.38	1.36	1.2	1.04	1	1.12	1.38
Large	1.83	1.9	2.01	2.01	2.14	1.95	1.18	0.97	0.91	1	1.59

Source: Derived from balance sheet of the concerned enterprises

The quick ratio of individual enterprises, public and private sector enterprises, and a group of small, medium, and large-scale enterprises are presented in table 4.5. The

table shows the quick ratio of Nepal Bitumin and Barrel, Nepal Welfare Company and Salt Trading Corporation is above the normal standard. It indicates that the ratio of private sector is better than public sector. In the same way, the ratio is better in a small scale of enterprises as compared to the category of medium and large scales enterprises. Beside the quick ratio of private and small enterprises groups, it is also in line with standard norms of 1:1. However, the quick ratio of public and medium enterprises group is not according to standard norm. In the aggregate level, the quick ratio, worthily equal to 1:1, as it is 1.04:1.

4.1.5 Current assets to total assets ratio (CATA)

Current assets to total assets ratio expresses the relationship between the amount of current assets and the amount of investment in total assets. It indicates the extent of total funds invested for liquidity purpose. It helps to assess the importance of current assets of a concerned. Table 4.6 shows that on an average the share of current assets is more than two thirds of the total assets in Nepalese enterprises except private and medium size categories of enterprises. It indicates that the major portion of the total investment of the enterprises exists for liquidity purpose. Higher investment in current assets will increase the liquidity, but it will decrease profitability. Heavy investment in current assets will lower the return on assets as fund ties up in idle cash and high level of debtors reduces profitability. It also shows efficiency of liquidity management in Nepalese enterprises. Among the enterprises, National Trading Limited has higher CATA ratio of 94 percent but Sriram Sugar Mills Limited has lower CATA ratio of 12 percent.

Table 4.6 also indicates that ratio of current assets to total assets is higher in public enterprises group as compared to private enterprise group. Similarly, in the case of different scale of enterprise, large-scale enterprises group is undergoing through a higher ratio of current assets to total assets as compare to small and medium enterprises groups. The higher investment in current assets as compared to fixed assets shows that Nepalese enterprises are conscious and found to be concentrated in cash related activities. More over it also shows that current assets represent more than fifty percent of total assets, which indicates lesser investment on earning generating assets.

Table 4.6

Current assets to total assets ratio (%)

Co \ Year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	Average
DDC	45	48	49	47	53	52	55	58	69	66	45
HPP	74	74	88	89	90	90	90	91	91	92	74
HC	53	73	77	78	81	82	78	77	73	69	53
JCF	74	76	69	69	71	72	69	67	69	80	74
NAL	75	71	74	71	70	74	79	70	69	78	75
AIC	85	86	88	89	55	41	42	34	35	29	85
NFC	79	82	81	79	78	79	82	84	86	83	79
NSC	85	86	88	31	37	41	43	46	49	55	85
NTL	94	96	96	89	88	87	90	93	96	96	94
NOC	78	71	82	63	84	85	87	89	86	87	78
AV	64	68	74	71	70	80	79	73	42	39	64
BN	40	40	46	49	58	54	46	50	72	34	40
GRY	35	38	37	38	34	34	37	43	45	44	35
NWC	60	89	84	46	42	43	33	43	42	41	60
NBB	84	86	86	88	99	99	91	93	96	96	84
NLO	85	83	83	84	86	84	87	89	89	91	85
SSM	12	23	17	18	26	19	13	19	34	27	12
BBCL	22	22	17	11	16	17	27	26	27	17	22
SALT	82	86	86	66	73	72	49	51	58	52	82
UNI	65	72	75	70	75	77	81	58	63	70	65
Total	**64**	**69**	**70**	**62**	**64**	**64**	**63**	**63**	**65**	**62**	**65**
Public	74	76	79	71	71	70	71	71	72	74	73
Private	55	61	60	54	58	58	54	55	57	51	56
Small	66	71	72	66	68	70	69	69	65	65	68
Medium	58	63	62	52	55	55	56	55	61	63	58
Large	67	71	75	71	72	70	69	65	69	62	69

Source: Derived from balance sheet of the concerned enterprises

The CATA is appeared to be above the average standard in public enterprise group but in the same time it is appeared to be below average standard in private enterprises group. Similarly, it is above the average standard in small and large-scale enterprises group but below than average standard in medium enterprises group. Fluctuation and movement of CATA is greater in private enterprises group as compared to public enterprises group. However, on the basis of scale of operation, the fluctuation is higher in medium enterprises group.

4.1.6 Cash to current assets ratio (C/CA)

The percentage of cash to current assets is a measure of efficiency with which cash is employed to support the operation of an enterprise. The acceptable level of cash to current assets may be based on inter-firm comparison or industry average. There is no conventional norm otherwise recognized.

Table 4.7

Average cash balance to current assets ratio (%)

Year / Co	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	Average
DDC	37	19	26	26	29	29	40	45	44	57	35
HPP	11	3	1	1	2	3	3	3	5	4	4
HC	1	0	0	0	0	0	2	6	6	10	3
JCF	12	11	14	13	10	13	14	15	13	11	13
NAL	16	7	3	4	4	3	20	33	6	21	12
AIC	15	18	17	20	40	61	23	29	28	25	28
NFC	12	9	7	10	12	12	11	11	11	20	11
NSC	15	18	18	13	28	29	20	14	9	6	17
NTL	9	6	6	6	5	4	14	17	23	25	12
NOC	30	36	17	52	21	28	26	14	32	37	29
AV	3	4	6	4	2	1	2	2	5	4	3
BN	7	8	7	3	3	2	2	4	4	1	4
GRY	18	19	23	16	14	12	7	8	12	12	14
NWC	54	40	55	39	24	19	17	4	7	7	27
NBB	2	1	1	1	1	3	3	3	7	8	3
NLO	3	2	1	2	2	2	2	2	2	2	2
SSM	9	4	4	4	2	3	5	2	3	11	5
BBCL	14	1	17	21	9	22	35	48	40	33	24
SALT	5	5	5	4	3	4	4	3	4	4	4
UNI	5	13	9	9	32	49	47	45	13	13	24
Total	14	11	12	12	12	15	15	15	14	16	14
Public	16	13	11	15	15	18	17	19	18	22	16
private	12	10	13	10	9	12	12	12	10	10	11
Small	15	8	12	10	6	8	12	14	10	11	11
Medium	15	13	14	12	17	20	21	21	17	19	17
Large	12	13	9	15	13	18	11	11	14	16	13

Source: Derived from balance sheet of the concerned enterprises

Wide fluctuation in this ratio is an indication of poor cash management. Among the enterprises, Dairy Development Corporation has higher cash to current assets ratio of 35 percent, but Nepal Lube Oil Limited has lower cash to current assets ratio of 2 percent. These two enterprises represent public and private sector enterprises. Between the groups of public and private enterprises, cash to current ratio is higher in private enterprises group. However, public enterprises group ratio (11 to 22 percent) is more fluctuating than a group of private sector enterprise (9 to 13 percent).

In terms of scale of operation, medium and large enterprises categories have higher ratio than small enterprises category. Fluctuation is also higher in medium group of enterprises and large group of enterprises as compared to small group enterprises. On an average, Nepalese enterprise has 14 percent cash in the total current assets. The cash balance to current assets by nature of the enterprises shows that the groups of public enterprises maintain higher cash to current assets ratio than private group of enterprises. Similarly, this ratio, by scale of operation, medium portfolio enterprises is maintaining higher cash ratio than small portfolio and large portfolio enterprises. This shows poor cash management in public sector categories of enterprises. This is also applicable in medium portfolio enterprises under scale of operation.

4.1.7 Cash to quick assets ratio(C/QA)

The ratio of cash to quick asset works as a measure of the degree of corporate liquidity. Normally, this ratio does not reflect liquidity position of an enterprise in all cases, since there are many instances of corporate liquidation even with ample cash balance in hand. Conservative cash management policy implies that lower the amount of cash in hand greater the chance of technical insolvency of the firm. Therefore, a high ratio of cash to quick assets may be a good sign of corporate strength rather than its weakness.

Table 4.8 depicts the position of cash to quick assets ratio in Nepalese enterprises. As revealed in the table above, Dairy Development Corporation has higher cash to quick assets ratio of 61 percent as compared to lower cash to quick assets ratio of Hetauda Cement and Nepal Lube Oil Limited 3 percent. Public portfolio enterprises are found with the higher average ratio of cash to quick assets as compared to private portfolio

enterprises. Similarly, medium group of enterprises have higher cash to quick assets than large and small group enterprises. On an average, Nepalese enterprise maintains more than 20 percentage cash to quick assets. It reflects that Nepalese enterprises have one-fifth chance of paying immediate obligations.

Table 4.8
Average cash balance to quick assets ratio (%)

Year / Co	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	Average
DDC	68	68	58	43	50	53	54	71	64	78	61
HPP	28	7	2	1	2	4	4	4	7	6	7
HC	3	0	0	0	0	0	3	7	8	12	3
JCF	19	20	22	23	17	20	24	23	21	14	20
NAL	41	20	8	10	10	7	31	57	13	34	23
AIC	32	27	37	34	49	70	42	30	35	31	39
NFC	31	23	16	18	19	20	22	22	26	44	24
NSC	32	27	37	50	54	72	70	50	47	28	47
NTL	38	37	30	26	19	9	25	40	31	32	29
NOC	37	33	49	38	49	51	36	54	46	29	42
AV	3	5	8	6	2	3	3	3	6	7	5
BN	13	13	10	5	4	3	3	7	7	1	7
GRY	47	45	58	47	34	37	23	21	27	32	37
NWC	55	49	154	39	24	19	17	4	7	7	38
NBB	3	2	2	1	2	4	4	3	9	12	4
NLO	4	2	2	2	3	3	2	3	3	3	3
SSM	21	16	15	13	6	7	10	7	9	22	13
BBCL	14	1	17	21	9	22	35	48	40	33	24
SALT	6	7	7	6	5	6	7	6	6	6	6
UNI	10	19	19	13	41	66	63	83	25	30	37
Total	25	21	28	20	20	24	24	27	22	23	23
Public	33	26	26	24	27	0.31	31	36	30	31	29
Private	18	16	29	15	13	17	17	19	14	15	17
Small	21	12	27	11	7	9	14	17	12	14	15
Medium	33	33	34	31	31	38	38	42	32	34	35
Large	20	17	20	17	21	25	19	21	21	21	20

Source: Derived from balance sheet of the concerned enterprises

4.1.8 Cash to total assets ratio(C/TA)

Ratio of cash to total assets is called cash ratio. It is an important financial ratio to assess the position of cash on total assets of the enterprises. Demand for cash for investment in total assets can be observed from this ratio. Cash to total assets ratio usually shows the relationship between the size of cash investment and structure of company's assets. Studies show that companies maintain a certain amount of cash as a percentage of their total assets. Kalcheva and Lins (2003) found that companies hold on an average 16 percent of their total assets in cash or cash equivalents. Ferreira and Vilela (2004) recommended an average cash ratio of 15 percent and Guney et al., (2005) observed on an average 14 percent.

These studies indicated that management of cash is related to the size of investment in total assets. Ratio of cash to total assets indicates that percentage of total assets also include capital expenditure. The increase in the ratio indicates that enterprises are utilizing higher portion of their cash on total assets, whereas decrease in the ratio represents that firms are using small amount of cash in total assets. The ratio of cash to total assets for the selected enterprises is shown in table 4.9.

Among the enterprises cash to total assets ratio is higher 23 percent in Nepal Oil Corporation as compared to lower cash to total assets ratio of 1 percent in Sriram Sugar Mills. The ratio of 2 percent is similar in Hetauda Cement, Arun Vanaspati, Bottlers Nepal and Nepal Lube Oil Limited. Public enterprises group is facing with a higher average cash to total assets ratio as compared to private enterprises group. It is due to cash inflow and outflow of Nepal oil limited.

Similarly, in the scale of operation, ratio of cash to total assets is higher in medium group and large group of enterprises than small group of enterprises. It is also noticed that the average cash to total assets ratio of Nepalese enterprises as shown in the table below is lower than the ratio shown above by the studies conducted in various countries. As given in the table cash to total assets ratio for Nepalese enterprises is 8 percent, which is similar to US firms 8.6 percent cash to total assets ratio and British firms median cash ratio of 8.1 percent, which was mentioned in the study of Kester (1986), and Dittmar et al. (2002)

Table 4.9

Average cash balance to total assets ratio (%)

Year / Co	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	Average
DDC	14	17	13	12	15	15	22	26	31	38	20
HPP	8	2	1	1	1	3	3	3	4	4	3
HC	1	0	0	0	0	0	2	5	5	7	2
JCF	9	9	10	9	7	9	10	10	9	9	9
NAL	12	5	2	3	3	2	16	23	4	17	9
AIC	13	15	15	12	22	25	10	10	10	7	14
NFC	9	S	6	8	9	9	9	9	10	16	9
NSC	13	15	15	4	10	12	8	6	4	3	9
NTL	8	6	6	6	5	3	13	16	22	24	11
NOC	24	25	14	33	18	24	22	13	27	32	23
AV	2	3	4	3	1	1	2	2	2	2	2
BN	3	3	3	2	1	1	1	2	3	0	2
GRY	6	7	8	6	5	4	3	3	5	5	5
NWC	32	35	46	18	10	8	6	2	3	3	16
NBB	2	1	1	1	1	3	3	3	7	7	3
NLO	3	1	1	1	2	2	1	2	2	2	2
SSM	1	1	1	1	0	0	1	0	1	3	1
BBCL	3	0	3	2	1	4	9	12	11	6	5
SALT	4	4	5	3	2	3	2	2	2	2	3
UNI	3	9	7	6	24	38	38	26	8	9	17
Total	**9**	**8**	**8**	**7**	**7**	**8**	**9**	**9**	**9**	**10**	**8**
Public	11	10	8	9	9	10	11	12	13	16	11
private	6	7	8	4	5	6	6	5	4	4	6
Small	9	7	8	4	3	3	6	7	5	6	6
Medium	8	9	9	6	10	12	13	13	12	13	10
Large	9	9	7	10	9	10	7	7	9	11	9

Source: Derived from balance sheet of the concerned enterprises

From the table, it is clear that cash to total assets ratio of public enterprise group is increasing gradually from 2001 to 2008 whereas in the case of private enterprises group, it is fluctuating over a period of time. It is due to higher cash mobilization in a group of public sector enterprises specially to purchase oil in Nepal Oil Corporation. In a group of private sector, cash to total assets is decreasing because of cash outflow.

The trend of small, medium and large group of enterprises is moving upward but medium group of enterprises pace upward much higher as compared to other group of small and large enterprises.

4.2. Utilization of cash

Having examined how cash is distributed over the time variant, the next relevant question for which to seek an answer is whether the cash has been efficiently utilized. There is no doubt that a proper evaluation of cash utilization can be made only if a norm or industry average is available. Econometric analysis has not provided such a norm so far. However, a review of the behavior of cash to current liabilities, cash to total capital, turnover ratios and cash to sales ratio over a period can indicate the nature of improvement in cash utilization in the selected enterprises. These ratios mainly indicate portion of cash used in paying current and long-term obligation and to operate the sales transaction. The improvement in cash utilization has been assessed by examining the behavior of different turnover ratio over a period of time.

4.2.1 Cash to current liabilities ratio (C/CL)

The utilization of cash and its efficiency can be determined by computing cash to current liabilities ratio (C/CL). It is another measure to assess the sufficiency of cash to discharge the current liabilities of the firm. This can be calculated by dividing cash and bank balance by the current liabilities of the firm. The ratio indicates how much cash is available to pay current obligation and the number of times the average current liabilities is turned over during the year.

This study analyzes the cash to current liabilities ratio to show the use of cash for paying immediate obligation. In cash management, cash adequacy should be known while dealing with current liabilities. Cash to current liabilities ratio further shows whether the level of cash maintained by the enterprises is greater or less than the current liabilities. When this ratio increases over time, one can see the improvement in cash utilization. The cash to current liabilities ratio as specified in cash utilization computed and presented in table 4.10. The table shows the utilization of cash for current liabilities in different natures of enterprises.

Table 4.10

Cash to current liabilities ratio (%)

Year / Co	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	Average
DDC	58	27	27	22	29	34	47	49	57	64	41
HPP	20	4	4	2	4	7	6	6	8	7	7
HC	1	1	0	0	0	1	3	9	13	22	5
JCF	17	17	22	19	16	24	27	16	13	20	19
NAL	34	12	4	10	4	3	28	33	14	55	20
AIC	29	24	24	14	27	34	13	13	13	11	20
NFC	18	16	12	14	15	14	13	9	9	14	13
NSC	29	24	24	64	78	75	44	28	15	11	39
NTL	11	15	8	8	7	5	17	23	28	30	15
NOC	67	62	36	143	59	45	17	7	12	22	47
AV	5	3	5	3	1	1	2	2	1	3	3
BN	10	13	9	5	5	5	3	7	3	1	6
GRY	99	26	25	16	11	8	4	4	6	5	20
NWC	456	46	69	116	42	28	20	11	19	15	82
NBB	5	3	4	2	3	9	8	6	68	22	13
NLO	6	4	2	2	2	3	2	3	3	3	3
SSM	19	5	3	2	1	1	2	1	1	4	4
BBCL	19	2	28	23	4	23	48	66	54	28	29
SALT	15	16	21	15	13	16	4	3	4	4	11
UNI	7	20	13	15	45	65	47	34	11	13	27
Total	**46**	**17**	**17**	**25**	**18**	**20**	**18**	**16**	**18**	**18**	**21**
Public	28	20	16	30	24	24	22	19	18	26	23
Private	64	14	18	20	13	16	14	14	17	10	20
Small	78	10	16	23	9	11	16	18	24	19	22
Medium	34	19	17	21	27	30	27	22	19	21	24
Large	23	22	17	32	20	19	9	8	9	12	17

Source: Derived from balance sheet of the concerned enterprises

Among the enterprises, Nepal Welfare Company has higher cash to current liabilities ratio of 82 percent as compared to lower cash to current liabilities ratio of 3 percent in Arun Vanaspati and Nepal Lube Oil limited. Public sector group of enterprises have higher ratio of 23 percent than the private sector group of enterprises of 20 percent. According to scale, the lowest average ratio (17 percent) was found in large scale

enterprises and the highest average ratio (24 percent) was found in medium scale enterprises. However, the ratio is fluctuating from 78 percent to 8 percent. The ratio was high in the said insurgency period till 2004 then it is fluctuating with less variation. This shows the sound liquidity position of the enterprise. Only large groups of enterprises face less than 20 percent cash to current liabilities.

On an average Nepalese enterprise have more than 20 percent cash to current liabilities ratio and there is no significant difference between the ratio of public and private enterprises. It is not practical to suggest any standard ratio in this regard to determine the adequacy of cash and bank balance. It is influenced by the firm cash flow position, maturity of debts, schedule of its liabilities, reason to purchase raw materials, seasonality of the product or demand period of the product and ability to procure extra fund in case of needs. If the firm is able to meet all their current liabilities out of cash inflow, there is no need to have sufficient cash balance. On the contrary, a firm by rule of thumb should have cash equal to 30 days current liabilities (Guthman and Dougall, 1995). In general, a low percentage of cash to current liabilities ratio may be regarded as a favorable financial situation. However, a very low ratio is also not desirable as it may lead to corporate insolvency. The ratios show the level of cash in relation to current liabilities maintained by the Nepalese enterprises under study.

4.2.2 Cash to total capital ratio (C/TC)

Cash to total capital ratio depicts the portion of cash in total capital of the enterprises. A large portion of cash in total capital reflects sound liquidity but poor profitability. The ratio in table 4.11 shows the level of cash in relation to total capital maintained by the Nepalese enterprises. Among the enterprises, Nepal Seeds Company has higher cash to total capital ratio of 22 percent as compared to lower ratio of 1 percent in Sriram Sugar Mills. The average ratio (6 percent) is found lower in private sector group of enterprises as compared to public sector group of enterprises (11 percent). According to size, highest (15 percent) is found in medium group of enterprises as compared to small group of enterprises (6 percent) and large group of enterprises (7 percent).

Table 4.11

Cash to total capital ratio (%)

Year / Co	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	Average
DDC	14	17	13	12	15	15	22	25	30	38	20
HPP	7	2	2	1	2	5	5	6	9	9	5
HC	1	0	0	0	0	0	2	5	7	10	3
JCF	9	12	11	10	8	11	10	10	9	9	10
NAL	12	4	1	3	3	2	16	14	4	17	8
AIC	13	17	16	11	22	25	10	10	10	7	14
NFC	6	6	3	4	4	4	4	4	5	7	5
NSC	17	55	48	52	12	10	7	8	5	4	22
NTL	7	5	5	6	5	3	13	16	22	24	11
NOC	16	25	14	31	18	24	17	6	8	8	17
AV	1	3	4	3	1	1	1	1	1	0	2
BN	3	3	3	2	2	1	1	2	2	0	2
GRY	4	7	8	6	4	4	3	3	5	1	5
NWC	50	38	47	18	10	8	5	2	3	3	18
NBB	2	1	1	1	1	3	3	3	10	7	3
NLO	3	2	1	1	2	2	1	2	2	2	2
SSM	1	1	1	1	0	0	1	0	1	2	1
BBCL	4	0	4	4	1	4	9	12	11	6	6
SALT	3	3	4	3	2	3	2	2	3	2	3
UNI	3	9	7	6	24	38	38	26	8	9	17
Total	9	11	10	9	7	8	8	8	8	8	9
Public	10	14	11	13	9	10	10	10	11	13	11
Private	7	7	8	4	5	6	6	5	5	3	6
Small	11	7	9	4	3	4	6	6	6	6	6
Medium	8	15	13	13	10	12	13	13	12	12	12
Large	7	9	7	8	8	9	6	5	6	6	7

Source: Derived from balance sheet of the concerned enterprises

On an average, Nepalese enterprise maintained (9 percent) cash to total capital ratio. The Nepalese enterprise on an average has less than 10 percent cash on their total capital. It ranges from 12 percent on medium group enterprises to 6 percent on small group of enterprises. It shows that Nepalese enterprises frequently have to face cash problems in their operations. In total capital, the portion of cash is only 9 percent.

Figure shows that the trend of public group of enterprises to some extent is moving upward but the trend of private enterprises is going downward. Among the different size of enterprises, medium group size has upward trend but same pattern is not applicable for small and large group of enterprises.

4.2.3 Cash to sales ratio (C/S)

The utilization of cash in sales transaction over a period is studied by computing cash to sales ratio (C/S). Cash to sales ratio serves as a useful indicator of the efficiency of cash management. It is a measure of the velocity with which cash moves through an enterprise's operations. Higher the velocity of cash movement, the lower is the amount of cash required to finance the enterprises activity. A, higher percentage cash to sales ratio indicates poor cash management. It is argued that a low level of cash to sales ratio is generally an indication of the efficiency of cash management. The ratios estimated in the Table 4.12 shows considerable variations in the cash to sales ratio of Nepalese enterprises under study. Among the enterprises, Nepal Welfare Company has higher cash to sales ratio of 70 percent as compared to other companies. Agriculture Inputs Corporation has 37 percent. However, Arun Vanaspati, Nepal Bitumin and Barrel, Nepal Lube Oil and Sriram Sugar Mills have lower cash to sales ratio of 2 percent.

Public sector group of enterprises have higher cash to sales ratio as compared to private sector group of enterprises. Similarly, small group of enterprises has higher ratio than medium and large group of enterprises. The average cash to sales ratio in small group of enterprises is 16 percent where as it is 12 percent in large and 9 percent in medium group of enterprises. The higher ratio indicates enterprise is less efficient to manage cash. The ratio presented in table 4.12 shows that, on an average, cash balance maintained in the enterprises is 13 percent of total sales. The analysis mainly indicates that the ratio of cash to sales maintained by the enterprises varies widely (4 percent to 22 percent) from one group of enterprise to another. Small portfolio enterprises have lower cash to sales ratio in fiscal year 2001 and 2002. Similarly, medium portfolio of enterprises have lower ratio in 2002 but large portfolio enterprises have lower ratio in 1999.

Table 4.12

Cash to sales ratio (%)

Year / Co	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	Average
DDC	10	5	7	6	7	8	11	14	15	15	10
HPP	33	4	5	3	5	10	9	9	13	13	10
HC	1	1	0	1	1	1	5	13	12	13	5
JCF	4	4	5	4	4	5	4	4	5	6	5
NAL	16	8	3	5	6	5	45	47	8	62	20
AIC	12	15	25	25	36	104	23	44	27	58	37
NFC	12	16	17	16	21	20	26	19	19	20	18
NSC	12	15	25	11	27	29	16	11	7	5	16
NTL	5	S	4	4	4	3	16	30	31	29	14
NOC	9	14	7	12	5	4	3	2	2	3	6
AV	1	2	4	2	1	1	1	1	1	2	2
BN	7	7	6	3	3	2	1	3	3	0	4
GRY	13	17	17	13	8	8	4	5	10	10	11
NWC	5	38	12	10	222	140	123	18	61	73	70
NBB	2	1	1	1	2	2	2	2	4	6	2
NLO	3	2	2	1	2	2	2	2	1	2	2
SSM	2	2	1	1	1	1	1	1	2	3	2
BBCL	7	0	5	5	3	7	14	18	15	9	8
SALT	2	3	3	2	2	2	3	3	4	3	3
UNI	1	3	3	3	15	23	28	18	4	5	10
Total	**8**	**8**	**8**	**6**	**19**	**19**	**17**	**13**	**12**	**17**	**13**
Public	11	9	10	9	12	19	16	19	14	22	14
Private	4	8	5	4	26	19	18	7	11	11	11
Small	9	8	4	4	34	24	28	14	15	24	16
Medium	7	8	9	6	9	11	11	12	11	10	9
Large	7	9	10	10	11	22	10	14	11	16	12

Source: Derived from balance sheet of the concerned enterprises

According to type of enterprises public and private, both groups of enterprises have lower cash to sales ratio in 2002. Public sector enterprises have higher cash to sales ratio in 2008, but private sector enterprises has higher ratio in 2003. Similarly small scale enterprises have higher ratio in 2003 medium scale enterprises in 2006, and large scale enterprises in 2004.

4.2.4 Cash turnover ratio (CTOR)

The important factor that influences the level of cash during a period is the amount of sales. If the level of sales increases, the cash inflow will increase, but on the other hand, the business requires additional cash to carry on its increased operations. For measuring the efficiency of cash velocity or cash, turnover ratio is calculated. It is calculated by dividing annual sales by average balance of cash. Greater cash turnover indicates the effective utilization of cash. If a business has large turnover, of cash it can finance greater volume of sales with relatively lesser cash resources. This will increase profitability of the concerned. A declining trend in cash turnover ratio indicates inefficient cash management. If the trend continuously declines, the enterprises will be in a bad financial position.

According to Professor John Sagan (1955), "The increase in sales is generally associated with larger bank balance." There exists a positive correlation between cash holding and sales. Sound cash management should ensure that the rate of growth in cash holding is lower than the growth rate of sales. It has been found by Case M. Sprenkle (1969) that "the actual cash holding increase by more than square root of sales". A downward trend of cash to sales ratio indicates effective control over cash flows Walkor (1974). The cash turnover ratio in Nepalese enterprises is presented in table 4.13 from 1999 to 2008.

Among the enterprises, Sriram Sugar Mills has higher cash turnover ratio of 81 times and Bisal Bazzer Company Limited has lower cash turnover ratio of 0.67 times. There is a negative cash turnover ratio in 2000 and the highest cash turnover is in 2003 in public group of large enterprises. Such happens because of negative cash balance of Hetaunda Cement Limited (HC) in 2000 and larger cash turnover of (HC) and Bottlers Nepal (BN) in 2003. Comparisons of the average turnover ratios of different enterprises show that the highest average ratio was that of private group of enterprises (41.98 times) and the lower average ratio is found in public group of enterprises (17.77 times) . Similarly, small and large scale of enterprises has larger cash turnover ratio as compared to medium scale of enterprises. On average, cash turnover of Nepalese enterprises is 30 times. There is a wide fluctuation in cash turnover ratio of large group of enterprises (-12.16 times) in 2000 to (83.98 times) in 2003. This variation indicates poor management of corporate cash in large group of

enterprises as compared to small and medium group of enterprises. Cash turnover ratio of small and medium group of enterprises is, to some extent, constant as compared to large group of enterprises.

Table 4.13

Cash turnover ratio (Times)

Year / Co	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	Average
DDC	10.43	18.48	29.84	14.93	9.44	3.29	5.27	5.36	0.34	3.95	10.13
HPP	3.06	23.78	21.34	31.78	21.39	9.73	10.98	11.7	7.79	7.51	14.91
HC	45.46	-139.5	108.5	163.3	388.8	59.42	13.26	5.37	6.12	7.74	65.85
JCF	22.74	24.05	20.77	23.59	28.04	21.2	23.26	23.84	21.23	16.57	22.53
NAL	6.33	13.11	32.82	19.67	16.16	19.91	2.23	2.14	12.2	1.62	12.62
AIC	8.25	6.7	4.05	3.96	2.74	0.96	4.29	2.28	3.73	1.74	3.87
NFC	8.31	6.24	6.03	6.34	4.69	5.03	3.9	5.21	5.39	5.09	5.62
NSC	8.25	6.7	4.03	8.88	3.77	3.42	6.11	9.52	14.12	21.21	8.6
NTL	21.01	12.38	23.51	22.3	23.25	39.18	6.33	3.28	3.22	3.42	15.79
NOC	11.61	6.9	14.25	8.41	22	23.21	28.63	55.69	44.92	30.67	24.63
AV	97.96	41.84	28.28	60.64	126.5	117.9	76.02	75.24	94.76	57.27	77.65
BN	13.76	14.5	16.02	32.07	35.05	66.22	78.45	32.86	32.2	253.4	57.45
GRY	7.42	5.84	5.87	7.72	12.15	13.15	25.94	18.18	9.98	10.21	11.65
NWC	20.93	2.64	8.63	10.18	0.45	0.71	0.82	5.58	1.64	1.37	5.29
NBB	65.04	69.62	76.41	134.8	65.16	53.26	58.08	54.77	22.23	15.54	61.5
NLO	38.83	62.77	53.38	86.93	50.55	41.35	65.32	48.84	70.93	59.57	57.85
SSM	42.78	48.83	89.24	71.78	118.9	123.8	67.19	159.4	60.48	28.75	81.13
BBCL	1.3	0.51	0.12	0.2	0.17	0.05	1.92	1.07	0.3	1.07	0.67
SALT	47.35	32.22	29.82	40.62	50.56	57.6	34.22	31.7	26.36	29.86	38.03
UNI	85.9	28.92	29.25	36.03	6.56	4.3	3.55	5.71	22.64	21.38	24.42
Total	28.34	14.32	30.11	39.21	49.32	33.19	25.79	27.89	23.03	28.9	30.01
Public	14.54	-2.12	23.68	28.96	51.09	18.21	9.9	11.93	11.89	9.57	17.77
private	42.05	30.77	33.75	48.12	46.69	47.9	41.41	44.93	35.52	48.64	41.98
Small	33.24	30.62	31.64	49.21	40.18	34.79	31.14	30.75	31.93	21.7	33.52
Medium	28.36	20.74	24.88	24.52	27.53	29.3	18.92	31.48	18.83	14.52	23.91
Large	22.45	-12.16	29.78	42.46	83.98	35.41	27.13	22.19	19.79	54.75	32.58

Source: Derived from balance sheet of the concerned enterprises

Cash turnover ratio of private group of enterprises is efficient and constant as compared to public group of enterprises, which have volatile cash turnover ratio. It indicates the efficiency of private enterprises on sales resource utilizations.

4.2.5 Current assets turnover ratio (CATR)

The utilization of cash could be measured by computing current assets turnover ratio. CATR indicates the relationship between the current assets and the sales of the company. Current assets turnover ratio indicates how effectively current assets are being utilized by the concern.

Table 4.14
Current assets turnover ratio (Times)

Year / Co	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	Average
DDC	3.91	3.47	3.6	4.67	4.05	3.81	3.82	3.33	3.01	3.89	3.76
HPP	0.33	0.64	0.32	0.32	0.35	0.32	0.34	0.37	0.36	0.32	0.37
HC	1.08	0.46	0.32	0.43	0.29	0.44	0.47	0.47	0.54	0.76	0.53
JCF	2.72	2.76	2.92	3.01	2.73	2.71	3.31	3.51	2.86	1.86	2.84
NAL	1.03	0.88	0.95	0.87	0.69	0.67	0.44	0.71	0.78	0.35	0.73
AIC	1.23	1.2	0.71	0.52	1.09	0.59	0.98	0.67	1.03	0.44	0.85
NFC	0.96	0.59	0.45	0.64	0.55	0.58	0.41	0.58	0.62	1	0.64
NSC	1.23	1.2	0.71	1.13	1.06	0.98	1.2	1.31	1.23	1.2	1.13
NTL	1.79	0.73	1.4	1.4	1.26	1.55	0.9	0.56	0.75	0.84	1.12
NOC	3.51	2.47	2.38	4.41	4.63	6.46	7.34	7.96	14.32	11.33	6.48
AV	2.45	1.55	1.58	2.61	2.1	1.48	1.52	1.57	4.72	2.36	2.19
BN	0.98	1.18	1.05	1.06	0.91	1.24	1.36	1.43	1.35	1.92	1.25
GRY	1.32	1.13	1.33	1.22	1.66	1.55	1.79	1.44	1.2	1.24	1.39
NWC	11.33	1.05	4.75	3.96	0.11	0.14	0.14	0.24	0.12	0.09	2.19
NBB	1.18	0.76	1.03	1.05	0.87	1.86	1.86	1.52	1.61	1.2	1.3
NLO	1.24	1.02	0.75	1.45	0.96	0.88	1.07	1.14	1.46	1.22	1.12
SSM	3.7	1.77	3.75	2.68	1.85	3.1	3.27	3.57	1.62	3.24	2.85
BBCL	2.04	2.74	3.44	4.41	3.7	3.31	2.51	2.68	2.69	3.58	3.11
SALT	2.2	1.54	1.63	1.68	1.47	2.44	1.25	0.98	1.01	1.14	1.54
UNI	4.26	3.83	2.72	3.1	2.11	2.11	1.66	2.57	2.92	2.88	2.82
Total	**2.43**	**1.55**	**1.79**	**2.03**	**1.62**	**1.81**	**1.78**	**1.83**	**2.21**	**2.04**	**1.91**
Public	1.78	1.44	1.38	1.74	1.67	1.81	1.92	1.95	2.55	2.2	1.84
Private	3.07	1.66	2.2	2.32	1.57	1.81	1.64	1.71	1.87	1.89	1.98
Small	26.94	17.05	16.97	30.39	28.27	25.3	19.9	20.07	17.7	11.38	21.4
Medium	2.7	2.13	2.35	2.46	2.1	2.26	2.28	2.33	1.94	2.16	2.27
Large	3.07	1.66	2.2	2.32	1.57	1.81	1.64	1.71	1.87	1.89	1.98

Source: Derived from balance sheet of the concerned enterprises

This ratio indicates the extent of efficiency with which the funds tied-up with current assets are rotated in the business to attain sales (Basu, 1992). This ratio is applied to measure the turnover and profitability of the total current assets employed in a firm. The ratio is calculated by dividing the amount of sales by the amount of current assets. The higher the turnover, the better is the use of current assets. The lower the turnover of the current assets, the worse is the utilization of current assets.

Among the enterprises, Nepal Oil Corporation has higher current assets turnover ratio of 6.48 times, and Herb Production and Processing Company has lower current assets turnover ratio of 0.37 times. On average current assets, turnover ratio is 1.91 times in Nepalese enterprises. The ratio (1.98) times is higher, in private group of enterprises as compared to public group of enterprises (1.84), times. It shows private group of enterprises has greater ability to utilized current assets in business. Similarly, according to scale of operation small group of enterprises has higher (21.40 times) of current assets turnover ratio than medium and large group of enterprises (2.27) and (1.98) for each group of enterprises. The higher current assets turnover ratio of small group of enterprises shows efficient use of current assets to earn profit. However, the fluctuating trend of current assets turnover ratio among the enterprises signifies that the performance in respect of current assets turnover ratio does not seem to be encouraging during the study period.

4.2.6 Working capital turnover ratio (WCTR)

This ratio shows the number of times working capital has been rotated in producing the cost of goods sold. High working capital turnover ratios indicate an efficient use of working capital, whereas a low ratio shows an underutilization of working capital (Bardia, 2001). A close relationship exists between sales and working capital of a concern. Working capital turnover ratio helps to measure the efficiency of the utilization of net working capital. This ratio indicates the extent of working capital turnover in achieving sales of the firm. The higher the ratio, the lesser is the investment in working capital and the greater is the efficiency and the larger is the rate of profit. A very high ratio is a sign of overtrading, but a low ratio indicates under trading, i.e. working capital is not efficiently utilized.

Table 4.15

Working capital turnover ratio in (Times)

Year / Co	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	Average
DDC	11.21	11.32	247.8	-23.1	364.95	27.46	27.42	41.83	13.24	35.8	75.79
HPP	0.72	1.81	0.53	0.56	0.62	0.6	0.75	0.84	0.84	0.82	0.81
HC	-3.59	1.16	0.89	1.15	0.75	1.16	1.36	1.44	1.04	1.36	0.67
JCF	8.91	8.64	8.05	9.29	6.79	5.81	6.97	59.28	-131.9	4.23	-1.4
NAL	1.98	1.98	4.57	1.59	-4.25	-3.93	1.49	-65.87	1.48	0.57	-6.04
AIC	2.51	4.58	2.61	7.08	-2.44	-0.76	-1.28	-0.57	-0.96	-0.34	1.04
NFC	2.83	1.38	1.12	2.13	2.49	3.23	1.98	-1.91	-2.06	-2.56	0.86
NSC	2.52	2.51	4.58	2.6	1.41	1.64	1.59	2.15	2.58	2.89	2.45
NTL	9.6	1.21	5.47	6.64	5.43	6.22	5.31	2.14	4.93	5.15	5.21
NOC	6.4	5.83	4.41	6.96	7.17	17.14	-15.75	-7.77	-8.84	-17.14	-0.16
AV	4.61	-5.63	-7.98	-11.1	-8.07	-9.14	-62.25	-12.81	-1.1	-6.27	-11.98
BN	3.33	3.05	3.81	3.22	1.8	1.89	2.74	3.87	-3.51	-28.08	-0.79
GRY	1.6	4.71	17.27	-471	-7.97	-3.41	-1.86	-1.5	-1.03	-0.98	-46.45
NWC	12.06	7.37	23.64	5.95	0.26	0.42	1	0.39	0.2	0.16	5.23
NBB	1.81	1.34	1.54	1.59	1.51	3.05	3.02	2.85	1.81	1.85	2.04
NLO	2.45	1.9	4.57	7.27	6.35	4.15	5.19	6.09	6.89	5.36	5.02
SSM	6.8	5.44	-5.67	-4.89	-4	-3.12	-1.67	-3.27	-1.57	-2.12	-1.41
BBCL	7.82	5.67	8.52	60.34	-2.83	80.35	9.04	9.68	10.6	-19.22	17
SALT	3.24	2.22	2.19	2.3	1.9	3.32	22.67	95.98	27.5	32.23	19.35
UNI	17.69	11.75	10.31	7.03	7.62	8.45	157.75	-7.79	-14.23	-40.32	15.82
Total	**5.26**	**3.91**	**16.91**	**-19.2**	**18.97**	**7.23**	**8.27**	**6.25**	**-4.71**	**-1.33**	**4.15**
Public	4.31	4.04	28.01	1.49	38.29	5.86	2.98	3.16	-11.97	3.08	7.92
Private	6.22	3.78	5.82	-40	-0.34	8.6	13.56	9.35	2.56	-5.74	0.38
Small	4.61	2.06	5.06	9.45	-0.92	10.79	-5.96	-8.4	2.96	-2.39	1.72
Medium	8.33	6.51	41.12	-67.7	53.46	6.15	27.93	13.26	-18.29	0.66	7.15
Large	2.45	3.04	2.51	3.81	1.94	4.33	1.95	15.18	2.2	-2.42	3.50

Source: Derived from balance sheet of the concerned enterprises

Table 4.15 shows working capital turnover ratio of 20 Nepalese enterprises .Among the enterprises, Dairy Development Corporation has higher working capital turnover ratio of 15 times and Gorakhkali Rubber Udyog has lower negative working capital turnover ratio of 46 times. There is a larger gap (7.92 times to 0.38 times) of working

capital turnover ratio between the public and private sector enterprises. Among the different size of enterprises, medium group of enterprises has higher capital turnover ratio than the small and large scale of enterprises. The working capital turnover ratio of Nepalese enterprises also shows fluctuating trend and fluctuated between -46.45 times to 75.79 times. On an average, Nepalese enterprise maintained working capital turnover ratio at 4.15 times. It signifies that the performance in respect of efficient utilization of short-term funds in the company is not satisfactory.

4.2.7 Debtors turnover ratio (DTR)

Debtors turnover ratio is another important ratio to measures the effective utilization of cash in the enterprises. This ratio throws light on the speed with which the amount is collected from debtors (Fisher and Jordan, 2003). DTR focuses on the credit and collection policy pursued by the firm (Garvin, 1995). A higher ratio indicates that the amount from debtors is being collected more quickly and the chance of bad debt or losses is minimum (McMeanmin, 2000). In other words, a higher DTR improves the liquidity position of the firm; a lower DTR reflects that credit sales have been made to customers who do not deserve much credit. It increases the chances of the bad debt losses (Kaur, 2007). Generally, a higher turnover, indicate efficiency in trade credit management. On the other hand, low debtors turnover implies inefficient management of debtors and less liquid debtors.

Table 4.16 shows the position of debtor's turnover ratio in the Nepalese enterprises. Among the enterprises, Bottlers Nepal has higher debtor's turnover ratio of 92.09 times and Nepal Lube Oil Limited has lower debtor's turnover ratio of 1.91 times. Both these enterprises are of private sector. In public sector, DDC has higher debtors turnover ratio, and NFC has lower turnover ratio. When it is compared to the debtors' turnover ratio of Nepalese enterprises, private sector enterprises has a higher debtor turnover ratio than public sector enterprises. On the basis of size of enterprises, large group of enterprises has a higher debtors' turnover than medium and small group of enterprises. The debtor's turnover ratio of Nepalese enterprises ranges from 5.60 to 96.67 times. On an average, it is 18.50. It indicated that the performance of debtor's management as well as the liquidity of debtors at Nepalese enterprises found to be good.

Table 4.16

Debtor's turnover (Times)

Year / Co	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	Average
DDC	32.84	27.9	14	17.3	16.24	14.74	17.48	15.65	19.07	16.21	19.14
HPP	1.76	3.74	4.08	4.66	5.02	4.84	4.77	5.8	5.67	6.25	4.66
HC	5.33	4.05	2.9	3.94	2.95	3.53	3.68	3.89	4.96	4.77	4
JCF	13.26	14.8	19.6	17.1	26.28	19.91	21.73	20	19.48	13.53	18.56
NAL	3.32	2.83	2.79	2.1	1.69	1.57	1.58	1.36	3.65	2.67	2.36
AIC	15.63	7.92	6.04	4.68	9.9	3.01	5.83	2.86	2.6	2.18	6.07
NFC	3.21	2.04	1.19	1.4	1.14	1.25	1.13	1.46	2.33	5.55	2.07
NSC	15.63	7.92	6.01	0	7.34	8.11	12.12	15.62	17.7	18.51	10.9
NTL	15.68	7.96	11.1	7.71	4.88	5.71	5.41	0	212.5	1.97	27.3
NOC	17.09	22.9	27.3	31.4	33.88	42.37	46.19	94.03	85.66	84.56	48.55
AV	2.54	5.86	11.4	33	15.25	12.79	6.57	6.05	187.8	12.34	29.36
BN	323.9	531	5.15	4.65	2.69	3.42	7.6	9.77	12.01	20.29	92.09
GRY	6.9	7.25	11.6	6.81	7.09	8.61	15.26	20.47	10.5	11.85	10.63
NWC	23.9	1.47	58.3	22.4	0.52	0.6	3.99	0.99	0.76	0.51	11.34
NBB	2.37	1.65	1.83	1.76	1.46	2.95	2.42	1.97	2.62	2.1	2.11
NLO	2.22	1.61	1.48	2	1.58	1.55	1.95	2.12	2.65	1.96	1.91
SSM	17.04	10.2	23.6	17.6	10.07	13.84	9.84	16.07	8.68	12.89	13.99
BBCL	32.82	22	15.5	17.6	25.94	27.62	28.19	31.09	38.43	37.57	27.67
SALT	13.19	11.7	11.6	12.3	14.67	21.93	10.76	9.43	8.75	9.54	12.39
UNI	44.44	35.1	47.9	38.4	19.22	15.71	9.39	10.37	13.33	14.48	24.83
Total	**29.65**	**36.5**	**14.2**	**12.3**	**10.39**	**10.7**	**10.79**	**13.45**	**32.96**	**13.99**	**18.5**
Public	12.37	10.2	9.5	9.03	10.93	10.5	11.99	16.07	37.36	15.62	14.36
Private	46.94	62.8	18.8	15.7	9.85	10.9	9.6	10.83	28.56	12.35	22.63
Small	9.85	5.6	13.6	11.9	7.35	7.42	7.07	7.05	34.52	9.06	11.35
Medium	20.83	15.9	19.1	15	13.02	12.37	13.03	14.03	43.04	12.78	17.91
Large	63.07	96.7	9.03	9.74	10.87	12.59	12.53	20.24	19.39	21.15	27.53

Source: Derived from balance sheet of the concerned enterprises

4.2.8 Inventory turnover ratio (ITR)

Inventory turnover ratio shows the relationship between the costs of goods sold and the average stock held by a company (Brigham and Houston, 2001). It indicates the speed with which the stock is rotated into sales during the year (Finnerty, 1986).

Table 4.17

Inventory turnover ratio (Times)

Year / Co	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	Average
DDC	7.23	6.96	6.54	12.14	9.41	8.43	15.16	9.08	9.96	14.62	9.95
HPP	0.54	1.04	1.18	1.12	1.57	1.59	1.23	1.31	1.23	1.22	1.2
HC	2.44	2.07	1.45	2.31	1.65	2.59	2.78	2.92	2.64	3.56	2.44
JCF	7.53	6.56	7.79	6.92	6.49	7.35	8.06	9.44	8.24	9.4	7.78
NAL	1.71	1.32	1.51	1.6	1.23	1.24	1.24	1.68	1.53	0.93	1.4
AIC	2.32	3.62	1.36	0.98	5.75	4.32	2.18	31.18	4.9	2.36	5.9
NFC	1.54	0.99	0.82	1.47	1.39	1.37	0.79	1.19	1.09	1.79	1.24
NSC	2.32	3.62	1.35	1.52	2.19	1.63	1.66	1.82	1.51	1.5	1.91
NTL	2.32	0.87	1.76	1.85	1.77	2.76	2.13	0.99	3.08	3.58	2.11
NOC	24.88	12.66	13.69	11.86	12.17	12.3	14.07	14.95	26.5	28.75	17.18
AV	0	5.32	5.96	9.53	8.33	2.72	4.13	5.04	27.47	6.11	7.46
BN	2.15	3.04	2.9	2.89	2.69	3.42	2.74	3.51	3.35	5.18	3.19
GRY	2.12	1.98	2.18	1.84	2.77	2.26	2.56	2.29	2.13	1.99	2.21
NWC	652.3	5.35	7.38	1889.3	0	0	0	0	0	0	255.43
NBB	3.47	1.93	3.15	3.51	3.28	8.73	16.6	13.85	8.67	3.61	6.68
NLO	4.33	4.61	2.49	7.06	3.9	2.68	3.25	3.89	3.85	4.97	4.1
SSM	6.23	2.28	5.21	3.79	2.53	4.76	6.39	5.3	2.29	6.54	4.53
BBCL	0	0	0	0	0	0	0	0	0	0	0
SALT	11.14	5.45	8.72	5.06	3.58	8.28	2.78	2.11	2.68	3.5	5.33
UNI	8.73	13.05	5.24	8.56	9.87	8.28	6.45	5.6	5.98	5.23	7.7
Total	**37.17**	**4.14**	**4.03**	**98.67**	**4.03**	**4.23**	**4.71**	**5.81**	**5.85**	**5.24**	**17.39**
Public	5.28	3.97	3.75	4.18	4.36	4.36	4.93	7.46	6.07	6.77	5.11
Private	69	4.3	4.32	193	3.69	4.11	4.49	4.16	5.64	3.71	29.66
Small	94.62	2.8	3.09	273	2.62	2.42	3.78	3.68	6.11	2.41	39.47
Medium	5.21	5.05	4.3	5.23	5	5.07	6.06	4.93	4.74	6.12	5.17
Large	7.41	4.64	4.82	4.09	4.54	5.38	4.22	9.31	6.86	7.53	5.88

Source: Derived from balance sheet of the concerned enterprises

A higher ratio means, the stock is converted into sales quickly, while a lower ratio shows that the stock is converted in to sales in longer duration and inventories remain lying in the warehouse for quite a long time (Bhattacharya, 2003). Table 4.17 shows the position of inventory turnover ratio of Nepalese enterprises. Among the enterprises, Nepal Welfare Company has higher inventory turnover ratio of 255 times,

and Nepal Food Corporation has lower inventory turnover ratio of 1.24 times. When it is evaluated the position of inventory turnover ratio across the enterprises, private group of enterprises has a higher inventory turnover ratio than public group of enterprises. Similarly, small group of enterprises has a higher inventory turnover than medium and large group of enterprises.

The inventory turnover ratio of Nepalese enterprises registered a fluctuating trend. The ratio of small group of enterprises is found highest in 2002 (273 times) and lowest in 2000 (2.80 times) in small group of enterprises. It is because of Nepal Welfare Company (NWC) and Nepal Bitumen and Barrel Company (NBB), which have fewer inventories with larger amount of sales. On an average, inventory turnover ratio of Nepalese enterprises is 17.39 times. The inventory turnover ratio of Nepalese enterprises shows fluctuating trend. On an average, it is fluctuating within the ranges of 4.14 times to 98.67 times. It indicates in consistency of inventory turnover ratio among the enterprises.

4.2.9 Average collection period (ACP)

Average collection period measure the efficiency of debtors and bill receivables. How much quick debtors are converted into cash that depends on collection policy. A shorter collection period signifies a better credit management and liquidity of account receivable. A rule of thumb is that the collection period should not exceed 1/3 times across the regular credit period. Debtors or receivable collection is also related to credit policy, terms, and period. Table 4.18 reveals the average collection period in Nepalese enterprises. Among the enterprises, AIC has longer collection period of 85 days and DDC has shortest collection period of 20 days. These both enterprises are from public sector.

Average collection period of a group of private enterprises is larger than the group of public enterprises. In the similar manner, collection period of a small group of enterprises is larger than a group of medium and large-scale enterprises. The average collection period of Nepalese enterprises was the lowest (24 days) in 2005, and the highest (186 days) in 2003, and on an average, it is 85.82 days. It indicates that the liberal credit policy adopted by the company and the performance of credit management in the company was not satisfactory.

Table 4.18

Average collection period (Days)

Year / Co	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	Average
DDC	10.96	12.9	25.69	20.85	22.17	24.42	20.6	23	18.87	22.21	20.17
HPP	204.9	96.13	88.16	77.25	71.67	74.35	75.4	62.12	63.45	57.63	87.11
HC	67.59	88.82	124.2	91.29	122.1	101.9	97.84	92.43	72.57	75.44	93.44
JCF	27.15	24.39	18.37	21.08	13.7	18.09	16.56	18	18.48	26.61	20.24
NAL	108.3	127	129.2	171.59	213.6	228.9	227.8	264.6	98.62	134.8	170.48
AIC	23.03	45.44	59.62	76.87	36.36	119.4	61.75	125.9	138.3	164.7	85.16
NFC	112	176.5	302.8	256.83	315.7	287.5	319	246.1	154.3	64.87	223.61
NSC	23.03	45.44	59.87	0	49.05	44.41	29.71	23.05	20.34	19.45	31.44
NTL	22.97	45.25	32.31	46.72	73.74	63.03	66.58	0	1.69	182.2	53.46
NOC	21.06	15.69	13.19	11.45	10.63	8.5	7.79	3.83	4.2	4.26	10.06
AV	141.7	61.4	31.69	10.91	23.6	28.14	54.78	59.53	1.92	29.17	44.29
BN	1.11	0.07	69.89	77.45	133.9	105.3	47.34	36.85	29.99	17.75	51.98
GRY	52.21	49.67	31.01	52.87	50.8	41.83	23.59	17.59	34.28	30.38	38.42
NWC	15.06	245.1	6.18	16.05	691.7	601.5	90.17	365.1	474.1	700.6	320.58
NBB	151.8	217.9	196.9	204.8	247.3	122.1	148.9	182.7	137.6	171.3	178.19
NLO	162.3	222.9	242.6	179.84	228.1	232.8	184.5	170	135.8	183.3	194.24
SSM	21.13	35.15	15.23	20.48	35.77	26	36.59	22.4	41.49	27.94	28.22
BBCL	10.97	16.34	23.28	20.47	13.88	13.03	12.77	11.58	9.37	9.58	14.13
SALT	27.29	30.84	31	29.21	24.54	16.42	33.45	38.18	41.13	37.75	30.98
UNI	8.1	10.27	7.52	9.37	18.73	22.91	38.32	34.7	27.01	24.87	20.18
Total	**99.26**	**76.19**	**89.89**	**79.68**	**109**	**120**	**70**	**75.45**	**78.37**	**60.65**	**85.82**
Public	75.24	59.09	85.91	92.32	97.08	92.88	77	85.36	67.77	62.12	79.52
Private	123	93.28	93.87	67.05	121	147	62	65.54	89	59.18	92.12
Small	184	132	159	113	186	213	97	103	141	114	144
Medium	47.68	23.17	19.82	33.14	34.39	37.71	24	27.14	31.87	23.65	30.3
Large	60.81	73.43	90.56	94.54	106	107	90	100	60	42.02	82.54

Source: Derived from balance sheet of the concerned enterprises

4.2.10 Working capital to sales ratio (WC/S)

Working capital to sales ratio provides the efficiency with which the short-term funds are being used. A high ratio is a sign of possible inefficiency in the use of short-term financial resources by a company. A lower ratio implies a more efficient use of funds.

Table 4.19

Working capital to sales ratio (%)

Year / Co	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	Average
DDC	0.09	0.09	0	-0.04	0	0.04	0.04	0.02	0.08	0.03	0.03
HPP	1.39	0.55	1.89	1.77	1.6	1.66	1.34	1.19	1.19	1.23	1.38
HC	-0.28	0.86	1.13	0.87	1.34	0.86	0.74	0.69	0.96	0.74	0.79
JCF	0.112	0.116	0.124	0.108	0.147	0.172	0.143	0.017	-0.008	0.236	0.12
NAL	0.51	0.51	0.22	0.63	-0.24	-0.25	0.67	-0.02	0.68	1.77	0.45
AIC	0.4	0.22	0.38	0.14	-0.41	-1.31	-0.78	-1.76	-1.04	-2.95	-0.71
NFC	0.35	0.73	0.89	0.47	0.4	0.31	0.5	-0.52	-0.49	-0.39	0.23
NSC	0.4	0.22	0.38	0.71	0.61	0.63	0.47	0.39	0.35	0.4	0.46
NTL	0.1	0.83	0.18	0.15	0.18	0.16	0.19	0.47	0.2	0.19	0.27
NOC	0.16	0.17	0.23	0.14	0.14	0.06	-0.06	-0.13	-0.11	-0.06	0.05
AV	0.22	-0.18	-0.13	-0.09	-0.12	-0.11	-0.02	-0.08	-0.91	-0.16	-0.16
BN	0.3	0.33	0.26	0.31	0.55	0.53	0.36	0.26	-0.28	-0.04	0.26
GRY	0.62	0.21	0.06	0	-0.13	-0.29	-0.54	-0.67	-0.97	-1.02	-0.27
NWC	0.08	0.14	0.04	0.17	3.86	2.36	1	2.58	4.9	6.16	2.13
NBB	0.55	0.75	0.65	0.63	0.66	0.33	0.33	0.35	0.55	0.54	0.53
NLO	0.41	0.53	0.22	0.14	0.16	0.24	0.19	0.16	0.15	0.19	0.24
SSM	0.15	0.18	-0.18	-0.2	-0.25	-0.32	-0.6	-0.31	-0.64	-0.47	-0.26
BBCL	0.13	0.18	0.12	0.02	-0.35	0.01	0.11	0.1	0.09	-0.05	0.04
SALT	0.31	0.45	0.46	0.44	0.53	0.3	0.04	0.01	0.04	0.03	0.26
UNI	0.06	0.09	0.1	0.14	0.13	0.12	0.01	-0.13	-0.07	-0.02	0.04
Total	**0.3**	**0.35**	**0.35**	**0.32**	**0.44**	**0.27**	**0.21**	**0.13**	**0.23**	**0.32**	**0.29**
Public	0.32	0.43	0.54	0.49	0.38	0.23	0.32	0.03	0.18	0.12	0.31
Private	0.28	0.27	0.16	0.15	0.5	0.32	0.09	0.23	0.29	0.52	0.28
Small	0.5	0.41	0.5	0.5	0.76	0.43	0.41	0.37	0.93	0.98	0.58
Medium	0.22	0.25	0.1	0.12	0.1	0.07	-0.04	-0.03	-0.15	-0.09	0.05
Large	0.21	0.46	0.56	0.39	0.43	0.13	0.13	-0.24	-0.16	-0.45	0.15

Source: Derived from balance sheet of the concerned enterprises

Among the enterprises, Nepal Welfare Company has higher working capital to sales ratio and Agriculture Inputs Corporation has lower ratio. Comparison of ratio among the enterprises reveals that, public group of enterprises working capital to sales ratio is higher than the private group of enterprises. Similarly, small-scale enterprises working capital to sales ratio is higher than the medium and large scale of enterprises.

The ratio varies from -45 % and 98%. On an average, Nepalese enterprises maintained 29 % working capital to its sales. It signifies that Nepalese enterprises shows average performance in terms of efficient utilization of its short-term funds. The working capital to sales ratios are far from average working capital to sales ratio. The average ratio of medium and large group of enterprises is lesser than half, while it is more than double in the case of small group of enterprises, but in the case of nature of enterprises both public and private groups of enterprises are close to Nepal's average enterprises.

4.3 Concluding remarks

On an average, the size of cash balance and net working capital is larger in public enterprises as compared to private enterprises both at current and constant price. According to scale of operation, the size of cash balance and net working capital is higher in large group enterprises as compared to medium and small group of enterprises. The size of cash and net working capital in absolute rupee values found to be fluctuating in all public and private groups of enterprises. This also follows in small, medium, and large assets portfolio.

Similarly, current and quick ratio recorded a fluctuating trend in all the categories of companies. The average current ratio of all categories is far from the standard ratio of 2:1. However, the mean quick ratio of private, small, and large enterprises is found to be almost equal to the standard ratio of 1:1. These ratios are better in private group of enterprises as compared to public group enterprises. Small enterprises ratios are more liquid than those of medium and large group enterprises.

The current assets contribute on an average 65 percent of the total assets indicating much investment in current assets. The trend of this ratio is similar to the study of Das (2008), conducted in Indian trading companies. Their current assets to total assets ratio shows 68 percentages. Public group enterprises maintain greater current assets to total assets ratio. This is also true in the case of large-scale enterprises group.

Cash to current assets, cash to quick assets and cash to total assets ratio in the Nepalese enterprises showed a mixed trend. The proportion of these ratio is found

maximum and above average standard on public group of enterprises. In the case of scale of operation, it is medium group of enterprises, which have higher proportion.

The study of cash to total assets ratio conducted in different countries shows inconsistent result. The study of Dittmar et al. (2003) in the largest corporations around the world reported a cash to total assets ratio of 9 percent. Similarly, US firms maintained 15 percent cash to total assets ratio, and firms in Switzerland maintained 22 percent cash ratio. Cash holdings range from a mere 3 percent of assets in Kenya, to 15.5 percent in Japan, to 29.6 percent in Egypt (Baum et al. 2005). Similar to the study of Dittmar et al. (2003) Nepalese large-scale enterprises have 9 percent cash to total assets ratio. Public and medium group of enterprise cash to total assets ratio is also close to this ratio.

Cash to current liabilities C/CL, cash to total capital C/TC and cash to sales C/S ratio has been found to be higher in public group of enterprises as compared to private group enterprises. This shows that liquid position of public group enterprises seems to be sound. However, this higher ratio is an indicator of inefficient utilizations of capital, liabilities and sales. These ratios contribute mix result in the case of scale of enterprises. C/CL and C/TC ratio is observed to be more on medium scale group, while C/S ratio is more on small-scale group. It indicates sound liquidity but weak efficiency of medium and small-scale groups of enterprises to utilize cash in business transactions.

Among the turnover ratio, cash turnover ratio (CTOR), debtor's turnover (DTR), inventory turnover ratio (ITR) and average collection period (ACP) are observed to be more in different measuring norms and standard on private group of enterprises as compared to public group of enterprises. It indicates superior liquidity, efficient trade credit management, and quick conversion capacity of non-cash item in to cash but worst credit management in private enterprises as compared to public enterprises.

Current assets turnover ratio (CATR) is observed to be more on private group of enterprises, but working capital turnover ratio (WCTR) and working capital to sales ratio (WCS) observed to be more on the basis of different measuring norms in public group of enterprises. It shows efficiency of private enterprises group to the rotated

tied fund in business but inefficiency of public enterprises group to use short-term financial resources, and faster rotation of working capital

These ratios again represent mix effect on size of enterprises. CTOR, CATR, ITR, WCS ratios has been found to be more on the basis of different measuring norms and standard in small groups of enterprises as compared to large and medium group's enterprises. WCTR has been observed to be higher in medium group of enterprises, whereas DTR and ACP are higher in large group of enterprises. It indicates efficiency of small group enterprises to mobilize non-cash assets in to cash, rotated tied fund in to business, and use of short-term financial resources. Medium group of enterprises are capable for faster rotation of working capital and large enterprises group is inefficient in credit management.

Cash turnover ratio in the public category of enterprises is found to be fluctuating, which shows inefficiency of cash management. Private categories of enterprises cash turnover ratio is satisfactory as compared to public category of enterprises. The increasing trend of the ratio in private enterprises shows an efficient working of management. The similar CTOR ratio of small and large group enterprises indicates similar management to utilize idle cash. The lower CTOR ratio in medium group enterprises shows effective control of cash flow.

The CATR ratio of public and private group's enterprises indicates efficient management in utilizing their current assets. CATR ratio of small group enterprises indicates better use of current assets but CATR ratio of medium and large group enterprises indicates worse utilization of current assets. The WCTR ratio of public group enterprises shows over trading where as private group of enterprises ratio shows under trading. It signifies that the performance in respect of efficient utilization of short-term fund in the enterprises is not satisfactory. WCTR ratio of small and large group of enterprises shows efficient use of working capital, but WCTR ratio of medium group enterprises was over trading and inefficient.

Debtors' turnover ratio DTR of private group enterprises shows rapidity of debtor's collection as compared to public group enterprises. DTR of small and medium groups of enterprises show slowness in debtors' collection. The higher inventory turnover

ratio ITR of private group of enterprise indicates stock is converted into cash quickly whereas lower ratio of public, group enterprises shows a long time needed to convert stock into cash. In the case of scale of operation, small group enterprises show efficiency in converting stock into cash.

Result of average collection period ACP signifies poor credit management and liquidity of account receivable. Only medium group enterprises ACP is consistent with the normal standard of not exceed 1/3 times the regular credit period. It indicates the liberal credit policy adopted by the Nepalese enterprises.

The higher working capital to sales ratio WCS of public group of enterprises indicates inefficiency in the use of short-term financial resources. The lower ratio of private group enterprises shows efficient use of fund. In the case of size of enterprises, it is true in small group enterprises. Similarly, lower ratio on medium and large groups of enterprises indicates efficiency in the use of fund. The overall result depicts that cash and debtor's turnover ratio are consistent over time while all turnover ratio reveals poor performance of cash management. However, turnover ratio of public group enterprises is good as compared to private group enterprises.

Chapter 5
DETERMINANTS OF CASH HOLDING IN NEPALESE ENTERPRISES

5.1 Introduction

The decisions to hold cash or in any liquid form may be motivated by many considerations. Out of those, the most prominent are the transaction (sales, size, and bank debt), precaution (liquidity, cash flow, cash flow variability, leverage, average collection period, current ratio and quick ratio), and the speculative motive (interest and growth opportunity) for holding cash. The variables under different motives are the firms' specific variables.

In recent years, there has been a growing interest in corporate cash holdings in the finance literature due to the fact that corporations hold significant amount of cash .The structure of cash holding is one of the subjects that have also received increasing attention in the changing financial environment. This interest has been especially motivated by the fact that corporations hold significant amounts of cash. The amount of cash available for firms provides liquidity for enterprises and allows for investment. Holding excessive cash does not necessarily make good business sense. Therefore, financial managers need to understand the determinants of cash holdings in a corporation. The empirical researches on the determinants of cash holding are required for better understanding and management of cash. The use of cash has implication for different components of assets (assets structure) and liabilities of the enterprises. Therefore, the effective management of cash becomes easier if the determinants of demand for cash are analyzed properly.

A review of the empirical works on the demand for cash shows presence of economies of scale in some studies and diseconomies in other studies. For example, Baumol (1952), Tobin (1956), Friedman (1959), Miller and Orr (1966) Selden (1961) Frazer (1964) Mulligan (1997) Bover and Watson (2005) Liu, Tsou and Wang (2008) show economies of scale in corporate cash holding, while the studies conducted by Meltzer (1963), Vogel and Maddala (1967), Falls and Natke (1988) came with the conclusions of diseconomies of scale in corporate cash holdings.

Similarly, there is no unanimous finding as regards to the determinants of cash holdings. Among others Kim, Mauer and Sherman (1998), Opler, Pinkowitz, Stulz and Williamson (1999), Dittmar, Mahrt-Smith and Servaes (2003), Ferreira and Vilela, (2004), Haushalter, Klasa and Maxwell, (2007), Bates, Kahle and Stulz, (2009) showed the statistically significant effect of growth, leverage and liquidity on cash balance, while Dechow and Dichev (2002), Ozkan and Ozkan (2004), Garcia et al. (2008) showed a significant relationship of cash holding with cash flow, average collection period, assets size, ratio of bank loan and current ratio.

According to Baskin (1987), a higher leverage ratio reduces the requirement of cash, in which size of cash decreases with the increment in leverage. In a study of cash holding decision in small and medium enterprises, Shleifer and Vishny (1992) state that a firm whose assets can be cheaply converted into cash can raise funds at low cost by selling the assets. Therefore, the firms with a high degree of assets tend to have higher cash holdings. According to Opler et al. (1999) larger firms are generally more diversified in terms of assets so that they can liquidate assets in non-core segments, and as a result, they hold less liquidity. Firms with shorter cash conversion cycles hold less cash whereas firms with longer cash conversion cycle hold more cash Deloof (2001).

Afza and Adnan (2007) focused on determining the level of corporate cash holdings of non-financial Pakistani firms across different firm sizes and different industries. They used data set for the period of 1998 to 2005 for the firm size, growth opportunities, cash flow, net working capital, leverage, cash flow uncertainty, and dividend payments. Afza and Adnan found negative relationships between market-to-book ratio, net working capital, leverage, dividends, and cash holdings, and positive relationships between firm size, cash flow, and cash holdings. Their findings show that firm size, cash flow, cash flow uncertainty, net working capital, and leverage significantly affect the cash holdings of non-financial firms in Pakistan.

Tong (2009) measures the impact of firm diversification on the value of cash holdings arguing that cash holdings serve as a potentially important channel through which firm diversification can affect firm value. Their studies find that optimal cash holdings will be determined as the equilibrium between advantages and disadvantages

of holding cash. Whether such findings in developed financial market are applicable in the Nepalese context is still unclear. This has been an important issue for the discussion and empirical investigation.

It has already been mentioned that several factors affect demand for cash. The number of variables to be included in the model also depends upon the number of observation and degree of freedom. Because of constraint in number of observation, this requires to short out variables keeping in view the strong theoretical base. The present study includes twelve firm specific factors as independent variables in the model. Some of the variables represent transaction motive while other represent precautionary and speculation motives. The independent variables are growth, leverage, cash flow, liquidity, sales, interest, average cash collection period, and size, current and quick ratios. The expected relationship has been discussed in methodology.

In order to assess the effect of above variables, the present study uses time series and cross section data. It includes ten year (1999-2008) time series data of 20 different enterprises. The cash balance of various groups of enterprises is regressed with different firm specific variables. Equations have been specified for static and dynamic model. The static model provides analysis of twelve independent variables and dynamic model provides analysis of thirteen independent variables including lagged dependent variable appearing as independent variable. Equation (1) as mentioned below represents static model of cash holdings.

Static model for cash holding

$$(CASH_{it}) = \alpha + ß_1\ GROWTH_{it} + ß2\ LEV_{it} + ß_3\ CFLOW_{it} + ß_4\ LIQ_{it} + ß_5\ STA_{it} + ß_6\ INT_{it} + ß_7 ACP_{it} + ß_8\ CR_{it} + ß_9\ QR_{it} + ß_{10}\ CFVAR_{it} + ß_{11}\ BANKD_{it} + ß_{12}\ SIZE_{it} + \varepsilon_{it} \quad \ldots\ldots (1)$$

Among the variables, cash to total assets minus cash ratio $CASH_{it}$ indicates cash holding position of the enterprises. The variables GROWTH, LIQ, INT, BANKD, QR, and SIZE are expected with negative relationship with dependent variable, while the variables LEV, CFLOW, STA, ACP, CR, and CFVAR are expected with positive relationship. Static and dynamic model shows short- term and long-term relationship. In dynamic model, enterprises cash balance adjust their actual cash level to desired cash level through partial adjustment that indicate the speed with which the

corporations adjust their actual cash balance to desired cash balance, which is given by:

$CASH_{it} - CASH_{it-1} = \lambda\ (CASH^{*}_{it} - CASH_{it-1})$ ……. *(2)*

$AVCASH_{it} - AVCASH_{it-1} = \lambda\ (AVCASH^{*}_{it} - AVCASH_{it-1})$…… *(3)*

$CONCASH_{it} - CONCASH_{it-1} = \lambda\ (CONCASH^{*}_{it} - CONCASH_{it-1})$…… *(4)*

Here, $CASH_{it}$, $AVCASH_{it,}$ $CONCASH_{it}$ refer to actual cash and $CASH^{*}_{it,}$ $AVCASH^{*}_{it,}$ $CONCASH^{*}_{it,}$ refers to desired cash. The coefficient λ measure the speed of adjustment. With the use of above hypothesis mentioned in equations 2, 3 and 4, a simple manipulation provides the following dynamic model:

$(CASH_{it}) = \alpha + ß_1\ GROWTH_{it} + ß2\ LEV_{it} + ß_3\ CFLOW_{it} + ß_4\ LIQ_{it} + ß_5\ STA_{it} + ß_6\ INT_{it} + ß_7 ACP_{it} + ß_8\ CR_{it} + ß_9\ QR_{it} + ß_{10}\ CFVAR_{it} + ß_{11}\ BANKD_{it} + ß_{12}\ SIZE_{it} + ß_{13}\ CASH_{it-1} + \varepsilon_{it}$ ..... *(5)*

The similar specification is made for another form of dependent variable average cash balance in current and constant terms.

The above regression equations have been used to examine cash holding behavior for different portfolio of enterprises, public and private sector enterprises and for different size of enterprises, small, medium and large scale.

5.2 Regression results of all enterprises

According to Kremp and Gerdesmeier (1999), corporate cash determination is a function of liquidity, leverage, growth, and size, cash flow, and cash flow variability. Guney et al. (2003), pointed out leverage and growth opportunities as the important factors for influencing cash holding. Management that maximizes shareholders' wealth should set the firm's cash holdings at a level that the marginal benefit of cash holdings equals to the marginal cost of cash holdings. Opler et al. and Harford (1999) examined cash holding based on the cross-sectional variation. They hypothesized that firms with stronger growth opportunities, riskier cash flows, and more limited access to capital markets hold higher cash balances. Similarly, Pinkowitz and Williamson (2004) examined the marginal value of cash, focusing largely on the cross-sectional variation related to the firm's investment opportunity. Fama and French (1998) observed that

shareholders of a firm with better growth options and more volatile investment opportunities placed higher values on the firm's cash than a firm with fewer, more stable growth opportunities.

The above studies reveal that that the firm specific factors affecting the corporate cash holdings have different relationships across different countries and across firm sizes. The behavior of these variables changes over time. Total enterprises in the study cover 20 Nepalese enterprises from public and private sectors. The independent variables included in the studies are GROWTH, LEV, CFLOW, LIQ, STA, INT, ACP, CR, QR, CFVAR, BANKD, and SIZE. The two different forms of dependent variables, CASH, AVCASH in current and constant price, have been linked with independent variables. The pooled data consisting of 200 observations of Nepalese enterprises have been used for regression analysis. First regression analysis is made for all enterprises then for public and private enterprises, and finally for small, medium, and large groups enterprises. The use of lagged dependent variable indicates dynamic cash holding behavior of Nepalese enterprises and the speed of adjustment is measured through, λ and $(1-\lambda)$ is the coefficient of $ß_{13a}$ $CASH_{it-1}$, $ß_{13b}$ $AVCASH_{it-1}$ and ß13c $CONCASH_{it-1}$.

The estimated equation on Table 5.1 supports the hypothesis that growth, leverage, cash flow, liquidity, sales, interest, average collection period, current ratio, quick ratio, cash flow variability, bank debt and size are the major determinants of cash balance. All the parameters have expected sign except the variable ACP. The priori hypothesis is positive relationship between ACP and cash holding but negative relationship is observed. The dynamic model in the study explains the long run relationship between cash holding and explanatory variables and measures speed of adjustment of actual cash balance to desired cash balance.

Table 5.1 states the relationship between CASH, AVCASH and CONCASH with thirteen explanatory parameters. Equation 1, 2 and 3 under static model shows the presence of problem of autocorrelation in the equation developed for static model. The DW statistics in all three equations are very far from 2, indicating the existence of autocorrelation at .01 levels. The conclusion with the presence of autocorrelation is meaningless. Therefore, the equations are required to improve auto correlation.

Table 5.1

Regression of cash holding for all enterprises

	Static model Dependent variable			**Dynamic model Dependent variable**		
Parameters	**CASH (eq.1)**	**AVCASH (eq2)**	**CONCASH (eq3)**	**CASH (eq4)**	**AVCASH (Eq5)**	**CONCASH (eq6)**
Constant	0.092 (1.178)	734987 (0.305)	4465204 (0.195)	0.0645 (1.0911)	1448745 (0.895)	15244 (1.009)
ß$_1$ (GROWTH)$_{it}$	-0.645** **(-2.360)**	-243225** **(-2.885)**	-198685** **(-2.474)**	-0.2105 (-0.954)	-5659138 (-0.946)	-451445 (-0.813)
ß$_2$ (LEV)$_{it}$	0.004 (0.303)	-409939 (-1.054)	-570442*** **(-1.541)**	0.0085 (0.8383)	13003226 (0.477)	58093 (0.223)
ß$_3$ (CFLOW)$_{it}$	0.004 (0.237)	130636 (0.260)	2332987 (0.487)	0.0038 (0.2542)	28247152 (0.778)	42324 (1.134)
ß$_4$ (LIQ)$_{it}$	-0.044 **(-3.528)**	-818909** **(-2.121)**	-4640786 (-1.262)	-0.0206** **(-1.776)**	-2932026 (-1.059)	-2452 (-0.893)
ß$_5$ (STA)$_{it}$	0.027* **(5.657)**	1028047* **(6.927)**	8214120* **(5.812)**	0.0113* **(2.828)**	29256996* **(2.457)**	17095*** **(1.609)**
ß$_6$ (INT)$_{it}$	0.001 (0.086)	357582 (0.174)	4752167 (0.243)	-0.0036 (-0.719)	-9466713 (-0.687)	-9524 (-0.744)
ß$_7$(ACP)$_{it}$	0.000 (-0.947)	-72700 (-0.405)	-105967 (-0.620)	0.0000 (-0.1690)	-63032 (-0.518)	-645 (-0.566)
ß$_8$ (CR)$_{it}$	0.029* **(2.516)**	100646 (0.281)	7454309 (0.219)	0.0295* **(2.911)**	-1880808 (-0.680)	-1825 (-0.708)
ß$_9$ (QR)$_{it}$	-0.029** **(-2.087)**	-350519 (-0.808)	-2550968 (-0.617)	-0.0341* **(-2.724)**	18781130 (0.550)	15606 (0.490)
ß$_{10}$ (CFVAR)$_{it}$	0.050* **(2.683)**	115015** **(2.011)**	1201407** **(2.206)**	0.0073 (0.4885)	26666333 (0.651)	28659 (0.761)
ß$_{11}$ (BANKD)$_{it}$	-0.095* **(-4.015)**	-50259 (-0.686)	-2721925 (-0.390)	-0.0278*** **(-1.315)**	9175878 (0.166)	24104 (0.468)
ß$_{12}$ (SIZE)$_{it}$	0.000** **(-2.050)**	0.0994 (1.291)	4465204 (0.195)	0.0000*** **(-1.351)**	-0.0688 (-1.254)	-0.080*** **(-1.555)**
ß$_{13a}$ (CASH)$_{it-1}$	–	–	–	0.688* **(12.533)**	–	–
ß$_{13b}$ (AVCASH)$_{it-1}$	–	–	–	–	0.782* **(14.734)**	–
ß$_{13c}$ (CONCASH)$_{it-1}$	–	–	–	–	–	0.7886* **(15.368)**
No of observation	200	200	200	180	180	180
D.F	187	187	187	166	166	166
R^2	0.361	0.331	0.259	0.666	0.729	0.707
F	8.817	7.711	5.455	25.332	34.265	30.866
DW	0.757	0.739	.680	h=2.13	h=7.43	h=8.31

Note: * significant at .01 levels, ** significant at.05 levels and *** significant at 0.10 levels.
Figure in parenthesis represents t value

[CASH is defined as cash to total assets minus cash ratio, AVCASH refer to average cash balance and CONCASH refer to average cash balance at constant price. GROWTH is the ratio of depreciation to total assets. LEV is the ratio of total debt to total assets. CFLOW is the ratio of pretax profit plus depreciation to total assets. LIQ is the ratio of current assets minus cash to total assets. STA is the ratio of sales to total assets. INT refer to average interest rate charged by commercial bank for lending commercial loan. ACP is average collection period required to collect debtors and receivables. CR represents current assets divided by current liabilities. QR represents current assets minus stock to current liabilities. CFVA is the standard deviation of ($CFLOW_t - CFLOW_{t-1}$) divided by assets. BANKD is the ratio of long-term bank loan to total debt. SIZE is total fixed assets at constant price].

The results of the regression equation under dynamic model depict that the signs of all independent variables included in the model are as per expectation. However only seven independent variables out of total 13 variables are significant in equation no.4. It means the LIQ (sig. at .01 levels) STA (sig. at. 01 level) CR (sig. at. 01 level) QR (sig. at. 01 level) CFVAR (sig. at. 0.10 level) and lagged CASH (sig. at. 01 level) can be considered as an independent variable affecting cash balance in both short term and long term in Nepalese enterprises.

All parameters have expected relationship except ACP. A positive relationship was assumed between cash demand and ACP, but it observes negative relationship. CR, QR and BANKD have expected relationship only in eq.l but not in eq.2 and eq.3. The dynamic long run cash holding behavior of the enterprises explain that GROWTH, LEV, CFLOW, LIQ, INT, CFVAR and SIZE determine the demand for cash in Nepalese enterprises. The F statistic in all these equation shows the presence of relationship as computed F value is higher > than table value ($F_{0.01, 12,187}$) = 2.18 it shows goodness of fit. The R^2 shows that 66.6 % of the variation in the dependent variable in eq.4 can be explained by the variation of independent variables. Similarly, the explanatory power in eq.5 and eq.6 is 73% and 71% respectively. Enterprises adjust their cash holdings in order for their current cash ratio to be close to the target ratio. Parameters $CASH_{it-1,}$ $AVCASH_{it-1}$ and $CONCASH_{it-1}$ indicates the adjustment required to reach the optimal level.

Enterprises capacity to achieve the desired level will be given by the coefficient λ, which takes value between 0 and 1. If λ is 1, the enterprises will adjust their cash level to the optimal level immediately; if it is 0, this indicates that the costs of adjustment are so high that the enterprises cannot modify their existing cash structure. The equation 4, where many of the independent variables are significant, 0.32 comes as speed of adjustment. This is computed from the $ß_{13a} (CASH)_{it}$ which provides 0.68 values. Similarly, equation 5, and 6, 0.22 come as speed of adjustment. There are only two variables significant in eq.5 where AVCASH is specified as dependent variable. Similarly, only three independent variables are significant in eq.6, where the dependent variable CASH is specified in constant term. The result of "h" in the dynamic model shows that there is no problem of serial correlation. The result of regression analysis under static model after correction of autocorrelation is presented in (table 5.2).

Table 5.2

Regression of cash holding for total enterprises with autocorrelation improvement

	Dependent variable		
Parameters	**CASH (eq.7)**	**AVCASH (eq.8)**	**CONCASH (eq.9)**
	0.104**	290977951**	26925850**
(Constant)	**(2.169)**	**(2.110)**	**(2.108)**
	-0.284	-13520409**	-855790**
ß$_1$ (GROWTH)$_{it}$	(-1.069)	**(-1.793)**	(-1.236)
	-0.004	61098129**	2031309
ß$_2$ (LEV)$_{it}$	(-0.311)	**(1.854)**	(0.672)
	-0.025*	-472471***	-2985914
ß$_3$ (CFLOW)$_{it}$	**(-2.207)**	**(-1.495)**	(-1.031)
	-0.045*	-1171244*	-7663313*
ß$_4$ (LIQ)$_{it}$	**(-4.010)**	**(-3.725)**	**(-2.658)**
	0.027*	39524399*	2878671*
ß$_5$ (STA)$_{it}$	**(5.444)**	**(2.840)**	**(2.252)**
	0.001	-7857269	-757504
ß$_6$ (INT)$_{it}$	(-0.113)	(-0.775)	(-0.817)
	0.000	-134763.8	-13589
ß$_7$(ACP)$_{it}$	(0.043)	(-0.894)	(-0.983)
	0.047*	23839741	2118861
ß$_8$ (CR)$_{it}$	**(5.037)**	(0.916)	(0.889)
	-0.057*	-48462492***	-4306237***
ß$_9$ (QR)$_{it}$	**(-4.878)**	**(-1.487)**	**(-1.442)**
	0.014	50998500	6048769
ß$_{10}$ (CFVAR)$_{it}$	(0.509)	(0.592)	(0.755)
	-0.042**	-91216115***	-3675942
ß$_{11}$ (BANKD)$_{it}$	**(-1.841)**	**(-1.404)**	(-0.616)
	-0.001	-0.300*	-0.308*
ß$_{12}$ (SIZE)$_{it}$	(-0.000)	**(-3.137)**	**(-3.484)**

R^2, F, are based on original VARs

Note: * significant at .01 levels, ** significant at.05 levels and *** shows significant at 0.10 levels. Figure in parenthesis represents t value

The overall results after improvement of autocorrelation are encouraging. The signs of all the coefficients are as they were expected. The coefficients are also statistically significant and the goodness of fit of the model is satisfactory, with respect to the demand for cash by Nepalese enterprises.

The result as indicated by equations 7, 8 and 9 show that the parameters LIQ, ST A, QR, and SIZE are significant in all the equation of static model. The parameters GROWTH, INT, CR, CFVAR, and BANKD are significant with expected sign. Parameter LEV is significant and with expected relation on equation 8 of AVCASH dependent variable. ACP has expected positive relationship only in CASH equation 7. The sign of the parameter cash flow is not observed as per expectation. Similarly the relationship as specified as priory hypothesis in CASH and AVCASH equation 7 and equation 8 did not appear as per expectation. Among the major twelve parameters in

CASH equation (eq.7), three parameters LIQ, STA, QR are significant at 1 and 10 percent with expected relation. Parameters SIZE is significant with priory hypothesis on cash balance but not significant on cash ratio of eq.7. Only three parameters INT, ACP, CFVAR are not significant in all three different alternative equations under static model. Only one parameter CFLOW is significant, but it is in contrast with a priori hypothesis in all three different equations of dependent variable. In equation 7 cash flow, liquidity, sales current ratio, quick ratio and bank debt are the major determinants of corporate cash holding defined in terms of cash ratio in Nepalese enterprises. In equation 8 growth opportunities, leverage, cash flow, liquidity, sales, quick ratio, bank debt and size are major determinants of cash balance, and in equation 9, liquidity, sales, quick ratio and size are the major determinants of cash balance. Liquidity, sales and quick ratio are the parameters, which are significant in the entire three models.

Table 5.2 shows the result of three different equation of cash demand function CASH (eq- 7), AVCASH (eq -8), and CONCASH (eq-9). These models explain the behavior of short term cash demand function. According to regression result, Nepalese enterprises hold cash for transaction, precaution and speculative motive. Furthermore, the result concludes that transactions and speculative motive are more significant than precautionary motive. Few parameters of precautionary motive are not according to a priori hypothesis like as average collection period, cash flow variability and current ratio. Scherr and Hulbert (2001) argue that growth opportunity has negative relationship with cash holdings. The regression results of the equation under dynamic model are consistent with above studies. Similarly, leverage is expected to have positive relationship with cash holding. The studies of Kim et.al.(1999) also found positive relation between cash holding and leverage. The present study also concludes with positive relation.

The positive sign of coefficient sales (STA) with significant at .01 level in eq.4 and 5 and 0.1 level in eq.6 is consistent with Baumol (1952) and Tobin (1956), indicating that increase in sales will also increase cash holdings. The coefficient LIQ variable is observed to be negative and this is significant at .05 levels in eq.4. The negative sign is also observed in eq.5 and eq.6. However, they are not significant. The negative sign of the LIQ variable is consistent with opler et al. (1999), Ozkan and Ozkan (2002), Ferreire and Vilela (2004). Similarly, the significant negative relationship between cash holding

and firm size shows consistent result with Baumol (1952), Miller and Orr (1966), and Mulligan (1997). It shows that there is economies of scale indicating bigger size of firms tend to keep smaller amount of cash holding.

The positive relationship between cash flow (CFLOW) and cash holding in the equation under dynamic model is consistent with Kim et al. (1998), John (1993) and Baskin (1987) but contradicts with Opler et al. (1999), Ozkan and Ozkan (2002), and Ferreira and Vilela (2004). Similarly, in the case of interest which is considered to be an important variable in the model as specified above, the result presents consistent sign as those of Baumol (1952), Tobin (1956), and Selden (1961). They show statistically significant results while Friedman (1959) agrees that cash holding is not statistically sensitive to interest rate. The result of the present study also provides negative relationship, but statistically not significant. It shows cash holding does not seem to be sensitive to interest rate.

5.3 Regression result of public sector enterprises

Table 5.3 present simple linear relationships between cash and other thirteen major variables (CFLOW, LIQ, LEV, GROWTH, SIZE, STA, INT, CR, QR, ACP, BANKD, CFVAR and lagged dependent variables) under both static and dynamic models. The equations are estimated with pooled data from ten enterprises with 100 observations from 1999 to 2008.Comparing this result with the regression equation of total enterprises, explanatory power of the model was quite high in case of dynamic model. In dynamic model, the value of R^2 and F is highly significant with absence of autocorrelations as value of h is higher than 1.96 (5% level of significance) in all the three alternatives dependent variables. The result of eq. 10, 11, and 12 show existence of autocorrelation under improvement the DW is far from2. The eq 13, 14 and 15 under dynamic model show absence of autocorrelation as h test is higher than 1.96.

Table 5.3, shows only three variables LIQ, CR and $CASH_{it-1}$, they are significant at 0.10, and 0.01, level in eq. 13. STA, CR, QR, SIZE and $AVCASH_{it-1}$ and are significant in eq .14. Whereas CFLOW, CR, SIZE and $CONCASH_{it-1}$ are significant in eq.15. Among the variables only ACP CR and QR have not expected relationship with CASH, AVCASH and CONCASH under dynamic model. The result of eq 13, 14 and 15 show the coefficients of $ß13_a\ CASH_{t-1}$, $ß13_b AVCASH_{t-1}$, $ß13_c\ CONCASH_{t-1}$ have been observed

to be (0.615), (0.798), and (0.832). It means the speed of adjustment is equal to 0.385, 0.202, and 0.168, which show the speed of adjustment between desired and actual level of cash is slow. It seems that only 19 percent to 38 percent of the adjustment of actual to desired cash level is completed within a year.

Table 5.3
Regression of cash holding for public sector enterprises

	Static model Dependent variable			**Dynamic Model Dependent Variable**		
Parameters	**CASH (eq10)**	**AVCASH (eq11)**	**CONCASH (eq12)**	**CASH (eq13)**	**AVCASH (eq14)**	**CONCASH (eq15)**
(Constant)	0.054 (0.472)	-2372242 (-0.563)	-2375732 (-0.585)	0.069 (0.687)	233224497 (0.723)	25338205 (0.840)
ß$_1$ (GROWTH)$_{it}$	0.227 (0.442)	-315936******* **(-1.675)**	-249765*** **(-1.373)**	-0.181 (-0.337)	-7967340 (-0.470)	-5451420 (-0.351)
ß$_2$ (LEV)$_{it}$	0.021 (0.950)	-113682*** **(-1.421)**	-1482769****** **(-1.922)**	0.024 (1.198)	22336264 (0.353)	1607247 (0.263)
ß$_3$ (CFLOW)$_{it}$	0.002 (0.101)	507006 (0.769)	573688 (0.902)	0.001 (0.046)	757403*** (1.339)	993070*** **(1.665)**
ß$_4$ (LIQ)$_{it}$	-0.045***** **(-2.754)**	-74047191 (-1.233)	-2689753 (-0.464)	-0.026*** **(-1.534)**	-46073650 (-0.992)	-5628476 (-1.163)
ß$_5$ (STA)$_{it}$	0.019***** **(2.791)**	1459874***** **(5.709)**	1262132***** **(5.119)**	0.008 (1.234)	380068*** **(1.556)**	21423475 (0.993)
ß$_6$ (INT)$_{it}$	-0.001 (-0.058)	151460 (0.414)	140763 (0.3993)	-0.005 (-0.570)	-12087896 (-0.433)	-10507176 (-0.405)
ß$_7$(ACP)$_{it}$	0.000 (-0.357)	422878 (0.830)	4251 (0.865)	0.000 (-0.253)	-7799 (-0.019)	6192.08717 (0.017)
ß$_8$ (CR)$_{it}$	0.041***** **(2.145)**	-235122 (-0.337)	-23903 (-0.355)	0.035***** **(2.077)**	-70975*** **(-1.322)**	-774872*** **(-1.529)**
ß$_9$ (QR)$_{it}$	-0.011 (-0.428)	2646820***** **(2.680)**	2616156***** **(2.747)**	-0.027 (-1.125)	104236*** **(1.314)**	89457430.1 (1.218)
ß$_{10}$ (CFVAR)$_{it}$	0.013 (0.500)	1507178*** **(1.610)**	1686301****** **(1.868)**	-0.009 (-0.377)	75623288 (0.986)	77247238 (1.106)
ß$_{11}$ (BANKD)$_{it}$	-0.062*** **(-1.444)**	-214741*** **(-1.365)**	-200922*** **(-1.324)**	-0.012 (-0.292)	-46689574 (-0.363)	-36319707 (-0.302)
ß$_{12}$ (SIZE)$_{it}$	0.000 (0.782)	0.427 (0.150)	0.124 (0.618)	-0.000 (-0.194)	-0.382***** **(-2.156)**	-0.419***** **(-2.489)**
ß$_{13a}$ (CASH)$_{it\ -1}$	–	–	–	0.615***** **(5.915)**	–	–
ß$_{13b}$ (AVCASH)$_{it\ -1}$	–	–	–	–	0.798***** **(8.591)**	–
ß$_{13c}$ (CONCASH)$_{it\ -1}$	–	–	–	–	–	0.832***** **(9.171)**
No of observation	100	100	100	90	90	90
D.F	87	87	87	76	76	76
R^2	0.334	0.473	0.411	0.558	0.73	0.711
F	3.642	6.514	5.051	7.296	15.786	14.415
DW	0.987	1.090	1.025	h=3.87	h=7.68	h=8.18

Note: * significant at .01 levels, ** significant at.05 levels and *** significant at 0.10 levels.
Figure in parenthesis represents t value

In table 5.3, the existence of growth opportunity in enterprises is an important factor that positively affects cash level. It clarifies that growth opportunity has positive relationship with cash demand. Further, they consider that cash flow represents an additional source of liquidity for the firm and can therefore substitute cash. The negative sign of cash flow and liquidity indicates that firm with high cash flow have lower cost of liquidity and consequently, they have fewer incentives to hold large amounts of cash. This is similar with Kim et al. (1998). Myers (1977), Myers and Majluf (1984) find out that firm with more investment opportunity should keep higher liquidity level. This argument is consistent with Nepalese public enterprises as they have investment opportunity in the market and they should keep higher liquidity. John (1993) and Baskin (1987) state that a higher proportion of debt to total assets amplifies the cost of investing in liquid assets.

The static model given above in the eq.10 11 and 12 shows the existence of autocorrelation. The value of Durbin Watson is not close to 2. The serial autocorrelation therefore attempt had been made to correct autocorrelation by using maximum likelihood method and the improvement result is given in table 5.4. All the signs of coefficient are according to the expectation except for variable cash flow and average collection period. Variables growth has not maintained expected relationship in eql6, whereas leverage, current ratio and quick ratio have not maintained relationship in AVCASH eql7 and CONCASH eql8. Among others, the equation shows that liquidity, cash flow variability and size variables are significantly important factors to determine the level of cash balance in Nepalese enterprises. The majority of the estimated coefficients are in line with the hypothesized signs. The coefficient of cash flow and average collection period are significant at .051evel.

All the signs of coefficient are according to the expectation except for variable cash flow and average collection period. Variables growth has not maintained expected relationship in eql6, whereas leverage, current ratio and quick ratio have not maintained relationship in AVCASH eql7 and CONCASH eql8. Among others, the equation shows that liquidity, cash flow variability and size variables are significantly important factors to determine the level of cash balance in Nepalese enterprises. The majority of the estimated coefficients are in line with the hypothesized signs. The coefficient of cash flow and average collection period are significant at .051evel. Among the parameters, cash flow and liquidity are highly significant in static model. Interest, average collection period and cash flow variability are insignificant in all the cases. This analysis indicates that among the twelve variable growth, leverage, liquidity, cash flow, bank debt has strong association with cash,

balance. The positive relationship between CASH and LEV support the view that firms with higher leverage hold more cash, which is not consistent with pecking order and free cash flow theories. It is because high leverage firms are subject to monitoring by capital markets and managerial control. While negative relationship between CASH and depreciation to assets (GROWTH) is consistent with free cash flow theory. It indicates that managers with poor investment opportunities (low depreciation to assets) hold more cash to ensure availability of funds for investment in growth projects, which may earn a positive NPV.

Table 5.4

Regression of cash holding for public enterprises with autocorrelation improvement

	Dependent variable		
	CASH	**AVCASH**	**CONCASH**
Parameters	**(eq.16)**	**(eq17)**	**(eq18)**
	0.076	734077142**	656048900**
(Constant)	(0.979)	**(2.317)**	**(2.364)**
	1.079**	-2822625	-1212560
ß$_1$ (GROWTH)$_{it}$	**(2.172)**	(-0.187)	(-0.084)
	0.018	-32141613	-81715409
ß$_2$ (LEV)$_{it}$	(0.790)	(-0.445)	(-1.186)
	-0.030**	-65886161**	-49193227***
ß$_3$ (CFLOW)$_{it}$	**(-2.357)**	**(-1.718)**	**(-1.333)**
	-0.069*	-1089972**	-71457840***
ß$_4$ (LIQ)$_{it}$	**(-4.027)**	**(-1.977)**	**(-1.359)**
	0.019**	14312059	19935961
ß$_5$ (STA)$_{it}$	**(2.354)**	(0.562)	(0.819)
	0.000	-6243926	-6906820
ß$_6$ (INT)$_{it}$	(-0.006)	(-0.381)	(-0.437)
	0.000	-900588**	-865002**
ß$_7$(ACP)$_{it}$	(-0.573)	**(-2.068)**	**(-2.068)**
	0.076*	-41323331	-38411107
ß$_8$ (CR)$_{it}$	**(5.055)**	(-0.923)	-0.891
	-0.060**	22339804	16493374
ß$_9$ (QR)$_{it}$	**(-2.271)**	(0.279)	(0.214)
	0.008	191223257***	196971727***
ß$_{10}$ (CFVAR)$_{it}$	(0.204)	**(1.533)**	**(1.654)**
	-0.035	-1616119***	-1225231
ß$_{11}$ (BANKD)$_{it}$	(-0.868)	**(-1.320)**	(-1.042)
	-0.000	-1.160*	-1.097*
ß$_{12}$ (SIZE)$_{it}$	(-0.000)	**(-5.995)**	**(-5.904)**

R^2, F, are based on original VARs

Note: * significant at .01 levels, ** significant at.05 levels and *** shows significant at 0.10 levels. Figure in parenthesis represents t value

This result suggests that the agency problem is prevalent in Nepalese firms, where managers try to avoid raising external funds for keeping the investment information of the company to themselves. Negative relationship of (QR) and (ACP) with cash holding indicates that firms with more absolute liquid assets and higher collection

period maintained lower cash, but for maintaining more current assets the firm required higher cash. Therefore, CASH and current ratio reveals the positive relationship. This statement is similar to the study of Garcia-Teruel and Martinez-Solano (2007)

The relationship with financial institutions (BANKD) has been approximated by the debt levels that the firms maintain with their banks. Ozkan and Ozkan (2004) suggest that firms with a higher proportion of bank debt will be able to obtain external financing more easily so they do not need to maintain such high cash levels. This study also concludes the same hypothesis that higher bank debt means firms have access to external market so the enterprises demand less cash. The coefficient of cash flow is significant with negative sign. The negative coefficient on cash flow supports the tradeoff model, which suggests that firms finance investments with internally generated cash flow instead of debt capital.

This result is, similar, to the tradeoff model as reported by the earlier researches for firms in developed countries, i.e. Opler et al. (1999) Ozkan and Ozkan (2002) and Ferreira and Vilela (2004). The reason for this similarity may be high cost of external debt in Nepal
The negative sign of liquidity is consistent with the opinion that firms with higher liquid assets substitute holding less cash, which is consistent with the expected relationship between the two variables. Study of Opler et al. (1999), Ferreira and Vilela (2004), Ozkan, and Ozkan (2004), reveal negative relationship between cash holding and liquidity. The sign on cash flow variability is positive and significant which is in conformity with the expectation and empirical research. It suggests that firms with greater cash flow volatility hold more cash in order to provide a safe cushion for smooth operations. Firm size is significant at 5 percent level.

According to Baumol (1952), Tobin (1956), there is an inverse relationship between interest rate and demand for cash. Similarly, Selden (1961) showed the statistically significant relationship between interest and demand for cash. Friedman (1959) study showed that demand for cash does not statistically sensitive to change in the rate of interest. The regression result of Nepalese public enterprises is similar with Friedman study as it is negatively related to cash demand with insignificant association. Firm's size is another significant variable that affects cash holding. The traditional model of (Baumol, 1952: and Miller and Orr, 1966) or Model of Mulligan (1997) demonstrates that there are economics of scale associated with the cash level required to confront the

normal transactions of the firm. Larger firms keep lower cash and due to financial distress, small firms keep higher cash Thus, there is negative relationship between firm size and cash holding. The regression result is similar to these studies, as cash demand and size has negative relationship in the case of public sector.

5.4 Regression result of private sector enterprises

Private enterprises in the study included enterprises listed in Securities Board of Nepal. Under this sector, there are ten enterprises. The regression result is given below.

Table 5.5 presents the short and long term relationship between cash demand and independent variables included in the other equation specified above under dynamic model ROWTH, LEV, CFLOW, LIQ, STA, INT, ACP, CR, QR, CFVAR, BANKD, and SIZE.

The overall result as shown in the table 5.5 is encouraging in the sense that the value of R is strong and value of F is significant which indicates that overall model is fit. The computed F value in all equations is higher than the table value 2.42 at .01 levels. The coefficients are consistent with the priory hypothesis and significant at one, five and ten percent level of significance. The sign of growth variable is negative in equation 22 and 23. Firms with a larger investment in the assets are considered to have less growth opportunities in the future. It describes negative relationship of growth variable with cash balance. This finding is consistent with the study of Scherr and Hulbert (2001).

As demonstrated by the studies Kim et al. (1999), Ferreria and Vilela(2004), and Ozkan and Ozkan (2004) leverage affect cash holdings. The logic is that a reduction in cash levels increases their financial leverage. A higher financial leverage involves higher cost of the funds to invest in liquid assets (Baskin, 1987). It supports the argument of Kim et al. (1999) and Baskin (1987) while in the case of LEV; it has positive relationship with CASH. This is consistent with the finding of John (1993), which states that increase in leverage will also increase cash holdings.

According to hierarchy theory of the firm, it is argued that firms prefer to find themselves with resources generated internally before looking at the market. In such

circumstances, firm with large cash flow will keep higher cash level (Opler et al.1999, Ozkan and Ozkan, 2004).

Table-5.5

Regression of cash holding for private sector enterprises

	Static model Dependent variable			**Dynamic Model Dependent Variable**		
Parameters	**CASH (eq19)**	**AVCASH (eq20)**	**CONCASH (eq21)**	**CASH (eq22)**	**AVCASH (eq23)**	**CONCASH (eq24)**
(Constant)	0.190****** **(1.855)**	13006*** **(1.422)**	1001991*** **(1.336)**	0.070 (0.954)	28180460 (0.476)	23544000 (0.488)
ß$_1$ (GROWTH)$_{it}$	-1.059***** **(-3.116)**	-648185***** **(-2.138)**	-4888609****** **(-1.966)**	-0.231 (-0.895)	-8702188 (-0.043)	19037202 (0.115)
ß$_2$ (LEV)$_{it}$	0.014 (0.527)	554335****** **(2.391)**	39997865****** **(2.104)**	0.010 (0.502)	-2222366 (-0.133)	-4932703 (-0.363)
ß$_3$ (CFLOW)$_{it}$	-0.007 (-0.088)	155076****** **(2.117)**	11188100****** **(1.863)**	0.010 (0.167)	-31489768 (-0.616)	-32046591 (-0.774)
ß$_4$ (LIQ)$_{it}$	-0.164***** **(-4.320)**	-364732 (-1.080)	-32949148 (-1.190)	-0.075****** **(-2.144)**	-25768016 (-0.994)	-21298637 (-1.003)
ß$_5$ (STA)$_{it}$	0.068* **(5.498)**	824871 (0.747)	7590596 (0.838)	0.038***** **(3.020)**	11232359 (1.232)	978550*** **(1.313)**
ß$_6$ (INT)$_{it}$	-0.004 (-0.527)	-81871 (-1.106)	-5920444.1 (-0.975)	-0.004 (-0.645)	-1132886 (-0.244)	-959662.4 (-0.254)
ß$_7$(ACP)$_{it}$	0.000 (1.050)	-38979 (-0.611)	-32852.808 (-0.628)	0.000 (1.067)	-11141 (-0.264)	-7741.472 (-0.225)
ß$_8$ (CR)$_{it}$	0.040***** **(2.111)**	194682 (1.161)	1996213*** **(1.451)**	0.038*** **(1.619)**	278318 (0.015)	-10545 (-0.001)
ß$_9$ (QR)$_{it}$	-0.059***** **(-2.444)**	-243779 (-1.128)	-244327*** **(-1.379)**	-0.047****** **(-1.722)**	3269501 (0.148)	2635170 (0.146)
ß$_{10}$ (CFVAR)$_{it}$	-0.133*** **(-1.319)**	-129161*** **(-1.440)**	-978982*** **(-1.331**)	-0.063 (-0.854)	-3206981 (-0.540)	-2109214 (-0.435)
ß$_{11}$ (BANKD)$_{it}$	-0.071****** **(-2.035)**	-63931****** **(-2.057)**	-4829752****** **(-1.895)**	-0.030 (-0.946)	-11458592 (-0.447)	-5713363 (-0.273)
ß$_{12}$ (SIZE)$_{it}$	0.000****** **(-2.394)**	0.0141 (0.427)	0.0063 (0.235)	0.000 (-1.028)	0.0010 (0.045)	-0.0017 (-0.089)
ß$_{13a}$ (CASH)$_{it-1}$	–	–	–	0.659***** **(9.396)**	–	–
ß$_{13b}$ (AVCASH)$_{it-1}$	–	–	–	–	0.831***** **(11.51)**	–
ß$_{13c}$ (CONCASH)$_{it-1}$	–	–	–	–	–	0.832***** **(11.59)**
No of observation	100	100	100	90	90	90
D.F	87	87	87	76	76	76
R^2	0.469	0.206	0.193	0.758	0.732	0.729
F	6.399	1.887	1.728	18.349	15.983	15.719
DW	0.927	0.525	0.515	h=3.80	h=5.20	h=5.33

Note: * significant at .01 levels, ** significant at.05 levels and *** significant at 0.10 levels.
Figure in parenthesis represents t value

It indicates that cash flow and cash holding in eq.22 has positive relationship. But Kim et al. (1998) claim that the relationship is, in fact, negative, as they consider that cash flow represent an additional source of liquidity for the firm and can therefore substitute cash. In this sense, cash flow has negative relation with cash demand. This argument is contradicted in equation23 and 24 where dependent variables are specified as AVCASH and CONCASH. As liquidity is considered to be a substitute of cash in different circumstances, it has a negative relation with cash. Generally, higher the liquidity lowers the requirement of cash. It has been argued that non-cash liquid assets are a substitute for holding cash (Opler et al. 1999 and Ozkan, and Ozkan, 2004).

Regression result under dynamic model shows significant negative relationship of liquidity, with cash demand. This is similar to the finding of Opler et al. and Ozkan and Ozkan studies. Current and quick ratios are other important variables, which affect on cash demand function. Current ratio has positive relationship with cash whereas quick ratio has negative relationship. The result is consistent with Parasher (1996) and Keown et al. (2003) as they argue that these ratios show inconsistent relationship in cash demand.

As higher ACP indicates, the larger days required collecting cash and a lower ACP indicates shorter days required to collect cash therefore positive relationship is expected between cash demand and ACP. Bodie and Merton, (2000) argue that a lower ACP firms can reduce its needs for cash. On the contrary to this argument, Hutchison et al. (2007) argues that ACP is likely to be negative as well as positive. A positive relationship indicates the number of days that a company must borrow or tie up capital while awaiting payment from a customer. A negative relationship indicates the number of days a company has received cash from sales before it must pay its suppliers. The regression result of Nepalese private enterprises supports the finding of Hutchison et al. (2007), and does not agree with a priori hypothesis.

According to Baumol (1952), Tobin (1956), Friedman (1959) sales is positively related to cash balance and the interest has negative relationship with cash balance. However, Friedman argument is different from Baumol and Tobin regarding the significant effect of interest on demand for cash. According to Friedman, demand for cash is not statistically sensitive to changes in the rate of interest. Among others Farzer (1964), Nadiri (1969), and Coates (1976) supported Baumol and Tobin while Meltzer (1963),

Whalen (1965), Vogel and Maddala (1967) supported Friedman. The regression result of private enterprises shows expected significant positive relationship with STA and negative and insignificant relationship with INT in Nepalese private enterprises.

This result supports the argument of Baumol and Tobin with respect to demand for cash and sales and does not support their argument regarding interest. The present study is consistent with Friedman argument regarding the relationship between cash holding and interest rate. According to Minton and Schrand (1999), greater cash flow variability required larger cash balance to mitigate the expected cost of liquidity constraints. In his argument, positive relationship is expected between cash demand and cash flow variability. Similar to Minton and Schrand, this study finds out positive relationship between cash holding and cash flow variability in Nepalese private enterprises.

Bank debt (BANKD) shows the relationship with financial institutions and ability of firms to raised cash from bank when needed. Higher the ratio lower will be the cash requirement. Because of the comparative advantage of banks in monitoring firms' activities and in collecting and processing information, it is often argued that bank financing is more effective than public debt in reducing problems associated with agency conflicts and informational asymmetry. Thus, the existence of a bank relationship would enhance the ability of firms to raise external finance through providing signals about the borrowing firms' credit worthiness. Moreover, bank debt can serve as a substitute for holding high levels of cash because bank debt is more easily renegotiated when firms needed (Ozkan and Ozkan, 2004). These arguments suggest that firms with more bank debt are expected to hold less cash. This is consistent with Ozkan and Ozkan study.

Smaller firms face more borrowing constraints and higher cost of external financing than larger firms, which lead to demand for more cash. Smaller firms are more likely to be liquidated when they are in financial distress. These arguments (Titman and Wessel's, 1988), Ozkan (1996), (Whited, 1992; Fazzari and Petersen, 1993, and Kim et al. 1998) assumed negative relationship between cash holdings and SIZE. The regression of Nepalese private enterprises supports this view in the dynamic model of cash demand.

The lagged dependent variables in the dynamic model are significant and the coefficients are observed to be 0.66 in eq.22 and 0.83 in eq.23 and eq.24. This gives speed of

adjustment of 0.34 in eq.22 and 0.17 in eq.23 and 24. This shows very slow adjustment. As the equations 19, 20 and 21 under static model show the presence of autocorrelation due to less than table value of DW at .01 levels, the results of the above equations are not acceptable without autocorrelation improvement. Therefore, attempt has been made to correct serial autocorrelation through time series maximum likelihood method. The improvement result after correction of autocorrelation is as follows.

Table 5.6

Regression of cash holding for private enterprises with autocorrelation improvement

	Dependent variables		
Parameters	**CASH (eq.25)**	**AVCASH (eq26)**	**CONCASH (eq27)**
(Constant)	0.083*** (1.303)	83601994****** **(1.676)**	71611222****** **(1.761)**
ß$_1$ (GROWTH)$_{it}$	-0.790***** **(-2.633)**	-430254559** **(-1.955)**	-3637019** **(-2.011)**
ß$_2$ (LEV)$_{it}$	0.008 (0.364)	26124821*** **(1.550)**	18682860*** **(1.351)**
ß$_3$ (CFLOW)$_{it}$	0.030 (0.526)	15454886 (0.368)	8696630 (0.252)
ß$_4$ (LIQ)$_{it}$	-0.023 (-0.570)	-24264885 (-0.804)	-22861968 (-0.925)
ß$_5$ (STA)$_{it}$	0.031 **(3.955*)**	-3938953 (-0.696)	-2290048 (-0.492)
ß$_6$ (INT)$_{it}$	-0.002 (-0.544)	-1789932 (-0.577)	-1609351 (-0.630)
ß$_7$(ACP)$_{it}$	0.000 (0.392)	-5768 (-0.153)	-2250 (-0.072)
ß$_8$ (CR)$_{it}$	0.022*** **(1.902)**	618005 (0.074)	3102178 (0.450)
ß$_9$ (QR)$_{it}$	-0.032****** **(-2.140)**	2122036 (0.197)	-1441403 (-0.163)
ß$_{10}$ (CFVAR)$_{it}$	0.040 (0.222)	-208968021*** **(-1.423)**	-1614391*** **(-1.350)**
ß$_{11}$ (BANKD)$_{it}$	-0.029 (-0.917)	-9080791 (-0.385)	-5491791 (-0.283)
ß$_{12}$ (SIZE)$_{it}$	0.000 (0.000)	0.0034 (0.105)	-0.004 (-0.142)

* R^2, F, are based on originals VARs

Note: * significant at .01 levels, ** significant at.05 levels and*** significant at 0.10 levels.
Figure in parenthesis represents t value

In the table 5.6 the parameters GROWTH, LEV, STA, CR, and QR are significant with expected sign. The variable of CFVAR is significant but not consistent with the priory hypothesis. The result of regression analysis concluded GROWTH, LEV, CFLOW, LIQ, INT, CR, QR and BANKD are the major determinants of cash holding in Nepalese private listed enterprises. Cash flow variability does not postulate the positive relationship because of fluctuation of cash flow in the private enterprises as

compared to other enterprises. Average collection period does not positively associate with AVCASH and CONCASH because of total amount of cash holding. Similarly, SIZE has negative relationship with cash holding in the enterprises of private sector.

5.5 Regression result of small scale enterprises

The enterprises, which have less than Rs 300 million of average assets, is defined as small enterprises. Portfolio of small, medium, and large size enterprises have been formed on the basis of average value of total assets (1999 and 2008). Out of total selected enterprises, only seven enterprises are included in small size portfolio. Table 5.7 presents the relationship between CASH, AVCASH and CONCASH as dependent variables with thirteen explanatory major variables of corporate cash holding in Nepalese enterprises. Specifically, it reveals the relationship between cash ratio, and GROWTH, LEV, CFLOW, LIQ, STA, INT, ACP, CR, QR, CFVAR, BANKD, SIZE, and CASH $_{t-1}$, AVCASH $_{t-1}$, CONCASH $_{t-1}$ similar, specification has been made for other dependent variables AVCASH and CONCASH.

In the eq.31, 32 and 33 under dynamic model, all the parameters have expected relationship except CFLOW, ACP and CFVAR. The expected relationship between cash flow average collection period and cash flow variability is not consistent because of limited circulation of cash flow and quick transactions of the enterprises. The explanatory power of the model is strong as R is high, and F is also significant. The adjustment coefficient factor in the Nepalese small enterprises is higher in CASH dependent variable (0.65) and lower in AVCASH dependent variable (0.36) and CONCASH dependent variable (0.30).

Under dynamic model, the variable growth, liquidity, current ratio, quick ratio and bank debt have expected relationship with cash holding in eq.31, 32 and 33. Variable leverage has not expected relationship in eq31 and sales in eq32. Interest and size have not expected relationship in eq 32 and 33. The analysis indicates growth opportunity, liquidity, bank debt, and lagged dependent variable are the major determinants of cash holding in the small enterprises in Nepal. In the dynamic model speed of adjustment, $(1-\lambda)$ 0.70 is fast in eq33 CONCASH dependent variable.

Table-5.7

Regression of cash holding for small scale enterprises

	Static model Dependent variable			Dynamic model Dependent variable		
Parameters	**CASH (eq28)**	**AVCASH (eq29)**	**CONCASH (eq30)**	**CASH (eq31)**	**AVCASH (eq32)**	**CONCASH (eq33)**
(Constant)	0.132 (1.234)	8167 (0.907)	5352412 (0.771)	0.096 (1.281)	4320024 (0.488)	3327014 (0.517)
ß$_1$ (GROWTH)$_{it}$	-0.914 (-1.143)	-59595 (-0.886)	-40939173 (-0.789)	-0.473 (-0.813)	-90335*** **(-1.311)**	-811253*** **(-1.587)**
ß$_2$ (LEV)$_{it}$	0.0011 (0.077)	996 (0.812)	-39914 (-0.042)	-0.000 (-0.042)	1359445 (1.138)	788956 (0.900)
ß$_3$ (CFLOW)$_{it}$	-0.0307*** **(-1.595)**	-3573** **(-2.203)**	-2866400** **(-2.292)**	-0.024*** **(-1.663)**	-3776959** **(-2.210)**	-3400537* **(-2.728)**
ß$_4$ (LIQ)$_{it}$	-0.1432* **(-3.362)**	-5488** **(-1.532)**	-416142*** **(-1.506)**	-0.060** **(-1.795)**	-5112001*** **(-1.359)**	-3720310*** **(-1.358)**
ß$_5$ (STA)$_{it}$	0.065* **(6.083)**	-400 (-0.440)	204395 (0.292)	0.029** **(2.180)**	-193803 (-0.148)	68093 (0.069)
ß$_6$ (INT)$_{it}$	0.0004 (0.050)	-232 (-0.314)	-127686 (-0.224)	-0.004 (-0.660)	40655 (0.058)	54622 (0.107)
ß$_7$(ACP)$_{it}$	-0.0000 (-0.302)	-5536 (-1.084)	-2374 (-0.603)	-0.000 (-0.018)	-5918 (-1.172)	-4340 (-1.184)
ß$_8$ (CR)$_{it}$	0.0598** **(1.940)**	6658416* **(2.567)**	5391850* **(2.696)**	0.055** **(2.107)**	3815120 (1.233)	2545871 (1.124)
ß$_9$ (QR)$_{it}$	-0.0788 **(-2.328)**	-618568 **(-2.170)**	-5384463 **(-2.450)**	-0.067** **(-2.206)**	-2555615 (-0.716)	-1725646 (-0.660)
ß$_{10}$ (CFVAR)$_{it}$	0.0355 (1.101)	1989922 (0.732)	2009273 (0.959)	-0.012 (-0.389)	-25298.9 (-0.007)	-171115 (-0.065)
ß$_{11}$ (BANKD)$_{it}$	-0.0696** **(-2.054)**	-48337** **(-1.696)**	-287876*** **(-1.310)**	-0.034*** **(-1.328)**	-4964643** **(-1.698)**	-3646601** **(-1.725)**
ß$_{12}$ (SIZE)$_{it}$	0.0000* **(-2.820)**	0.052*** **(1.607)**	0.054064** **(2.139)**	-0.000 (-1.040)	0.038328 (1.221)	0.0409695** **(1.787)**
ß$_{13a}$ (CASH)$_{it-1}$	–	–	–	0.652* **(7.836)**	–	–
ß$_{13b}$ (AVCASH)$_{it-1}$	–	–	–	–	0.360* **(2.578)**	–
ß$_{13c}$ (CONCASH)$_{it-1}$	–	–	–	–	–	0.307** **(2.373)**
No of observation	70	70	70	60	60	60
D.F	57	57	57	46	46	46
R^2	0.593	0.36	0.378	0.814	0.46	0.473
F	6.913	2.671	2.892	16.521	3.212	3.384
DW	1.451	1.475	1.44	h=1.10	h=1.134	h=1.01

Note: * significant at .01 levels, ** significant at.05 levels and *** significant at 0.10 levels.
Figure in parenthesis represents t value

Similarly, 0.64 is moderate in eq.32 AVCASH dependent variable and lower 0.35 in eq.31 CASH dependent variable. It shows that speed of adjustment on actual to desired cash balance is fast in small enterprises in Nepal. The Durbin Watson value in the equation 28, 29 and 30 under static model shows positive first serial correlation. An attempt has been made to correct the autocorrelation using maximum likelihood method. After correction, the regression result is as follows:

Table 5.8

Regression of cash holding for small scale enterprises with autocorrelation improvement

	Dependent variable		
Parameters	**CASH (eq.34)**	**AVCASH (eq35)**	**CONCASH (eq36)**
(Constant)	0.128*** **(1.584)**	3624863 (0.479)	-101318 (-0.017)
ß$_1$ (GROWTH)$_{it}$	0.416 (0.765)	4019740 (0.070)	-1974390 (-0.416)
ß$_2$ (LEV)$_{it}$	-0.060* **(-4.085)**	-3109025** **(-2.056)**	-1473363*** **(-1.310)**
ß$_3$ (CFLOW)$_{it}$	-0.066* **(-4.425)**	-6331157* **(-4.003)**	-4225865* **(-3.260)**
ß$_4$ (LIQ)$_{it}$	-0.097** **(-2.253)**	-9045981** **(-2.130)**	-5984242** **(-1.904)**
ß$_5$ (STA)$_{it}$	0.036* **(5.087)**	-111409* (-0.149)	93482 (0.146)
ß$_6$ (INT)$_{it}$	0.003 (0.782)	536392 (1.123)	450295 (1.060)
ß$_7$(ACP)$_{it}$	0.000*** **(1.418)**	3166 (0.666)	2390 (0.601)
ß$_8$ (CR)$_{it}$	0.100* **(4.473)**	7271265* **(3.162)**	6375135* **(3.376)**
ß$_9$ (QR)$_{it}$	-0.127* **(-5.068)**	-8189148* **(-3.200)**	-6893268* **(-3.296)**
ß$_{10}$ (CFVAR)$_{it}$	-0.032 (-0.492)	5856523 (1.071)	2465185 (0.831)
ß$_{11}$ (BANKD)$_{it}$	0.015 (0.410)	5165694*** **(1.407)**	-275108 (-0.104)
ß$_{12}$ (SIZE)$_{it}$	0.000 (0.000)	-0.092*** **(-1.646)**	0.036 (1.004)

* R^2, F, are based on originals VARs

Note: * significant at .01 levels, ** significant at.05 levels and*** significant at 0.10 levels.
Figure in parenthesis represents t value

The expected sign of the parameters is only observable in LIQ, ACP, CR and QR in all three equations of CASH, AVCASH and CONCASH dependent variables under static model. These coefficients are also significant. GROWTH and BANKD has expected relationship only in CONCASH eq36. STA has not consistent relationship in AVCASH eq.35, and CFVAR has not expected relationship in CASH eq34. SIZE is maintaining expected relationship only in AVCASH eq35. From this point of view, it is concluded that small enterprises hold cash for precautionary motive.

The negative sign of leverage indicates less cash is needed for high debt enterprises, because less debt is associated with less monitoring by the capital markets. Since Guney, Ozkan and Ozkan (2007) provide evidence of a significant negative relationship between cash holdings and leverage, this finding is consistent with them. The negative sign with cash flow indicates that firm with high cash flow have lower cost of liquidity shortage,

and consequently, they have fewer incentives to hold large amounts of cash. This argument is similar to Kim et al. (1998). John (1993) and Baskin (1987) which state, that a higher proportion of debt to total assets amplifies the cost of investing in liquid assets. Further, they consider that cash flow represent an additional source of liquidity for the firm and can therefore substitute cash.

5.6 Regression result of medium scale enterprises

Enterprises having average total assets of more than Rs 500 million and less than Rs 900 million are classified as medium enterprises. Total seven enterprises lie under this medium size category. The time series data from 1999 to 2008 provides 70 observations. R^2 of the equation under dynamic model is satisfactory, as it is 62 % in eq.40, 78% in eq.41, and 76 % in eq.42. Similarly, F is also significant at .01 level. The DW "h" test in all the equations does not appear to have the problem of autocorrelation.

Regression result of table 5.9 shows that liquidity, interest, average collection period, size and lagged variable are observed with expected relationship in all the equations of dynamic model. But the variables quick ratio and cash flow variability have not expected relationship in all the equations 40, 41, and 42. GROWTH and LEV have expected relationship in eq 40. CFLOW has expected relation in eq41, and eq 42. STA CR and BANKD have expected relationship in eq 40. As shown in table below, coefficients of CR and QR are significant at .01 level, STA and BANKD coefficient are significant at 0.10 level. The analysis indicates Liquidity is the major factor to determine cash holding in medium enterprises of Nepal. The coefficient of lagged dependent variable is observed to be 0.48 in eq.40, 0.80 in eq.41 and 0.76 in eq.42. It states that speed of adjustment for actual to desired cash is fast in Nepalese medium enterprises. The speed of adjustment is fast in eq40 under CASH dependent variable.

The equation under static model shows the presence of autocorrelation. The value of D-W statistics (d-value) 1.123, 0.878, and 0.827 are not near to 2 implying the presence of autocorrelation in the static model, K=12 n= 70. Taking 1% level of significance the tabulated upper limit dU= 1.870 and the lower limit dL = 1.099. Here the calculated d statistics 0.878 and 0.827 are < dL. This implies existence of positive autocorrelation in the model.

Table 5.9

Regression of cash holding for medium scale enterprises

	Static model Dependent variable			**Dynamic model Dependent variable**		
Parameters	**CASH (eq37)**	**AVCASH (eq38)**	**CONCASH (eq39)**	**CASH (eq40)**	**AVCASH (eq41)**	**CONCASH (eq42)**
(Constant)	0.247*** (1.345)	185100 (1.078)	93373684 (0.680)	0.0626 (0.325)	166456 (1.268)	122493 (1.157)
ß$_1$ (GROWTH)$_{it}$	-0.439 (-0.972)	-349690 (-0.826)	-24488 (-0.723)	-0.3461 (-0.808)	130439 (0.437)	1017931 (0.422)
ß$_2$ (LEV)$_{it}$	-0.016 (-0.387)	-51 (-0.001)	1291951 (0.042)	0.060 (1.272)	-38582 (-1.183)	-269454 (-1.019)
ß$_3$ (CFLOW)$_{it}$	-0.038 (-0.295)	68459 (0.574)	55381907 (0.581)	-0.0382 (-0.290)	27623 (0.304)	36695258 (0.500)
ß$_4$ (LIQ)$_{it}$	-0.345* **(-4.304)**	-163969** **(-2.183)**	-99853*** **(-1.663)**	-0.2164* **(-2.502)**	-32936 (-0.575)	-11200 (-0.244)
ß$_5$ (STA)$_{it}$	0.028 (0.970)	2090 (0.077)	3228174 (0.149)	0.0372 (1.295)	-26126*** **(-1.316)**	-210094*** **(-1.306)**
ß$_6$ (INT)$_{it}$	-0.001 (-0.080)	-40277 (-0.349)	-1597203 (-0.173)	-0.0041 (-0.378)	-2542 (-0.339)	-2492871 (-0.410)
ß$_7$(ACP)$_{it}$	0.001***** **(2.407)**	1387* **(2.754)**	887289** **(2.203)**	0.0009****** **(1.872)**	162 (0.451)	16741 (0.058)
ß$_8$ (CR)$_{it}$	0.008 (0.325)	-54643* **(-2.434)**	-40769** **(-2.272)**	0.0555** **(2.142)**	-58825* **(-3.337)**	-475614* **(-3.334)**
ß$_9$ (QR)$_{it}$	0.033 (0.620)	132742* **(2.636)**	10686* **(2.655)**	-0.0163 (-0.321)	111311* **(3.279)**	91332206* **(3.324)**
ß$_{10}$ (CFVAR)$_{it}$	0.148 (0.163)	259351 (0.304)	362733 (0.532)	-0.1337 (-0.135)	-343360 (-0.506)	-2138885 (-0.389)
ß$_{11}$ (BANKD)$_{it}$	-0.041 (-0.460)	-16257 (-0.194)	-15620 (-0.233)	-0.069****** **(-1.697)**	70341 (1.002)	46364956 (0.815)
ß$_{12}$ (SIZE)$_{it}$	0.000* **(-3.266)**	-0.169** **(-2.059)**	-0.105*** **(-1.597)**	-0.000 (-0.569)	-0.1092*** (-1.594)	-0.0678 (-1.232)
ß$_{13a}$ (CASH)$_{it-1}$	–	–	–	0.4860* **(3.931)**	–	–
ß$_{13b}$ (AVCASH)$_{it-1}$	–	–	–	–	0.805* **(8.882)**	–
ß$_{13c}$ (CONCASH)$_{it-1}$	–	–	–	–	–	0.769* **(8.555)**
No of observation	70	70	70	60	60	60
D.F	57	57	57	46	46	46
R^2	0.455	0.409	0.36	0.626	0.782	0.756
F	3.959	3.288	2.667	6.296	13.521	11.655
DW	1.123	0.878	0.827	h=5.11	h=3.20	h=3.17

Note: * significant at .01 levels, ** significant at.05 levels and *** significant at 0.10 levels.
Figure in parenthesis represents t value

For the correction of autocorrelation time series, maximum likelihood autoregressive method was used and the result after correction is as below: After corrections the variables growth, liquidity, sales, interest, cash flow variability, bank debt and size are

observed with expected relationship. Cash flow, average collection period, current ratio and quick ratio are not observed as per expected relationship. Only liquidity, average collection period, current ratio and size are significant. Among them growth, leverage, cash flow, liquidity, average collection period, current ratio and quick ratio are significant in eq.43. Similarly liquidity, average collection period, current ratio and size are significant in eq.44, and except size, they are also significant in eq.45.

Table 5.10

Regression of cash holding for medium scale enterprises with autocorrelation improvement

	Dependent variables		
Parameters	**CASH (eq.43)**	**AVCASH (eq44)**	**CONCASH (eq45)**
(Constant)	0.532* **(3.362)**	1598586 (1.155)	88940448 (0.823)
ß$_1$ (GROWTH)$_{it}$	-0.100 (-0.243)	-2851713 (-0.794)	-2783178 (-1.001)
ß$_2$ (LEV)$_{it}$	-0.092** **(-1.994)**	-6195022 (-0.153)	12052334 (0.378)
ß$_3$ (CFLOW)$_{it}$	-0.161*** **(-1.478)**	-8165943 (-0.858)	-1970444 (-0.266)
ß$_4$ (LIQ)$_{it}$	-0.365* **(-4.876)**	-1526003** **(-2.326)**	-8518238*** **(-1.673)**
ß$_5$ (STA)$_{it}$	0.026 (0.909)	9169165 (0.367)	617519 (0.032)
ß$_6$ (INT)$_{it}$	-0.002 (-0.239)	-1560434 (-0.250)	-1684759 (-0.352)
ß$_7$(ACP)$_{it}$	0.001* **(2.518)**	721089** **(2.178)**	339253*** **(1.327)**
ß$_8$ (CR)$_{it}$	0.060* **(3.318)**	-2840891** **(-1.782)**	-2285428** **(-1.855)**
ß$_9$ (QR)$_{it}$	-0.152* **(-3.219)**	33492356 (0.811)	33174586 (1.033)
ß$_{10}$ (CFVAR)$_{it}$	-1.244 (-1.185)	5820958 (0.634)	6588904 (0.910)
ß$_{11}$ (BANKD)$_{it}$	-0.037 (-0.565)	-1807430 (-0.314)	-1809852 (-0.406)
ß$_{12}$ (SIZE)$_{it}$	-0.000 (-0.000)	-0.140** **(-1.782)**	-0.062 (-0.992)

* R^2, F, are based on originals VARs

Note: * significant at .01 levels, ** significant at.05 levels and*** significant at 0.10 levels.

Figure in parenthesis represents t value

5.7 Regression result of large scale enterprises

The corporate cash holding decisions of the enterprises specified above has been estimated with pooled data consisting of 200 observations. First of all, effort has been made to construct a portfolio on the basis of average amounts of total assets from 1999 to 2008.

Table 5.11

Regression of cash holding for large scale enterprises

	Static model Dependent variable			**Dynamic model Dependent variable**		
Parameters	**CASH (eq46)**	**AVCASH (eq47)**	**CONCASH (eq48)**	**CASH (eq49)**	**AVCASH (eq50)**	**CONCASH (eq51)**
(Constant)	0.122*** **(1.317)**	133993 (0.209)	117370 (0.191)	0.1005 (1.182)	545972 (1.000)	423873 (0.830)
ß$_1$ (GROWTH)$_{it}$	-1.7745* **(-4.738)**	-9198380* **(-3.552)**	-8609979* **(-3.477)**	-1.2516* **(-3.168)**	-5372195** **(-2.167)**	-5085920** **(-2.242)**
ß$_2$ (LEV)$_{it}$	-0.0202 (-1.095)	-312702 **(-2.451)**	-377395 **(-3.094)**	0.0181 (0.881)	-37416 (-0.286)	19439 (0.143)
ß$_3$ (CFLOW)$_{it}$	0.0308** **(1.682)**	132105 (1.042)	151065 (1.246)	0.0998** **(2.005)**	116368 (0.923)	449112** **(1.753)**
ß$_4$ (LIQ)$_{it}$	-0.0136 (-0.967)	29424 (0.302)	103737 (1.112)	-0.0300** **(-1.842)**	-37273 (-0.412)	-95784 (-0.949)
ß$_5$ (STA)$_{it}$	0.0252* **(4.622)**	157800* **(4.185)**	145871* **(4.047)**	0.0170* **(2.623)**	39577 (0.872)	34788 (0.896)
ß$_6$ (INT)$_{it}$	0.0040 (0.515)	56057 (1.054)	54095 (1.064)	0.0010 (0.134)	4913 (0.103)	12092 (0.273)
ß$_7$(ACP)$_{it}$	-0.0001 (-0.555)	-658 (-0.859)	-6075 (-0.830)	-0.0001 (-0.805)	-1089*** **(-1.587)**	-1050** **(-1.689)**
ß$_8$ (CR)$_{it}$	0.0167 (0.6543)	-95849 (-0.544)	-103349 (-0.613)	0.0231 (0.934)	23816 (0.148)	37582 (0.256)
ß$_9$ (QR)$_{it}$	-0.0357 (-0.958)	127456 (0.495)	122621 (0.498)	-0.0376 (-1.039)	-84490 (-0.358)	-127710 (-0.595)
ß$_{10}$ (CFVAR)$_{it}$	0.0884 **(5.007)**	312391 **(2.559)**	332766 **(2.851)**	0.0394** **(1.869)**	131857 (1.167)	78201 (0.712)
ß$_{11}$ (BANKD)$_{it}$	-0.0751** **(-1.771)**	-500115** **(-1.706)**	-401702*** **(-1.433)**	-0.0692** **(-1.697)**	-211793 (-0.795)	-131291 (-0.536)
ß$_{12}$ (SIZE)$_{it}$	0.0001* **(-4.442)**	-0.66633* **(-2.851)**	-0.64363* **(-2.880)**	0.0000* **(-3.435)**	-0.628* **(-3.018)**	-0.56913* **(-2.958)**
ß$_{13a}$ (CASH)$_{it-1}$	–	–	–	0.4106* **(3.283)**	–	–
ß$_{13b}$ (AVCASH)$_{it-1}$	–	–	–	–	0.589* **(4.406)**	–
ß$_{13c}$ (CONCASH)$_{it-1}$	–	–	–	–	–	0.656* **(5.106)**
No of observation	60	60	60	50	50	50
D.F	47	47	47	36	36	36
R^2	0.763	0.609	0.574	0.831	0.756	0.75
F	12.582	6.093	5.287	14.779	9.52	9.213
DW	1.462	1.404	1.307	h=1.98	h=6.75	h=8.15

Note: * significant at .01 levels, ** significant at.05 levels and *** significant at 0.10 levels.
Figure in parenthesis represents t value

The portfolio of large enterprises is formed with the enterprises having a value of assets more than Rs 900 million. The economies of scale described in previous literature assured that larger firms hold less cash and smaller firms hold more cash, which is called size effect. Attempt has been made to assess the size effect under static and dynamic model in table 5.11.

All parameters have expected sign with priory hypothesis except ACP and INT in all the equations under dynamic model. The relationship between this variable and cash holding is observed with negative sign. Similarly, INT has not maintained consistent relationship as hypothesized. The GROWTH is significant at .01 and .05 level in all the equations of dynamic model. The coefficient of LEV is not significant in all the equations of 49, 50 and 51. CFLOW, LIQ and STA are significant at .05, level in eq.49 of CASH dependent variable. INT have not expected relationship in large enterprises. It is due to the higher volume of transactions in large enterprises, which initiate to hold cash even in a situation of rising interest. The coefficient of CFVAR and BANKD are significant at .05 level. The coefficient of SIZE is significant at .01 level in all the equations.

In the regression of cash holding for large enterprises, the coefficient of determination R of all equations under dynamic model is satisfactory. The overall significance of the model as indicated by $F_{(13, 50)}$ statistics is significant which means the model is fit for it. The computed F is higher than the table value 2.50, at .01 level. The overall result is encouraging due to the presence of expected relationship except few variables. Size, growth, and lagged cash variable are significant under three different dependent variable CASH, AVCASH and CONCASH. In the static model DW statistics under eq 46, 47 and 48 is observed as 1.462, 1.404 and 1.307. This implies existence of positive autocorrelation in the model.

For the correction of autocorrelation, maximum likelihood method was used and the result after correction is presented in table 5.12. After correction of autocorrelation, there is an improvement in the result of all equations. Many of the variables are significant and the sign as per priory and the parameters like growth opportunity, sales to total assets, cash flow variability, bank debt and size are significant in all the equation of all dependent variables, CASH, AVCASH and CONCASH. Leverage and cash flow also presents the significant result in cash eq52 and CONCASH eq 54.

However the parameters related to average collection period, current ratio and quick ratio are insignificant. It shows that there is a size effect in cash holdings.

Table 5.12

Regression of cash holding for large enterprises with autocorrelation improvement

	Dependent variables		
Parameters	**CASH (eq.52)**	**AVCASH (eq53)**	**CONCASH (eq54)**
(Constant)	0.169** **(2.175)**	772325*** **(1.622)**	7563253****** **(1.720)**
ß$_1$ (GROWTH)$_{it}$	-1.258* **(-2.560)**	-5657668*** **(-1.611)**	-53679595*** **(-1.645)**
ß$_2$ (LEV)$_{it}$	0.001 (0.076)	30202 (0.239)	-81137847 (-0.695)
ß$_3$ (CFLOW)$_{it}$	0.010 (0.628)	-10264 (-0.112)	7327088 (0.087)
ß$_4$ (LIQ)$_{it}$	-0.027****** **(-1.686)**	-179412****** **(-1.770)**	-85567340 (-0.915)
ß$_5$ (STA)$_{it}$	0.020* **(3.411)**	53887*** **(1.355)**	54598204*** **(1.483)**
ß$_6$ (INT)$_{it}$	-0.000 (-0.065)	3054 (0.088)	2324196 (0.072)
ß$_7$(ACP)$_{it}$	0.000 (-0.769)	-745 (-0.889)	-641909 (-0.826)
ß$_8$ (CR)$_{it}$	0.010 (0.365)	29582 (0.161)	19250770 (0.113)
ß$_9$ (QR)$_{it}$	-0.028 (-0.735)	-74201 (-0.320)	-72596413 (-0.340)
ß$_{10}$ (CFVAR)$_{it}$	0.073* **(2.952)**	319289****** **(1.704)**	365598101** **(2.088)**
ß$_{11}$ (BANKD)$_{it}$	-0.055*** **(-1.327)**	-353080*** **(-1.348)**	-3133183 (-1.295)
ß$_{12}$ (SIZE)$_{it}$	-0.000 -0.000	-1.004* **(-3.670)**	-0.986* **(-3.891)**

* R^2, F, are based on originals VARs

Note: * significant at .01 levels, ** significant at.05 levels and*** significant at 0.10 levels.
Figure in parenthesis represents t value

Long term coefficients

Long run elasticity is computed from the dynamic model. Since many of the variables are significant in the case of cash ratio dependent variable, the long term coefficients have been, estimated only for that dependent variable. The estimated ratio of long term relationship is given below:

Table 5.13

Long term coefficients of various categories of the Nepalese enterprises: Dependent variables (CASH)

Parameters	Total	Public sector enterprises	Private sector	Small scale	Medium scale	Large scale
ß1(GROWTH)	-0.6747	-0.4701	-0.6774	-1.3592	-0.6733	-2.1214
ß2 (LEV) it	0.0272	0.0623	0.0293	0.0000	0.1167	0.0307
ß3 (CFLOW)it	0.0122	0.0026	0.0293	-0.0690	-0.0743	0.1692
ß4 (LIQ)it	-0.0660	-0.0675	-0.2199	-0.1724	-0.4210	-0.0508
ß5(STA)it	0.0362	0.0208	0.1114	0.0833	0.0724	0.0288
B6 (INT) it	-0.0115	-0.0130	-0.0117	-0.0115	-0.0080	0.0017
B7(ACP)it	0.0000	0.0000	0.0000	0.0000	0.0018	-0.0002
ß8 (CR) it	0.0946	0.0909	0.1114	0.1580	0.1080	0.0392
ß9 (OR) it	-0.1093	-0.0701	-0.1378	-0.1925	-0.0317	-0.0637
ß10 (CFVAR)it	0.0234	-0.0234	-0.1848	-0.0345	-0.2601	0.0668
ß11 (BANKD)	-0.0891	-0.0312	-0.0880	-0.0977	-0.1342	-0.1173
ß 12 (SIZE) it	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Source: Computed from the regression under dynamic model

Economies of scale

Keeping in view the constant return to scale which shows sum of exponents equal to one, the elasticity computed from the regression coefficient and mean value of the variable reveals the presence of diseconomies of scale in cash holding of Nepalese enterprises. The sum of the exponents is 0.22 which is lesser than one. This also follows in the case of regression of public and private sector enterprises, including small, medium and large scale enterprises.

5.8 Conclusion

The regression results under dynamic model framed for aggregate level (for all enterprises) show all independent variables (growth opportunities, leverage, cash flow, liquidity, sales to total assets ratio, interest, current ratio, quick ratio, cash flow variability, bank debt and size) included in case of CASH dependent variable equation are as per expected relationship. But only some of them liquidity, sales to total assets ratio, current ratio, quick ratio, bank debt, size and lagged dependent variables ($CASH_{t-1}$, $AVCASH_{t-1}$and $CONCASH_{t-1}$) are significant at .01 level. Similarly, all independent variables are also as per a priori except current ratio, quick ratio, and bank debt in the case of AVCASH and CONCASH. The speed of adjustment in CASH is obtained at 0.32

and 0.22. In case of AVCASH and CONCASH, this shows very slow adjustment between actual and desired cash holding. The equations run under static model appear with the presence of autocorrelation. After improvement, the sign of all independent variables are found to be as per expectation except cash flow and leverage. The coefficients of the variables which are in line with hypothesis are also significant in many of the cases.

The regression result of CASH under dynamic model formed for public enterprises shows significant with liquidity, current ratio, cash flow, sales to total assets ratio, current ratio, quick ratio, size and lagged dependent variables ($CASH_{t-1}$, $AVCASH_{t-1}$and $CONCASH_{t-1}$). Similarly, in the case of AVCASH and CONCASH equations, cash flow, current ratio, size and lagged dependent variables as per expectations and significant at .01 level. Similarly, all independent variables are also as per priory except cash flow variability in CASH equation, current ratio, quick ratio, and average collection period in the case of AVCASH and CONCASH. The speed of adjustment is obtained at 0.38, 0.20 and 0.17.In the cases of CASH, AVCASH, and CONCASH, respectively. The adjustment process is found to be very slow.

The equations under static model show autocorrelation problem. After correction, the sign of all independent variables found to be as per expectation except growth opportunities, and cash flow in CASH, Leverage, cash flow, current ratio, quick ratio in the case of AVCASH, and CONCASH. The coefficients of the variables growth, cash flow, liquidity, sales to total assets ratio, average collection period, cash flow variability and size which are in the direction of expected hypothesis are also significant at .01 level.

The regression result of private sector groups of enterprises shows all independent variables have expected relationship with cash to total assets ratio in dynamic model except cash flow variability. But few of them are significant at .01 level. Similarly, all independent variables are also as per a priori except leverage, cash flow, average collection period current ratio and quick ratio in relation to average cash balance and cash balance at constant price. The speed of adjustment in CASH is obtained 0.34 and 0.17 in case of AVCASH and CONCASH. The adjustment process is found to be very slow.

Equation of static model after improvement of autocorrelation also reveals expected sign of all independent variables as per expectation except sales to total assets ratio, average collection period, and cash flow variability. The coefficients of the variables which are in accordance with a priori hypothesis are also significant in many of the cases.

The regression results of small portfolio enterprises under dynamic model show all independent variable included in the equation of CASH dependent variable are in accordance with priory hypothesis. Many of them are significant at .05, level. Similarly, all independent variables are maintaining expected relationship except cash flow, interest, average collection period, cash flow variability, and size in the case of AVCASH and CONCASH. The speed of adjustment is 0.35, 0.64 and 0.70 in case of CASH, AVCASH, and CONCASH, respectively. The adjustment process is found to be moderate. The equations run under static model appear with the presence of autocorrelation. After improvement the sign of all independent variables is found to be as per expectations except growth, leverage, cash flow, interest, and bank debt. The coefficients of the variables which are in line with the hypothesis are also significant in many of the cases.

The regression results of medium portfolio enterprises show all independent variable included in CASH equation are as per expectation under dynamic model. Similarly, all independent variables are also as per a priori except, growth opportunities, leverage, sales to total assets ratio, current ratio, quick ratio, cash flow variability and bank debt in the case of AVCASH and CONCASH. The speed of adjustment in CASH is obtained 0.51, but in case of AVCASH and CONCASH, it is obtained as 0.19 and 0.23. The equation run under static model appears with the presence of autocorrelation. After improvement, the sign of all independent variables are as per expectations except leverage, cash flow and quick ratio. The coefficients of the variables which are in line with hypothesis are also significant in many of the cases.

The result of large portfolio enterprises in dynamic model included in cash to total assets ratio shows all independent variables have expected relationship with cash holding except average collection period. Many of them, which are in line with hypothesis, are also significant at .01 level. Similarly, all independent variables are also as per a priori except interest, and average collection period in the case of average cash balance AVCASH, and cash balance at constant price CONCASH. The speed of adjustment is obtained

0.59, .0.41 and 0.34 for cash to total assets ratio, average cash balance and cash balance at constant price equation.

The regression equations run under static model show the presence of autocorrelation. After improvement, the sign of all independent variables are as per expectations except average collection period and interest. The values of many of the coefficients of the variables are also significant.

Growth opportunities, cash flow, sales, interest (capital cost), bank debt and size as an important variable affecting cash holding in the specification at aggregate level (total enterprises), many of the variables provide similar behavior in the equation developed for public and private sectors, and small, medium and large enterprises.

The speed of adjustment estimated from the selected 20 enterprises for 1999 -2008 year is less than 30 % in all the equations for various portfolios of enterprises under dynamic condition. Looking at the studies of Guney et al. (2003), Ozkan and Ozkan (2004) conducted in the firms of developed countries like England (0.80), France (0.60), Gennany and Japan (0.50). The adjustment between actual cash holding and desired cash holding is very slow. The adjustment process of the firm in developed countries is quicker than the firms in Nepal.

As interest rate is considered to be an important variable determining the size of cash holding, it is not significant in the equation formed for all categories of the enterprises except in the case of large size enterprises. This is consistent with the proposition of Friedman (1956), Meltzer (1963), Whalan (1965), D Allessi, (1966) and Maddla (1965).

Chapter 6
SURVEY ANALYSIS ON CASH MANAGEMENT

In this study, primary data were used to analyze the position of cash management policy and practices in Nepalese enterprises. For the purpose of the study, twenty enterprises located in different region of the country were selected from the public and private sector. These twenty enterprises are further categorized into small, medium and large scale on the basis of their average value of total assets. Opinion survey of employees from the selected enterprises was made to find out the perception of respondents on different issues of cash management. An examination of the responses of employees from selected institutions is made on various aspects of cash management in Nepalese enterprises.

Eighty survey questionnaires were distributed to Chief executive officers, Finance managers, Sales and Purchase managers of the selected twenty enterprises. The employees selected so far were experts, general manager, chartered accountants and cash managers. They were called chief accountant, purchase manager, sales manager, credit manager and store manager as per their position classification of the organization. Data were collected through structured questionnaires issued to four categories of respondents. Total 31 questionnaires were filled up and obtained from the respective respondents. Of the 80 respondents, general manager, financial officer, sales officer and procurement officers were interviewed from each enterprise. The number of male respondents was 69 and number of female respondents was 11. The questionnaire mainly contained different issues on cash management in the changing context. The questionnaire included background information, awareness on cash management, organizational and technological issues on cash management, cash requirement and its determinants, sales purchase and payment policy, investment and utilization of cash, cash management practice and relationships with bank.

6.1 Background information

Background information included in the questionnaire states respondents profile on the basis of sex, age, training, experience, educational status, professional status, and involvement of respondents on cash management practices. Background information

also includes respondents' characteristic in terms of their gender, age, experience, training and attachment to different types and sizes of enterprises.

6.1.1 Respondents' profile

Table 6.1 shows the characteristics of respondents by sex, age, working experience, training, years of involvement of employees on cash management activity. The intention of referring to this table is that profile of respondents in terms of sex, age and experience of the employees to analyses the perception on different aspect of cash management. The average age of employees is 30 years. The average work experience of respondents is 12 years.

Table 6.1
Respondent's profile

Criteria	**Sex**		**Age**		**Experience**		**Involvement**		**Training**	
Respondents	Male	Female	≥30	≤30	≥10	≤10	≥10	≤10	Yes	No
Number	69	11	41	39	36	44	59	21	32	48
Percentage	86	14	51	49	45	55	74	26	40	60

Source: Field survey, 2010

6.1.2 Professional and educational status of respondents

Professional status and academic qualification is another important factor to influence cash management. Professional status is achieved through the knowledge of the subject matter. Educational level of employees contributes to theoretical as well as practical exposure to manage cash. Educational competency of the professional's possesses knowledge and is able to manage cash efficiently. Table 6.2 shows educational status of the respondents.

Table 6.2
Professional and education status of respondents

Criteria	**Professional category**				**Academic qualification**			
Respondents	Expert	Manager	Chartered accountant	Cash manager	Intermediate	Bachelors	Masters	M Phil/ PhD
Number	21	23	12	24	2	21	56	1
Percentage	26	29	15	30	3	26	70	1

Source: Field survey, 2010

Regarding professional category, cash manager, manager, expert and chartered accountants are 30 percent, 29 percent, 26 percent and 15 percent respectively. Regarding the education status of the respondents 2.5 percent of employees are of intermediate level, 26.25 percent of the employees are of Bachelors degree, 70 percent are of Masters Level and only 1.25 percent are Ph.D. holder.

6.2 Awareness on cash management

Modern cash management is responsible for liquidity management. The cash manager is primarily responsible for short-term financial activities. In an emerging money market, it is important to know how to further enhance a company's cash position, which includes managing current assets and liabilities, improving cash flow, transferring funds, and controlling cash disbursements. In addition, one should understand the principles of short-term investment, including investment policies, strategies and techniques of minimizing cash management costs, along with the available instruments as well. Generally, awareness on cash management such as; motives for holding cash, scope, function, and importance of cash management should be understood to analyze issues on cash management.

One of the significant issues in cash management is its awareness. Employees' awareness on cash management helps in building a sound cash flow system in enterprises. In this survey, to analyze the awareness on cash management, eight questions were asked to the respondents. They were: motives for holding cash, area, functions, importance and relevancy of cash management, formal cash management policy and cash planning in Nepalese enterprises.

6.2.1 Perception of respondents on motives for holding cash

Motive for holding cash is one of the major issues in cash management. To measure the awareness on cash management the reason for holding cash should be significant. According to Miller-Orr (1966), there are three basic motives for holding cash: transaction, precautionary, and speculative motive. The transaction motive is simply the need of cash to make everyday payments. The precautionary motive is essentially the margin of safety required to meet unexpected needs. The speculative motive is based on the desire to take advantage of unexpected profitable opportunities that

require cash. To meet these basic requirements for cash firms can hold cash in compensating balances. In this context, a question was asked to respondents of the selected enterprises to rank the motives of cash holding in order of priority. The responses were analyzed by classifying the respondents' on the basis of their attachment to various size and types of enterprises.

The lower percentage reflects most important motive for holding cash, and higher percentage reveals least important motive for holding cash. Among the five motives for holding cash, transaction motive received a minimum of 11 percent of total score and indicates most important motive for holding cash. Similarly precaution motive takes up 18 percent of the total score and is the reason as to why one holds cash. Similarly profit and speculative motive is another important reason which captures 20 and 21 percent of total score and were ranked as third and fourth motives for holding cash. Table 6.3 presents the perception of employees regarding motives of cash holding across different types, nature and size of enterprises. Among others, the perception of the respondents attached with different nature, types and scale of enterprises shows different opinion towards the motive for holding cash.

Table 6.3

Ranking of motives of cash holdings as perceived by various groups of respondent

Motives for holding cash	Rank					Total score	Percent of total score
	1	2	3	4	5		
Transaction	59 (59)	7 (14)	5 (15)	5 (20)	4 (20)	80 (128)	11
Precaution	15 (15)	22 (44)	28 (84)	10 (40)	5 (25)	80 (208)	18
Speculative	8 (8)	13 (26)	25 (75)	25 (100)	9 (45)	80 (254)	21
Profit	3 (3)	32 (64)	12 (36)	27 (108)	6 (30)	80 (241)	20
Other	4 (4)	4 (8)	6 (18)	6 (24)	60 (300)	80 (354)	30

Note: Lowest percent indicates higher priority. Figure in parenthesis represents total score. Source: Field survey, 2010

Table 6.3 provides responses on the motives of cash holding. The most important motives in order of priority as perceived by the respondents are transaction (11 %), precaution (18%), profit (20%), speculative (21%), and others (30%). There is no difference in the first two priorities of transaction and precaution motive. But, there is

difference in two motives on their ranking by various respondent groups, especially their involvement in various types and size of enterprises. Their perceptions are different in the ranking of speculative, profit and other motives. These findings were similar to Keynes (1936) transaction, precaution and speculative motives for holding cash and Baumol (1952), and Tobin (1956) transaction and precaution motives for holding cash.

6.2.2 Areas of cash management

Cash management is defined as managing money of a firm in order to maximize cash availability and interest income on idle funds. At one end, the function starts when a customer writes a check to pay the firm on its account receivable. The function ends when a supplier, who is an employee or the government realizes that the collected funds from the firm is account payable or accrual. All activities between these two points fall within the scope of cash management (Weston &Copeland, 1991).

Cash management involves the design of collection and disbursement systems of cash including temporary investment for operating business transactions. This study concentrates on a firms' cash control system which includes financial transactions of cash management which is consistent with Srinivasan and Kim's (1986a) and Teigen's (2001) specifications of cash balance management. The survey part of the study examines how cash management professionals rank these factors at different times. The areas of cash management are: Cash position management, short-term investment, short-term borrowing, and forecasting cash balance.

Table 6.4 shows the percentage of total score on various areas of cash management by various categories of respondents and their attachment to different nature, types and size of enterprises. The lower percentage reflects most important area of cash management and higher percentage reveals least important functional area of cash management. Cash position management is concerned with cash flow and liquidity position where as short term investment is related with investment in short term securities. Short term borrowing deals with arrangement of immediate cash requirement. Forecasting focused on estimation of future cash requirement of enterprises. The table shown in 6.4 provides response of the respondents attached with different types and size of enterprises on areas of cash management.

Table 6.4
Ranking of areas of cash management as perceived by various groups of respondent

Events	Rank					Total score	Percent of total score
	1	2	3	4	5		
Cash position	41	18	11	5	5	8 0	13
management	(41)	(36)	(33)	(20)	(25)	(155)	
Short term investment	10	27	31	10	2	80	18
	(10)	(54)	(93)	(40)	(10)	(207)	
short-term borrowing	20	20	19	16	5	80	18
	(20)	(40)	(57)	(64)	(25)	(206)	
Forecasting	13	17	13	29	8	80	21
	(13)	(34)	(39)	(116)	40	242	
Other	2	4	4	7	63	80	31
	(2)	(8)	(12)	(28)	(315)	(365)	

Note: Lowest percent indicates higher priority. Figure in parenthesis represents total score of respondents. Source: Field survey, 2010

The most important area in order of priority as perceived by the respondents are cash position management (13 %), short term investment and short term borrowing (18%), forecasting (21%), and others (31%). There is no difference in second and third priority as place to short term investment and short term borrowing. Opinion of the respondents is difference on cash position management, forecasting, and others. There is a difference in areas of cash management on the perceived result by various respondent groups, especially respondent's characteristics in terms of their involvement in various types and size of enterprises. This is consistent with Srinivasan and Kim's (1986a) and Teigen's (2001) study on cash balance management. As seen in Table 6.4 the most important area of cash management is reported to be cash position management. This result is consistent with Soenen and Aggarwal (1989), who researched on the components of a firm's cash flow, accounts receivable, accounts payable, and cash position.

6.2.3 Function of cash management

The early short-term financial management research of the 1960s focused on specific activities of cash management such as working capital management. The early research in this area was conceptually based on balance sheet information. In the 1970s the short-run financial management research was developed in a more dynamic

direction examining all of the components as well as affecting the inflow and outflow of cash through a firm. The other parts of cash management were inventory management, credit management and management of short-term liabilities.

According to Lee (2001), cash management involves the administration of liquid assets and liabilities, and the raising of funds to finance a business. Teigen (2001) defined cash management as a part of treasury management, a main responsibility of the central finance management team. The specific tasks of a typical treasury function includes: account receivables management, account payables management and credit management. Thus it is clear that cash management deals with different functions. Different functions of cash management were addressed on cash management survey. Table 6.5 presents functions of cash management as perceived by respondents.

Table 6.5
Function of cash management

Events	**Scale ***					**Total score**	**Mean value**
	1	**2**	**3**	**4**	**5**		
Management of liquid assets and liabilities	27.5 (22)	32.5 (26)	23.75 (19)	10 (8)	6.25 (5)	100 (80)	2.35
Management of cash receipt and payment	31.25 (25)	45 (36)	16.25 (13)	3.75 (3)	3.75 (3)	100 (80)	2.04
Management of working capital	27.5 (22)	23.75 (19)	35 (28)	7.5 (6)	6.25 (5)	100 (80)	2.41
Management of account receivable	23.75 (19)	17.5 (14)	23.75 (19)	31.25 (25)	3.75 (3)	100 (80)	2.74
Inventory management	6.25 (5)	17.5 (14)	18.75 (15)	23.75 (19)	33.75 (27)	100 (80)	3.61
Credit management	21.25 (17)	17.5 (14)	21.25 (17)	20 (16)	20 (16)	100 (80)	2.41

Source: Field survey, 2010.
**Scale represent 5 point likert scale and indicates (1= to a very great extent 2= to a great extent 3= to a moderate extent 4= to a small extent 5= to no extent). Figure in parentheses represent no of respondents.*

The survey shows that 31 percent (25) respondents "to a very great extent" agree on the statement that cash management is a function of cash receipt and payment. 45 percent (36) respondents "to a great extent" agreed on this argument. Sixty percent

(48) respondents combining top (1 and 2 scales) to a great extent agreed that cash management is a function of liquid assets and liabilities. Thirty five percent (28) of total respondents "to a moderate extent" agreed on management of working capital. Less than 50 percent respondents agreed on account receivable, inventory and credit management. About 57 percent of responding officials express "disagreement" with inventory and credit management.

As a function of cash management over all respondents gave first priority to management of cash receipt and payments. Second priority is given to management of liquid assets and liabilities and third priority is given to working capital management. On the basis of minimum mean value; 2.04 cash receipt and payment function is highly prioritized by respondents as compared to other functional area of cash management. This conclusion is similar with the study of Arslan, Florackis, and Ozkan (2006) and Han and Qui (2007) study on corporate cash holdings. It is similar with the cash management functions of Srinivasan and Kim (1986a) and Teigen's (2001).

6.2.4 Emphasis of cash management

Once cash budget is prepared and an appropriate net cash flow is established, the finance manager should ensure that a significant deviation between projected cash flow and actual cash flow does not exist. To achieve this, cash management efficiency will require improvement through proper control of cash collection and disbursement. Teigen (2001) defined cash management as a part of treasury management, which is defined as a part of the main responsibilities of central finance management team. Specific tasks of a typical treasury function includes: accelerating collection, decelerating payment and mobilization of idle cash. This definition is consistent with the Srinivasan and Kim (1986a) classification of cash management areas such as; cash gathering, cash disbursement, cash mobilization and concentration.

Thus it is clear that cash management is associated with different activities but their emphasis may vary according to position of the enterprises. To find out the emphasis of cash management in Nepalese enterprises respondents reaction is given on table 6.6. This result supports the Teigen (2001) and Srinivasan and Kim (1986a) views on cash management and optimal tradeoff models for cash holdings developed by Kim et

al. (1998) and Opler et al. (1999). The lowest mean value of 2.20, concludes that collection of cash should be emphasized in Nepalese enterprises as compared to other events for managing cash.

Table 6.6

Emphasis of cash management in Nepalese enterprises

Events	Scale *					Total score	Mean value
	1	2	3	4	5		
Accelerating collection	41.25 (33)	21.25 (17)	22.5 (18)	6.25 (5)	8.75 (7)	100 (80)	2.20
Decelerating payment	10 (8)	31.25 (25)	41.25 (33)	10 (8)	7.5 (6)	100 (80)	2.74
Mobilization of idle cash	25 (20)	33.75 (27)	31.25 (25)	7.5 (6)	2.5 (2)	100 (80)	2.29
Improving cash flow	33.75 (27)	26.25 (21)	25 (20)	12.5 (10)	2.5 (2)	100 (80)	2.24
Transferring fund	17.5 (14)	27.5 (22)	21.25 (17)	20 (16)	13.75 (11)	100 (80)	2.85
Minimizing cash management cost	22.5 (18)	17.5 (14)	23.75 (19)	21.25 (17)	15 (12)	100 (80)	2.89

Source: Field survey, 2010

**Scale represent 5 point likert scale and indicates (1= to a very great extent 2= to a great extent 3= to a moderate extent 4= to a small extent 5= to no extent). Figure in parentheses represent no of respondents.*

6.2.5 Interrelated issues on cash management

Cash management concerned with arrangement and use of cash in enterprises. However, other issues are also important in the organizations. Cash management problem is closely related to liquidity problems as discussed in the corporate finance literature (Cooley and Roden 1991, Brealey, Myers 1998, Scherr 1989, Maness and Zietlow 1998, and Ross, Westerfield, and Jordan 1999). In fact, depending upon the definition, one opts for cash management; the liquidity planning problem can be viewed more or less in general. Teigen (2001) defined cash management as cash balance management, short term borrowing, cash gathering, cash mobilization, concentration, cash disbursement, and banking system design.

In theory, cash is considered as a resource hub center for financing, investment and resource distribution activities. To find out the position of cash in Nepalese enterprises a question was asked as to what extent cash management is related with cash collection, disbursement and investment. The response of respondents is presented on table 6.7.

Table 6.7

Issues related to cash management

Events	Scale *					Total score	mean value
	1	2	3	4	5		
Cash collection	38.75 (31)	32.5 (26)	16.25 (13)	8.75 (7)	3.75 (3)	100 (80)	2.06
Cash accumulation	27.5 (22)	33.75 (27)	28.75 (23)	10 (8)	0 (0)	100 (80)	2.21
Cash disbursement	21.25 (17)	48.75 (39)	20 (16)	8.75 (7)	1.25 (1)	100 (80)	2.20
Immediate investment of surplus cash	17.5 (14)	37.5 (30)	13.75 (11)	26.25 (21)	5 (4)	100 (80)	2.64
Short term borrowing	8.75 (7)	38.75 (31)	23.75 (19)	16.25 (13)	12.5 (10)	100 (80)	2.85
Banking system design	8.75 (7)	31.25 (25)	21.25 (17)	16.25 (13)	22.5 (18)	100 (80)	3.13

Source: Field survey, 2010

**Scale represent 5 point Likert scale and indicates (1= to a very great extent 2= to a great extent 3- to a moderate extent 4= to a small extent 5= to no extent). Figure in parentheses represent no of respondents.*

The perception regarding issues related with cash management shows that combining first three (1, 2 and 3 scale) 87 percent respondents agree on cash collection. Ninety percent of the respondents combined top (1, 2, 3, scale) perceived to a great extent that cash management is related with controlling cash disbursement. Forty nine percent (39) respondents agree to a great extent on cash disbursement. Thirty seven percent (30) respondents agree to a great extent on immediate investment in surplus cash. Thirty eight percent (31) respondents agree to a great extent on short term borrowing and 31 percent (25) agree to a great extent on banking system design.

The response of respondents of the concerned enterprises shows that cash collection, disbursement and immediate investment of surplus cash are important issues of cash management. However, respondents were less concerned with the issues of short term borrowing and banking system design. Generally, theory of cash management focuses on cash collection and distribution aspect of cash instead of other issues.

The conclusion is similar with the theory of cash management developed in 1960 and thereafter. The mean value of the above alternative is minimum with cash collection of 2.06, and disbursement of 2.20, so it can be concluded that the issue of gathering cash is highly emphasized with cash disbursement. This conclusion is similar with the

study of Rajan et al. (2000) and Dewaelheyns and Van Hulle (2010) on corporate cash holding.

6.2.6 Cash management policy

Cash management requires a wide range of decisions to be taken whose basis is provided by relevant policies. A formal cash management policy is a frame work to plan and control cash transaction in the enterprises. Effective cash management system requires a formal cash management policy for cash collection, disbursement, and short-term investments, liquidity management, cash optimization, financing, and financial risk management. Enterprises in the developed economy prepared formal cash management policy and managed their cash based on policy.

To know the position of Nepalese institutions with regard to the preparation of cash management policy, a question was asked to selected employees of Nepalese enterprises. The perception regarding cash management policy shows 38.75 percent out of total 80 respondents agree on cash management policy whereas 61.25 percent respondents disagree on cash management policy. The result indicates that the numbers of companies are still without a formal cash management policy. When comparing this result with Soenen and Aggarval (1989), about fifty percent of the Belgian firms had a formal cash management policy. The rate was consistent with The Netherlands (67%) and The United Kingdom (80%). Nepalese enterprises should seriously think on formal cash management policy.

6.2.7 Cash management policy followed in Nepalese enterprises

Generally, cash management describes three different policies of cash; conservative, aggressive, and tradeoff. The conservative cash management policy maintain maximum amount of cash balance all the time considering maximum cash demand point and use long term financing. Aggressive policy maintains minimum cash required by the firms in different month and use short term financing. Trade off approach maintains balance between the requirement of cash and its financing.

To find out the practices related to cash management policy followed in Nepalese enterprises a question was asked to the executive of the selected enterprises regarding the management policy. The perception regarding cash management policy followed

in Nepalese enterprises shows that out of the eighty respondents; 37.5 percent (30) respondents' practices active cash management policy. Twenty-five percent (20) respondents of the responding enterprises had the practice of tradeoff policy twenty one percent (17) respondents adopt conservative policy and only five percent (4) respondents belong to passive cash management policy. Among the different policy first ranking is for active cash management policy and second ranking is for trade off cash management policy.

Table 6.8
Cash management policy applying in Nepalese enterprises

Cash management policy	No of respondents	percentage
Active cash management policy	30	37.50
Conservative cash management policy	17	21.25
Trade off cash management policy	20	25.00
Aggressive cash management policy	9	11.25
Passive cash management policy	4	5.00
Total	80	100

Source: Field survey, 2010

6.2.8 Method used for cash planning in Nepalese enterprises

The optimum use of available funds is possible only through good cash planning. One can foresee surplus as well as shortage of cash, if cash planning is made. All business operations are linked with cash planning in so far as it estimates cash balance required for various purposes. Predicting available cash and required cash is a short term cash planning. An important instrument used in cash planning is the cash budget. This is an estimation of the flows in and out of the firm's cash account over a particular period of time, usually a quarter, month, week, or day. It is primarily intended to provide an estimate of the firm's borrowing and lending needs and to forecast these needs across various future periods. An unplanned surplus of cash causes many problems. Without cash budget, the firm has no way of knowing how long the surplus will persist, that is, if and when cash will be needed for expenses.

Thus it is concluded that the preparation of formal cash flow forecasts is fundamental cash management activity. Additionally, this study examines the extent to which

formal quantitative models are used for cash and short-term investment planning and what their position is with respect to cash budgeting. The alternative methods are: cash budgeting, linear programming, simulation, optimizing model, and the rule of thumb. To ascertain the situation of Nepalese enterprises with regard to the method followed for cash planning, a question was asked to the selected employees of the selected enterprises.

The table 6.9 shows the percentage distribution of respondents by respondent's characteristics and method of cash planning. The lower percentage reflects most important method of cash planning and higher percentage reveals least important method for cash planning. The responses of employees attached to different size and nature of enterprises in order of priority as perceived by the respondents are cash budgeting (12%), linear planning (20%), simulation (22%), optimizing, and the rule of thumb (23%). Various respondent groups have shown difference in priority regarding cash budgeting and other methods of cash planning.

Table 6.9
Ranking of method of cash planning as perceived by various group of respondents

Method of cash planning	**Scale***					**Total score**	**Percent of total score**
	1	**2**	**3**	**4**	**5**		
Cash budgeting	57	10	6	2	5	80	12
	(57)	(20)	(18)	(8)	(25)	(128)	
Linear programming	8	27	31	5	9	80	20
	(8)	(54)	(93)	(20)	(45)	(220)	
Simulation	9	19	26	18	8	80	22
	(9)	(38)	(78)	(72)	(40)	(237)	
optimizing	7	20	23	19	11	80	23
	(7)	(40)	(69)	(76)	(55)	(247)	
Rule of thumb	21	11	10	8	30	80	23
	(21)	(22)	(30)	(32)	(150)	(255)	

Note: Lowest percent indicates higher priority. Figure in parenthesis represents total score of respondents. Source: Field survey, 2010

As per their ranking, lower priority is given to linear programming, simulation, optimizing and the rule of thumb. The conclusion is similar with the study of Chen et al. (2009) and Guney et al. (2007) who argued that one of the major methods of cash planning is cash budgeting.

6.3 Organizational and technological issues on cash management

Various organizational and technological issues affect cash management policy and practice in the enterprises. Therefore, the issues to be examined consist of some organizational and technological questions like: help of outside agency for cash planning, sources of information used for decision making, conflicts with other departments, responsibility for cash management, use of cash budget and time spent to prepare cash budget. Organizational cash planning, responsibility of cash management, interdepartmental conflict, decision making process and cash budgeting are major elements to be discussed for such issues. Who is responsible in cash management, what sources of information are reliable and relevant in cash management in the organization could be clarified through the analysis of these issues.

6.3.1 Use of outside agencies for cash planning

In the management process in general, planning plays a key role. The planning stage is followed by the decision making and contracting. According to Martin and Morgan (1991), the need to plan arises as a result of few factors that have been used to explain the creation of firms. It has been stated that all plans that deal with a period of one calendar year or less are short-term. Whereas long-term planning is used to refer to the firm's general plans or strategies for its future endeavors (Hussey 1971). Organizational cash planning is related with liquidity planning and cash flow planning. Long term cash planning encompasses the formulation of policies regarding the firm's current and quick assets and it also determines how these assets will be financed (Hart's, 2001).

Assuming that the technique of cash budgeting is beyond the competence of the accountant or treasurer, services of outside agencies may be required. Help of outside agency became crucial for successful operation of cash planning. Outside experts provide independent judgments for cash planning and forecasting. When making cash management systems more effectives it is usually reasonable for a firm to use expert consultants. The demand for these services has clearly increased. This study examines how widely firms have used cash management consultants in order to develop cash management processes.

Table 6.10

Involvement of outside agencies in cash planning

Event	Scale*					Total	Mean value
	1	2	3	4	5		
Professional chartered accountant	30 (37.5)	25 (31.25)	20 (25)	0 (0)	5 (6.25)	80 (100)	2.06
Lending institution	8 (10)	37 (46.25)	25 (31.25)	2 (2.5)	8 (10)	80 (100)	2.56
Financial consultant	35 (43.75)	25 (31.25)	16 (20)	1 (1.25)	3 (3.75)	80 (100)	1.90
Government agencies guidelines	20 (25)	15 (18.75)	28 (35)	8 (10)	9 (11.25)	80 (100)	2.64
Any other (Please specify)	0 (0)	10 (12.5)	27 (33.75)	10 (12.5)	33 (41.25)	80 (100)	3.83

Source: Field survey, 2010

**Scale represent 5point Likert scale and indicates (1= to a very great extent 2= to a great extent 3= to a moderate extent 4= to a small extent* 5= *to no extent). Figure in parenthesis indicate percentage.*

To ascertain the involvement of outside agencies in the preparation of cash budget, a question was asked to the selected respondents of selected enterprises with respect to cash budgets. The perception regarding involvement of outside agencies in cash planning shows that out of 80 respondents, 37.5 percent "agrees to a very great extent" on professional chartered accountant. Among the respondents 46.25 percent agree to a great extent on lending institution. Similarly, 43.75 percent agree to a very great extent on financial consultant 35 percent agree to a moderate extent on government agencies guidelines, and 33 percent agree to a small extent on other activity.

As revealed by the figures of mean value in table 6.10, financial consultant professional chartered accountant and lending institution were ranked as first, second, and third priority respectively. Government agencies guidance and others are ranked fourth and fifth having highest mean value of 2.64 and 3.83 respectively. Table 6.10 also indicates that financial consultant advice is the best among other advisor for organization cash planning. Respondent's first reaction is on financial consultant and second priority is for professional chartered accountant. So it can be concluded that financial consultant and chartered accountant advice is considered best for cash planning in Nepalese enterprises.

6.3.2 Source of information used for decision making in cash management

In order to manage financial transactions effectively, a manager needs online information on the firm's internal accounting systems and the money market. In addition to the information services offered by banks, there are many alternative commercial systems available on the market for example, Reuters, Telerate and Startle. With the increasing importance of cash management the demand for such systems also increases.

Decision making is a process of selecting the best alternative amongst those available. The quality of decisions depends on content and sources of information used. Cash manager collect information from different source and make decisions based on qualitative and quantitative information. In the past two decades, information technology has made tremendous advances. Information is much cheaper and available online via electronic and mobile technology. In addition, there has been a great revolution in banking connections via internet. It is reasonable to assume that commercial systems, including utilization of banking systems have increased the importance of information sources. Potential information sources which cash managers are supposed to utilize in their decision-making could be for example: banks, commercial information systems, personal relationships, economic newsletters, economic reviews, and economic newspapers, etc.

Table 6.11
Sources of information

	Scale*					**Total**	**Mean**
Sources of information	**1**	**2**	**3**	**4**	**5**		**value**
Banks	24 (30)	23 (28.75)	28 (35)	0 (0)	5 (6.25)	80 (100)	2.24
Commercial information systems	29 (36.25)	30 (37.5)	16 (20)	0 (0)	5 (6.25)	80 (100)	2.03
Personal relationships	23 (28.75)	22 (27.5)	30 (37.5)	2 (2.5)	3 (3.75)	80 (100)	2.25
Economic and business newspapers	7 (8.75)	16 (20)	44 (55)	8 (10)	5 (6.25)	80 (100)	2.85
Any other (Please specify)	1 (1.25)	10 (12.5)	32 (40)	14 (17.5)	23 (28.75)	80 (100)	3.60

Source: Field survey, 2010

**Scale represent 5point Likert scale and indicates (1= to a very great extent 2= to a great extent 3= to a moderate extent 4= to a small extent 5= to no extent). Figures in parenthesis indicate percentage.*

The perception regarding sources of information use for decision making in cash management shows that 30 percent respondents out of 80 respondents, attached to different size of enterprises agree "to a very great extent" on banks information. Whereas, 37.5 percent respondents agree "to a great extent" to commercial information system. Similarly, 55 percent respondents agree "to a moderate extent" on economic and business news paper and 32 percent respondents agree to "a moderate extent" on other sources of information.

The table shown in 6.11 provides responses on the sources of information. The most important source in order of priority as perceived by the respondents is commercial information system (2.03) lower mean values; second priority is given for banks. The highest mean value 3.60 of other sources ranked least preferred by respondents. There are significant differences between commercial information systems and personal relationships. The greatest consensus prevails on the position of the alternatives regarded as the most important information sources. The increase in the importance of the banks may refer to the use of internet-based banking services.

This result is consistent with the increase in systems other than those offered by commercial suppliers. Soenen and Aggarwal (1989) examined the sources of information used in the case of exchange rate forecasts. They found that the most common procedure was to use a combination of information provided by banks and financial publications, about one third of the companies claim that they used only intuitive approaches. The analysis indicates that commercial information system is the first priority of the respondents for taking decision on cash management. Banks and personal relationship is another source that a cash manager used for decision making in Nepalese enterprises.

6.3.3 Conflicts of cash management with other departments

Effective cash management requires information from other departments of a firm and active cooperation with them. Although financial executives know how important effective cash management can be to a company's profitability, they sometimes have difficulties convincing operating managers to pay sufficient attention to cash flow. Even those who might otherwise be very good at managing sales, production, inventory or materials may need some persuading. Obviously, corporate goals (such

as liquidity, profitability and risk management) can result in opposing interests for different departments within the same firm. This survey tries to determine which departments are most likely to be in conflict with those responsible for cash management. Potential candidates are: purchasing, inventory management, production, marketing, and human resource management. Decisions made by other departments may have an impact on cash management, thus conflicts of interest between departments may frequently arise. Departments that are most likely to be involved in such conflicts are summarized in Table 6.12.

Table 6.12
Disagreement on cash management

Departmental disagreement	**Scale***					**Total**	**Mean value**
	1	**2**	**3**	**4**	**5**		
Purchasing	27 (33.75)	30 (37.5)	22 (27.5)	0 (0)	1 (1.25)	80 (100)	1.98
Inventory management	14 (17.5)	35 (43.75)	25 (31.25)	1 (1.25)	5 (6.25)	80 (100)	2.35
Production	3 (3-75)	25 (31.25)	42 (52.5)	2 (2.5)	8 (10)	80 (100)	2.84
Marketing	19 (23.75)	20 (25)	29 (36.25)	7 (8.75)	5 (6.25)	80 (100)	2.49
Human resource management	28 (35)	9 (11.25)	27 (33.75)	2 (2.5)	14 (17.5)	80 (100)	2.56

Source: Field survey, 20 10
**Scale represent 5point Likert scale and indicates (1= to a very great extent 2- to a great extent* 5= *to a moderate extent 4= to a small extent* 5= *to no extent). Figure in parenthesis indicate percentage.*

As this table indicates, conflicts between cash management and other departments are very general. Most evidently these conflicts arise between cash management and the purchasing and marketing departments, whereas the departments least likely to create conflicts are production and human resource management.

The survey also reveals that the awareness of the possibility of conflicts between cash management and other departments has increased. The perception regarding conflict of cash management with other department shows that combining the percent of top (1, 2 scale) seventy percent of the respondents out of 80 agreed to some extent, on conflict of purchasing department with cash department. Out of the total 80 respondents, 61 percent (combining the percent of top 1 and 2 scales) agreed to some

extent on inventory management. Similarly less than 50 percent (combining 1 and 2 scale) respondents agree to some extent on marketing and human resource department. The mean value of Table 6.12 indicates that respondent's first reaction is for purchasing department, second reaction is for inventory management. Whereas marketing, human resource and production are ranked as third, fourth, and fifth. As lower mean value ranked higher importance, purchasing department has disagreement with cash management in Nepalese enterprises. It means the respondents who disagree on cash management are from purchased department.

The evidence of the present survey is partly consistent with evidence found by Soenen and Sun (1995) in China. The department most likely to come into conflict with cash management was purchasing, whereas those least likely to create conflicts were accounting and personnel. As Soenen and Aggarwal (1989) proposed, this finding of the generality of conflicts can be seen as a confirmation of the belief that the cash management area is closely interrelated with other managerial functions in a firm and therefore, any department that can influence a company's cash flow may be in conflict with cash management Soenen and Aggarwal found that the situation is quite different with respect to foreign exchange management. Purchasing and sales are the departments with whom conflicts are most likely to occur. These are the departments found in the present study concerning conflicts with respect to cash management.

6.3.4 Responsibility for cash management

Responsibility is a mechanism to make accountable for work, duty and obligation. In the organization responsibility should be assigned to someone for better cash management. Cash management is a specific task in the organization. Special knowledge and skill is needed for the efficient utilization of cash in the organization. Considering responsibility of cash management a question was asked to the selected respondents attached with different types and size of enterprises to rank the responsibility for cash management.

Table 6.13 provides responses of respondents on the responsibility of cash management. The lower percentage reflects most important responsibility of cash management and higher percentage reveals least important responsibility of cash management. More responsible person for cash management in order of priority as

perceived by the respondents are financial manager and cash manager (14%), business controller and chief executive (21%) and other (31%).There is no difference in the priority as place by respondents to financial manager and cash manager but their perceptions are different in the ranking of other positions.

Table 6.13
Ranking of responsibilities of cash management by respondents characteristics

Responsibility for cash management	**Scale***					**Total score**	**Percent of total score**
	1	**2**	**3**	**4**	**5**		
Financial manager	29	28	18	2	3	80	14
	(29)	(56)	(54)	(8)	(15)	(162)	
Cash manager	26	32	14	6	2	80	14
	(26)	(64)	(42)	(24)	(10)	(166)	
Business controller	13	8	26	24	9	80	21
	(13)	(16)	(78)	(96)	(45)	(248)	
Chief executive	12	12	22	29	5	80	21
	(12)	(24)	(66)	(116)	(25)	(243)	
Other	5	0	4	8	63	80	31
	(5)	(0)	(12)	(32)	(315)	(364)	

Source: Field survey, 2010
Note: Lowest percent indicates higher priority. Figure in parenthesis represents total score of respondents.

As per respondents' response business controller and chief executive are ranked the second place. It means there is different reaction among the respondents towards the responsibility of cash management. In small companies only one position either financial manager or cash manager perform cash management. In such a situation, only one person will be responsible for cash management. Such situation is still in practice in Nepalese enterprises. Among other table 6.13 figure of the percentage of total score concludes, financial manager and cash managers are responsible person for cash management in Nepal as compared to chief executive, business controller and others.

As per respondent's reaction, first priority is given to financial manager and second priority is given to cash manager, followed by business controller and chief executive. This result is consistent with the results from the Netherlands and the UK, while it does not seem to be the case in Belgium (Soenen and Aggarwal 1989). Soenen and Sun (1995) found that in China three company executives; the controller, the treasurer

and the VP/Director Finance, seem to be designated executives for dealing with the enterprises' short-term financial management.

6.3.5 Use and purpose of cash budget in Nepalese enterprises

Preparing a cash budget or schedule of receipts and disbursement is the first step involved in cash management. Therefore, the cash budget is considered as the key to plan and control cash. Cash receipt, cash payment, surplus deficit and cash balance is clearly point out by cash budget. To ascertain the position of Nepalese enterprises with regard to the preparation of cash budget, a question was asked to the chief executive, finance executive, and sales and purchase executives of selected enterprises. Out of 80, forty two percent of the respondents reported that they accustomed to anticipating cash requirement through cash budgeting, fifty seven percent did not use cash budget. This shows that Nepalese enterprises do not use cash budget for cash management purpose.

Table 6.14
Purpose of cash budget

Purpose	**Scale***					**Total**	**Mean**
	1	**2**	**3**	**4**	**5**		**value**
To co-ordinate the timings of cash needs	50 (62.5)	21 (26.25)	6 (7.5)	2 (2.5)	1 (1.25)	80 (100)	1.54
To pinpoint the period where there is likely shortage of cash	19 (23.75)	40 (50)	15 (18.75)	6 (7.5)	0 (0)	80 (100)	2.10
To arrange needed funds at most favorable terms	23 (28.75)	31 (38.75)	16 (20)	4 (5)	6 (7.5)	80 (100)	2.24
To prevent the accumulation of excess funds	19 (23.75)	35 (43.75)	16 (20)	6 (7.5)	4 (5)	80 (100)	2.26
To manage cash flow	30 (37.5)	28 (35)	11 (13.75)	5 (6.25)	6 (7.5)	80 (100)	2.11

Source: Field survey, 2010
**Scale represent 5point Likert scale and indicates (1= to a very great extent 2= to a great extent 3= to a moderate extent 4= to a small extent 5= to no extent). Figure in parenthesis indicate percentage.*

The perception regarding purpose of cash budget shows that 62.5 percent of the respondent's agree "to a very great extent" that purpose of cash budget is to coordinate the timing of cash needs. Fifty percent of the respondents agree to a great extent on purpose of cash budget to pin point shortage or excess of cash, 39 percent agree to a

great extent on arranged of needed funds 44 percent agree "to a great extent" prevention of excess fund and 35 percent agree "to a great extent" on management of cash flow.

The figures of mean value on table 6.14 reveal the priority and rank of each alternative purpose of cash budget. Lower the mean value, higher the priority. The lowest mean value 1.54 indicates respondents give first priority to coordinate timing of cash needs as purpose of cash budget. The highest mean value 2.26 indicates least priority is given to prevent of excess fund.

6.3.6 Preparation of cash budget

The periodicity of cash budgeting generally indicates its appropriateness and determines the stability of cash flows. Long budget period reduces its usefulness in the absence of symmetric cash flows in between actual and expectations. Therefore, the period of cash budget is divided into several short periods. Enquiry was made regarding the periodicity of cash budgeting from respondents who have the practice of preparing cash budgets. The time of preparing cash budget is very crucial in cash management. Cash budget is prepared in different time intervals. The frequency of time to prepare cash budget provides appropriate schedule for cash planning and forecasting. Following table shows the frequency of cash budget preparation in the Nepalese enterprises.

Table 6.15

Period of cash budget

Basis	No of respondents	Percentages
Weekly basis	14	17.50
Fortnightly basis	1	1.00
Monthly basis	31	38.75
Quarterly basis	8	10.00
Yearly basis	26	32.50
Total	80	100

Source: Field survey, 2010

Table 6.15 reveals that Nepalese enterprises prepare cash budget on monthly and yearly basis. According to respondents' reactions, 38.75 percent (31) respondents express their opinion on monthly basis whereas 32.50 percent (26) respondents

express their views on yearly basis. Eighteen percent (14) respondent's response on the weekly basis of cash budget. Very few respondents are in favor of quarterly and fortnightly basis. It means that respondents perceived cash budget are prepared either on monthly or yearly basis.

6.4 Determinants of minimum cash requirement and excess cash holding

The requirement of cash in the enterprises depends on their transaction and activities. There can't be uniformity on cash requirement and determinants. According to nature, volume and scale of business range of minimum cash may differ among enterprises. Table 6.16 provides important factors to determine level of cash. Opinion on determinants of minimum cash balance required and the validity of excess cash holding in Nepalese enterprises are further analyzed in table 6.17.

6.4.1 Respondents' views on important factor to determine level of cash

Determinants of cash level are one of the important areas of study in cash management. Level of cash in the enterprises is influenced by different factors. An organization wishes, to maintain optimum level of cash. Survey of literature reveals that the size of cash in the organization is influenced by cash flow, liquidity, capital expenditure, growth opportunity, interest rate, dividend payment, portion of long term debt and investment. Study on cash holding by firms suggests that liquidity, current obligation, size and interest rates are the major influencers of cash balance. The respondents were asked to indicate level of cash determinants in their enterprises. The responses are shown in table 6.16.

The perception regarding important factor to determine level of cash balance shows that 43.75 percent of the respondents agree to a very great extent on current obligation of firms as a most important factor to determine level of cash. About 51.25 percent respondents agree "to a very great extent" on size of the firm as an important factor but 41.25 percent agree "to a great extent" on interest rate as an important factor. 42.5 percent agree "to a great extent" on capacity utilization. Similarly, 32.5 percent agree on safety level as a moderately important factor to determine cash level. Other factors are also important to determine firms' cash level but 37.5 percent of respondents' responded other factor as not so important.

Table 6.16 shows the lowest mean value of 1.62 for size of the firms, 1.80 for current obligation, 1.97 for interest rate, 2.10 for capacity utilization and highest mean value 3.84 for other factors. Lowest mean value indicates most important factor to determine cash level and highest mean value as less important.

Table 6.16
Important factor to determine level of cash

Factors	Scale*					Total	Mean value
	1	2	3	4	5		
Current obligation of the firm	35 (43.75)	28 (35)	16 (20)	0 (0)	1 (1.25)	80 (100)	1.80
Size of the firm in terms of (sales, assets, branches, employees)	41 (51.25)	30 (37.5)	8 (10)	0 (0)	1 (1.25)	80 (100)	1.62
Interest rate	26 (32.5)	33 (41.25)	19 (23.75)	1 (1.25)	1 (1.25)	80 (100)	1.97
Capacity utilization	21 (26.25)	34 (42.5)	22 (27.5)	2 (2.5)	1 (1.25)	80 (100)	2.1
Safety level	24 (30)	22 (27.5)	26 (32.5)	4 (5)	4 (5)	80 (100)	2.27
Others (Please specify)	6 (7.5)	3 (3.75)	15 (18.75)	30 (37.5)	26 (32.5)	80 (100)	3.84

Source: Field survey, 2010
**Scale represent 5 point Likert scale and indicates (1= most important 2= important 3= moderately important 4= not so important 5= no important). Figure in parenthesis indicate percentage.*

This indicates respondent's perceived size as the most important factor to determine level of cash balance. Again this finding is found to be more or less similar to Fulkender and Wang (2006) but not similar to the findings of De Nicolo et.al, (2006).

6.4.2 Determinants of minimum cash balance required

For normal operation of business, minimum level of cash is required. Companies maintain certain level of cash holdings. According to Kalcheva and Lins (2007), companies hold on an average 16% of their total assets in cash, Ferreira and Vilela (2004) find an average cash ratio of 15%; Guney et al. (2003) observe an average cash ratio of 14%. French firms hold on average 12.3% of their total assets in cash and 10.3% for British companies. Dittmar et al. (2003), found that the median of the cash ratio for French firms is 11.1% against 8.1% for British firms and 6.4% for U.S.

firms. Since it is impossible to expect perfect synchronization of cash inflow and outflow, maintaining a reasonable cash balance is a must in every enterprise. Both cash shortage and surplus can thus be avoided. The primary objective of managing cash balance is to determine the amount of minimum cash that balance between cost of not holding enough cash and the cost of holding too much cash.

Table 6.17presents the views of respondents on determining minimum level of cash. The perception regarding determinants of minimum cash level shows that 38.75 percent of the respondents perceived that cash budget is the most important factor to determine minimum cash level. A 47.5 percent of respondents believe percentage of working capital is an important factor to determine minimum cash level. Similarly, 37.5 percent respondents agree percentage of total assets is an important factor. A 43.5 percent respondent give average importance to ratio analysis but 36.25 percent respondents' perceived operating cycle as a moderately important factor.

Table 6.17
Determinants of minimum cash level

Determinants factors	**Scale***					**Total**	**Mean value**
	5	**4**	**3**	**2**	**1**		
By means of cash budget	31	26	21	1	1	80	1.94
	(38.75)	(32.5)	(26.25)	(1.25)	(1.25)	(100)	
A certain percentage of	10	38	31	0	1	80	2.30
working capital	(12.5)	(47.5)	(38.75)	(0)	(1.25)	(100)	
A percentage of total	6	30	42	0	2	80	2.53
assets	(7.5)	(37.5)	(52.5)	(0)	(2.5)	(100)	
With the help of Ratio	10	20	35	13	2	80	2.71
analysis	(12.5)	(25)	(43.75)	(16.25)	(2.5)	(100)	
On the basis of operating	27	6	29	8	10	80	2.60
cycle	(33.75)	(7.5)	(36.25)	(10)	(12.5)	(100)	

Source: Field survey, 2010
**Scale represent 5point Likert scale and indicates (1- most important 2= important 3= moderately important 4= not so important 5= no important). Figures in parenthesis indicate percentages.*

The mean value shown in table 6.17 provides most important to not important priority ranking order of minimum cash level determinants. The minimum mean value 1.94 indicates that respondent's response cash budget as most important determinants of minimum cash level. It means minimum level of cash balance in Nepalese enterprises is determined by means of cash budget.

6.4.3 Excess cash holding

Enterprises sometimes operate their business transaction in an unstable situation. Due to limited information on cash forecasting, firms maintain either excess cash or insufficient cash. As a precaution against applications of cash shortage and problems of liquidity, firms may hold excess cash. Excess cash may be classified as temporary surplus, or permanent surplus. The temporary surplus has an opportunity cost, which may generate additional income through its use in marketable securities. But a permanently surplus involves a capital cost as idle cash yields no return. Enquiry was thus made to ascertain the practice of holding excess cash in the Nepalese enterprises. The perception regarding validity of excess cash holding shows 43.80 percent out of total 80 respondents agree on excess cash holding whereas 56.20 percent respondents disagree on validity of excess cash holding. It indicates respondents are selected from those enterprises which do not prefer to hold excess cash.

6.5 Sales purchase and payment policy

Sales purchase and payment policy measure the efficiency of cash management. Cash sales immediately provide liquidity to enterprises, credit purchase conserves cash and advance payment policy assures cash circulation on time. Sales, purchase, and payments policies depend on cash discount, credit terms, credit worthiness and discharging of short term liabilities. To establish a relation between these rudiments, questions were asked to the selected employees of the concerned enterprises and their reaction was analyzed on table 6.18.

Table 6.18
Sales policy of the firm

Response	No of respondents	Percentage
(a) Cash sales only	11	13.75
(b) Credit sales only	0	0
(c) Cash and credit sales	69	86.25
Total	80	100

Source: Field survey, 2010

Generally, enterprises sell their product and service in cash but it is not always possible to sell in cash. The enterprises follow cash as well as credit sales policy. Cash sales are riskless but credit sales are risky. Enterprises grant credit to increase

sales and meet the competitors. Sales purchase and payment policy are the main ingredients of cash management policy. Nature and behavior of sales, purchase and payment policy of enterprises directly influence cash management policy and practices. Credit sales involve the risk of loss it also affect need for working capital. Sale of goods and services on credit thus presupposes a judicious credit policy.

An enquiry was made to assess the relative significance of credit sales in the Nepalese enterprises. The responses revealed that 13.75 percent of the respondents were associated with organizations deal with cash sales whereas; eighty six percent respondents were associated with organizations undertaking both cash and credit sales. It indicates that only credit sale is not applied in Nepalese enterprises. Cash and credit sales policy is considered to be the best sales policy.

6.5.1 Cash discount to the customer for early payments

Enterprises offer cash discount to those customers who pay well on their due date or in advance. The terms of credit sales often include provision of cash discount as an incentive for customers to make prompt payment. This is an indirect way of minimizing overdue accounts. In the case of Nepalese enterprises, 47 out of 80 respondents (59 percent) reported that the enterprises did not have the practice of offering cash discount. Whereas 33 (41 percent) respondents reported to have practice of cash discount.

6.5.2 Uniformity in the credit terms

Decisions' relating to the terms of credit depends on the current trade practices and the degree of competition. In addition to profitability, current demand situation, volume of trade, location of customers, stability of product, financial position, and buyer's credit rating also affect the credit policy. The credit periods may vary from customer to customer and from one enterprise to another. Most of the enterprises maintain standardized credit period for the sake of simplicity. However, credit period differs based on the regularity of payment and volume of transaction with particular customer.

Companies in business formulate credit terms and policy for customers. Tight and liberal credit policies are followed by company according to situation. A tight credit

policy does not extend credit terms and conditions as well as discount whereas, liberal credit policy focuses on soft terms and conditions. A uniform term of credit provides credibility and reliability of enterprises as compared to differentiated terms of credit. However, it is a choice of enterprise to offer either uniform term of credit or to differentiate terms of credit. To ascertain the practices relating to credit allowed by Nepalese enterprises, a question was asked about the terms of credit to customers. Out of the eighty respondents, 77.5 percent of the respondents reported the practice of granting differential terms of credit. Only 22 percent of the respondents reported uniform terms of credit. According to perception of the respondents, it is perceived little number of selected enterprises applying uniform terms of credit.

6.5.3 Appropriate measure to assess credit worthiness

Economic condition and the firm credit policies are the factors affecting the level of firm's credit sales. A credit sale has three characteristic risks, loss in economic value, futurity. Cash sales are totally risk free; the same cannot be said for credit sales because cash payment is yet to be received. In cash management, due to credit sales, credit risk need to be analyzed. To evaluate the credit risk, credit manager consider the five "C "of credit: character, capacity, capital, collateral, and conditions (Ramamoorthy, 1976).

By analyzing the five "C "s of credit, credit manager try to formulate judgments of the total expected costs of granting credit to an account in relation to the expected increases in net revenues (positive cash flows) from sales produced by the credit extension. Credit worthiness is an appropriate measure to assess the position and performance of credit. An appropriate measure is required to test credit worthiness. As more and more credit worthiness is assured it increases confidence. To find out the opinion of Nepalese respondents on credit worthiness, a question was asked to the respondents regarding credit worthiness. To rank the various measures of credit worthiness in order of priority, the respondents were classified according to their position, experience, training and their attachment to different size and types of enterprises.

Table 6.19 shows the percentage distribution to respondents by respondent's characteristics and credit worthiness. The lower percentage reflects most important

measure of credit worthiness and higher percentage reveals least important measure of credit worthiness. It provides responses on the credit worthiness. The most important measure of credit worthiness in order of priority as perceived by the respondents are five "C" of credit (14%), credit analysis (18%), scoring technique and bank guarantee^ 9%) and other (30%). There is no difference in the priority place to scoring technique and bank guarantee on the ranking by respondents. Their perceptions are different in the ranking of five "C" of credit, credit analysis and other.

Table 6.19

Ranking of measures of credit worthiness by various groups of respondents (in %)

Credit worthiness	Scale					Total score	Percent of total score
	1	2	3	4	5		
Five "c" of credit	38	27	6	9	0	80	14
	(38)	(54)	(18)	(36)	(0)	(146)	
Credit analysis	15	30	31	3	1	80	18
	(15)	(60)	(93)	(12)	(5)	(185)	
Scoring technique	15	27	22	15	1	80	19
	(15)	(54)	(66)	(60)	(5)	(200)	
Bank guarantee	15	31	20	11	3	80	19
	(15)	(62)	(60)	(44) .	(15)	(196)	
Other	5	7	17	16	35	80	30
	(5)	(14)	(51)	(64)	(175)	(309)	

Note: Lowest percent indicates higher priority. Figure in parenthesis represents total score of respondents. Source: Field survey, 2010

As per respondents views five "C" of credit (character of the consumer, capacity of the consumer, prevailing economic condition, credit policy and collateral) and sequential credit analysis are the major determinants of credit worthiness in Nepal. The conclusion is similar with the study of Stone (1976).

6.5.4 System of advance payment from customer

In business transactions sometimes consumer wants to pay in advance. Receiving payment in advance from customer is considered to be an indication of efficacious management of corporate cash. Enterprises having opportunity to receive advance payment from customer could never fall short of cash, if it is managed properly. The perception regarding advance payment system shows that 60 percent of the

respondent reported practice of advance payment system in the selected enterprises. 40 percent of the respondents did not adopt advance payment system in the concerned enterprises. As per respondents response it is clear that more number of selected enterprises (sixty percent) adopt advance payment system in their business transactions. It could be concluded that there is an advance payment system from customer in the Nepalese enterprises.

6.5.5 Discharging short term liabilities

Short term liabilities are those liabilities which must be paid within a short period of time. Firms may have different opinion on discharging liabilities. If liabilities are not discharged in due date then further problems will arise in business. Competent financial managers attempt to hold adequate liquid assets to discharge obligation on time because failure to do so implies loss of credibility.

Regarding the issue of short-term liabilities nineteen percent of the respondents agree on the capacity of discharging short- term obligation on due dates, while eighty one percent of the respondents could not do so presumably due to liquidity problems. Since 81 percent respondents believe that Nepalese enterprises are not able to discharge all short term liabilities on due date, as per the response of respondents it is clear that Nepalese enterprises are not able to discharge all short term liabilities on due date.

6.6 Investment and utilization aspect of cash

Investment and utilization aspect of cash arise only with the surplus cash generation in business. Surplus cash cannot remain idle and obsolete as it creates opportunity cost and capital cost. Investment and utilization of surplus cash in marketable securities and other short term investment opportunity is an appropriate way to mobilize ideal cash. Investment and utilization is a crucial and sensitive task. Risk return analysis is needed before investing ideal and surplus cash. Realizing the importance of investment and utilization of cash an opinion survey of the employees of Nepalese enterprises was made to analyze the utilization aspect of cash management.

6.6.1 Types of investment opportunities available

In the planning and decision-making process of financial transactions, there are some important issues to consider. For example, during periods of high interest rates the cash manager should be aware of the increased value of seeking the best investment alternatives. In order to operate on the money market, the cash manager should be familiar with the investment vehicles available on markets and select appropriate securities for investments. Certificates of deposit represent an investment in a financial institution and they are written at face value. Treasury bills represent direct obligations of the government. They are considered the safest investments. Bank's certificate of deposit is a short-term paper issued by a central bank. Commercial paper represents an unsecured promissory note of a corporation with a limited maturity and is issued on a discount basis. Similarly mutual fund and other money market instruments are also important source for investments.

Regardless of a company's size or ability, cash investing has been and always will be governed by three simple investment objectives, (1) principal preservation (the safety of the instrument), (2) liquidity and (3) performance (return). Failure to keep these priorities aligned can be costly.

A cash investment manager needs to understand his role within the corporate risk continuum and avoid straying into a higher risk zone (winters, 1999). Table 6.20 reveals different types of investment opportunities available to mobilize cash. When considering the activities of investment, it can be seen that in surveys there is fairly wide consensus on the position of banks deposits and certificates of deposits. They are the most commonly used short-term instrument in addition to treasury bills and bonds. The responses of respondents in order of priority as perceived by the respondents are expressed in terms of mean value.

A higher mean value represents weak investment opportunities and lower mean value represents strong investment opportunities. Among the investment opportunities bank deposits (2.10), certificate of deposits (2.63), investment in Treasury bill (2.69), investment in land and apartment (2.86), mobilization of idle cash (2.94), investment in share and debenture (2.99) are higher ranked opportunities as represented by low mean value. However, investment in other business (3.38), investments in commercial

paper (3.35) are lower ranked opportunities as represented by higher mean value. This analysis shows respondent's confidence is higher on investment as bank deposits as compare to other investment opportunities.

Table 6.20
Investment opportunities available to invest surplus cash

Types of investment opportunities	Scale*						
	1	**2**	**3**	**4**	**5**	**Total**	**Mean value**
Investment in Treasury bill	21.25 (17)	25 (20)	32.5 (26)	6.25 (5)	15 (12)	100 (80)	2.69
Investment in commercial paper	10 (8)	21.25 (17)	20 (16)	21.25 (17)	27.5 (22)	100 (80)	3.35
Certificate of deposits	25 (20)	26.25 (21)	20 (16)	18.75 (15)	10 (8)	100 (80)	2.63
Bank deposits	46.25 (37)	20 (16)	16.25 (13)	12.5 (10)	5 (4)	100 (80)	2.10
Mobilization of idle cash	8.75 (7)	30 (24)	31.25 (25)	18.75 (15)	11.25 (9)	100 (80)	2.94
Inter corporate deposits	5 (4)	27.5 (22)	27.5 (22)	25 (20)	15 (12)	100 (80)	3.18
Money market and mutual fund	10 (8)	16.25 (13)	31.25 (25)	18.75 (15)	23.75 (19)	100 (80)	3.30
Investment in share and debenture	12.5 (10)	25 (20)	30 (24)	16.25 (13)	16.25 (13)	100 (80)	2.99
Investment in Land and other fixed assets	17.5 (14)	22.5 (18)	26.25 (21)	23.75 (19)	10 (8)	100 (80)	2.86
Investment in other business	6.25 (5)	13.75 (11)	32.5 (26)	31.25 (25)	16.25 (13)	100 (80)	3.38
Other (Please specify)	1.25 (1)	2.5 (2)	7.5 (6)	13.75 (11)	75 (60)	100 (80)	4.59

Source: Field survey, 2010
**Scale represent 5point Likert scale and indicates (1= very strong 2= strong 3= moderately strong 4= little strong 5= no strong). Figures in parenthesis indicate no of respondents.*

Furthermore, there are significant differences in the respondents' perception in investment and utilization of cash from commercial paper and investment in other business to investment in Treasury bill and fixed assets. Good investment opportunities are needed to employ cash effectively. Opportunities for short term investment are less risky than long term investment. The sources of short term investment opportunities in Nepal are numerous but the perception of respondents' states investment in business commercial paper and money market instruments are in

least priority. The conclusion is consistent with the study of Martin and Morgan (1991) and Kendal and Sheridan (1991), study on business strategy and financial management.

6.6.2 Criteria for investing excess cash

Because of the yield curve effect, there is an incentive for firms to invest in longer-term securities. Offsetting this is the greater interest rate risk for longer maturities; if the investing firm chooses a security with a longer maturity and is forced to sell that security before maturity and if interest rates have risen, the return achieved may be less than if the firm had invested in shorter-term securities. Although the priority order of these factors seems to be fairly obvious, it is reasonable to assume that because of the environmental changes, changes in their relative importance are likely.

Table 6.21
Criteria for investing excess cash

	Scale*						Mean
Events	**1**	**2**	**3**	**4**	**5**	**Total**	**Value**
Marketability	35 (28)	36.25 (29)	12.5 (10)	7.5 (6)	8.75 (7)	100 (80)	2.19
Stability of market price	11.25 (9)	43.75 (35)	28.75 (23)	11.25 (9)	5 (4)	100 (80)	2.55
Yield/ Return	28.75 (23)	37.5 (30)	30 (24)	0 (0)	3.75 (3)	100 (80)	2.13
Maturity	16.25 (13)	37.5 (30)	28.75 (23)	15 (12)	2.5 (2)	100 (80)	2.50
Safety	32.5 (26)	37.5 (30)	15 (12)	8.75 (7)	6.25 (5)	100 (80)	2.19
Liquidity	30 (24)	28.75 (23)	17.5 (14)	11.25 (9)	12.5 (10)	100 (80)	2.48
Other (Please specify)	2.5 (2)	0 (0)	1.25 (1)	21.25 (17)	75 (60)	100 (80)	4.66

Source: Field survey, 2010

**Scale represent 5point Likert scale and indicates (1= most important 2= important 3= moderately important 4= not so important 5= no important). Figures in parenthesis indicate no of respondents.*

The criteria for short-term investments are as follows: (a) safety of instrument (b) liquidity (c) maturity (d) Yield/ Return and Marketability, Stability of market price. Thus it is clear that different criteria should be analyzed before investing excess cash in short term investment. Particular securities should not be selected until and unless

conformity is not received from different criteria. Which criteria are more popular in Nepal can be traced out from the above table.

The table states that 66 percent of (top two scale, land 2) respondents agree yield, (return) on investment is the most important criteria to invest excess cash. Fifty six percent of respondents state that safety and marketability are next important elements that should be considered before investing excess cash. Liquidity, maturity and stability are ranked as third, fourth and fifth important criteria for investing excess cash. The conclusion is consistent with the study of Winters (1999) corporate cash holding decision by the firms.

6.6.3 Risk factor for short term investment

The risks of short-term finance exist both in the operating and financial transactions. The most important risk on the operating side is the risk of bad debts. However, the primary focus of this study is on the priority of financial risks. Interest rate risk is the probability of the interest rate change before maturity. In addition, risks and returns among near-cash assets differ because of the credit risk characteristics of their issuers. Some securities are extremely safe while others entail a nonzero probability of default and carry higher interest rates to compensate buyers for this risk. Liquidity risk refers to the ease of liquidating assets and inflation risk is the uncertainty of purchasing power changes. Priorities of financial risks are assumed to change due to environmental changes. The importance of interest rate risk is expected to increase especially, after the liberalizing period. The risks of short-term investments are: interest rate risk, credit risk, liquidity risk, inflation risk and other risk.

The decisions on financial transactions in cash management can be divided into strategic and tactical. From the financial transactions perspective, cash management is affected by risk, return and liquidity of short-term investments. Short term investment itself is more risky than the long term investment. To some extent investor can judge risk if they are aware on different category of risk. All risk bearing factors should not be treated on equal grounds. Some risk factor may be more sensitive than other risk factor. According to economic and financial environment of the nation, risk factors are categorized as high risk, moderate risk and low risk.

The table 6.22 shows the priority of risk in the Nepalese enterprises as perceived by the selected employees. The responses of the respondents were analyzed in relation to their involvement to various size and types of enterprises. Table provides responses on the risk of short term investment. The most serious risk in order of priority as perceived by the respondents is credit risk (16%), liquidity and inflation risk (17%), interest rate risk (18%) and others (32%). There is no difference in the third and fourth priority as place to risk factor but there is difference in interest, credit, and other risk on their ranking by various respondents group attached with different types and size of enterprises.

Table 6.22

Ranking of risk factor for short term investment by various groups of respondents in %

Event	Scale					Total score	Percent of total score
	1	2	3	4	5		
Interest rate risk	23 (23)	19 (38)	14 (42)	19 (76)	5 (25)	80 (204)	18
Credit risk	16 (16)	29 (58)	23 (69)	11 (44)	1 (5)	80 (192)	16
Liquidity risk	24 (24)	20 (40)	13 (39)	21 (84)	2 (10)	80 (197)	17
Inflation risk	18 (18)	30 (60)	14 (42)	14 (56)	4 (20)	80 (196)	17
Other risk	1 (1)	2 (4)	4 (12)	7 (28)	66 (330)	80 (375)	32

Note: Lowest percent indicates higher priority. Figure in parenthesis represents total score of respondents. Source: Field survey, 2010

As per respondent's response credit risk, liquidity risk, inflation risk and interest risk are more serious risk then other types of risk for short term investment in Nepal. The greatest consensus prevails on the lowest effect of other risk. In case of this issue, there are no changes in priorities and no significant differences in the respondent's perceptions. This finding is consistent with the study of Erkki kytonen (2004) study on cash management behavior of the firm.

6.6.4 Appropriate media for cash transfer

A transfer mechanism is a system for moving funds from one account to another account and from one bank to another. Increasing cash availability involves moving funds among banks. The main transfer mechanisms are wire transfer and depository transfer cheque (DTC). With a wire transfer, funds are immediately transferred from

one bank to another. With a DTC arrangement for the movement of funds, it becomes available one business day later. Besides these other media like telegraph, telex, computer and courier are also available for cash transfer. These different media have their own cost and benefit. Among the six different media the survey evidence shows strong support for depository transfer cheque wire transfer and telegraphic transfer as the mean value of the responses is lowest of all.

Table 6.23 reveals that about 53 percent respondents (sum of responses under lowest two scales) strongly or generally agree on the statement that (DTC) is a useful media for moving funds in Nepal. Similarly, 52 percent respondents perceived wire transfer followed by telegraph, telex and computer terminal. The least preference is given for courier. Among the different media, the mean value of (DTC) is minimum and ranked as first that indicates the best media for moving funds in Nepalese enterprises.

Table 6.23
Media for moving funds

	Scale*					**Total**	**Mean**
Types of risk	**1**	**2**	**3**	**4**	**5**		**value**
Wire transfer	29	23	25	1	2	80	2.05
	(36.25)	(28.75)	(31.25)	(1.25)	(2.5)	(100)	
Telegraphic Transfer	22	26	29	2	1	80	2.18
	(27.5)	(32.5)	(36.25)	(2.5)	(1.25)	(100)	
Depository transfer	33	20	24	1	2	80	1.99
cheque (DTC)	(41.25)	(25)	(30)	(1.25)	(2.5)	(100)	
Courier service	11	21	31	11	6	80	2.76
	(13.75)	(26.25)	(38.75)	(13.75)	(7.5)	(100)	
Telex transfer	22	18	30	6	4	80	2.40
	(27.5)	(22.5)	(37.5)	(7.5)	(5)	(100)	
Computer terminal	21	16	32	4	7	80	2.50
	(26.25)	(20)	(40)	(5)	(8.75)	(100)	

Source: Field survey, 2010
**Scale represent 5point Likert scale and indicates (1 ^strongly agree 2= Agree 3= don't agree 4= Disagree 5= strongly disagree). Figure in parenthesis indicate percentage.*

6.7 Cash management practice in Nepal

John (1993), Baskin (1987), and Fazzari et al. (1996) analysis reveals that cash holding decisions of UK firms are significantly influenced by cash flow, size, growth

opportunities and liquid assets they hold. It is difficult to outline cash holding factor for manufacturing and trading concern. Various opinions are given to shape the volume of cash in different situation. This study is directed to have opinion towards finding out the factors that affect cash position in Nepalese enterprises. Different factors contribute significantly to make up our mind while making decision on cash holding. Specifically, well-established managers are more likely to accumulate large, unused cash stockpiles than managers of firms with strong corporate governance mechanisms.

Firms hold excess cash reserves when it suffers from weak corporate governance. These views are consistent with the findings of Dittmar et al. (2003) and Harford et al. (2008).In this context a question was asked to the respondents of the selected enterprises to rank the major influencing factor for corporate cash management practice in Nepal on the basis of mean value in order of agreement or disagreement in scales. The perception regarding influencing factor shows that 67.5 percent of respondents (the sum of top two scales) strongly agree or agree on risky activities as an important factor to influence cash management practice. Similarly, 62.50 percent of respondents strongly agree or agree on investor protection and developed capital market through strong corporate governance as an important factor. About 53.75 percent of respondents strongly agree or agree on payment of cash dividend. Forty five percent of respondents strongly agree or agree on financial constraints as an important influencing factor. All other factor such as: value of the firm, growth companies, management practice and decentralization are ranked as lower priority by respondents.

The table below presents the respondents agreement/disagreement regarding the different observations on corporate cash holding practices in Nepal. The lowest mean value 2.24 indicates that high risk and uncertain activities are highly prioritized by respondents. Highest mean value 2.96 indicates value of the firm as a lower ranked factor for influencing cash management practice as per respondent's response. Firms with greater uncertainty in their future cash flows tend to hold more cash to prevent underinvestment in profitable projects and firms with abundant investment opportunities hold higher levels of cash to insulate future capital expenditures from the variability of internally generated cash flows. Similarly, the respondents

perceptions shows the evidence that employees of the enterprises generally believe that firms in countries where investor protection and capital markets are well developed hold less cash. This result supports the optimal tradeoff models for cash holdings developed by Kim et al. (1998) and Opler et al. (1999).

Table 6.24

Major influencing factor for corporate cash management practice in Nepal

	Major influencing factor	Scale					Total	Mean value
		1	2	3	4	5		
1	Firms increase their cash when their activities are risky and uncertain	30 (24)	37.5 (30)	20 (16)	3.75 (3)	8.75 (7)	100 (80)	2.24
2	Dividend payments (cash) affect cash holding position of the Nepalese firm?	7.5 (6)	46.25 (37)	41.25 (33)	2.5 (2)	2.5 (2)	100 (80)	2.46
3	financially constraint firm accumulate more cash than financially unconstraint	18.75 (15)	26.25 (21)	45 (36)	6.25 (5)	3.75 (3)	100 (80)	2.50
4	Higher the corporate cash holding higher will be the value of the firm	7.5 (6)	33.75 (27).	27.5 (22)	17.5 (14)	13.75 (11)	100 (80)	2.96
5	Firms in countries where investor protection and capital market are better developed hold less cash	27.5 (22)	35 (28)	17.5 (14)	12.5 (10)	7.5 (6)	100 (80)	2.38
6	Growth companies hold higher level of cash	11.25 (9)	42.5 (34)	25 (20)	18.75 (15)	2.5 (2)	100 (80)	2.59
7	Firms tend to hold more cash where management and control is separate	12.5 (10)	32.5 (26)	31.25 (25)	12.5 (10)	11.25 (9)	100 (80)	2.78
8	Degree of centralization in cash management function is increasing.	12.5 (10)	40 (32)	26.25 (21)	18.75 (15)	2.5 (2)	100 (80)	2.59

Source: Field survey, 2010

**Scale represent 5point Likert scale and indicates (l=strongly agree 2= Agree 3= don't agree 4= Disagree 5= strongly disagree). Figure in parenthesis represent no of respondents.*

Respondents' opinions on three statements about the relation between cash dividends, investor protection and cash holdings, show that majority of respondents express agreement with the following three statements: dividend payments (cash) affect cash holding position of the Nepalese firm, financially constraint firm accumulate more cash than financially unconstraint firm. Companies having growth opportunities in market hold higher level of cash. About 54 % of respondents (the sum of the top two scales) generally agree with these statements and ranked three four and five in Table

6.24. These opinions are consistent with Harford et al.'s (2008) and Pinkowitz et al. (2006) findings. By contrast, the majority of managers express agreement with the statement that firms that have entrenched managers and weak investor protections that do not pay cash dividends will have lower values than other firms. Such views support the findings by Kalcheva et al. (2007). According to respondent's reactions, the centralization of cash management practice is happening in Nepal.

As shown in Table 6.24, the centralization of cash management had increased significantly at a very high level. This finding is consistent with Collins and Frankle (1985), who reported that for U.S. domestic operations, 91 percent of the companies surveyed centralize cash management at the corporate level. Table 6.24 indicates major influencing factor for cash management in Nepalese enterprises. Among the various influencing factor for cash management these statement are crucial in Nepalese context. Among these available facts the more important one is, firm's risky activities as our calculated mean value is minimum for first alternative it can be concluded from analysis that firm increase their cash when their activities are risky.

6.7.1 Use of cash management systems

Cash management practice significantly influenced from the use of consultants, new technology and banking relationship. In order to develop its cash management skills and practices a firm may turn to an external consultant. The results of Soenen and Aggarwal (1989) are not directly comparable with this issue. They found that among the companies that use computer-based systems, approximately 45 percent of them in the UK, 40 percent in the Netherlands, and 35 percent in Belgium maintain in-house data processing expertise specifically for cash management.

In Nepal firms do not prefer external consultant to develop cash management process but use of information system and technology is gradually increasing in the field of cash management. Electronics systems have significantly increased their popularity. Companies using computer based system, the computer software used in cash management was developed in-house. As use of information technology increase, it will contribute to meaningful result in cash management.

Table 6.25

Use of technology & information system in cash management

Events	Scale*					Total	Mean value
	1	2	3	4	5		
Firms have used cash management consultants in order to develop cash management processes.	17.5 (14)	23.75 (19)	36.25 (29)	16.25 (13)	6.25 (5)	100 (80)	2.7
Firms are adopting new technology in cash management.	16.25 (13)	41.25 (33)	27.5 (22)	13.75 (11)	1.2 (5 1)	100 (80)	2.42
Use of information systems is increasing.	36.25 (29)	26.25 (21)	28.75 (23)	8.75 (7)	0 (0)	100 (80)	2.1

Source: Field survey, 2010

**Scale represent 5 point Likert scale and indicates (1= to a very great extent 2= to a great extent 3= to a moderate extent 4- to a small extent* 5= *to no extent). Figure in parentheses represent no of respondents.*

Above table shows the use of information technology in Nepalese enterprises. Table 6.25 shows that use of information system is increasing in the field of cash management in Nepalese enterprises. Uses of technology and information system options have minimum mean value as compared to other options, so it could be concluded so far. Generally, the tendency in cash management systems seems to be similar to that presented by Tse et al. (1998b) who found that trend emerges throughout corporate cash management towards more use of electronics and technology.

6.7.2 Respondents' preference on financial institution for handling cash

Generally, banks and financial institutions play an important role with respect to corporate cash management. The results presented in Table 6.26 indicate that the number of banking relationships maintained by enterprises varies widely between financial institutions and respondents. Due to liberalization of financial system numbers of financial institutions are in operation in Nepal. They are categorized as commercial bank, development bank, finance companies, micro finance institutions and cooperatives. They are classified as (Ka, Kha,Ga and Gha) under financial institutions act 2060 BS. For handling cash, Nepalese enterprises used different financial institutions and open current, saving, fixed account as per their requirement. Usually enterprises used more than one account and institution according to their convenient.

Table 6.26

Use of financial institution for handling cash

Types of **risk**	**Scale***					**Total**	**Mean value**
	1	**2**	3	**4**	**5**		
Commercial bank	74	4	0	0	2	80	1.15
	(92.5)	(5)	(0)	(0)	(2.5)	(100)	
Development bank	3	60	14	0	3	80	2.25
	(3.75)	(75)	(17.5)	(0)	(3.75)	(100)	
Finance companies	5	30	40	3	2	80	2.59
	(6.25)	(37.5)	(50)	(3.75)	(2.5)	(100)	
Micro finance	3	31	15	28	3	80	2.96
	(3.75)	(38.75)	(18.75)	(35)	(3.75)	(100)	
Cooperatives	5	30	15	2	28	80	3.23
	(6.25)	(37.5)	(18.75)	(2.5)	(35)	(100)	

Source: Field survey, 2010

**Scale represent 5point Likert scale and indicates (1= to a very great extent 2= to a great extent 3= to a moderate extent 4= to a small extent 5= to no extent). Figure in parenthesis indicate percentage.*

Among these institutions respondents prefer commercial bank than other financial institution. Although development bank, finance companies and cooperatives provide higher interest rate on deposit, fast service and easy accessibility but due to credibility and large fund requirement enterprises choose for commercial bank.

Table 6.26 shows that more than 92 percent respondents' first choice is commercial bank. 75 percent respondents' second choice is for development bank and 50 percent third choice for financial institutions. It means commercial banks are reliable organizations to deposit and handle cash for business transaction in Nepal. The result is inconsistent with the Netherlands and Belgium, where banking relationship is considered unimportant. But the study is mostly consistent with the UK where, companies tend to have banking relationships than in the Netherlands and Belgium (Soenen and Aggarwal 1989). The results presented here are consistent with China increasing number of banking relationships.

6.8 Conclusion

Response of respondents' attached to different types and size of enterprises is different on motive and area of cash management. Regarding motives, perception of respondents reveals that transaction and precaution motives are important reasons for holding cash as compared to speculative, profit and other motives. Similarly, cash

position management (cash holding) is an important area in comparison to short term investment and short term borrowing.

According to respondent's perceptions, cash management is concerned with cash collection, disbursement, use of surplus cash, management of liquid assets and liabilities. Accelerating collection, improving cash flow and mobilization of idle cash are emphasized in cash management in the Nepalese context. The practice of formal cash management policy is weak and not used in Nepalese enterprises. Active, tradeoff, and conservative cash management policy are popular in Nepal. Cash budgeting is the best method for cash planning as compared to linear programming and simulation in Nepal.

Regarding the organizational and technological issues, respondent's answer revealed that due to organizational and technological changes, role of outside agencies is increasing in cash planning. Decisions are made in cash management with the help of commercial information system and financial institutions information. Purchasing and marketing departments frequently conflict and disagree with cash department as compared to other departments.

Respondent's perceptions shows responsibility of cash management is shifting from general manager to financial manager. From the survey result analysis, it can be concluded that many of the respondents perceive limited use of cash budget by Nepalese enterprises. Very few Nepalese enterprises, in fact, prepared monthly and yearly cash budget. Size and current obligation of the firm are reported to determine the level of cash.

Respondents' reaction on sales, purchase, and payment policy shows that Nepalese enterprises has practice of both cash and credit sales and they offer cash discount for early payment but customers do not get uniform terms of credit. Credit worthiness is measured using five "C" of credit. Nepalese enterprises are not very able to discharge short term liabilities on due date, but they are able to get advance payment from customer.

For short term investment, bank deposits and treasury bills are reported to be more attractive than other monetary instruments. "While using surplus cash on the instruments, return and safety of investment credit risk and inflation risk are also reported needs for consideration. Depository transfer of cheque is used for moving fund from one place to another.

Regarding investment and utilization aspect of cash, respondents agree that rate of return; safety and marketability are the criteria for investing excess cash. For investment, instruments like bank deposits, land, treasury bills, share and debentures are available in Nepal. For investment, respondents perceived credit risk as a more serious risk. However priority is different to the respondents attached to different size of enterprises for liquidity and interest rate risk. Respondents believe depository transfer cheque is a useful media for moving funds.

Similarly, respondents attached to different types and sizes of enterprises agree to increase cash level when business activities are more risky and uncertain. They believed that, in situation of investor protection and developed capital market, requirement of cash will be less. Respondents' perceived that cash holding is affected by payment of cash dividend, and the firms' with financial constraints accumulates more cash than the firms without constraint.

Respondent's reaction shows use of information technology is increasing in cash management of Nepalese enterprises. Respondents involved in different categories and size of enterprises reported that among the financial institutions, commercial banks handle cash more efficiently.

Respondents support an optimal tradeoff approach to cash holdings where firms with abundant investment opportunities and high uncertainty in future cash flows hold more cash, and large firms with strong access to the capital markets hold less. It provides limited support for a hierarchy financing explanation and generally strong disagreement with most agency explanations for cash holdings. In this case, it shows mixed reaction for arguments that financial constraints affect a firm's cash holdings.

The effectiveness of a firm's corporate governance structures affects its cash holdings and spending of cash but not the value of its cash holdings. Respondents generally support the notion that firms with stronger corporate governance tend to hold smaller cash balances. They also believe that growing firms can hold higher levels of cash if their governance mechanisms protect investors' interests. Managers do not believe that weak corporate governance affects the value of a firm's cash holdings. Generally, the survey show that firms can achieve significant technological progress (improving information systems and methods) and significant behavioral changes (increasing professionalism) through the use of consultants concerning cash management practices during the research period, leading to increasing opportunities for more effective cash management operations.

Chapter 7
SUMMARY CONCLUSION AND RECOMMENDATION

7.1 Summary

Cash management is becoming an important issue not only in business practices but also building theoretical foundation in finance literature. Expanding business activities are associated with efficient cash management. A number of studies with respect to cash management have been conducted which are still inadequate to address cash management issues.

Past studies conducted with regards to the relationships between cash holdings and internal and external factors have shown mixed results and conflicting views. Moreover, there are still a number of variables not included in the model of factors affecting cash holding. The variables not included in the model are also equally important variables for proper cash management endeavors. The present study is although an extension of past studies, it is also restricted in some of the variables. However, it uses some of the new variables as factors affecting cash holdings. Apart from the above it also studies and analyses structure and utilization of cash including the analysis of perception of professionals and practitioners attached to various categories of the enterprises.

This study covers 20 manufacturing, processing and trading enterprises of Nepal both public and private sectors. Among the 20 enterprises, 12 are manufacturing and processing, and 8 are trading. These enterprises represent more than 10 percent of total population and 57 percent of manufacturing, processing and trading enterprises. Data sources of this study are the record of Office of the Auditor General, Nepal Rastra Bank and Securities Board of Nepal during the period of 1999-2008.

In this study, primary data are collected from structured and open ended questionnaire, distributed to 80 respondents like; general managers, financial managers, sales managers, and store managers. Their responses are meant for analyzing their perception on cash management policy and practice.

Regression analysis is used to establish relationship between cash holding and other firms' specific variables included in the model. The findings of the regression analysis are also compared with the findings of the studies conducted in other countries. Different cash management ratio is also used to analyze the structure and utilization of cash.

From the analysis of structure and utilization of cash, it is observed that size of cash holding and net working capital is larger in public group of enterprises than private group of enterprises. In terms of fixed assets, the scale of enterprises which indicates large scale of enterprises has larger amount of cash and working capital than medium and small scale portfolio of enterprises.

Among the enterprises, Nepal Oil Corporation has larger amount of cash balance and Nepal Welfare Company has smaller amount of cash balance. However, these enterprises are from different sectors. There is a larger difference between the sizes of cash balance among the enterprises. The amount of net working capital is large and positive in Salt Trading Corporation, but it is small and negative in Agriculture Inputs Corporation. The trend and structure of net working capital is downward across the different groups and scales of enterprises.

Current and quick ratio of private sector enterprises reflect normal standard whereas it is lower than the normal standard in the case of public sector enterprises. The current and quick ratio of small scale enterprises is improving over the period of time as compared to large and medium scale enterprises. The trend of current ratio is downward throughout the study period for all categories of enterprises. Among the enterprises, Nepal Bitumin and Barrel Limited has higher current and quick ratio, but Sriram Sugar Mills has lower current and quick ratio. Both the enterprises are from private sector and indicate inconsistency in current and quick ratio of Nepalese private enterprises.

Current assets to total assets ratio is higher in National Trading Limited and lower in Sriram Sugar Mills Limited. The ratio is higher in public sector enterprises as compared to private sector enterprises. Similarly, it is higher in large and small scale

enterprises as compared to medium scale enterprises. The trend of the ratio is upward in public enterprises and downward in private enterprises. According to the scale of enterprises, all enterprises have observed with increasing trend.

The utilization of cash in different types of assets such as current, quick, and total assets revealed that public sector enterprises utilized more amounts of cash in different types of assets as compare to private enterprises. Among the enterprises, National Trading Limited a public sector enterprise, has higher current assets to total assets ratio, but Sriram Sugar Mills a private sector enterprise, has lower current assets to total assets ratio. As compared, medium and large scales enterprises are found to be utilizing more cash in assets than small scale enterprises. For example Dairy Development Corporation, a medium scale enterprises and Nepal Oil Corporation, a large scale enterprise, have higher cash to total assets ratio, but Nepal Lube Oil Limited a small scale enterprise, has lower cash to assets ratio.

Cash to total assets ratio of public sector enterprises is felt with a higher ratio than private group of enterprises. Similarly, the ratio is higher in medium scale enterprises as against large and small scale enterprises. However, the trend of ratio is found moving upward in all categories of enterprises. The average cash to total assets ratio is found to be more or less same as that of US and British firms.

Utilization of cash into liabilities, capital, and sales is lower in private sector enterprises as compared to public sector enterprises. Cash to liabilities and cash to total capital ratio is observed higher in medium group of enterprises, but' cash to sales ratio is observed higher in small group of enterprises. Among the enterprises, Nepal Welfare Company has higher cash to current liabilities ratio, but Arun Vanaspati, Nepal Lube Oil and Sriram Sugar Mills have lower cash to total capital ratio. Agriculture Inputs Corporation has higher cash to sales ratio but Nepal Bitumin and Barrel has lower cash to sales ratio. A lower ratio shows effective utilization of cash for making sales transactions and paying current obligation and liabilities of the firms.

The trend of cash to total capital ratio of public sector enterprises is increasing, but it is decreasing in private sector. This also follows in small, medium, and large scale of enterprises. Cash to sales ratio is observed with upward trend in public sector

enterprises but is observed with a decreasing downward trend in private sector enterprises. Small and large scale enterprises are facing with increased cash to sales ratio, while it is decreased in medium enterprises. It shows cash utilization ratio is not uniform across the enterprises over the study period.

Turnover ratio and debt collection status of private sector enterprises is more encouraging than public sector enterprises. Similarly, turnover ratio of small scale enterprises is better than medium and large scale enterprises when their average collection period is worse than medium and large enterprises. Among the enterprises, Bisal Bazzer Company Limited has lower cash turnover ratio. Herb Production and Processing Company has lower current assets turnover ratio and Gorakhkali Rubber Udyog has lower working capital turnover ratio. Similarly, Bottlers Nepal has higher debtor's turnover ratio and Nepal Welfare Company has higher inventory turnover ratio.

Econometric analysis of the demand for cash in the Nepalese enterprises aimed at identifying the factors affecting cash balance. It is specified as a function of scale variables such as sales and total assets, rate of interest, and some other variables like growth opportunity, leverage, liquidity, cash flow and bank debt.

Regression equation of all enterprises after autocorrelation improvement in the static model showed liquidity, sales to total assets ratio, current ratio, quick ratio, and bank debt with significance at .01 level. The sign of growth, interest, and size has observed with negative signs as per expectations whereas average collection periods, and cash flow variability has been observed with positive signs. The only one variable cash flow could not come with expected positive sign in cash to total assets ratio (CASH). Average collection period has been observed with negative sign in both current and constant term of cash balance. Similarly, all independent variables in the dynamic model are as per expected sign and significant at .01 level, except in the case of average collection period.

Speed of adjustment for actual to desire cash level is observed to be slow in the Nepalese enterprises. It indicates that adjustment costs are so large that firm cannot change existing cash structure.

The result of the regression of all enterprises shows that transaction motive (sales, size and bank debt) precaution motive (liquidity, cash flow variability, leverage, current ratio, and quick ratio) and speculative motive (Interest and growth opportunity) determine cash holding in Nepalese enterprises.

Result of regression of public enterprises under static model after correction of autocorrelation states growth, liquidity, interest, quick ratio, bank debt, and size with negative sign but leverage, sales, current ratio, and cash flow variability with positive sign as expected. Growth, liquidity, sales, current ratio and quick ratio are significant at .05 level. Cash flow and average collection period are significance at the .05 level in (CASH) equation, but they have not come as per expected positive relationship. Similarly, all independent variables in current and constant term are also as per a priori except leverage, cash flow, average collection period, current ratio and quick ratio. In the dynamic model, all the independent variables have expected relationship except current ratio and quick ratio and a few of them are significant at.05 level.

Result of regression of private sector enterprises under static model after autocorrelation improvement indicates all independent variables as per expectation with cash to total assets ratio (CASH). Some of them, like growth, sales to total assets ratio, current ratio and quick ratio are significant at .01 level. Only one variable i, e, size has not come as per expected negative sign. Similarly, the sign of all independent variables have appeared also as per priori except sales to total assets ratio, average collection period and cash flow variability under cash balance as current and constant terms. In the dynamic model, all independent variables have also observed with expected sign and priori hypothesis. Liquidity, sales to total assets ratio, current ratio, quick ratio and lagged dependent variables have observed to be significant at the .01 level with dependent variable cash to total assets ratio (CASH). Similarly, all independent variables except leverage, cash flow, average collection period, and cash flow variability are also as per priori in the case of another form of dependent variables like cash balance at current and constant price.

The result of regression of the small enterprises under static model shows that the variables, liquidity, sales, average collection period, current ratio, quick ratio and cash flow variability has an expected relationship with cash to total assets ratio (CASH),

and cash balance at current and constant price. The coefficients of the variables are also significant at the .05 level. In the dynamic model, all the independent variables are also as per priory except, cash flow, average collection period, cash flow variability, and size. However, some of them are significant at the .10, level.

The result of regression of the medium scale enterprises under static model after correction of autocorrelation shows positive sign with all the independent variables as it was expected. Out of them all variables are significant at the .01 level except leverage and cash flow variables. However the variable cash flow is significant at the .10 level with cash to total assets ratio (CASH). Similarly, in cash balance at current and constant price, all independent variables have appeared with expected sign except cash flow, current ratio and quick ratio. However, only liquidity, average collection period and current ratio are significant at the .05 level. In the dynamic model, the variables liquidity, sales to total assets ratio, current ratio, quick ration bank debt size and lagged dependent variables have observed with expected relationship. However, few of them are significant at the .05 level.

The result of regression of the large scale enterprises in static model after correction of autocorrelation shows all the independent variables with expected sign as per priory. However, only six variables out of twelve such as growth, liquidity, sales to total assets ratio, cash flow variability, bank debt and size are significant at .05 and .01 levels. Under dynamic model, all the independent variables except interest and average collection period have expected relationship and observed expected sign as per priory in both forms of dependent variables (CASH), and AVCASH in both current and constant term. However only growth, size and lagged dependent variables are significant at the .05 level with cash to total assets ratio and cash balance at current and constant price. Variables, cash flow, liquidity, sales, average collection period, cash flow variability and bank debt are significant with cash balance at current and constant price at .05 and .10 levels.

From the opinion survey analysis, it is observed that there is a difference in the opinion of executives regarding the motives for holding cash, organizational and technological issues on cash management; cash balance determinants, investment and utilization of cash, cash management policies and practice. The responses are not

uniform and consistent. However the responses of the majority of executives reveal that transaction and precaution motives are the major motives for holding cash in Nepalese enterprises. Cash position management, management of liquid assets and liabilities, cash receipt and payment, short term investment, and borrowing are the major areas and functions of cash management in the selected enterprises. Executives believe that accelerating collection, improvement of cash flow and idle cash mobilizations are the better tools for better cash planning and management in Nepalese enterprises.

The opinion survey on cash management specifies that enterprises do not have formal cash management policy and program. However, cash budgeting method is used for cash planning and program. For the preparation of cash planning and programming advices and suggestions are taken from outside agencies such as financial consultant, and chartered accountant firms. To make decision on cash management, different types of information such as general economic and financial information, commercial information and banker information are used for better cash planning forecasting. Besides all these provisions, the enterprises in Nepal are either adopting active cash management policy or tradeoff or conservative cash management policy but not the optimum cash policy.

The result of opinion survey analysis reveals that the responsibility of cash management goes to financial manager and cash manager. However, chief executive is also responsible for cash management. Due to the overall responsibility of chief executive officer, cash management authority is given to financial manager. The position of financial manager and procurement manager remains the same in most of the organizations are of the same hierarchy. These managers work in their own way independently without coordination. Procurement manager does not analyses cash position of the enterprises and rather issues procurement order when there may be insufficient cash and limited budget. Because of poor coordination, procurement department and cash department frequently goes into conflict.

The response of the executives of the selected Nepalese enterprises shows that sample enterprises are practicing monthly and yearly cash budgeting system to find out the shortage and excess of cash and to coordinate timing of cash needs and cash flow.

However, there is a lack of cash budgeting in the undertakings and formal cash budget making as a formal document.

The perceptions of respondents show that size of the firms, current obligation, and interest rate mainly determined the level of cash balance in the Nepalese enterprises. Minimum cash balance is determined with the help of cash budget, percentage of working capital and operating cycle. This finding is similar to the result of regression analysis of cash balance with firms' specific variables in the Nepalese enterprises.

From the survey analysis, it is found that Nepalese enterprises sell goods and services in both cash and credit terms. However the terms of credit and credit facilities are not uniform across the sample enterprises. To measure the credit worthiness, respondents perceive five "C "of credit (character, capacity, capital, collateral, conditions) as the important tools. Advance payment facilities are also given to the customer, but the firms are not able to collect the receivables on time from the clients.

The result of opinion survey analysis shows that a number of investment opportunities are available for Nepalese sample enterprises to mobilize their surplus and idle cash balance. These opportunities range from deposits in bank, to investment on short term bonds, treasury bill, share, debenture, land and apartment. However these opportunities are analyzed and tested on the basis of certain criteria such as yield, return, marketability, safety, liquidity, and stability to make investment decisions. Various types of risk exist on short term investment. However, interest rate risk, credit risk, liquidity and inflation risk are found to be more serious and sensitive risk than other type of risks for the investment of surplus cash balance.

The perception of respondent's on cash management practices shows that cash dividend declaration by firms, growth opportunities available, separation of management and control, value of the firm affects corporate cash management practice in Nepalese enterprises. The executives believe that enterprises increase their cash balance when business activities are risky and uncertain, but they decrease their cash balance when capital market is efficiently functioning and investors are well protected.

Regarding information technology, respondents perceive use of information management system by Nepalese enterprises in cash management. Consultants are also hired for information management system. Commercial banks are reported to prefer bank by respondents to cash transaction in Nepalese enterprises. Cash could be transferred either through depository transfer cheque or through wire transfer from one place to another.

7.2 Conclusion

The major conclusion of this study is that growth opportunity, leverage, cash flow; liquidity, sales revenue, interest, average collection period, current ratio, quick ratio, cash flow variability, bank debt, and size are the variables affecting cash holdings specified in cash to total assets and cash balance in current and constant price. The relationships are significant.

It means growth opportunities; leverage, liquidity, sales, current ratio, quick ratio, bank debt and size are the main determinants of short term cash holding in Nepalese enterprises at aggregate level. In public enterprises, liquidity, sales, and size are the most important variable to determine cash demand, but in private enterprises growth opportunity, leverage and cash flow variability are the important variables to determine cash demand.

Similarly, liquidity, current ratio and quick ratio are the most important variables that significantly affect cash demand in small scale enterprises, while liquidity and average collection period significantly affect cash demand in medium enterprises. Likewise, growth, liquidity, sales, cash flow variability, bank debt and size are the determinants of cash balance in large scale enterprises. This indicates transaction, precaution and speculative motives are the motives for holding cash in Nepalese enterprises.

Speed of adjustment for actual to desired cash is slow indicating high adjustment cost in Nepalese enterprises. However, it is fast in small scale enterprises. Regression analysis reveals that there is little effect of the interest rate, average collection period, and cash flow on cash balance

The opinion survey analysis also reveals management of liquid assets and liabilities, cash receipt and payment as the important function of cash management. Accelerating collection, cash flow projection, and surplus cash mobilization are also the major areas, of cash management. For the mobilization of surplus cash various types of investment opportunities are available. But these opportunities are analyzed on the basis of return, marketability, risk, liquidity and stability of return on specific investment.

Size of the firms, current obligation, and interest rate are reported to determine the level of cash balance in Nepalese enterprises. This finding is consistent with the findings of regression analysis based on secondary data of Nepalese public and private sector enterprises.

Cash management practice as perceived by respondents shows that firms increase their cash balance when their business activities are risky and uncertain because of instability in the market. Companies hold large amount of cash balance to pay cash dividend to shareholders when they declare cash dividend instead of bonus share. Similarly, companies hold large amount of cash reserve to invest in short term profitable business opportunities such as short term bond, treasury bill and marketable securities. However, large amount of cash balance incurs opportunity cost of holding cash. The amount of cash requirement will be lower when capital market is efficient and investors are protected. Similarly, companies hold small amount of cash in case of lower risk and stability in the market.

There is a wide variation over time in the state of financial health of the enterprises in terms of the composition of current assets and current liabilities as revealed by the structure and utilization of cash. Size of cash balance and net working capital are larger in public and large scale enterprises. The performance of liquidity and turnover is efficient on private and small enterprises. The corporate cash holding, indicating by cash to total assets is comparable with the enterprises with other countries like Japan and USA.

The enterprises under medium and large scale enterprises have been found with investing more cash in different categories of assets. This is also true in public sector

enterprises. Utilization of cash in liabilities, capital and sales are lower in private and small enterprises. Turnover ratio and debt collection status of private enterprises is better than public enterprises. Similarly, small scale enterprises turnover ratio is better than medium and large enterprises but their average collection period is found to be worse than medium and large enterprises.

Size of cash balance in public sector enterprises reveals an upward trend. This is also same in the case of large scale enterprises. The trend of net working capital is going down for all categories of enterprises. Cash to total assets ratio is moving upward in all group of enterprises except private enterprises group. The trend of current ratio is moving down throughout the study period in all the enterprises.

7.3 Recommendation

The major factor affecting cash balance in Nepalese enterprises are growth opportunity, leverage, cash flow, liquidity, sales revenue, interest, average collection period, current ratio, quick ratio, cash flow variability, bank debt, and size. Among the variables, sales, size and, bank debt came under transaction motive. Precaution motive includes liquidity, cash flow, cash flow variability, leverage, average collection period, current ratio and quick ratio. Interest and growth opportunities comprise with speculative motive. These specific variables play an important role in the cash management of Nepalese public and private sector enterprises. Therefore the study firmly recommends to consider these variables while making broad policy and strategy in cash management.

Performance of growth, leverage, bank debt, size and sales to total assets ratio are significant under two different form of dependent variable in different nature and scales of enterprises. These variables play major role to specify cash demand in the Nepalese context. Therefore the study emphasizes on these variables, while formulating short term and long term cash management policy and program in Nepal.

Public sector enterprises have larger cash balance than private sector enterprises. But the problem of cash management is severe in public enterprises. For example the amount of cash balance in Nepal Oil Corporation, Agriculture Inputs Corporation, and

Dairy Development Corporation is higher than private sector enterprises but they are still facing cash problems. Within the public sector, Nepal Oil Corporation has higher level of cash balance as compared to other enterprises. Although the corporation has large volume of cash balance but it is still insufficient to manage fuel, gas and other petroleum products. The study suggests to establish a cash reserve fund in Nepal Oil Corporation and other similar types of enterprises to solve price fluctuation problems in future.

Agriculture Inputs Corporation has small amount of negative working capital whereas Salt Trading Corporation has large amount of working capital. These companies represent public and private sector. However in aggregate, public sector has large amount of net working capital than the private sector. The lower working capital shows weak liquidity position, and higher working capital shows good liquidity but poor efficiency. Therefore, the study suggests to maintain optimum working capital and its effective use in the enterprises.

The current and quick ratio of Nepal Bitumin and Barrel Company is higher than the standard but the ratio of Sriram Sugar Mills is lower than the standard. Both the companies represent private sector. As compared with private sector, the public sector enterprises ratio is lower. However both sectors ratio are not as per standard. The higher ratio indicates sound solvency and poor profitability whereas lower ratio shows poor solvency and sound profitability. Therefore the study emphasizes to maintain liquidity ratio according to normal standard in the Nepalese enterprises.

The result of other ratios which show structure of cash in Nepalese enterprises such as current assets to total assets ratio, cash to current assets ratio and cash to total assets ratio presents contradictory result among the enterprises. For example, current assets to total assets ratio is higher in National Trading Limited and cash to current assets ratio is higher in Dairy Development Corporation. These both enterprises are from public sector. However cash to total assets ratio is higher in Unilever which is from private sector. The study therefore suggests to maintain uniformity as per standard in cash structure ratio among the enterprises.

The utilization of cash is better in Arun Vanaspati Udyog, Sriram Sugar Mills, Nepal Lube Oil limited, Nepal Bitumen and Barrel and Agriculture Inputs Company as these enterprises have lower cash to current liabilities, cash to total capital, cash to sales and working capital to sales ratio. Therefore priority should be given on these ratios while utilizing cash in Nepalese enterprises.

Nepal Seed Company has higher cash to total capital ratio. Similarly Agriculture Input Corporation has higher cash to sales ratio. The higher ratios indicate weak cash utilization in different combination of capital and sales turnover. Therefore, attention is needed for better utilization of cash by maintaining proper combination of assets and sales transaction.

Cash turnover, current assets turnover, and working capital turnover ratio are higher in Sriram Sugar Mills, Nepal Oil Corporation, and Dairy Development Corporation respectively. The higher turnover ratio indicates effective utilization of cash in the enterprises. Therefore it is emphasized to maintain efficiency in the use of assets and working capital for efficient use of cash in business.

The debtors' turnover ratio, inventory turnover ratio, and average collection period are as per standard in Bottlers Nepal, Nepal Lube Oil, and Dairy Development Corporation. However some of the companies are incapable to maintain turnover ratio as per standard. Therefore the study recommends to apply cash sale, quick receivable collection, and speedy inventory circulation policy in business.

Utilization of cash in assets revealed that public sector enterprises, medium and large scale portfolios of enterprises invested more cash in liquid, current and total assets as compared to private and small scale of enterprises. Therefore the study suggests to increase cash to assets ratio in private and small scale enterprise substantially.

Utilization of cash into liabilities, capital and sales is efficient in private sector enterprises as compared to public sector enterprises. Public sector enterprises should consider reducing these ratios substantially. Cash to liabilities and cash to capital ratio is higher in medium group of enterprises as compared to small scale enterprises.

Therefore the study advises to increase the level of cash holding in small scale enterprises.

The cash ratio varies widely over the period of time across the enterprises. Such a variation in cash position creates risk and uncertainty to manage cash balance. Hence Nepalese enterprises should try to maintain consistency in cash variability. Cash to assets, cash to liabilities, cash to capital, and cash to sales ratio varies widely over the period of time across the scale of enterprises. Such a variation indicates inconsistency in managing assets and liabilities. Therefore the study suggests to design appropriate cash management policy in different scales of enterprises in Nepal.

The higher working capital to sales ratio of public sector enterprises indicates inefficiency in the use of short-term financial resources. The lower ratio of private group enterprises shows efficient use of short term fund. Hence Nepalese public sector enterprises should try to use the business approach of private sector working capital management policy.

Current and quick ratio of private and small scale portfolio of enterprises reflects normal standard whereas it is lower than the normal standard in case of public group and medium and large scale enterprises. Public and medium scale enterprises should realize it and take necessary steps to improve it.

Turnover ratio and debt collection status of private, medium and large scale enterprises is better than public and small enterprises. Therefore the study suggests to increase efficiency in cash management by adopting cash budget and cash inflow outflow technique.

Result of average collection period, ACP, signifies poor credit management and liquidity of account receivable. Only medium group enterprises ACP is consistent with the normal standard of not exceed 1/3 times the regular credit period. It indicates Nepalese enterprises are adopting liberal credit policy. Such liberal credit policy may not be suitable in the entire situation. Hence Nepalese enterprises should also think to apply tight credit policy according to situation.

The overall result depicts that, cash and debtor's turnover ratio are consistent over time while all turnover ratio reveals poor performance of cash management. However, turnover ratio of public group enterprises is good as compared to private group enterprises. Hence the study suggests to improve their turnover ratio in future in private sector enterprises.

Cash management in Nepalese enterprises lacks formal cash management policy, cash planning and budgeting. They do not make any projection and forecast of future cash requirement in formal way. Financial managers are responsible for cash management but not the chief executive. Therefore, the study suggests the chief executives of Nepalese enterprises to take initiatives and responsibility in cash management

The perception of respondents reveal that management of liquid assets and liabilities, cash receipt and payment cash position management, accelerating collection, improvement of cash flow, idle cash mobilization short term investment, and borrowing are the major areas, of cash management in Nepalese enterprises. These factors should be considered while making cash management policy in future.

Size of the firms, current obligation, leverage, and interest rate determine the level of cash balance in Nepalese enterprises. This finding is consistent with the result of regression analysis. This has also appeared as an important issue in the survey analysis. Therefore the study recommends considering these variables while planning and controlling cash in the Nepalese enterprises.

The perception of respondents shows various types of investment opportunities available to mobilize idle and surplus cash in Nepal. This study suggests the Nepalese enterprise for investment of surplus cash in short term investment opportunities available, considering liquidity, risk, return, and marketability, stability of return and capital and money market situation.

Survey analysis shows that companies maintain larger amount of cash balance at the time of cash dividend declaration, business growth and expansion and risky business situation, but they maintain smaller amount of cash balance when they believe that

investors are well protected and capital market is efficient and strong. Considering reaction of respondents the study suggests due attention on these factors by Nepalese enterprises for better cash management in future.

From the survey analysis, it shows that there is a misunderstanding and conflict between cash department and inventory department. Therefore, the study suggests interdepartmental coordination against a conflict.

Appendix -1

CASH MANAGEMENT IN NEPALESE ENTERPRISES

Survey Questionnaire

A. Background

A_1 Name (Optional) ……A_2 Sex (Male/Female)…… A_3 Age……

A_4 Position …… A_5 Enterprises (Government Enterprises / Private owned enterprises)

A_6 Experience Years (Below 5 year/5 to 10 year/10 to 15 more than 15 year)

A_7 Education…… Intermediate/Bachelor/Master

A_8 Professional Category [(1) Experts (2) General Manager (3) Chartered Accountant (4) Cash manager]

A_9 Training in cash management (Yes/No)

A_{10} Involvement in cash management (Yrs)……

B. Awareness on cash management

(B1) What is the major motive for holding cash? Please rank in order of their importance by indicating "1" for the most important and "5" for least important. ( )

(a) To meet day to day operation (Transaction Motive) ( )

(b) To meet the future uncertainty of cash (Precautionary Motive) ( )

(c) To grab the investment opportunities (Speculative Motive) ( )

(d) To meet the better performance of the business (Profit motive) ( )

(e) Other (Please specify) ( )

(B2) What are the major areas of cash management? Please rank

(a) Cash position management ( )

(b) Short-term investment ( )

(c) Short-term borrowing ( )

(d) Forecasting cash balances ( )

(e) Other (Please specify) ( )

(B3) To what extent cash management is concerned with the following functions

Events	Scale				
	1	2	3	4	5
Management of liquid assets and liabilities					
Management of cash receipt and payment					
Management of working capital					
Management of account receivable					
Inventory management					
Credit management					

1= to a very great extent 2= to a great extent 3= to a moderate extent 4= to a small extent 5= to no extent

(B4) To what extent cash management be emphasized in Nepalese enterprises

Events	Scale				
	1	2	3	4	5
Accelerating collection					
Decelerating payment					
Mobilization of idle cash					
Improving cash flow					
Transferring fund					
Minimizing cash management cost					

1= to a very great extent 2= to a great extent 3= to a moderate extent 4= to a small extent 5= to no extent

(B5) To what extent cash management is related with following issues

Events	Scale				
	1	2	3	4	5
Cash gathering					
Cash concentration					
Controlling cash disbursement					
Immediate investment of surplus cash					
Short term borrowing					

1= to a very great extent 2= to a great extent 3= to a moderate extent 4= to a small extent 5= to no extent

(B6) Does your company have formal cash management policy?

Yes (1) No (2)

(B7) Which forms of cash management policy do you think is applying in Nepalese enterprises? Please (√) one

(a) Active cash management policy ( )

(b) Conservative cash management policy ( )

(c) Average cash management policy ( )

(d) Aggressive cash management policy ( )

(e) Passive cash management policy ( )

(B8) Which of the following method is being used for cash planning? Please rank in order of their importance by indicating "1" for the most important and "5" for least one.

(a) Cash budgeting ( )

(b) Linear programming ( )

(c) Simulation ( )

(d) Optimizing model ( )

(e) Rules of thumb ( )

C. Organizational and technological issues on cash management

(C1) Which of the following outside agencies do you think helpful for successful operation of organizations cash planning? Please (√) one

(a) Professional chartered accountant ( )

(b) Lending institution ( )

(c) Financial consultant ( )

(d) Government agencies guidelines ( )

(e) Any other (Please specify) ( )

(C2) Which of the potential information sources cash manager's use for decision-making in cash management in Nepalese companies? Please (√) one

(a) Banks ( )

(b) Commercial information systems ( )

(c) Personal relationships ( )

(d) Economic and business newspapers ( )

(e) Any other (Please specify) ( )

(C3) Which departments are most likely to be in disagreement with those responsible for cash management? Please (√)

(a) Purchasing ( )

(b) Inventory management ( )

(c) Production ( )

d) Marketing ( )

(e) Human resource management ( )

(C4) Who is responsible for cash management in Nepalese enterprises? Please rank in order of their importance by indicating "1" for the most important and "5 "for least one.

(a) Financial manager ( )

(b) Cash manager ( )

(c) Business controller ( )

(d) Chief executive officer ( )

(e) Others (Please specify) ( )

(C5) Does Nepalese enterprises use cash budget?

Yes (1) no (2)

If yes

(C6) What is the purpose of cash budget do you think?

(a) To co-ordinate the timings of cash needs ( )

(b) To pinpoint the period where there is likely shortage of cash or excess cash ( )

(c) To arrange needed funds at most favorable terms ( )

(d) To prevent the accumulation of excess funds ( )

(e) To manage cash flow ( )

(C7) How frequently do you think Nepalese enterprises prepare cash budget?

(a) Weekly basis ( )

(b) Fortnightly basis ( )

(c) Monthly basis ( )

(d) Quarterly basis ( )

(e) Yearly basis ( )

D. Cash requirement and its determinants issues

(D1) Do you have the practice of holding excess cash/bank balances in current account in excess of requirement?

Yes (1) no (2)

(D2) Which of the following factors do you think are important to determine the level of cash?

(a) Current obligation of the firm (1)

(b) Size of the firm in terms of (sales/ assets/ branches/ employees) (2)

(c) Interest rate (3)

(d) Capacity utilization (4)

(e) Safety level (5)

(f) others (Please specify) (6)

(D3) How do you determine minimum level of cash balance required for normal operation?

(a)	By means of cash budget	1
(b)	A certain percentage of working capital	2
(c)	A percentage of total assets	3
(d)	With the help of Ratio analysis	4
(e)	On the basis of operating cycle	5

E. Sales purchase and payment policy

(E1) What policy does your organization follow in respect to sales? Please (√) one

(a) Cash sales only

(b) Credit sales only

(c) Cash and credit sales

(E2) Does your organization offer cash discount to the customers for early payment?

Yes (1) no (2)

(E3) Do you have uniform terms of credit for all customers?

Yes (1) no (2)

(E4) What is the appropriate measure to assess the credit worthiness? Please rank (1) for the most important.

(A) The 5 c of credit

(b) Sequential credit analysis

(c) Credit scoring technique

(d) Bank guarantee

(e) Any other please specify

(E5) Do you have a system of advance payment from customers?

Yes (1) no (2)

(E6) Does Nepalese enterprises are able to discharge all short-term liabilities on due dates?

Yes (1) no (2)

F. Investment and utilization aspect of cash

(F1) What type of investment opportunities available to companies in Nepal to invest their surplus cash?

Events	Scale				
	1	2	3	4	5
Investment in Treasury bill					
Investment in commercial paper					
Certificate of deposits					
Bank deposits					
Mobilization of idle cash					
Inter corporate deposits					
Money market and mutual fund					
Investment in share and debenture					
Investment in Land and other fixed assets					
Investment in other business					
Other (Please specify)					

1= very strong 2= strong 3= moderately strong 4= little strong 5= no strong

(F2) What are the criteria for investing excess cash?

Events	Scale				
	1	2	3	4	5
Marketability					
Stability of market price					
Yield/ Return					
Maturity					
Safety					
Liquidity					
Other (Please specify)					

1= most important 2= important 3= moderately important 4= not so important 5= no important

(F3) Which factor do you think more risky for short-term investment in Nepal please mentioned in order of seriousness? Please rank (1) for the very seriousness and (5) for the least seriousness.

(a) Interest rate risk

(b) Credit risk

(c) Liquidity risk

(d) Inflation risk

(e) Other risk (Please specify)

(F4) What media do you think useful in Nepal for moving funds?

(a) Mail transfer

(b) Telegraphic Transfer

(c) Depository transfer cheque

(d) Courier service

(e) Telex transfer

G. Cash management practice and Relationships with bank:

(G1) What is your observation on corporate cash management practices in Nepal? (Please make a tick mark at the appropriate number as per following scheme:

	Major influencing factor for cash management	scale				
		1	2	3	4	5
1	Firms increase their cash when their activities are risky					
2	Dividend payments (cash) affect cash holding position of the Nepalese firm?					
3	financially constraint firm accumulate more cash than financially unconstraint firm					
4	Higher the Corporate cash holding higher will be the value of the firm					
5	Firms in countries where investor protection and capital markets are better developed hold less cash.					
6	Growth companies hold higher level of cash					
7	Firms tend to hold more cash where management and control is separate					
8	Degree of centralization in cash management function is increasing.					

1=strongly agree 2= Agree 3= don't agree 4= Disagree 5= strongly disagree

(G2) To what extent companies are using consultant, new technology, and information system in cash management.

Events	Scale				
	1	2	3	4	5
Firms have used cash management consultants in order to develop cash management processes.					
Firms are adopting new technology in cash management.					
Use of information systems is increasing.					

1= to a very great extent 2= to a great extent 3= to a moderate extent 4= to a small extent 5= to no extent

(G3) Which financial institution do you prefer to handle cash?

a. Commercial bank

b. Development bank

c. Finance companies

d. Micro finance

e. Cooperatives

Appendix -2

Total enterprise selected for the study

S.no	Name of enterprise	Nature of enterprise	Type	Size	Study period
1	Dairy development corporation	Manufacturing	Public	Medium	1999-2008
2	Herb production and processing company Ltd	Manufacturing	Public	Small	1999-2008
3	Hetaunda cement industry Ltd	Manufacturing	Public	Large	1999-2008
4	Janakpur Cigarette factory Ltd	Manufacturing	Public	Medium	1999-2008
5	Nepal ausadhi Ltd	Manufacturing	public	Small	1999-2008
6	Agriculture inputs company Ltd	Trading	Public	Large	1999-2008
7	Nepal food corporation	Trading	Public	Large	1999-2008
8	National seeds company limited	Trading	Public	Medium	1999-2008
9	National trading corporation Ltd	Trading	Public	Medium	1999-2008
10	Nepal oil corporation	Trading	Public	Large	1999-2008
11	Arun banaspati udyog Ltd	Manufacturing	Private	Small	1999-2008
12	Bottlers Nepal Ltd	Manufacturing	Private	Large	1999-2008
13	Gorakhakali rubber udyog Limited	Manufacturing	Private	Medium	1999-2008
14	Nepal welfare company limited	Trading	Private	Small	1999-2008
15	Nepal bitumen and barrel udyog limited	Manufacturing	Private	Small	1999-2008
16	Nepal lube oil Ltd	Manufacturing	Private	Small	1999-2008
17	Shree ram sugar mills limited	Manufacturing	private	Medium	1999-2008
18	Bisal bazer company	Trading	Private	Small	1999-2008
19	Salt trading corporation Ltd	Trading	private	Large	1999-2008
20	Unilever Nepal Ltd	Manufacturing	private	Medium	1999-2008

Appendix -3

Description of variables

Name of the variables	Computation
Average cash balance (AVCASH)	(Opening balance +Closing balance of cash)/2
Cash ratio(CASH)	Cash/Total assets
Cash balance at constant price(CONCASH)	(Opening balance +Closing balance of cash)/2 on constant price
Sales to total assets ratio (STA)	Sales in Rs/ Total assets
Interest (INT)	Interest rate of commercial bank for commercial loan
Assets size (SIZE)	Total amounts of fixed assets
Growth opportunities (GROW)	Depreciation/Total assets
Leverage(LEV)	Total debt/Total assets
Liquidity(LIQ)	Current assets-cash/Total assets
Cash flow (CFLOW)	(Earnings before tax +Depreciation)/Total assets
Cash flow variability (CFVAR)	S.D of $(CFLOW_t - CFLOW_{t-1})$/Average total assets
Bank debt(BANKD)	Bank loan/Total debt
Current ratio(CR)	Current assets/Current liabilities
Quick ratio(QR)	Quick assets/current liabilities
Average collection period (ACP)	(Receivable *days in a year)/Sales

Appendix-4

Interest rate structure of commercial bank

Year	Maximum percentages	Minimum Percentages	Average percentages
1997	16	14.4	15.2
1998	16	14.4	15.2
1999	14	9.98	12
2000	12.68	9.06	10.9
2001	14.56	10.9	12.7
2002	10.18	14.3	12.2
2003	10.64	14.3	12.5
2004	9.94	10.019	9.98
2005	9.6	14.019	11.8
2006	9.66	12.15	10.9
2007	11.81	9.98	10.91
2008	11.99	10.87	11.75

Appendix-5

Relation of cash demand with other exogenous variables

Variables	Acronyms	Relation	Description
Sales to total assets ratio	(STA)	+	(STA) is a real desired wealth defined in terms of sales to total assets ratio. Higher STA shows more sales transactions and transitions motives for holding cash demand more cash. As a result there is a positive relation between cash demand and sales ratio.
Interest	(INT)	-	Generally in cash demand studies interest rate in percentage is taken as a proxy for interest (INT). An increased in this rate discourages the demand of cash for manufacturing and trading enterprises. It indicates negative relation between cash demand and interest.
Assets size	(SIZE)	-	Due to economies of scale larger enterprises proportionally demand less cash than small enterprises. This (SIZE) effect explained negative relation between assets size and cash requirements.
Growth opportunities	(GROW)	-	Growth opportunity of an enterprises (GROW) could be measured by investment in tangible assets (depreciation/total assets). Firms with a larger investment in these assets are considered to have less growth opportunities. Thus we would expect dependent variable to be negatively related with tangible assets.
Leverage	(LEV)	+	Leverage (LEV) is an indication of higher debt in enterprises. Higher debt level can increase the likelihood of financial distress; therefore, we would expect a firm with a high leverage to increase its cash holdings to decrease the likelihood of financial distress. Accordingly, we would induce a positive relation between cash holdings and leverage.
Liquidity	(LIQ)	-	It has been argued that a non-cash liquid asset (LIQ) is a substitute for holding cash. We would therefore expect firms with more liquid assets required less cash. Thus there is a negative relationship between liquidity and cash holding.
Cash flow	(CFLOW)	+	According to hierarchy theory the firms first use internal resources to support cash flow. Firms with large cash flow (CFLOW) required internal fund to avoid financial distressed. Financially constraint enterprises that have higher cash flow expected to have higher cash. It shows cash flow has positive relation with cash demand.
Cash flow variability	(CFVAR)	+	Cash flow variability (CFVAR) is an indication of volatility in cash flow. The more volatile the firm's cash flows, the higher the likelihood that the cash flows are insufficient to cover the outlays. Therefore, cash flow uncertainty positively affects cash holdings,
Bank debt	(BANKD)	_	Bank debt (BANKD) can serve as a substitute for holding high levels of cash because bank debt is more easily renegotiated when firms need to. This argument suggests that firms with more bank debt are expected to hold less cash and we expect a negative relation between cash holdings and bank debt.
Current ratio	(CR)	+	Current ratio (CR) shows the relationship between current assets and current liabilities. Current assets could not be used as a substitute for cash. Higher current ratio required more cash. Thus the relationship between current ratio and cash will be positive.
Quick ratio	(QR)	_	The portion of assets used in quick assets could be used as a substitute for. Higher quick ratio (QR) represents more liquid assets in the enterprises. Higher the liquid assets lower the requirement of cash in enterprises. It indicates negative relation between cash and quick ratio.
Average collection period	(ACP)	+	A lower average collection period assured that it does not take a company long time to turn receivable in to cash. A shorter collection period encourage shorter cash conversion cycle which again reduce need for cash. Enterprises can reduce its need for cash by collecting account receivable more quickly. Shorter the (ACP) Lower will be the demand for cash. Thus it shows positive relation between cash and ACP.

Appendix-6

Total asset of Nepalese enterprises amt in Rs at current real price

Year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
DDC	788541000	803171000	833868000	704086000	748068000	776027000	759181600	800928000	812476000	707072106
HPP	76865000	73952000	140737000	150483000	153980000	158726000	152300000	160723000	162260000	175628000
HC	1016260000	1617692000	1770350000	1774707000	1791035000	1814984000	1824851000	1852760000	1831287000	1907935000
JCF	476007000	487747000	589668000	566632000	595474000	579351000	505442000	465272000	488937000	645440000
NAL	162439000	140054000	148512000	132490000	124577000	134457000	155372000	106413000	97785720	129838560
AIC	943380000	1056568000	1142309000	1803006000	1868559000	1494154000	1569431000	1360226000	1358454000	1251338000
NFC	1079488000	1201549000	1099940000	915702000	860743000	854411000	980509000	1006216000	1154814000	854212000
NSC	943380000	1056568000	1136309000	125269000	133832000	141492000	150252000	164738000	183671000	211921000
NTC	476169000	751388000	724561000	831488000	762981000	721718000	993447000	782602000	1338099000	1273102000
NOC	4062227400	7857291054	9002800096	6478632448	5203299179	4107537836	4210664957	4581959262	2971499603	3934239545
AVU	236803324	271773758	312607460	351537266	346889146	545345333	501522411	399929086	166414904	142676918
BN	758928000	786416000	855590000	1036046000	1161227000	947357000	975266000	872246000	648794000	1145308000
GRU	917231879	906169293	838866489	812123730	703153580	659599403	603950718	586486003	566309928	563504768
NWC	4496360	19018869	14251233	4594047	4047908	4040850	3381648	3428324	3362354	3204136
NBB	103005475	105158477	98776921	108454474	84077290	89356693	131004902	142349803	217031048	205104312
LUBE	101197685	126039317	115649953	111833142	144431844	115107008	127195361	145407858	141448684	151253119
SSM	902815333	1134089578	1049275572	1058369624	1132416276	1066136890	985627900	922052151	1014490507	845812254
BBC	82273034	73289322	84331987	106704142	88953628	94777675	92501733	96433996	96491927	124624482
STC	1021102564	1188313952	1240059011	1699616037	2282845859	2215335172	3587774568	3719540043	3269811105	3619289989
UNI	544810000	629749324	760415450	571335340	784879673	939719585	1098955828	967146575	985254424	1068172359

** In this study 20 enterprises are taken as a sample from the public and private sector. Among the public sector the enterprises are: (DDC) = Dairy development corporation, (HPP)= Herbs production & processing company limited, (HC)= Hetaunda cement industries limited (JCF)=Janakpur cigarette factory,(NAL)= Nepal ausadhi limited, (AIC)= Agriculture inputs company limited, (NFC)= Nepal food corporation, (NSC)=National seeds company limited, (NTC)= National trading corporation limited, (NOC)=Nepal oil corporation limited.*

** From the listed companies the private companies choosed are: (AVU)= Arun vanaspati udyog limited, (BN)=Bottlers Nepal limited,(GRU)=Gorakhkali rubber udyog limited,(NWC)= Nepal welfare company limited, (NBB)=Nepal bitumin and barrel udyog limited, (LUBE)= Nepal lube oil limited, SSM=Sriram sugarmills limited , (BBC)= Bishal bazar company limited,(STC)= Salt trading corporation limited, (UNI)= Unilever nepal limited*

**The nature of the enterprises selected from population are manufacturing processing and trading. The 12 manufacturing and processing enterprises includes :((DDC, HPP, HC, JCF, NAL from public and AVU, BN, GRU, NBB, LUBE, SSM, UNI from listed private companies) Similarly 8 trading enterprises are: (AIC, NFC, NSC, NTC, and NOC from public and NWC, BBC, STC from listed companies)*

**The portfolio is sort out on the basis of Average total assets of Nepalese enterprises in Rs at current price. The average value is derived from total assets of the enterprises at the end of 1999 and 2008. As our study period covered up to 2008 data. According to this criteria (NOC, STC, HC, AIC, NFC, BN) comes under large scale enterprises. (NTC, SSM, UNI, DDC, GRU, NSC) under medium enterprises and (AVU, NBB, NAL, HPP, LUBE, BBC, NWC) Comes under small enterprises.*

Appendix-7

Total asset of Nepalese enterprises amt in Rs at constant price

Year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
DDC	809258005	803171000	802567854	657409897	670311828	657650000	601570206	591527326	568562631	427233901
HPP	78884442	73952000	135454283	140507003	137974910	134513559	120681458	118702363	113547936	106119637
HC	1042959770	1617692000	1703897979	1657056022	1604870072	1538122034	1445999208	1368360414	1281516445	1152830816
JCF	488512931	487747000	567534167	529068161	533578853	490975424	400508716	343627770	342153254	389993958
NAL	166706691	140054000	142937440	123706816	111628136	113946610	123115689	78591581	68429475	78452302
AIC	968165025	1056568000	1099431184	1683478992	1674336022	1266232203	1243606181	1004598227	950632610	756095468
NFC	1107848933	1201549000	1058652551	854997199	771275090	724077119	776948494	743143279	808127362	516140181
NSC	968165025	1056568000	1093656400	116964519	119921147	119908475	119058637	121667651	128531141	128048943
NTC	488679187	751388000	697363811	776366013	683674731	611625424	787200475	577992614	936388383	769245921
NOC	4168952586	7857291054	8664870160	6049143275	4662454461	3480964268	3336501551	3384017180	2079425894	2377184015
AVU	243024758	271773758	300873398	328232741	310832568	462157062	397402861	295368601	116455496	86209618
BN	778866995	786416000	823474495	967363212	1040525986	802844915	772793978	644199409	454019594	692029003
GRU	941329925	906169293	807378719	758285462	630065932	558982545	478566338	433150667	396298060	340486265
NWC	4614491	19018869	13716297	4289493	3627158	3424449	2679594	2531997	2352942	1936034
NBB	105711694	105158477	95069221	101264682	75338073	75726011	103807371	105132794	151876171	123930098
LUBE	103856409	126039317	111308906	104419367	129419215	97548312	100788717	107391328	98984383	91391613
SSM	926534619	1134089578	1009889867	988206932	1014709925	903505839	781004675	680983863	709930376	511064806
BBC	84434559	73289322	81166494	99630385	79707552	80320064	73297728	71221563	67524092	75301802
STC	1047929561	1188313952	1193512041	1586943078	2045560806	1877402688	2842927550	2747075364	22880000000	2186882169
UNI	559123563	629749324	731872425	533459701	703297198	796372530	870804935	714288460	689471255	645421365
DEFLATOR	97.44	100	103.9	107.1	111.6	118	126.2	135.4	142.9	165.5

**The constant price is calculated using implicit GDP Deflator assuming financial year 2000/01 as a base year for all the years after 2000. For the year 1999 GDP Deflator is used considering base year is 1994/95 price.*

Appendix-8

Fixed asset of Nepalese enterprises amt in Rs at current real price

Year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
DDC	369305000	345855000	315483000	288243000	275075000	293383000	262920000	259593000	254143000	243645962
HPP	20303000	18966000	17363000	15909000	15240000	15504000	15190000	14464000	13969000	13324000
HC	473288000	434282000	397340000	366207000	337034000	310906000	285195000	263873000	251237000	248909000
JCF	71924000	66453000	60609000	58215000	51750000	46671000	46365000	49222000	49958000	45832000
NAL	38067000	37597000	36166000	35601000	34620000	33306000	31772000	30208000	28909090	26771462
AIC	140735000	141715000	137188000	802404000	796151000	812288000	830089000	820645000	801405000	790309000
NFC	227655000	214804000	202871000	192381000	183755000	168988000	163779000	155188000	150131000	135966000
NSC	140735000	141715000	137188000	86625000	83429000	80484000	77873000	75630000	74219000	73153000
NTC	28256000	27850000	26028000	26976000	23623000	21622000	21783000	23151000	23545000	29600000
NOC	88912860	96292788	559732625	60311545	637905749	554510899	497801125	446797975	410491913	490163671
AVU	83782270	84986534	81581480	100875366	100407824	108147766	101515606	105531544	96858713	87165346
BN	346395000	360609000	349114000	416993000	377394000	326096000	409427000	323573000	66464000	642964000
GRU	600767859	561850897	532304903	499541331	461409850	432834837	378820773	334144154	311171841	317299523
NWC	906170	858086	813621	768238	729249	687210	650769	616639	584587	552799
NBB	16685667	14834241	14026771	12812663	986560	986560	11139260	9807692	8683795	7638706
LUBE	14682579	18198620	16754214	15288880	17193931	18613431	17040802	15323263	14921047	13528238
SSM	798242379	875946710	874818380	862932218	841483126	868798600	856426342	742355067	666306893	615497935
BBC	54049559	51751373	48785500	45095122	42031066	39643686	37367744	40702373	40037453	50492009
STC	42080416	42017890	42782690	445170022	462129133	465991989	1393158082	1379608052	1377867557	1361452939
UNI	192090000	177868690	192840258	172198996	146158276	135710594	127776972	145776126	148934100	140217838

**Among the 20 enterprises 10 enterprises are public enterprises which are defined in the study as:(DDC) = Dairy development corporation, (HPP)= Herbs production & processing company limited, (HC)= Hetaunda cement industries limited (JCF)=Janakpur cigarette factory,(NAL)= Nepal ausadhi limited, (AIC)= Agriculture inputs company limited, (NFC)= Nepal food corporation, (NSC)=National seeds company limited, (NTC)= National trading corporation limited, (NOC)=Nepal oil corporation limited.*

The private enterprises taken for the study are:(AVU)= Arun vanaspati udyog limited, (BN)=Bottlers Nepal limited,(GRU)=Gorakhkali rubber udyog limited,(NWC)= Nepal welfare company limited, (NBB)=Nepal bitumin and barrel udyog limited, (LUBE)= Nepal lube oil limited, SSM=Sriram sugarmills limited , (BBC)= Bishal bazar company limited,(STC)= Salt trading corporation limited, (UNI)= Unilever nepal limited

Appendix-9

Fixed asset of Nepalese enterprises amt in Rs at constant price

Year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
DDC	379007594	345855000	303641001	269134454	246482975	248629661	208335975	191723043	177846746	147218104
HPP	20836412	18966000	16711261	14854342	13655914	13138983	12036450	10682422	9775367	8050755
HC	485722496	434282000	382425409	341929972	302001792	263479661	225986529	194884047	175813156	150398187
JCF	73813629	66453000	58333975	54355742	46370968	39551695	36739303	36353028	34960112	27693051
NAL	39067118	37597000	34808470	33240896	31021505	28225424	25175911	22310192	20230294	16176110
AIC	144432471	141715000	132038499	749210084	713396953	688379661	657756735	606089365	560815255	477528097
NFC	233636084	214804000	195256015	179627451	164655018	143210170	129777338	114614476	105060182	82154683
NSC	144432471	141715000	132038499	80882353	74757168	68206780	61706022	55856721	51937719	44201209
NTC	28998358	27850000	25051011	25187675	21167563	18323729	17260697	17098227	16476557	17885196
NOC	91248830	96292788	538722450	56313301	571600134	469924491	394454140	329983733	287258162	296171402
AVU	85983446	84986534	78519230	94188017	89971168	91650649	80440258	77940579	67780765	52667883
BN	355495690	360609000	336009625	389349206	338166667	276352542	324427100	238975628	46510847	388497885
GRU	616551579	561850897	512324257	466425146	413449686	366809184	300174939	246782979	217754962	191721766
NWC	929977	858086	783081	717309	653449	582381	515665	455420	409088	334018
NBB	17124042	14834241	13500261	11963271	884014	836068	8826672	7243495	6076833	4615532
LUBE	15068328	18198620	16125326	14275331	15406748	15774094	13503013	11317033	10441600	8174162
SSM	819214264	875946710	841981117	805725694	754017138	736270000	678626262	548268144	466274943	371902076
BBC	55469580	51751373	46954283	42105623	37662246	33596344	29609940	30060837	28017812	30508767
STC	43185977	42017890	41176795	415658284	414094205	394908465	1103928750	1018912889	964218024	822630175
UNI	197136700	177868690	185601788	160783376	130966197	115008978	101249582	107663313	104222603	84723769
DEFLATOR	97.44	100	103.9	107.1	111.6	118	126.2	135.4	142.9	165.5

**The constant price is calculated using implicit GDP Deflator assuming financial year 2000/01 as a base year for all the years after 2000. For the year 1999 GDP Deflator is used considering base year is 1994/95 price.*

**The variable size is derived from total fixed assets of the firm at the end of the year at constant price. In fact whether the firm is small medium or large could be find out from the size of their fixed assets. Land building, plant and equipment and machines determine the size of the firm.*

Appendix-10

Average cash balance of Nepalese enterprises amount in Rs at current real price

Year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
DDC	111097000	132997000	108117500	87718000	112776500	116793000	167008500	207629000	247916000	265300722
HPP	6098000	1487000	1843500	1349000	2239000	4721500	4302500	4587000	6891000	7006500
HC	8013500	4510000	44500	3820500	2365500	6075500	30672000	87691000	84238500	127820500
JCF	42239000	42414500	57387500	49903000	41404500	53591000	49597500	45659500	45629000	58017500
NAL	19787500	6672500	3167500	4146000	3718500	3351500	24228000	24680500	4320891	21781391
AIC	119318500	163359000	174730500	200883500	406388500	370256000	150015000	133757500	131101500	92862000
NFC	98227500	92424000	66444500	72583500	78434500	77987000	85011000	94053000	113641500	139255000
NSC	119318500	163359000	174730500	61048000	13967000	16739500	12637500	10548500	7892000	6581000
NTC	38246000	42918500	41645500	46562500	36317500	24949000	127855500	124079500	301033500	303136000
NOC	961219797	1993264053	1238921901	2152199206	920679953	973671132	938149163	582875703	810525488	1266386284
AVU	3822145	6848660	12840102	10691168	4040784	5463242	7964728	6099458	3462038	2288111
BN	21360500	25429500	25884000	16698000	17395500	9545000	7836000	18921500	19695000	2946000
GRU	56126588	66700359	69495213	49382509	33002354	26746587	15537606	20018232	30632945	29914922
NWC	1449780	6712142	6599752	818058	419017	326935	187493	61952	106716	86542
NBB	1568424	987187	1139573	745852	1112469	3092190	3845740	3675400	15132119	15298344
LUBE	2763978	1707511	1353032	1564592	2356946	2048521	1808211	3045867	2596979	2814347
SSM	9033703	9352756	7335919	7300480	4514032	4937893	6289969	4019903	9342982	25946982
BBC	2548363	161722	2308580	2394363	1296894	3632175	8550016	11975845	10410528	7072628
STC	38913493	49053449	58450714	46176607	48677251	67684546	64111927	58375619	72682577	71622380
UNI	17505000	59782551	52688368	34303307	189869580	354467936	417421455	251166479	80312107	100295635

**(DDC) = Dairy development corporation, (HPP)= Herbs production & processing company limited, (HC)= Hetaunda cement industries limited (JCF)=Janakpur cigarette factory,(NAL)= Nepal ausadhi limited, (AIC)= Agriculture inputs company limited, (NFC)= Nepal food corporation, (NSC)=National seeds company limited, (NTC)= National trading corporation limited, (NOC)=Nepal oil corporation limited.*

(AVU)= Arun vanaspati udyog limited, (BN)=Bottlers Nepal limited,(GRU)=Gorakhkali rubber udyog limited,(NWC)= Nepal welfare company limited, (NBB)=Nepal bitumin and barrel udyog limited, (LUBE)= Nepal lube oil limited, SSM=Sriram sugarmills limited , (BBC)= Bishal bazar company limited,(STC)= Salt trading corporation limited, (UNI)= Unilever nepal limited

**In our study average cash balance (AVCASH) is taken as a dependent variable. It is computed through opening and closing cash balance of the enterprises for their respective year at balance sheet value. In formula it is indicated by (Opening + Closing cash balance)/2.*

Appendix-11

Average cash balance of Nepalese enterprises amt in Rs at constant price

Year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
DDC	114015805	132997000	104059192	81902894	101054211	98977119	132336371	153344904	173489153	160302551
HPP	6258210	1487000	1774302	1259570	2006272	4001271	3409271	3387740	4822253	4233535
HC	8224035	4510000	42830	3567227	2119624	5148729	24304279	64764402	58949265	77232931
JCF	43348727	42414500	55233397	46594771	37100806	45416102	39300713	33721935	31930721	35055891
NAL	20307369	6672500	3048604	3871148	3331989	2840254	19198098	18227843	3023717	13160961
AIC	122453305	163359000	168171800	187566293	364147401	313776271	118870840	98786928	91743527	56109970
NFC	100808190	92424000	63950433	67771709	70281810	66090678	67362124	69463072	79525192	84141994
NSC	122453305	163359000	168171800	57000934	12515233	14186017	10013867	7790620	5522743	3976435
NTC	39250821	42918500	40082291	43475724	32542563	21143220	101311807	91639217	210660252	183163746
NOC	986473519	1993264053	1192417614	2009523068	824982036	825145027	743382855	430484271	567197682	765188087
AVU	3922562	6848660	12358134	9982416	3620774	4629866	6311195	4504769	2422700	1382544
BN	21921695	25429500	24912416	15591036	15587366	8088983	6209192	13974520	13782365	1780060
GRU	57601178	66700359	66886634	46108785	29572001	22666599	12311891	14784514	21436630	18075482
NWC	1487869	6712142	6352023	763826	375463	277063	148568	45755	74679	52291
NBB	1609630	987187	1096797	696407	996836	2620500	3047337	2714475	10589306	9243712
LUBE	2836595	1707511	1302244	1460870	2111958	1736035	1432813	2249532	1817340	1700511
SSM	9271041	9352756	7060557	6816507	4044831	4184655	4984128	2968909	6538126	15677934
BBC	2615315	161722	2221925	2235633	1162091	3078114	6774973	8844790	7285184	4273491
STC	39935851	49053449	56256703	43115412	43617608	57359785	50801844	43113455	50862545	43276362
UNI	17964901	59782551	50710652	32029231	170134032	300396556	330761850	185499615	56201614	60601592
DEFLATOR	97.44	100	103.9	107.1	111.6	118	126.2	135.4	142.9	165.5

**The constant price is calculated using implicit GDP Deflator assuming financial year 2000/01 as a base year for all the years after 2000. For the year 1999 GDP Deflator is used considering base year is 1994/95 price.*

**In our study average cash balance at constant price (CONCASH) is taken as a dependent variable. It is computed through opening and closing cash balance of the enterprises for their respective year at balance sheet value at constant price. In formula it is indicated by (Opening + Closing cash balance)/2.*

Appendix-12

Cash balance to total assets ratio of Nepalese enterprises (figure in percentage)

Year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
DDC	0.14	0.17	0.13	0.12	0.15	0.15	0.22	0.26	0.31	0.38
HPP	0.08	0.02	0.01	0.01	0.01	0.03	0.03	0.03	0.04	0.04
HC	0.01	0.00	0.00	0.00	0.00	0.00	0.02	0.05	0.05	0.07
JCF	0.09	0.09	0.10	0.09	0.07	0.09	0.10	0.10	0.09	0.09
NAL	0.12	0.05	0.02	0.03	0.03	0.02	0.16	0.23	0.04	0.17
AIC	0.13	0.15	0.15	0.12	0.22	0.25	0.10	0.10	0.10	0.07
NFC	0.09	0.08	0.06	0.08	0.09	0.09	0.09	0.09	0.10	0.16
NSC	0.13	0.15	0.15	0.04	0.10	0.12	0.08	0.06	0.04	0.03
NTC	0.08	0.06	0.06	0.06	0.05	0.03	0.13	0.16	0.22	0.24
NOC	0.24	0.25	0.14	0.33	0.18	0.24	0.22	0.13	0.27	0.32
AVU	0.02	0.03	0.04	0.03	0.01	0.01	0.02	0.02	0.02	0.02
BN	0.03	0.03	0.03	0.02	0.01	0.01	0.01	0.02	0.03	0.00
GRU	0.06	0.07	0.08	0.06	0.05	0.04	0.03	0.03	0.05	0.05
NWC	0.32	0.35	0.46	0.18	0.10	0.08	0.06	0.02	0.03	0.03
NBB	0.02	0.01	0.01	0.01	0.01	0.03	0.03	0.03	0.07	0.07
LUBE	0.03	0.01	0.01	0.01	0.02	0.02	0.01	0.02	0.02	0.02
SSM	0.01	0.01	0.01	0.01	0.00	0.00	0.01	0.00	0.01	0.03
BBC	0.03	0.00	0.03	0.02	0.01	0.04	0.09	0.12	0.11	0.06
STC	0.04	0.04	0.05	0.03	0.02	0.03	0.02	0.02	0.02	0.02
UNI	0.03	0.09	0.07	0.06	0.24	0.38	0.38	0.26	0.08	0.09

**(DDC) = Dairy development corporation, (HPP)= Herbs production & processing company limited, (HC)= Hetaunda cement industries limited (JCF)=Janakpur cigarette factory,(NAL)= Nepal ausadhi limited, (AIC)= Agriculture inputs company limited, (NFC)= Nepal food corporation, (NSC)=National seeds company limited, (NTC)= National trading corporation limited, (NOC)=Nepal oil corporation limited.*

(AVU)= Arun vanaspati udyog limited, (BN)=Bottlers Nepal limited,(GRU)=Gorakhkali rubber udyog limited,(NWC)= Nepal welfare company limited, (NBB)=Nepal bitumin and barrel udyog limited, (LUBE)= Nepal lube oil limited, SSM=Sriram sugarmills limited , (BBC)= Bishal bazar company limited,(STC)= Salt trading corporation limited, (UNI)= Unilever nepal limited

**In this study cash balance to total assets ratio (CASH) is taken as a dependent variable, to analyzed cash demand function under static and dynamic model.*

Appendix-13

Growth (Depc/ tangible assets)

Year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
DDC	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.05
HPP	0.03	0.03	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
HC	0.05	0.03	0.04	0.00	0.00	0.02	0.01	0.01	0.01	0.01
JCF	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01
NAL	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.07	0.02	0.02
AIC	0.05	0.05	0.05	0.00	0.01	0.01	0.01	0.01	0.01	0.01
NFC	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
NSC	0.01	0.01	0.01	0.00	0.03	0.02	0.02	0.02	0.01	0.01
NTC	0.09	0.06	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NOC	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.02	0.01
AVU	0.03	0.02	0.02	0.03	0.04	0.01	0.02	0.02	0.05	0.06
BN	0.02	0.04	0.05	0.05	0.05	0.06	0.05	0.07	0.09	0.06
GRU	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.04	0.04
NWC	0.00	0.00	0.00	0.01	0.01	0.01	0.02	0.01	0.01	0.01
NBB	0.02	0.02	0.00	0.01	0.01	0.00	0.01	0.00	0.00	0.00
LUBE	0.01	0.01	0.03	0.03	0.01	0.02	0.02	0.01	0.01	0.01
SSM	0.02	0.02	0.02	0.02	0.03	0.02	0.01	0.13	0.10	0.11
BBC	0.03	0.06	0.05	0.03	0.04	0.03	0.03	0.03	0.03	0.03
STC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UNI	0.04	0.03	0.03	0.08	0.06	0.02	0.02	0.02	0.02	0.02

Appendix-14

Leverage (Total debt/ total assets)

Year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
DDC	0.49	0.53	0.68	0.79	0.73	0.56	0.58	0.63	0.63	0.70
HPP	1.04	1.15	0.70	0.72	0.72	0.73	0.81	0.82	0.82	0.84
HC	0.81	0.61	0.52	0.87	0.88	0.89	0.90	0.89	0.36	0.31
JCF	0.77	0.52	0.44	0.47	0.43	0.39	0.49	0.63	0.81	0.85
NAL	0.36	0.40	0.59	0.74	1.38	1.62	1.93	2.75	2.79	1.72
AIC	4.30	4.67	5.55	1.77	1.76	1.22	1.26	1.10	1.13	0.95
NFC	0.60	0.47	0.91	0.96	1.10	1.12	1.05	1.09	1.12	1.15
NSC	0.66	0.65	0.69	0.06	0.13	0.16	0.19	0.23	0.39	0.38
NTC	0.76	0.75	0.72	0.70	0.68	0.66	0.75	0.68	0.81	0.81
NOC	0.35	0.41	0.38	0.23	0.30	0.53	1.27	2.09	3.33	4.17
AVU	1.68	1.27	1.23	1.17	1.17	1.11	1.07	1.43	3.78	3.64
BN	0.28	0.24	0.33	0.33	0.29	0.18	0.23	0.40	1.00	0.36
GRU	1.11	0.89	1.00	1.08	1.17	1.30	1.58	1.72	1.89	1.92
NWC	0.07	0.76	0.67	0.15	0.24	0.29	0.28	0.17	0.17	0.18
NBB	0.81	0.81	0.79	0.80	0.96	0.93	0.82	0.83	0.57	0.88
LUBE	0.42	0.38	0.69	0.67	0.73	0.66	0.69	0.73	0.71	0.70
SSM	0.76	0.80	0.67	0.74	0.79	0.76	0.73	0.73	0.95	1.01
BBC	0.29	0.18	0.10	0.10	0.36	0.17	0.19	0.19	0.20	0.20
STC	0.94	0.93	0.93	0.71	0.76	0.73	0.46	0.50	0.68	0.62
UNI	0.49	0.48	0.55	0.39	0.54	0.58	0.80	0.77	0.76	0.75

Appendix-15

Cash flow (Eat+depc/ total assets)

Year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
DDC	0.03	0.02	-0.09	-0.07	0.05	0.06	-0.01	0.01	0.06	-0.08
HPP	0.76	0.88	-0.55	-0.56	-0.61	-0.61	-0.56	-0.01	0.02	-0.08
HC	0.06	0.01	-0.03	-0.03	-0.05	0.03	0.05	0.03	0.05	0.06
JCF	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	-0.17	-0.23
NAL	0.00	-0.14	-0.29	-0.53	-1.23	-1.40	-1.61	-2.69	0.29	0.53
AIC	-2.85	0.28	-0.10	0.01	0.02	0.01	-0.02	-0.04	0.01	-0.17
NFC	-0.02	0.05	-0.02	-0.05	-0.13	-0.02	0.06	0.07	0.04	0.02
NSC	-0.23	0.04	-0.01	-0.01	0.01	0.05	0.04	0.05	0.03	0.02
NTC	0.12	0.07	0.08	0.01	0.01	-0.11	-0.14	-0.24	-0.17	-0.17
NOC	0.32	0.26	0.09	-0.01	-0.35	-0.21	-0.72	-0.83	-0.63	-1.40
AVU	0.06	-0.18	0.02	0.07	0.04	0.02	-0.10	-0.15	-0.88	-0.21
BN	0.10	0.12	0.09	0.10	0.07	0.10	0.09	0.10	0.05	0.20
GRU	0.01	0.14	-0.07	-0.04	-0.03	-0.06	-0.09	-0.08	-0.09	-0.12
NWC	0.24	0.02	0.05	-0.03	0.10	-0.04	-0.01	0.04	0.03	0.06
NBB	0.03	0.03	0.01	0.01	-0.08	0.04	0.06	0.01	0.02	0.01
LUBE	0.11	0.05	0.01	0.09	0.04	0.02	0.04	0.01	0.03	0.03
SSM	-0.02	-0.08	0.05	0.03	0.00	0.03	0.03	0.11	-0.10	0.05
BBC	0.18	0.25	0.25	0.22	0.29	0.25	0.30	0.25	0.30	0.24
STC	0.01	-0.01	0.01	0.02	0.02	0.03	0.01	0.01	-0.03	0.01
UNI	0.26	0.23	0.25	0.15	0.17	0.12	0.14	0.27	0.29	0.33

Appendix-16

Liquidity (Current assets –cash balance at the end / total assets)

Year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
DDC	0.30	0.30	0.41	0.32	0.37	0.37	0.26	0.33	0.32	0.33
HPP	0.72	0.72	0.86	0.89	0.88	0.86	0.88	0.87	0.87	0.89
HC	0.52	0.73	0.76	0.78	0.81	0.81	0.75	0.70	0.67	0.63
JCF	0.65	0.67	0.57	0.64	0.62	0.64	0.60	0.57	0.60	0.70
NAL	0.68	0.70	0.71	0.68	0.68	0.71	0.50	0.66	0.65	0.48
AIC	4.89	4.61	6.32	0.88	0.60	0.44	0.62	0.30	0.45	0.29
NFC	0.67	0.76	0.75	0.70	0.68	0.70	0.73	0.74	0.75	0.66
NSC	0.75	0.64	0.78	0.23	0.24	0.30	0.36	0.40	0.47	0.51
NTC	0.84	0.91	0.90	0.83	0.85	0.84	0.67	0.90	0.53	0.95
NOC	0.54	0.52	0.49	0.48	0.59	0.64	0.72	0.67	0.68	0.72
AVU	0.96	0.65	0.68	0.70	0.69	0.78	0.78	0.72	0.40	0.38
BN	0.39	0.34	0.46	0.46	0.57	0.52	0.46	0.46	0.72	0.34
GRU	0.28	0.30	0.29	0.34	0.30	0.31	0.36	0.38	0.40	0.39
NWC	0.29	0.81	0.76	0.35	0.34	0.35	0.31	0.41	0.38	0.40
NBB	0.83	0.85	0.85	0.88	0.97	0.94	0.89	0.90	0.84	0.94
LUBE	0.83	0.82	0.81	0.82	0.84	0.83	0.84	0.87	0.88	0.89
SSM	0.10	0.22	0.16	0.18	0.26	0.18	0.13	0.19	0.33	0.23
BBC	0.10	0.22	0.16	0.18	0.26	0.18	0.13	0.19	0.33	0.23
STC	0.78	0.81	0.82	0.63	0.71	0.69	0.47	0.49	0.55	0.50
UNI	0.61	0.56	0.74	0.59	0.35	0.35	0.41	0.52	0.53	0.60

Appendix-17

Sales to total assets ratio (STA)

Year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
DDC	1.76	1.68	1.78	2.2	2.13	1.98	2.09	1.92	2.07	2.55
HPP	0.24	0.48	0.28	0.28	0.31	0.29	0.31	0.33	0.33	0.3
HC	0.58	0.34	0.24	0.34	0.23	0.36	0.37	0.36	0.39	0.53
JCF	2.02	2.09	2.02	2.08	1.95	1.96	2.28	2.34	1.98	1.49
NAL	0.77	0.62	0.7	0.62	0.48	0.5	0.35	0.5	0.54	0.27
AIC	6.79	7.5	5.03	0.2	1.32	0.4	0.7	0.34	0.55	0.18
NFC	0.76	0.48	0.36	0.5	0.43	0.46	0.34	0.49	0.53	0.83
NSC	1.04	1.04	0.62	0	0.39	0.4	0.51	0.61	0.61	0.66
NTC	1.69	0.71	1.35	1.25	1.11	1.35	0.81	0.52	0.72	0.81
NOC	2.75	1.75	1.96	2.79	3.89	5.5	6.38	7.08	12.25	9.87
AVU	2.45	1.05	1.16	1.84	1.47	1.18	1.21	1.15	1.97	0.92
BN	0.39	0.47	0.48	0.52	0.53	0.67	0.63	0.71	0.98	0.65
GRU	0.45	0.43	0.49	0.47	0.57	0.53	0.67	0.62	0.54	0.54
NWC	6.75	0.93	4	1.81	0.05	0.06	0.05	0.1	0.05	0.04
NBB	0.99	0.65	0.88	0.93	0.86	1.84	1.7	1.41	1.55	1.16
LUBE	1.06	0.85	0.62	1.22	0.82	0.74	0.93	1.02	1.3	1.11
SSM	0.43	0.4	0.62	0.5	0.47	0.57	0.43	0.7	0.56	0.88
BBC	0.45	0.61	0.57	0.47	0.58	0.57	0.66	0.7	0.72	0.61
STC	1.8	1.33	1.41	1.1	1.08	1.76	0.61	0.5	0.59	0.59
UNI	2.76	2.74	2.03	2.16	1.59	1.62	1.35	1.48	1.85	2.01

Appendix-18

Average collection period (ACP)

Year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
DDC	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
HPP	10.96	12.9	25.69	20.85	22.17	24.42	20.6	23	18.87	22.21
HC	204.99	96.13	88.16	77.25	71.67	74.35	75.4	62.12	63.45	57.63
JCF	67.59	88.82	124.28	91.29	122.16	101.98	97.84	92.43	72.57	75.44
NAL	27.15	24.39	18.37	21.08	13.7	18.09	16.56	18	18.48	26.61
AIC	108.39	127.06	129.21	171.59	213.62	228.96	227.85	264.61	98.62	134.84
NFC	23.03	45.44	59.62	76.87	36.36	119.44	61.75	125.91	138.38	164.79
NSC	112.05	176.55	302.89	256.83	315.75	287.59	319.08	246.18	154.33	64.87
NTC	23.03	45.44	59.87	0	49.05	44.41	29.71	23.05	20.34	19.45
NOC	22.97	45.25	32.31	46.72	73.74	63.03	66.58	0	1.69	182.28
AVU	21.06	15.69	13.19	11.45	10.63	8.5	7.79	3.83	4.2	4.26
BN	141.72	61.4	31.69	10.91	23.6	28.14	54.78	59.53	1.92	29.17
GRU	1.11	0.07	69.89	77.45	133.96	105.35	47.34	36.85	29.99	17.75
NWC	52.21	49.67	31.01	52.87	50.8	41.83	23.59	17.59	34.28	30.38
NBB	15.06	245.16	6.18	16.05	691.71	601.55	90.17	365.1	474.18	700.68
LUBE	151.87	217.93	196.94	204.8	247.39	122.18	148.99	182.78	137.66	171.37
SSM	162.37	222.98	242.66	179.84	228.1	232.86	184.5	170	135.8	183.3
BBC	21.13	35.15	15.23	20.48	35.77	26	36.59	22.4	41.49	27.94
STC	10.97	16.34	23.28	20.47	13.88	13.03	12.77	11.58	9.37	9.58
UNI	27.29	30.84	31	29.21	24.54	16.42	33.45	38.18	41.13	37.75

Appendix-19

Current ratio (CR)

Year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
DDC	2.14	0.78	0.83	0.81	0.79	0.86	0.98	0.89	0.19	0.73
HPP	1.42	1.63	1.38	1.49	2.02	2.92	1.98	1.58	0.72	0.94
HC	5.57	1.32	1.08	1.00	0.83	0.69	0.51	0.51	0.46	0.44
JCF	8.42	1.17	1.25	2.98	1.74	1.47	1.16	2.57	2.50	2.28
NAL	2.88	2.32	2.99	2.94	2.37	2.56	2.61	2.14	9.37	2.88
AIC	2.02	2.16	1.20	1.25	1.18	1.27	1.26	1.23	1.27	1.29
NFC	2.19	1.48	0.60	0.65	0.68	0.50	0.34	0.48	0.49	0.40
NSC	1.35	1.93	1.68	1.08	0.43	1.04	1.38	1.38	1.34	0.84
NTC	3.13	3.30	3.92	3.74	4.40	3.78	1.06	1.01	1.04	1.04
NOC	1.32	1.48	1.36	1.79	1.38	1.33	1.01	0.75	0.83	0.93
AVU	2.14	0.78	0.83	0.81	0.79	0.86	0.98	0.89	0.19	0.73
BN	1.42	1.63	1.38	1.49	2.02	2.92	1.98	1.58	0.72	0.94
GRU	5.57	1.32	1.08	1.00	0.83	0.69	0.51	0.51	0.46	0.44
NWC	8.42	1.17	1.25	2.98	1.74	1.47	1.16	2.57	2.50	2.28
NBB	2.88	2.32	2.99	2.94	2.37	2.56	2.61	2.14	9.37	2.88
LUBE	2.02	2.16	1.20	1.25	1.18	1.27	1.26	1.23	1.27	1.29
SSM	2.19	1.48	0.60	0.65	0.68	0.50	0.34	0.48	0.49	0.40
BBC	1.35	1.93	1.68	1.08	0.43	1.04	1.38	1.38	1.34	0.84
STC	3.13	3.30	3.92	3.74	4.40	3.78	1.06	1.01	1.04	1.04
UNI	1.32	1.48	1.36	1.79	1.38	1.33	1.01	0.75	0.83	0.93

Appendix-20

Quick ratio (QR)

Year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
DDC	0.71	0.72	0.46	0.51	0.58	0.64	0.87	0.69	0.90	0.82
HPP	0.72	0.59	1.85	1.64	1.74	1.71	1.34	1.28	1.24	1.22
HC	0.43	1.29	1.22	1.30	1.34	1.34	1.27	1.25	1.65	1.79
JCF	0.92	0.85	0.98	0.84	0.97	1.18	1.12	0.67	0.64	1.43
NAL	0.83	0.60	0.47	1.01	0.38	0.40	0.91	0.57	1.03	1.62
AIC	0.92	0.91	0.65	0.51	0.56	0.49	0.31	0.45	0.38	0.35
NFC	0.57	0.71	0.75	0.80	0.77	0.70	0.61	0.39	0.34	0.32
NSC	0.92	0.91	0.65	1.29	1.45	1.04	0.63	0.56	0.32	0.39
NTC	0.28	0.41	0.27	0.31	0.37	0.58	0.69	0.58	0.89	0.91
NOC	1.90	1.40	1.79	1.72	1.75	0.76	0.33	0.23	0.18	0.36
AVU	2.14	0.55	0.61	0.59	0.59	0.39	0.62	0.61	0.16	0.45
BN	0.77	1.00	0.88	0.94	1.33	1.86	1.00	0.94	0.43	0.59
GRU	2.11	0.56	0.42	0.34	0.33	0.22	0.15	0.19	0.20	0.17
NWC	8.27	0.94	0.45	2.97	1.74	1.47	1.16	2.57	2.50	2.28
NBB	1.90	1.41	2.01	2.06	1.74	2.02	2.31	1.91	7.63	1.92
LUBE	1.44	1.68	0.84	0.99	0.89	0.85	0.84	0.87	0.79	0.98
SSM	0.89	0.33	0.17	0.19	0.18	0.17	0.16	0.16	0.14	0.20
BBC	1.35	1.93	1.68	1.08	0.43	1.04	1.38	1.38	1.34	0.84
STC	2.51	2.37	3.19	2.50	2.59	2.67	0.58	0.54	0.65	0.70
UNI	0.67	1.05	0.65	1.14	1.09	0.99	0.75	0.41	0.42	0.42

Appendix-21

Bank debt (Bank debt/total debt)

Year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
DDC	0.41	0.37	0.28	0.28	0.28	0.20	0.19	0.16	0.16	0.16
HPP	0.62	0.58	0.50	0.46	0.44	0.42	0.40	0.37	0.37	0.34
HC	0.14	0.28	0.06	0.44	0.44	0.44	0.44	0.42	0.02	0.02
JCF	0.33	0.00	0.00	0.00	0.00	0.00	0.26	0.00	0.12	0.47
NAL	0.00	0.00	0.00	0.56	0.41	0.47	0.71	0.74	0.88	0.82
AIC	0.35	0.02	0.07	0.00	0.00	0.00	0.00	0.00	0.01	0.00
NFC	0.13	0.00	0.46	0.43	0.45	0.42	0.38	0.00	0.00	0.00
NSC	0.35	0.02	0.07	0.00	0.00	0.00	0.00	0.00	0.28	0.25
NTC	0.00	0.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NOC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.33	0.65
AVU	0.72	0.32	0.29	0.25	0.25	0.17	0.24	0.43	0.42	0.85
BN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.00	0.00
GRU	0.06	0.32	0.34	0.36	0.35	0.38	0.46	0.49	0.52	0.52
NWC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NBB	0.64	0.54	0.64	0.63	0.57	0.58	0.57	0.48	0.82	0.62
LUBE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SSM	0.93	0.81	0.59	0.61	0.52	0.52	0.47	0.44	0.26	0.32
BBC	0.43	0.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
STC	0.72	0.72	0.76	0.75	0.78	0.74	0.00	0.00	0.19	0.19
UNI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Profit and loss account and balance sheet data used for analysis
Dairy Development Corporation

Year	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999
CASH	229159444	301442000	194390000	220868000	113149000	120437000	105116000	70320000	145915000	120079000
BR	111075884	88097000	98145000	90961000	104195000	98260000	89672000	105950000	48319000	42243000
STOCK	123190816	168794000	169200000	104832000	182273000	169543000	127575000	226951000	193824000	191889000
SAPATI	0	0	0	600	3427000	6253000	9080000	8906000	0	615000
ADV	0	0	0	0	0	0	0	0	0	0
CA	**463426144**	**558333000**	**461735000**	**416661600**	**403044000**	**394493000**	**331443000**	**412127000**	**388058000**	**354826000**
INV	0	0	79600000	79600000	79600000	78500000	84400000	106258000	69258000	64410000
FA	243645962	254143000	259593000	262920000	293383000	275075000	288243000	315483000	345855000	369305000
TA	**707072106**	**812476000**	**800928000**	**759181600**	**776027000**	**748068000**	**704086000**	**833868000**	**803171000**	**788541000**
PAY	131693974	125282000	129420000	128059000	109632000	176793000	398435000	406136000	268918000	231016000
CRE	281429384	306137000	295584000	230630000	237493000	213327000	0	0	0	0
CL	**413123358**	**431419000**	**425004000**	**358689000**	**347125000**	**390120000**	**398435000**	**406136000**	**268918000**	**231016000**
SHARE	550802389	552348000	552347000	550998000	549453000	418434000	419689000	419688000	419060000	419060000
RES	-335879651	-246068000	-247456000	-221915000	-208213000	-218825000	-227756000	-151624000	-45722000	-24094000
FUND	0	1545000	1545000	1545000	2459000	2459000	2488000	2488000	2785000	2565000
NW	**214922738**	**307825000**	**306436000**	**330628000**	**343699000**	**202068000**	**194421000**	**270552000**	**376123000**	**397531000**
LTD	79026010	82351000	83302000	84252000	85203000	155280000	156230000	157180000	158130000	159080000
MTD	0	0	0	0	0	0	0	0	0	0
TD	**79026010**	**82351000**	**83302000**	**84252000**	**85203000**	**155280000**	**156230000**	**157180000**	**158130000**	**159080000**
TC	**707072106**	**821595000**	**814742000**	**773569000**	**776027000**	**747468000**	**749086000**	**833868000**	**803171000**	**787627000**
OP.cash	301442000	194390000	220868000	113149000	120437000	105116000	70320000	145915000	120079000	102115000
CLO.cash	229159444	301442000	194390000	220868000	113149000	120437000	105116000	70320000	145915000	120079000
AVCASH	**265300722**	**247916000**	**207629000**	**167008500**	**116793000**	**112776500**	**87718000**	**108117500**	**132997000**	**111097000**
SALES	1800673561	1680354000	1536341000	1589663000	1535810000	1595907000	1548240000	1484772000	1348399000	1.387E+09
DEPC	36434381	34210000	31779000	29406000	30002000	29429000	30002000	32129000	34680000	34562000
EBIT	5244056	14724000	-25541000	-37915000	14149000	8931000	-76132000	-107550000	-21628000	-14000000
INT	3213106	3615000	4664000	4522000	4319000	11584000	11634000	11676000	11802000	11994000
TAX	0	0	0	0	3537000	0	0	0	0	0
EAT	-89790182	14724000	-25541000	-37915000	14149000	8931000	-76132000	-107550000	-21628000	-14000000

(CASH) refer to cash and bank balance at the end of the fiscal year. (BR) represents bills receivables and debtors; (STOCK) indicates closing stock at the end of the year. (SAPATI) represents Employees and institutional sapati, (ADV) is the total advance given for employees and institution for supply. (INV) represents total investment in short term and long term securities. (FA) fixed assets, (TA) total assets, (CA) current assets (CL) current liabilities (PAY) bills payable, (CRE) creditors, (SHARE) represents equity shares. (RES) reserve and (FUND) provisional fund, (NW) net worth, (LTD) long term debt (MTD) short and medium term debt (TD) total debt. Opcash and CLOcash are cash balance at the beginning and end of the year. (DEPC) depreciation (INT) total interest in Rs (EAT) is denoted for earnings after tax.

Herbs Production and Processing Company

Year	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999
CASH	6807000	7206000	6576000	2598000	6007000	3436000	1042000	1656000	2031000	943000
BR	8428000	9465000	9261000	9896000	9483000	9534000	9200000	9635000	9444000	10610000
STOCK	43276000	43760000	41054000	38324000	28822000	30526000	38449000	33228000	34067000	34399000
SAPATI	0	0	0	0	0	0	0	0	0	0
ADV	103793000	87860000	89368000	86292000	98910000	95244000	85883000	78855000	9444000	10610000
CA	**162304000**	**148291000**	**146259000**	**137110000**	**143222000**	**138740000**	**134574000**	**123374000**	**54986000**	**56562000**
INV	0	0	0	0	0	0	0	0	0	0
FA	13324000	13969000	14464000	15190000	15504000	15240000	15909000	17363000	18966000	20303000
TA	**175628000**	**162260000**	**160723000**	**152300000**	**158726000**	**153980000**	**150483000**	**140737000**	**73952000**	**76865000**
PAY	5084000	5625000	6587000	6430000	4366000	5251000	32177000	25393000	14913000	13052000
CRE	92694000	78610000	75905000	67397000	62457000	56826000	26403000	23441000	20481000	17520000
CL	**97778000**	**84235000**	**82492000**	**73827000**	**66823000**	**62077000**	**58580000**	**48834000**	**35394000**	**30572000**
SHARE	27517000	27517000	27517000	27517000	27517000	27517000	27517000	27517000	27517000	27517000
RES	0	0	0	0	0	0	0	0	0	0
FUND	984000	1159000	1365000	1607000	15037000	15037000	15037000	15037000	15037000	15037000
NW	**28501000**	**28676000**	**28882000**	**29124000**	**42554000**	**42554000**	**42554000**	**42554000**	**42554000**	**42554000**
LTD	49349000	49349000	49349000	49349000	49349000	49349000	49349000	49349000	49349000	49349000
MTD	0	0	0	0	0	0	0	0	0	0
TD	**49349000**	**49349000**	**49349000**	**49349000**	**49349000**	**49349000**	**49349000**	**49349000**	**49349000**	**49349000**
TC	**77850000**	**78025000**	**78231000**	**78473000**	**91903000**	**91903000**	**91903000**	**91903000**	**91903000**	**91903000**
OP.cash	7206000	6576000	2598000	6007000	3436000	1042000	1656000	2031000	943000	11253000
CLO.cash	6807000	7206000	6576000	2598000	6007000	3436000	1042000	1656000	2031000	943000
AVCASH	**7006500**	**6891000**	**4587000**	**4302500**	**4721500**	**2239000**	**1349000**	**1843500**	**1487000**	**6098000**
SALES	52644000	53706000	53672000	47247000	45917000	47888000	42876000	39346000	35366000	18633000
DEPC	1234000	1350000	1533000	1542000	1466000	1532000	1759000	1985000	2158000	2490000
EBIT	-15933000	4469000	-6037000	-527000	-3666000	-9361000	-976000	-4239000	2685000	3778000
INT	2961000	2961000	2961000	2961000	2961000	2961000	2961000	2961000	2961000	2961000
TAX	0	0	0	0	0	0	0	0	0	0
EAT	-15933000	1508000	-3076000	-86292000	-98910000	-95244000	-85883000	-78855000	62789000	56220000

Hetaunda Cement Industries Limited

Year	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999
CASH	130522000	118214000	125119000	50263000	11081000	1070000	3661000	3980000	-3891000	12911000
BR	211663000	145746000	172394000	181087000	186509000	141184000	151675000	149076000	133952000	110192000
STOCK	283426000	273580000	229931000	239657000	254539000	251725000	258822000	297968000	261696000	240357000
SAPATI	0	11242000	22485000	33727000	44969000	54251000	59319000	58441000	61736000	68320000
ADV	698977000	788179000	868236000	911449000	984567000	997889000	908318000	845830000	728917000	110192000
CA	**1324588000**	**1336961000**	**1418165000**	**1416183000**	**1481665000**	**1446119000**	**1381795000**	**1355295000**	**1182410000**	**541972000**
INV	334438000	243089000	170722000	123473000	22413000	7882000	26705000	17715000	1000000	1000000
FA	248909000	251237000	263873000	285195000	310906000	337034000	366207000	397340000	434282000	473288000
TA	**1907935000**	**1831287000**	**1852760000**	**1824851000**	**1814984000**	**1791035000**	**1774707000**	**1770350000**	**1617692000**	**1016260000**
PAY	0	0	0	0	0	0	0	0	0	0
CRE	572614000	630476000	256620000	205727000	209345000	197981000	178430000	809161000	438566000	588965000
CL	**581613000**	**642897000**	**953406000**	**925439000**	**913739000**	**889576000**	**863227000**	**868185000**	**715225000**	**705410000**
SHARE	900685000	900685000	900685000	900685000	900685000	900685000	900685000	900685000	900685000	900685000
RES	239000	281000	331000	389000	560000	774000	1165000	1480000	1782000	2220000
FUND	434397000	303506000	0	0	0	0	0	0	0	0
NW	**1335321000**	**1204472000**	**901016000**	**901074000**	**901245000**	**901459000**	**901850000**	**902165000**	**902467000**	**902905000**
LTD	8999000	12421000	696786000	719712000	704394000	691595000	684797000	59024000	276659000	116445000
MTD										
TD	**8999000**	**12421000**	**696786000**	**719712000**	**704394000**	**691595000**	**684797000**	**59024000**	**276659000**	**116445000**
TC	**1344320000**	**1216893000**	**1597802000**	**1620786000**	**1605639000**	**1593054000**	**1586647000**	**961189000**	**1179126000**	**1019350000**
OP.cash	118214000	125119000	50263000	11081000	1070000	3661000	3980000	-3891000	12911000	3116000
CLO.cash	130522000	118214000	125119000	50263000	11081000	1070000	3661000	3980000	-3891000	12911000
AVCASH	**127820500**	**84238500**	**87691000**	**30672000**	**6075500**	**2365500**	**3820500**	**44500**	**4510000**	**8013500**
SALES	1010108000	723011000	671464000	666277000	658411000	416057000	598142000	431843000	542952000	586932000
DEPC	18241000	19378000	21590000	24240000	27356000	6618000	4709000	64382000	43556000	48433000
EBIT	130926000	108155000	43336000	72941000	23011000	-89571000	-62488000	-116913000	-26670000	19856000
INT	20557000	26516000	29490000	31554000	34972000	33836000	32220000	33846000	34939000	37426000
TAX	25897000	21391000	12421000	12421000	12421000	0	0	0	0	0
EAT	94555000	78101000	39888000	65718000	23011000	-89571000	-62488000	-116913000	-26670000	17354000

Janakpur Cigarette Factory Limited

Year	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999
CASH	68159000	47876000	43382000	47937000	51258000	55924000	26885000	72921000	42975000	41854000
BR	71050000	49737000	54426000	53090000	57077000	44181000	68923000	60812000	69110000	72438000
STOCK	102240000	117565000	115292000	143075000	154652000	178989000	169994000	153012000	155421000	127609000
SAPATI	76847000	78863000	96681000	104845000	99851000	91183000	65702000	57927000	59391000	56421000
ADV	199697000	45223000	0	0	56585000	55263000	59396000	63838000	44403000	53525000
CA	**517993000**	**339264000**	**309781000**	**348947000**	**419423000**	**425540000**	**390900000**	**408510000**	**370179000**	**352968000**
INV	81615000	99715000	106269000	110130000	113257000	118184000	117517000	120549000	51115000	51115000
FA	45832000	49958000	49222000	46365000	46671000	51750000	58215000	60609000	66453000	71924000
TA	**645440000**	**488937000**	**465272000**	**505442000**	**579351000**	**595474000**	**566632000**	**589668000**	**487747000**	**476007000**
PAY	204305000	254901000	262846000	124821000	135842000	187070000	95412000	77563000	63550000	54312000
CRE	86409000	91704000	28575000	58594000	88094000	67512000	168842000	182806000	188569000	190820000
CL	**290714000**	**346605000**	**291421000**	**183415000**	**223936000**	**254582000**	**264254000**	**260369000**	**252119000**	**245132000**
SHARE	40837000	40837000	40837000	40837000	40837000	40837000	40837000	40837000	40837000	40837000
RES	54483000	54483000	133014000	215632000	215433000	219301000	216808000	215632000	73116000	65894000
FUND	0	0	0		0	0	0	0	0	0
NW	**95320000**	**95320000**	**173851000**	**256469000**	**256270000**	**260138000**	**257645000**	**256469000**	**113953000**	**106731000**
LTD	259406000	47012000	0	65558000	0	0	0	0	122796000	123023000
MTD	0		0	0	0	0	0	0	0	0
TD	**259406000**	**47012000**	**0**	**65558000**	**0**	**0**	**0**	**0**	0	**123023000**
TC	**645440000**	**488937000**	**465272000**	**505442000**	**480206000**	**514720000**	**521899000**	**516838000**	**366072000**	**474886000**
OP.cash	47876000	43382000	47937000	51258000	55924000	26885000	72921000	41854000	42975000	41503000
CLO.cash	68159000	47876000	43382000	47937000	51258000	55924000	26885000	72921000	41854000	42975000
AVCASH	**58017500**	**45629000**	**45659500**	**49597500**	**53591000**	**41404500**	**49903000**	**57387500**	**42414500**	**42239000**
SALES	961124000	968713000	1088470000	1153879000	1136140000	1161014000	1177090000	1192066000	1020054000	960393000
DEPC	4506000	4434000	7269000	6708000	6930000	7111000	6909000	6747000	7296000	7688000
EBIT	-134998000	-78976000	23224000	31521000	7126000	14814000	14131000	67127000	19291000	-2839000
INT	19476000	11008000	11463000	10759000	13611000	14709000	12393000	0	0	0
TAX	0	0	2665000	5198000	2518000	5530000	5725000	0	7985000	0
EAT	-154474000	-89984000	3264000	4245000	819000	417000	-821000	0	0	-2839000

Nepal Ausadhi Limited

Year	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999
CASH	39589999	3972782	4669000	44692000	3764000	2939000	4498000	3794000	2541000	10804000
BR	13214166	14438773	38830000	34133000	42438000	35666000	38877000	37313000	30879000	37686000
STOCK	37916217	34520916	31404000	43473000	53647000	48707000	50869000	68772000	66470000	73290000
SAPATI	11044716	14642159	0	0	0	0	0	0	0	0
ADV	0	0	0	0	0	0	0	0	0	0
CA	**101765098**	**67574630**	**74903000**	**122298000**	**99849000**	**87312000**	**94244000**	**109879000**	**99890000**	**121780000**
INV	1302000	1302000	1302000	1302000	1302000	2645000	2645000	2467000	2567000	2592000
FA	26771462	28909090	30208000	31772000	33306000	34620000	35601000	36166000	37597000	38067000
TA	**129838560**	**97785720**	**106413000**	**155372000**	**134457000**	**124577000**	**132490000**	**148512000**	**140054000**	**162439000**
PAY	39401975	31985050	42004000	48111000	38166000	26016000	15426000	87123000	55660000	58503000
CRE	0	0	33701000	38101000	78663000	75433000	27404000	0	0	0
CL	**39401975**	**31985050**	**75705000**	**86212000**	**116829000**	**101449000**	**42830000**	**87123000**	**55660000**	**58503000**
SHARE	75499000	75499000	75499000	75499000	75499000	87520000	87520000	87520000	87520000	87520000
RES	65482372	49840506	30936000	30936000	30936000	18915000	18915000	18915000	18915000	18915000
FUND	-234459607	-300578184	-222918000	-251283000	-190407000	-154279000	-72056000	45046000	22041000	2479000
NW	**-93478235**	**-175238678**	**-116483000**	**-144848000**	**-83972000**	**-47844000**	**34379000**	**151481000**	**128476000**	**108914000**
LTD	61900542	123365069	101547000	102434000	99068000	27007000	17007000	0	0	0
MTD	122014278	117674278	115644000	111574000	2532000	43965000	38274000	0	0	0
TD	**183914820**	**241039347**	**217191000**	**214008000**	**101600000**	**70972000**	**55281000**	**0**	**0**	**0**
TC	**129838560**	**97785719**	**176413000**	**155372000**	**134457000**	**124577000**	**132490000**	**238604000**	**184136000**	**167417000**
OP.cash	3972782	4669000	44692000	3764000	2939000	4498000	3794000	2541000	10804000	28771000
CLO.cash	39589999	3972782	4669000	44692000	3764000	2939000	4498000	3794000	2541000	10804000
AVCASH	**21781390.5**	**4320891**	**24680500**	**24228000**	**3351500**	**3718500**	**4146000**	**3167500**	**6672500**	**19787500**
SALES	35280442	52705113	52827000	53929000	66725000	60107000	81565000	103957000	87488000	125164000
DEPC	2365934	1583621	7139000	1539000	1498000	1467000	1805000	2019000	2172000	1795000
EBIT	66118577	26615987	-41635000	-60876000	-36128000	-82223000	-27010000	-23005000	-19562000	7322000
INT	19411324	13833247	1614000	9233000	13286000	8412000	6499000	0	0	0
TAX	0	0								
EAT	66118577	26615987	-292918000	-251283000	-190407000	-154279000	-72056000	-45046000	-22041000	-2479000

Agriculture Inputs Company Limited

Year	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999
CASH	108279000	77445000	184758000	82757000	217273000	523239000	171254000	112229000	237232000	89486000
BR	73918000	188003000	106887000	110495000	118503000	112580000	119708000	117155000	138142000	62977000
STOCK	68294000	99790000	9801000	295564000	82703000	193812000	573629000	521866000	302373000	423595000
SAPATI	31042000	36030000	83526000	144076000	170452000	177367000	110998000	131802000	117505000	88824000
ADV	83687000	73571000	72440000	21120000	20335000	18909000	111776000	112602000	115314000	133476000
CA	**365220000**	**474839000**	**457412000**	**654012000**	**609266000**	**1025907000**	**1087365000**	**995654000**	**910566000**	**798358000**
INV	95809000	82210000	82169000	85330000	72600000	46501000	3467000	3467000	4287000	4287000
FA	790309000	801405000	820645000	830089000	812288000	796151000	133057000	137188000	141715000	140735000
TA	**1251338000**	**1358454000**	**1360226000**	**1569431000**	**1494154000**	**1868559000**	**1223889000**	**1136309000**	**1056568000**	**943380000**
PAY	366293000	561512000	555257000	715207000	618597000	1022297000	1008134000	724524000	671406000	405533000
CRE	475749000	424217000	441368000	441431000	459140000	459471000	0	0	0	0
CL	**842042000**	**985729000**	**996625000**	**1156638000**	**1077737000**	**1481768000**	**1008134000**	**724524000**	**671406000**	**405533000**
SHARE	426382000	426382000	426382000	426382000	397831000	372075000	330849000	330431000	329394000	307806000
RES	-233234000	-69000000	-69020000	-20757000	11418000	10505000	115094000	0	-45133000	-11707000
FUND	216148000	6257000	6239000	7168000	7168000	4211000	0	0	0	0
NW	**409296000**	**363639000**	**363601000**	**412793000**	**416417000**	**386791000**	**445943000**	**330431000**	**284261000**	**296099000**
LTD	0	9086000	0	0	0	0	0	0		
MTD	0	0	0	0	0	0	0	56422000	10635000	218334000
TD	**0**	**9086000**	**0**	**0**	**0**	**0**	**0**	**56422000**	**10635000**	**218334000**
TC	**1251338000**	**1358454000**	**1360226000**	**1569431000**	**1494154000**	**1868559000**	**1454077000**	**1111377000**	**966302000**	**919966000**
OP.cash	77445000	184758000	82757000	217273000	523239000	289538000	112229000	237232000	89486000	149151000
CLO.cash	108279000	77445000	184758000	82757000	217273000	523239000	171254000	112229000	237232000	89486000
AVCASH	**92862000**	**131101500**	**133757500**	**150015000**	**370256000**	**406388500**	**141741500**	**174730500**	**163359000**	**119318500**
SALES	161480000	489093000	305601000	644194000	357162000	1114572000	560597000	707457000	1094402000	984245000
DEPC	11421000	11846000	12664000	7805000	8546000	8771000	6018000	6675000	7479000	6538000
EBIT	**-164234000**	**20000**	**-49192000**	**-30246000**	**1015000**	**4661000**	**-140026000**	**-20201000**	**33426000**	**-419751000**
INT	0	4000	0	0	0	0	9242000	7654000	23240000	19193000
TAX	0	10000	0	0	0	1812000	0	0	0	0
EAT	**-164234000**	20000	-49192000	-30246000	1015000	4661000	-140026000	-20201000	33426000	-419751000

Nepal Food Corporation

Year	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999
CASH	145398000	133112000	94171000	93935000	76087000	79887000	76982000	68185000	64704000	120144000
BR	127740000	262568000	334953000	293859000	313607000	322558000	328457000	337085000	282613000	254207000
STOCK	396055000	560852000	412701000	419733000	286526000	265340000	313957000	487874000	580063000	528997000
SAPATI	39812000	38948000	0	0	0	0	0	0	0	0
ADV	0	0	0	0	0	0	0	0	0	0
CA	**709005000**	**995480000**	**841825000**	**807527000**	**676220000**	**667785000**	**719396000**	**893144000**	**982820000**	**847908000**
INV	9241000	9203000	9203000	9203000	9203000	9203000	3925000	3925000	3925000	3925000
FA	135966000	150131000	155188000	163779000	168988000	183755000	192381000	202871000	214804000	227655000
TA	**854212000**	**1154814000**	**1006216000**	**980509000**	**854411000**	**860743000**	**915702000**	**1099940000**	**1201549000**	**1079488000**
PAY	839769000	1151649000	1061223000	615101000	534475000	500047000	503704000	536943000	472443000	511933000
CRE	145778000	141095000	37126000	25076000	20033000	19945000	0	0	91960000	47327000
CL	**985547000**	**1292744000**	**1098349000**	**640177000**	**554508000**	**519992000**	**503704000**	**536943000**	**564403000**	**559260000**
SHARE	990495000	990495000	990495000	990495000	990495000	990495000	990495000	990495000	990495000	990495000
RES	5907000	5907000	5907000	5907000	5907000	5907000	5907000	7565000	3997000	3997000
FUND	0	0	0	0	63788000	45943000	47215000	43040000	44200000	0
NW	**996402000**	**996402000**	**996402000**	**996402000**	**1060190000**	**1042345000**	**1043617000**	**1041100000**	**1038692000**	**994492000**
LTD	0	0	0	385126000	400241000	428660000	373532000	466022000	0	83217000
MTD	0	0	0	0	0	0	0	0	0	0
TD	**0**	**0**	**0**	**385126000**	**400241000**	**428660000**	**373532000**	**466022000**	**0**	**83217000**
TC	**1981949000**	**2289146000**	**2094751000**	**2021705000**	**2014939000**	**1990997000**	**1920853000**	**2044065000**	**1603095000**	**1636969000**
OP.cash	133112000	94171000	93935000	76087000	79887000	76982000	68185000	64704000	120144000	76311000
CLO.cash	145398000	133112000	94171000	93935000	76087000	79887000	76982000	68185000	64704000	120144000
AVCASH	**139255000**	**113641500**	**94053000**	**85011000**	**77987000**	**78434500**	**72583500**	**66444500**	**92424000**	**98227500**
SALES	708942000	612474000	489812000	331545000	392568000	367759000	460407000	400637000	576283000	816745000
DEPC	7126000	7789000	8319000	9261000	10383000	11916000	11057000	11879000	13334000	7517000
EBIT	-383112000	-320945000	-297162000	-152076000	-195459000	-301325000	-286026000	-285315000	-378224	-188877
INT	18584000	21442000	32772000	35288000	39250000	46559000	51567000	65667000	69083000	48461000
TAX	0	0	0	0	0	0	0	0	0	0
EAT	6595000	36155000	58511000	48565000	-30274000	-125103000	-61026000	-33197000	42354000	-25420000

National Seeds Company Limited

Year	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999
CASH	8612000	4550000	11234000	9863000	15412000	18067000	9867000	112229000	237232000	89486000
BR	7542000	6298000	6430000	6375000	7069000	7169000	0	117155000	138142000	62977000
STOCK	93141000	73920000	55301000	46601000	35239000	23976000	28777000	521866000	302373000	423595000
SAPATI	7045000	5890000	0	0	0	0	0	131802000	117505000	88824000
ADV	0	0	3426000	1709000	753000	664000	0	112602000	115314000	133476000
CA	**116340000**	**90658000**	**76391000**	**64548000**	**58473000**	**49876000**	**38644000**	**995654000**	**910566000**	**798358000**
INV	22428000	18794000	12717000	7831000	2535000	527000	0	3467000	4287000	4287000
FA	73153000	74219000	75630000	77873000	80484000	83429000	86625000	137188000	141715000	140735000
TA	**211921000**	**183671000**	**164738000**	**150252000**	**141492000**	**133832000**	**125269000**	**1136309000**	**1056568000**	**943380000**
PAY	59896000	52062000	37512000	28560000	22352000	17826000	7662000	724524000	671406000	405533000
CRE	0	0	0	0	0	0	0	0		
CL	**59896000**	**52062000**	**37512000**	**28560000**	**22352000**	**17826000**	**7662000**	**724524000**	**671406000**	**405533000**
SHARE	118517000	118517000	118517000	118517000	118517000	118517000	118517000	330431000	329394000	307806000
RES	13508000	11092000	8709000	3175000	623000	-2511000	-910000	-24932000	-45133000	-11707000
FUND		5000000	5000000	50000000	50000000	0	0	0	0	200107000
NW	**132025000**	**134609000**	**132226000**	**171692000**	**169140000**	**116006000**	**117607000**	**305499000**	**284261000**	**496206000**
LTD	20000000	20000000	0	0	0	0	0	0	0	0
MTD		0	0	0	0	0	0	56422000	10635000	218334000
TD	**20000000**	**20000000**	**0**	**0**	**0**	**0**	**0**	**56422000**	**10635000**	**218334000**
TC	**152025000**	**154609000**	**132226000**	**171692000**	**169140000**	**116006000**	**117607000**	**361921000**	**294896000**	**714540000**
OP.cash	4550000	11234000	9863000	15412000	18067000	9867000	0	237232000	89486000	149151000
CLO.cash	8612000	4550000	11234000	9863000	15412000	18067000	9867000	112229000	237232000	89486000
AVCASH	6581000	7892000	10548500	12637500	16739500	13967000	4933500	174730500	163359000	119318500
SALES	139584000	111471000	100430000	77254000	57300000	52621000	43800000	704457000	1094402000	984245000
DEPC	2622000	2622000	2800000	2950000	3263000	3516000	0	6675000	7479000	6538000
EBIT	3287000	3242000	8365000	3473000	3360000	-1601000	-910000	-20201000	33426000	-419751000
INT	299000	0	0	0	0	0	0	7654000	23240000	19193000
TAX	871000	859000	1995000	920000	227000	0	0	0	0	0
EAT	2416000	2383000	5534000	2553000	3133000	-1601000	-910000	-20201000	33426000	-219644000

National Trading Corporation Limited

Year	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999
CASH	22368000	583904000	18163000	229996000	25715000	24183000	48452000	44673000	38618000	47219000
BR	524229000	4558000	0	149651000	171153000	172964000	134727000	87868000	66804000	51262000
STOCK	289310000	314057000	412788000	380571000	354401000	477984000	562404000	557541000	607719000	345946000
SAPATI	220479000	225740000	189477000	138057000	79988000	-4342000	-4342000	8451000	1796000	12087000
ADV	169990000	158692000	105160000	0	0	0	0	0	0	0
CA	**1226376000**	**1286951000**	**725588000**	**898275000**	**631257000**	**670789000**	**741241000**	**698533000**	**723538000**	**447913000**
INV	17126000	27603000	33863000	73389000	68839000	68569000	63271000	10898000	10898000	12799000
FA	29600000	23545000	23151000	21783000	21622000	23623000	26976000	26028000	27850000	28256000
TA	**1273102000**	**1338099000**	**782602000**	**993447000**	**721718000**	**762981000**	**831488000**	**724561000**	**751388000**	**476169000**
PAY	966701000	1021078000	471225000	627018000	354505000	391715000	443475000	410520000	125131000	91926000
CRE	58768000	69388000	63744000	118796000	119580000	123633000	141310000	109204000	157763000	272253000
CL	**1025469000**	**1090466000**	**534969000**	**745814000**	**474085000**	**515348000**	**584785000**	**519724000**	**282894000**	**364179000**
SHARE	169335000	169335000	169335000	169335000	169335000	169335000	169335000	169335000	169335000	70957000
RES	78298000	78298000	78298000	10760000	10760000	10760000	10760000	10760000	10760000	10760000
FUND	0	0	0	67538000	67538000	67538000	67538000	67538000	48838000	67049000
NW	**247633000**	**247633000**	**247633000**	**247633000**	**247633000**	**247633000**	**247633000**	**247633000**	**228933000**	**148766000**
LTD	0	0	0	0	0	0	0	0	281516000	0
MTD	0	0	0	0	0	0	0	0	0	0
TD	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**281516000**	**0**
TC	**1273102000**	**1338099000**	**782602000**	**993447000**	**721718000**	**762981000**	**832418000**	**767357000**	**793343000**	**512945000**
OP.cash	583904000	18163000	229996000	25715000	24183000	48452000	44673000	38618000	47219000	29273000
CLO.cash	22368000	583904000	18163000	229996000	25715000	24183000	48452000	44673000	38618000	47219000
AVCASH	**303136000**	**301033500**	**124079500**	**127855500**	**24949000**	**36317500**	**46562500**	**41645500**	**42918500**	**38246000**
SALES	1035344000	968609000	407549000	809141000	977528000	844445000	1038142000	978904000	531435000	803568000
DEPC	2246000	1914000	2083000	2249000	2496000	2913000	3550000	50650000	47869000	44892000
EBIT	4506000	-42726000	-53134000	55892000	82785000	3468000	4653000	28258000	4839000	28050000
INT	26047000	29783000	30073000	22278000	25931000	29720000	28729000	26890000	5813000	5488000
TAX	0	0	0	0	0	2018000	8661000	1696000	290000	1683000
EAT	-220479000	-225740000	-189477000	-138057000	-79988000	4342000	3412000	6654000	1797000	10794000

Nepal Oil Corporation Limited

Year	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999
CASH	596630487	536729615	1024420488	629021790	851877837	1318320473	989482068	2986077938	1488361733	1000450168
BR	459246461	425086167	345187317	581413103	533307226	597855467	575920365	646951340	599685883	652568947
STOCK	1350725346	1374178243	2170908518	1909520052	1837865068	1664479988	1526092583	1288940627	1086714191	448437344
SAPATI	1019873880	207551465	539766764	538030687	275098606	795309302	1016747687	2496219366	2401358259	1081083881
ADV										
CA	**3426476174**	**2543545490**	**4080283087**	**3657985632**	**3498148737**	**4375965230**	**4108242703**	**7418189271**	**5576120066**	**3182540340**
INV	17599700	17462200	54878200	54878200	54878200	189428200	2310078200	1024878200	2184878200	790774200
FA	490163671	410491913	446797975	497801125	554510899	637905749	60311545	559732625	96292788	88912860
TA	**3934239545**	**2971499603**	**4581959262**	**4210664957**	**4107537836**	**5203299179**	**6478632448**	**9002800096**	**7857291054**	**4062227400**
PAY	2805214819	3684481357	5665829839	886625444	1668868285	1188937203	1056787708	2989548999	2232914245	1068401363
CRE	2887533521	2980336753	2592267839	4476997910	511141168	360618339	448495597	426673500	984502876	371580704
CL	**5692748340**	**6664818110**	**8258097678**	**5363623354**	**2180009453**	**1549555542**	**1505283305**	**3416222499**	**3217417121**	**1439982067**
SHARE	96715000	96715000	96715000	96715000	96715000	96715000	96715000	96715000	96715000	96715000
RES	0	0	0	0	1635132821	3376712614	5239118121	5309546578	4562029696	2534427686
FUND	195680563	195680563	195680563	195680563	195680563	180316022	180316022	180316022	10000000	10000000
NW	**292395563**	**292395563**	**292395563**	**292395563**	**1927528384**	**3653743636**	**5516149143**	**5586577600**	**4668744696**	**2641142686**
LTD	10710545493	3244277000	1340184667	0	0	0	0	0		
MTD										
TD	**10710545493**	**3244277000**	**1340184667**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
TC	**16695689396**	**10201490673**	**9890677908**	**5656018917**	**4107537837**	**5203299178**	**7021432448**	**9002800099**	**7886161817**	**5858559807**
OP.cash	536729615	1024420488	629021790	851877837	1318320473	989482068	2986077938	1488361733	1000450168	434077860
CLO.cash	596630487	536729615	1024420488	629021790	851877837	1318320473	989482068	2986077938	1488361733	1000450168
AVCASH	1266386284	810525487.5	582875703	938149162.5	973671131.5	920679953	2152199206	1238921901	1993264053	961219796.5
SALES	38836030123	36412641878	32459635942	26858238831	22596815463	20254047769	18104151687	17651723846	13756203485	11155195505
DEPC	58202778	58479796	59457631	60805769	21173917	19249141	16728749	13867490	11817596	10296479
EBIT	-5072556941	-1599643953	-3497493098	-2803397416	-842068484	-1871800527	146089026	1030167487	2874931374	1776855144
INT	507289375	291866319	340566080	176962809	5200709	2049214	1771509	1344573	1035484	5886484
TAX				60000	60000			255619960	684099341	404648897
EAT	-5574439710	-1921272425	-3863364686	-3080486781	-898119744	-1862405507	-70428457	766859881	2047148024	1283724239

Arun Vanaspati Udyog Limited

Year	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999
CASH	941684	3634539	3289538	8909377	7020079	3906404	4175163	17207173	8473031	5224289
BR	10620294	1746048	75885791	92133300	50373809	33530797	19648615	31966060	48874474	147396765
STOCK	21460986	11941171	91014854	146452896	236692689	61430352	67999257	60961307	53864825	0
SAPATI	0	0	0	0	140552753	144665533	156802809	119951440	73074894	0
ADV	22488608	52234433	122049222	150352995	0	0	0	0	0	0
CA	55511572	69556191	292239405	397848568	434639330	243533086	248625844	230085980	184287224	152621054
INV	0	0	2158137	2158237	2558237	2948236	2036056	940000	2500000	400000
FA	87165346	96858713	105531544	101515606	108147766	100407824	100875366	81581480	84986534	83782270
TA	**142676918**	**166414904**	**399929086**	**501522411**	**545345333**	**346889146**	**351537266**	**312607460**	**271773758**	**236803324**
PAY	76425863	366977063	328065269	407575617	505107366	306405330	306361880	275597497	235193523	71367183
CRE	0	0				522550	522550	0	0	0
CL	**76425863**	**366977063**	**328065269**	**407575617**	**505107366**	**306927880**	**306884430**	**275597497**	**235193523**	**71367183**
SHARE	55028000	55028000	55028000	55028000	55028000	55028000	55028000	55028000	55028000	55028000
RES	557168	557168	557168	557168	-114790033	-115066734	-115365189	-129109066	-130498410	0
FUND	0	0	0	0	0	0	0	0	0	0
NW	55585168	55585168	55585168	55585168	-59762033	-60038734	-60337189	-74081066	-75470410	55028000
LTD	235713596	152132814	158165807	127533333	100000000	100,000,000	104990025	110000000	110000000	181727948
MTD	207437256	109187256	86100000	82350	12000	0	0	0	0	0
TD	**443150852**	**261320070**	**244265807**	**127615683**	**100012000**	**100000000**	**104990025**	**110000000**	**110000000**	**181727948**
TC	575161883	683882301	627916244	590776468	545357333	346889146	351537266	311516431	269723113	308123131
OP.cash	3634538	3289538	8909377	7020079	3906404	4175163	17207173	8473030	5224289	2420000
CLO.cash	941684	3634538	3289538	8909377	7020079	3906404	4175163	17207173	8473030	5224289
AVCASH	2288111	3462038	6099457.5	7964728	5463241.5	4040783.5	10691168	12840101.5	6848659.5	3822144.5
SALES	131047607	328056994	458945598	605513894	644393648	511476833	648304982	363110839	286564758	374413621
DEPC	9063186	9070325	8460367	8406183	8168670	13158633	11579229	5290956	4733433	4467988
EBIT	1306584	-19764199	-71156830	2031545	31276784	54206052	69279405	41429725	-14701321	35799492
INT	25483760	32927627	33184739	45374124	33029686	40380233	42211369	34661041	34648632	26222991
TAX	0	0	0	0	84705	0	0	0	0	0
EAT	-39232001	-155265906	-66465352	-56174506	1153082	298455	14069370	1337344	-54083387	4419778

Bottlers Nepal Limited

Year	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999
CASH	2428000	3464000	35926000	1917000	13755000	5335000	29456000	3940000	47828000	3031000
BR	36803000	52823000	63657000	80845000	184980000	226861000	115210000	80480000	73000	907000
STOCK	144004000	189256000	176936000	224070000	184980000	226861000	185341000	142734000	121106000	136775000
SAPATI	204609000	224159000	159526000	146379000	124918000	212148000	176418000	166694000	144172000	159192000
ADV	1872000									
CA	389716000	469702000	436045000	453211000	508633000	671205000	506425000	393848000	313179000	299905000
INV	112628000	112628000	112628000	112628000	112628000	112628000	112628000	112628000	112628000	112628000
FA	642964000	66464000	323573000	409427000	326096000	377394000	416993000	349114000	360609000	346395000
TA	**1145308000**	**648794000**	**872246000**	**975266000**	**947357000**	**1161227000**	**1036046000**	**855590000**	**786416000**	**758928000**
PAY	75360000	586448000	210702000	164399000	117119000	184099000	189995000	149260000	86663000	105140000
CRE	340941000	63905000	64781000	64592000	56823000	148749000	150120000	135789000	105563000	106437000
CL	**416301000**	**650353000**	**275483000**	**228991000**	**173942000**	**332848000**	**340115000**	**285049000**	**192226000**	**211577000**
SHARE	194889000	194889000	194889000	194889000	194889000	194889000	194889000	194889000	194889000	194889000
RES	334141000	313938000	509681000	567000000	532265000	510670000	501042000	471921000	455527000	406299000
FUND	0	0	0	0	0	0				
NW	529030000	508827000	704570000	761889000	727154000	705559000	695931000	666810000	650416000	601188000
LTD	0	0	0	0	0	0	0	0	0	0
MTD	0		72000000	0	0	0	0	0	0	0
TD	**0**	**0**	**72000000**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
TC	945331000	1159180000	1052053000	990880000	901096000	1038407000	1036046000	951859000	842642000	812765000
OP.cash	3464000	35926000	1917000	13755000	5335000	29456000	3940000	47828000	3031000	39690000
CLO.cash	2428000	3464000	35926000	1917000	13755000	5335000	29456000	3940000	47828000	3031000
AVCASH	2946000	19695000	18921500	7836000	9545000	17395500	16698000	25884000	25429500	21360500
SALES	746582000	634190000	621827000	614739000	632114000	609654000	535494000	414577000	368623000	293820000
DEPC	65415000	60227000	64165000	49175000	57331000	55823000	51566000	44105000	32337000	16496000
EBIT	30272000	38208000	30963000	43876000	105056000	82644000	102302000	97376000	71317000	73301000
INT	20790000	20790000	1329000	265000	4000	284000	663000	82000	935000	263000
TAX	39492000	2959000	5539000	8503000	7208000	4103000	8865000	9636000	9126000	14319000
EAT	167054000	-30308000	24962000	34735000	37800000	25672000	48610000	35883000	62191000	58982000

Gorakhkali Rubber Udyog Limited

Year	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999
CASH	28874482	30955362	30310527	9725936	21349276	32143898	33860809	64904208	74086218	59314500
BR	25769424	29100000	17785363	26404236	40851849	56580298	55979626	35128633	53765443	60427154
STOCK	153574280	143718169	159018731	157160343	155364115	144820701	206634222	187270771	197045100	196722366
SAPATI	37987059	51364556	45227228	31839430	9199326	0	0	0	0	0
ADV	0	0	0	0	0	8198833	16107742	19257974	19421635	0
CA	**246205245**	**255138087**	**252341849**	**225129945**	**226764566**	**241743730**	**312582399**	**306561586**	**344318396**	**316464020**
INV	0	0	0	0	0	0	0	0	0	0
FA	317299523	311171841	334144154	378820773	432834837	461409850	499541331	532304903	561850897	600767859
TA	**563504768**	**566309928**	**586486003**	**603950718**	**659599403**	**703153580**	**812123730**	**838866489**	**906169293**	**917231879**
PAY	406388935	398177500	354810784	305496899	193270237	172062362	204891089	174444167	146069359	56811874
CRE	150996000	153402000	140024000	136500000	136500000	120000000	108500000	108500000	115500000	0
CL	**557384935**	**551579500**	**494834784**	**441996899**	**329770237**	**292062362**	**313391089**	**282944167**	**261569359**	**56811874**
SHARE	435822150	435822150	435822150	435822150	435822150	475822150	435822150	435822150	435822150	232247150
RES	952179540					-556734369	-500477309	-427764080	-322003702	0
FUND	0	-937441262	-860520472	-785704500	-633090349	0	0	0	0	305247635
NW	**1388001690**	**-501619112**	**-424698322**	**-349882350**	**-197268199**	**-80912219**	**-64655159**	**8058070**	**113818448**	**537494785**
LTD	522477223	516349541	516349541	511836169	527097365	532003437	563387800	556882200	548829381	960492332
MTD	0	0	0	0	0	0	0	0	0	0
TD	**522477223**	**516349541**	**516349541**	**511836169**	**527097365**	**532003437**	**563387800**	**556882200**	**548829381**	**960492332**
TC	**2467863848**	**566309929**	**586486003**	**603950718**	**659599403**	**743153580**	**812123730**	**847884437**	**924217188**	**1554798991**
OP.cash	30955362	30310527	9725936	21349276	32143898	33860809	64904208	74086218	59314500	52938675
CLO.cash	28874482	30955362	30310527	9725936	21349276	32143898	33860809	64904208	74086218	59314500
AVCASH	**29914922**	**30632944.5**	**20018231.5**	**15537606**	**26746587**	**33002353.5**	**49382508.5**	**69495213**	**66700359**	**56126588**
SALES	305360182	305590363	363993566	403018359	351620808	400989822	381164976	407813881	389681631	416669627
DEPC	23383443	23383443	26911989	28910733	34761921	38189155	41140874	44329728	49312159	52033921
EBIT	-26017703	3232427	8027776	11644977	15495429	40213931	29983493	8047393	53014654	-44924938
INT	57640901	56769775	55931759	64455125	57089488	58281836	61555848	69654884	78603562	62099742
TAX	0	0	0			0	0	0	0	0
EAT	-91659068	-76920790	-74815972	-81720881	-76355980	-56257060	-72713229	-105760378	74901067	-44924938

Nepal Welfare Company Limited

Year	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999
CASH	23327	149757	63675	60229	314756	339113	498920	1137196	1537582	1361977
BR	230408	230408	350408	38283	388917	362204	371099	978110	12062307	1269795
STOCK	0	0	0	0	0	0	4407	7724944	3310497	46521
SAPATI	0	0	0	0	0	0	1230386	2162365	0	0
ADV	1047720	1047720	1047720	1015345	1015345	1015345	0	0	0	0
CA	**1301455**	**1427885**	**1461803**	**1113857**	**1719018**	**1716662**	**2104812**	**12002615**	**16910386**	**2678293**
INV	1349882	1349882	1349882	1617022	1634622	1601997	1720997	1434997	1250397	911897
FA	552799	584587	616639	650769	687210	729249	768238	813621	858086	906170
TA	**3204136**	**3362354**	**3428324**	**3381648**	**4040850**	**4047908**	**4594047**	**14251233**	**19018869**	**4496360**
PAY	571967	571055	568695	961438	1170030	988252	706634	9592439	14508222	318045
CRE	0	0	0	0	0	0	0	0	0	0
CL	**571967**	**571055**	**568695**	**961438**	**1170030**	**988252**	**706634**	**9592439**	**14508222**	**318045**
SHARE	3075000	3075000	3075000	3075000	3075000	3075000	3075000	3075000	3075000	2460000
RES	-442833	-283703	-215372	-310291	-204180	-18344	812412	1281431	132036	132036
FUND	0	0	0	0	0	0	0	0	0	0
NW	**2632167**	**2791297**	**2859628**	**2764709**	**2870820**	**3056656**	**3887412**	**4356431**	**3207036**	**2592036**
LTD	0	0	0	0	0	0	0	0	0	0
MTD	0	0	0	0	0	0	0	0	0	0
TD	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
TC	**3204134**	**3362352**	**3428323**	**3726147**	**4040850**	**4044908**	**4594046**	**13948870**	**17715258**	**2910081**
OP.cash	149757	63675	60229	314756	339113	498920	1137196	12062307	1361977	1537583
CLO.cash	23327	149757	63675	60229	314756	339113	498920	1137196	12062307	1361977
AVCASH	**86542**	**106716**	**61952**	**187492.5**	**326934.5**	**419016.5**	**818058**	**6599751.5**	**6712142**	**1449780**
SALES	118381	174926	345511	152838	232748	188509	8326149	56972654	17712637	30346477
DEPC	31788	32052	34130	55421	39038	41999	45383	45311	40083	5493
EBIT	127342	36278	129049	-50690	3373	303550	640467	694021	822040	1715776
INT	0	0	0	18980	0	0	53942	688362	0	0
TAX	0	0	0	0	0	0	0	0	3026328	3026328
EAT	159131	68331	94919	-106111	-185835	345539	-185423	640146	332233	1096025

Nepal Bitumin and Barrel Udyog Limited

Year	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999
CASH	4608908	25987779	4276458	3074341	4617138	1567241	657697	834007	1445138	529236
BR	113195592	128617527	102211515	92438038	55891813	49816861	57234755	47632216	41603270	43032674
STOCK	65812589	38778572	14534996	13459404	18856704	22069872	28663094	27684581	35525683	29403678
SAPATI	0	0	0	0	0	0	0	0	229896	102726
ADV	13848517	14963375	11519142	10893859	9004478	9636756	9086265	8599346	11520249	13251494
CA	**197465606**	**208347253**	**132542111**	**119865642**	**88370133**	**83090730**	**95641811**	**84750150**	**90324236**	**86319808**
INV	0	0	0	0	0	0	0	0	0	0
FA	7638706	8683795	9807692	11139260	986560	986560	12812663	14026771	14834241	16685667
TA	**205104312**	**217031048**	**142349803**	**131004902**	**89356693**	**84077290**	**108454474**	**98776921**	**105158477**	**103005475**
PAY	54283884	7476020	51007166	38466246	29991990	31463243	28767442	25376160	36390996	27336076
CRE	14377339	14748008	10886382	7535989	4471472	3533531	3763367	2999025	2609448	2606094
CL	**68661223**	**22224028**	**61893548**	**46002235**	**34463462**	**34996774**	**32530809**	**28375185**	**39000444**	**29942170**
SHARE	21068000	21068000	21068000	21068000	21068000	21068000	21068000	21068000	21068000	21068000
RES	3265386	4452721	2716755	2943162	3822264	-6734850	216908	-720550	-1286015	-1725349
FUND	0	0	0	0		0	0	0	0	0
NW	**24333386**	**25520721**	**23784755**	**24011162**	**24890264**	**14333150**	**21284908**	**20347450**	**19781985**	**19342651**
LTD	0	0	0	0	0	0	0	0	46376048	53720654
MTD	112109693	102002111	56671500	60991505	48204031	45897581	54638757	50054286	0	0
TD	**112109693**	**102002111**	**56671500**	**60991505**	**48204031**	**45897581**	**54638757**	**50054286**	**46376048**	**53720654**
TC	**205104302**	**149746860**	**142349803**	**131004902**	**107557757**	**95227505**	**108454474**	**98776921**	**105158477**	**103005475**
OP.cash	25987779	4276458	3074341	4617138	1567241	657697	834007	1445138	529236	2607611
CLO.cash	4608908	25987779	4276458	3074341	4617138	1567241	657697	834007	1445138	529236
AVCASH	**15298343.5**	**15132118.5**	**3675399.5**	**3845739.5**	**3092189.5**	**1112469**	**745852**	**1139572.5**	**987187**	**1568423.5**
SALES	237785132	336361547	201311621	223358972	164678775	72492386	100607031	87071859	68726047	102003686
DEPC	376484	594912	551325	694053	401777	509771	638184	446456	2230297	2467921
EBIT	10577881	13471315	10117871	14934090	9321689	-1951231	7811207	7356956	657685	1448617
INT	6035094	6863627	5821898	5320372	5144640	4505920	5924954	5994781	5934747	5851952
TAX	941220	1343846	743996	936606	328085	0	398457	246742	218351	363693
EAT	919465	3842766	1512433	6765426	2912586	-6951758	937458	565465	439334	1084924

Nepal Lube Oil Limited

Year	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999
CASH	3613384	2015309	3178649	2913084	703337	3393705	1320186	1808997	897066	2517956
BR	85365154	69478934	70245261	60527403	54793789	75494284	67940267	48682458	66392678	48408603
STOCK	33715187	47839085	38251988	36392321	31603793	30569924	19268500	28984540	23255682	24776571
SAPATI	15031156	7194309	18408697	10321751	9392658	14720000	4955309	16359744	14235271	10811976
ADV	0	0	0	0	0	0	0	0	0	0
CA	**137724881**	**126527637**	**130084595**	**110154559**	**96493577**	**124177913**	**93484262**	**95835739**	**104780697**	**86515106**
INV	0	0				3060000	3060000	3060000	3060000	0
FA	13528238	14921047	15323263	17040802	18613431	17193931	15288880	16754214	18198620	14682579
TA	**151253119**	**141448684**	**145407858**	**127195361**	**115107008**	**144431844**	**111833142**	**115649953**	**126039317**	**101197685**
PAY	95412531	90168528	95459530	74304034	67496663	93961301	64119979	64267151	33417572	29523793
CRE	11014628	9632575	10200471	13097833	8596333	11438726	10645355	15776035	15043381	13207057
CL	**106427159**	**99801103**	**105660001**	**87401867**	**76092996**	**105400027**	**74765334**	**80043186**	**48460953**	**42730850**
SHARE	20292200	20292200	20292200	20292200	20292200	20292200	20292200	20292200	20292200	20292200
RES	24539760	22204795	20654457	20479562	20464837	19404407	18308076	16849820	22488194	20463181
FUND	0	0	0	0	0	0	0	0	0	0
NW	**44831960**	**42496995**	**40946657**	**40771762**	**40757037**	**39696607**	**38600276**	**37142020**	**42780394**	**40755381**
LTD	0	0	0	0	0	0	0	0	0	0
MTD	0	0	0	0	0	0	0	0	0	0
TD	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
TC	**151259119**	**142298098**	**146606658**	**128173629**	**116850033**	**145096634**	**113365610**	**117185206**	**91241347**	**83486231**
OP.cash	2015309	3178649	2913084	703337	3393705	1320186	1808997	897066	2517956	3010000
CLO.cash	3613384	2015309	3178649	2913084	703337	3393705	1320186	1808997	897066	2517956
AVCASH	**2814346.5**	**2596979**	**3045866.5**	**1808210.5**	**2048521**	**2356945.5**	**1564591.5**	**1353031.5**	**1707511**	**2763978**
SALES	167658557	184191344	148752321	118103607	84712633	119151146	136004136	72223408	107188225	107331022
DEPC	1603732	1725045	1881756	2131527	2363699	1972896	3687867	3844057	1431940	1367973
EBIT	9100286	11624275	5398223	9178553	12842911	16831390	14219804	3379782	6382820	14007156
INT	3970090	6326343	3251645	2415834	3432075	3014321	3687867	3844057	3321787	2629598
TAX	686162	695194	51528	901114	90084	1266111	1478507	0	1267211	2419337
EAT	2328965	2359624	174895	3058555	305761	4238716	6216068	-2199574	4718785	9677348

Sriram Sugar Mills Limited

Year	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999
CASH	36793063	15100900	3585063	4454742	8125196	1750589	7277474	7323485	7348353	11357158
BR	57902310	65125918	39885877	42959382	44159757	53328360	29806590	27693968	44590650	22679829
STOCK	114055998	246607335	121062221	66167102	128508774	212434811	138382183	125589919	200002294	62054283
SAPATI	0	0	0	0	0	0	0	0	5970382	8315724
ADV	21562948	21349461	15163923	15620332	16544563	23419390	19971159	13849820	231189	165960
CA	**230314319**	**348183614**	**179697084**	**129201558**	**197338290**	**290933150**	**195437406**	**174457192**	**258142868**	**104572954**
INV	0	0	0	0	0	0	0	0	0	0
FA	615497935	666306893	742355067	856426342	868798600	841483126	862932218	874818380	875946710	798242379
TA	**845812254**	**1014490507**	**922052151**	**985627900**	**1066136890**	**1132416276**	**1058369624**	**1049275572**	**1134089578**	**902815333**
PAY	321508322	447304063	268834785	268193996	192302998	238837080	105899188	77457595	174166342	47702232
CRE	259998196	261291782	106802952	114776473	201114299	186194854	196799294	212384543	0	0
CL	581506518	708595845	375637737	382970469	393417297	425031934	302698482	289842138	174166342	47702232
SHARE	296798327	296798327	296798327	296798327	296805327	296805327	296805327	296805327	290789327	259300277
RES	0	0	0	0	0	0	0	0	0	0
FUND	0	0	0	0		0	0	0	0	0
NW	**296798327**	**296798327**	**296798327**	**296798327**	**296805327**	**296805327**	**296805327**	**296805327**	**290789327**	**259300277**
LTD	225397504	219421780	265314523	301281135	395630019	440089537	474545342	401016951	504375000	444375000
MTD	45474995	33835540	29007110	34738014	25430000	24430000	6506000	17130000	223415932	194387430
TD	**270872499**	**253257320**	**294321633**	**336019149**	**421060019**	**464519537**	**481051342**	**418146951**	**727790932**	**638762430**
TC	**1149177344**	**1258651492**	**966757697**	**1015787945**	**1111282643**	**1186356798**	**1080555151**	**1004794416**	**1192746601**	**945764939**
OP.cash	15100900	3585063	4454742	8125196	1750589	7277474	7323485	7348353	11357158	6710247
CLO.cash	36793063	15100900	3585063	4454742	8125196	1750589	7277474	7323485	7348353	11357158
AVCASH	**25946981.5**	**9342981.5**	**4019902.5**	**6289969**	**4937892.5**	**4514031.5**	**7300479.5**	**7335919**	**9352755.5**	**9033702.5**
SALES	746103384	565045740	641153971	422648081	611381255	536777441	524001934	654662999	456657268	386454149
DEPC	91084494	100881218	115703932	13791470	24083465	28813575	23383984	22965976	24638763	18252604
EBIT	71218221	-61349581	137588186	77690512	84237039	52659579	90491313	123666494	76575940	55967559
INT	31264761	36637951	36429755	46547169	50113004	55760862	58611421	67581233	65874755	68745069
TAX	8407779	0	0	0	0	0	0	0	0	0
EAT	-50796325	-199455440	-14545501	14985708	8671402	-31914858	6796317	27114857	-115374560	-32392480

Bishal Bazaar Company Limited

Year	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999
CASH	5166250	8979006	11842049	12109641	4990391	2273959	319828	4468897	12148263	13675180
BR	2027423	1810162	2167968	2181632	1954223	1999714	2872908	3099145	2014812	1126967
STOCK	0	0	0	0	0	0	0	0	0	0
SAPATI	14065800	15065306	11121606	10242716	9377948	9735347	8263751	6357907	1939089	1402820
ADV	0	0	0	0	0	0	0	0	121311	1893678
CA	**21259473**	**25854474**	**25131623**	**24533989**	**16322562**	**14009020**	**11456487**	**13925949**	**16223475**	**18098645**
INV	52873000	30600000	30600000	30600000	30600000	47600000	24090000	7612000	12000000	0
FA	50492009	40037453	40702373	37367744	39643686	42031066	45095122	48785500	51751373	54049559
TA	124624482	96491927	96433996	92501733	**94777675**	**88953628**	**106704142**	**84331987**	**73289322**	**82273034**
PAY	25223263	19289452	18172514	17733950	0	17309586	10618977	8302158	8316623	12377673
CRE	0	0	0	0	15650812	15000000	0	0	85975	989266
CL	**25223263**	**19289452**	**18172514**	**17733950**	**15650812**	**32309586**	**10618977**	**8302158**	8402598	13366939
SHARE	49140000	27300000	27300000	27300000	27300000	27300000	27300000	27300000	27577562	27577562
RES	12203447	39015025	38883182	35931308	32730585	30243904	29290724	23431961	5599093	4621276
FUND	38057772	10887450	12148300	11536475	10884851	13786596	0	0	13940867	11889817
NW	**99401219**	**77202475**	**78331482**	**74767783**	**70915436**	**71330500**	**56590724**	**50731961**	**47117522**	**44088655**
LTD	0	0	0	0	0	0	0	0	0	7500000
MTD	0	0	0	0	0	0	0	0	4791546	2671318
TD	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4791546**	**10171318**
TC	**124624482**	**96491927**	**96503996**	**92501733**	**86566248**	**103640086**	**67209701**	**59034119**	**60311666**	**67626912**
OP.cash	8979006	11842049	12109641	4990391	2273959	319828	4468897	148263	175180	4921545
CLO.cash	5166250	8979006	11842049	12109641	4990391	2273959	319828	4468897	148263	175180
AVCASH	**7072628**	**10410527.5**	**11975845**	**8550016**	**3632175**	**1296893.5**	**2394362.5**	**2308580**	**161721.5**	**2548362.5**
SALES	76179163	69572923	67395450	61489634	53973835	51863551	50532937	47924606	44377420	36983049
DEPC	3203736	2758407	2733821	2734727	3020178	3267525	3711764	3937981	4142474	2692944
EBIT	37263309	35643716	37384548	3447247	2771838	3137742	3038756	2476680	22424709	18327249
INT	25165									
TAX	10092987	9604566	9472723	8727216	6995402	7658445	16470007	14795759	5351351	4467251
EAT	27170322	26039150	20911825	25221624	20303255	22771528	19508763	17272439	13940867	11889187

Salt Trading Corporation Limited

Year	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999
CASH	62952414	80292345	65072809	51678428	76545426	58823666	38530836	53822377	63079051	35027847
BR	224310407	218938094	196258556	203881404	177781002	167778845	152192977	150109178	135406514	139638054
STOCK	611621230	714440295	876578232	789888205	470669773	688133549	370716514	199967531	289980900	165408883
SAPATI	975640222	878272814	746301011	705448921	872565695	760958950	553369410	664540957	534678319	495579855
ADV	0	0	0	0	0	0	0	0		
CA	**1874524273**	**1891943548**	**1884210608**	**1750896958**	**1597561896**	**1675695010**	**1114809737**	**1068440043**	**1023144784**	**835654639**
INV	383312777		455721383	443719528	151781287	145021716	139636278	128836278	123151278	143367509
FA	1361452939	1377867557	1379608052	1393158082	465991989	462129133	445170022	42782690	42017890	42080416
TA	**3619289989**	**3269811105**	**3719540043**	**3587774568**	**2215335172**	**2282845859**	**1699616037**	**1240059011**	**1188313952**	**1021102564**
PAY	1808153651	1822272692	1864929789	1654107328	422280119	380755744	298195695	272527023	309729448	267087934
CRE	0	0	0	0	0	0	0	0	0	0
CL	**1808153651**	**1822272692**	**1864929789**	**1654107328**	**422280119**	**380755744**	**298195695**	**272527023**	**309729448**	**267087934**
SHARE	24777700	24777700	24777700	247777000	24777700	247777000	24777700	247777000	247777000	247777000
RES	1351720148	134882494	1524163848	1546000307	584204906	517719525	473842404	6719039	63744135	39383542
FUND	0	0	0	0	0	0	0	0	0	0
NW	**1376497848**	**159660194**	**1548941548**	**1793777307**	**608982606**	**765496525**	**498620104**	**254496039**	**311521135**	**287160542**
LTD	437625683	416532694	0	0	1184072447	1359592890	902800238	874763893	791043909	691815868
MTD	0	0	0	0	0	0	0	0	0	0
TD	**437625683**	**416532694**	**0**	**0**	**1184072447**	**1359592890**	**902800238**	**874763893**	**791043909**	**691815868**
TC	**3622277182**	**2398465580**	**3413871337**	**3447884635**	**2215335172**	**2505845159**	**1699616037**	**1401786955**	**1412294492**	**1246064344**
OP.cash	80292345	65072809	51678428	76545426	58823666	38530836	53822377	63079051	35027847	42799139
CLO.cash	62952414	80292345	65072809	51678428	76545426	58823666	38530836	53822377	63079051	35027847
AVCASH	**71622379.5**	**72682577**	**58375618.5**	**64111927**	**67684546**	**48677251**	**46176606.5**	**58450714**	**49053449**	**38913493**
SALES	2138957424	1916218180	1850551513	2193935368	3898942646	2461000708	1875868790	1743145018	1580455250	1842372311
DEPC	5169703	4275438	4733230	3873130	3628563	2536865	2079885	2109782	2373865	2499247
EBIT	54635534	41759056	41359055	70412037	109074966	73856281	40403816	15960508	4558518	3090599
INT	114353837	90478776	154015234	119994903	115686298	111425761	105032677	93352837	82003067	0
TAX	12364110	10511593	12306070	20604056	25135625	16340415	9870735	3346419	0	2003832
EAT	13027201	-103656366	29052985	49807981	73024651	50250248	26657889	10545243	-15232585	5282830

Unilever Nepal Limited

Year	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999
CASH	98988795	101602475	59021739	443311218	391531691	317404181	62334979	6271634	99105101	20460000
BR	148132838	136449877	138318764	157721493	97062568	64775152	32163092	32177588	49311533	33840000
STOCK	410116557	304326892	256167954	229764546	184215736	126107336	144447296	293927513	132465020	172200000
SAPATI	87066331	80291080	104447807	60617414	51434811	81598231	160190977	235198457	170998980	126220000
ADV	0	0	0							
CA	744304521	622670324	557956264	891414671	724244806	589884900	399136344	567575192	451880634	352720000
INV	183650000	213650000	263414185	79764185	79764185	48836497	0	0	0	0
FA	140217838	148934100	145776126	127776972	135710594	146158276	172198996	192840258	177868690	192090000
TA	**1068172359**	**985254424**	**967146575**	**1098955828**	**939719585**	**784879673**	**571335340**	**760415450**	**629749324**	**544810000**
PAY	299147948	368484050	353309001	370237344	335716055	247008131	96593677	129355503	156177676	261210000
CRE	498343032	381983233	388922781	511785188	207989709	179442429	126616654	288713098	148629802	6510000
CL	797490980	750467283	742231782	882022532	543705764	426450560	223210331	418068601	304807478	267720000
SHARE	92070000	92070000	92070000	92070000	92070000	92070000	92070000	92070000	92070000	92070000
RES	188410900	142717141	132844802	124863296	303943822	266359113	256055009	250276849	232871846	158330000
FUND	0	0	0							
NW	**280480900**	**234787141**	**224914802**	**216933296**	**396013822**	**358429113**	**348125009**	**342346849**	**324941846**	**250400000**
LTD	0	0	0	0	0	0	0	0	0	0
MTD	0	0	0	0	0	0	0	0	0	0
TD	0	0	0	0	0	0	0	0	0	0
TC	1077971880	985254424	967146584	1098955828	939719586	784879673	571335340	760415450	629749324	518120000
OP.cash	101602475	59021739	443311218	391531691	317404181	62334979	6271634	99105101	20460000	14550000
CLO.cash	98988795	101602475	59021739	443311218	391531691	317404181	62334979	6271634	99105101	20460000
AVCASH	**100295635**	**80312107**	**251166478.5**	**417421454.5**	**354467936**	**189869580**	**34303306.5**	**52688367.5**	**59782550.5**	**17505000**
SALES	2144589477	1818527500	1434942233	1481569044	1524901045	1244727395	1236052381	1540992319	1728629324	1503690000
DEPC	20650892	19517262	19581408	17430497	19761682	44110572	44393641	22817744	21443836	21860000
EBIT	422173372	298342240	260727130	190321516	133552165	133552165	73750492	115589013	161095911	123250000
INT	129055	1059458	1789825	27551752	7130536	2602127	12614336	14211934	3838692	10120000
TAX	98000000	82500000	66500000	53000000	30877627	30887627	14000000	25500000	24200000	7200000
EAT	335121739	263064838	238156507	140782744	93167104	93167104	42606160	168043503	120576552	119032385

Calculation of elasticity for independent variables in various categories of enterprises

		B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	Total
	Coefficient B	-0.28	0.00	-0.03	-0.05	0.03	0.00	0.00	0.05	-0.06	0.01	-0.04	0.000	
	Parameters	0.02	0.87	-0.05	0.64	1.27	11.57	85.66	1.61	1.04	0.24	0.23	194529289	
Total	Cash ratio	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.085	
	Elasticity	**-0.08**	**-0.04**	**0.02**	**-0.34**	**0.40**	**0.14**	**0.00**	**0.89**	**-0.69**	**0.04**	**-0.11**	**0.000**	**0.22**
	B	1.08	0.02	-0.03	-0.07	0.02	0.00	0.00	0.08	-0.06	0.01	-0.04	0.000	
	Parameters	0.02	0.98	-0.15	0.77	1.51	11.57	79.19	1.52	0.86	0.38	0.21	170131431	
public	Cash ratio	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.114	
	Elasticity	**0.17**	**0.15**	**0.04**	**-0.46**	**0.25**	**0.00**	**0.00**	**1.02**	**-0.45**	**0.03**	**-0.06**	**0.000**	**0.68**
	B	-0.79	0.01	0.03	-0.02	0.03	0.00	0.00	0.02	-0.03	0.04	-0.03	0.000	
	Parameters	0.03	0.76	0.05	0.51	1.03	11.57	92.12	1.69	1.22	0.10	0.25	218927149	
private	Cash ratio	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.056	
	Elasticity	**-0.40**	**0.11**	**0.03**	**-0.21**	**0.57**	**-0.41**	**0.00**	**0.66**	**-0.69**	**0.07**	**-0.13**	**0.000**	**-0.41**
	B	-0.42	-0.06	-0.07	-0.10	0.04	0.00	0.00	0.10	-0.13	-0.03	0.02	0.000	
	Parameters	0.02	0.85	-0.09	0.64	0.92	11.57	144.15	1.86	1.43	0.33	0.28	26383619	
small	Cash ratio	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.057	
	Elasticity	**0.14**	**-0.90**	**0.10**	**-1.08**	**0.58**	**0.61**	**0.00**	**3.25**	**-3.16**	**-0.19**	**0.07**	**0.000**	**-0.58**
	B	-0.10	-0.09	-0.16	-0.37	0.03	0.00	0.00	0.06	-0.15	-1.24	-0.04	0.000	
mediu m	Parameters	0.03	0.72	0.01	0.47	1.24	11.57	27.68	1.38	0.64	0.09	0.21	231726125	
	Cash ratio	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.110	
	Elasticity	**-0.03**	**-0.61**	**-0.02**	**-1.57**	**0.29**	**-0.21**	**0.25**	**0.75**	**-0.89**	**-1.01**	**-0.07**	**0.000**	**-3.11**
	B	-1.26	0.00	0.01	-0.03	0.02	0.00	0.00	0.01	-0.03	0.07	-0.06	0.000	
large	Parameters	0.02	1.06	-0.09	0.84	1.72	11.57	85.06	1.59	1.05	0.32	0.19	347302931	
	Cash ratio	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.089	
	Elasticity	**-0.26**	**0.01**	**-0.01**	**-0.26**	**0.39**	**0.00**	**0.00**	**0.18**	**-0.33**	**0.27**	**-0.12**	**0.000**	**-0.14**

Descriptive Statistics for total enterprises

Variables	Mean	Minimum	25%	50%	75%	Maximum	St.deviation
CASH	0.09	0.00	0.02	0.05	0.11	0.49	0.09
AVCASH	109556096	44500	4307098	23004695	84817875	2152199206	280235288
CONCASH	93362516	42830	3683367	18151663	66840065	2009523068	253610536
GROWTH	0.02	0.00	0.01	0.01	0.03	0.13	0.02
LEV	0.87	0.03	0.45	0.73	0.96	5.55	0.79
CFLOW	-0.05	-2.85	-0.04	0.02	0.06	0.88	0.40
LIQ	0.64	0.05	0.36	0.63	0.78	6.32	0.63
STA	1.27	0.00	0.48	0.71	1.61	12.25	1.59
INT	11.57	9.98	10.91	11.78	12.24	12.73	0.82
ACP	85.66	0.00	18.77	38.25	123.75	700.68	110.27
CR	1.61	0.19	0.99	1.38	1.97	9.37	1.11
QR	1.04	0.14	0.48	0.84	1.34	8.27	0.94
CFVA	0.24	0.02	0.06	0.09	0.28	1.42	0.37
BANKD	0.23	0.00	0.00	0.13	0.43	0.93	0.26
SIZE	194529290	334018	25082236	85484990	301545079	1103928750	236820609
No of enterprises	20	20	20	20	20	20	20
No of observations	200	200	200	200	200	200	200

Descriptive Statistics for Public enterprises

Variables	Mean	Minimum	25%	50%	75%	Maximum	St.deviation
CASH	0.11	0.00	0.05	0.09	0.15	0.49	0.09
AVCASH	189270182	44500	11070750	63746250	137880625	2152199206	375556071
CONCASH	161938228	42830	8671493	56555452	122453305	2009523068	342282000
GROWTH	0.02	0.00	0.01	0.01	0.02	0.09	0.02
LEV	0.98	0.03	0.52	0.73	1.08	5.55	0.94
CFLOW	-0.15	-2.85	-0.16	0.01	0.04	0.88	0.52
LIQ	0.77	0.08	0.50	0.67	0.76	6.32	0.83
STA	1.51	0.00	0.39	0.68	1.96	12.25	2.05
INT	11.57	9.98	10.91	11.78	12.24	12.73	0.83
ACP	79.19	0.00	18.39	59.74	117.60	319.08	81.71
CR	1.52	0.38	1.13	1.47	1.87	5.04	0.68
QR	0.86	0.18	0.49	0.76	1.22	1.90	0.45
CFVA	0.38	0.04	0.06	0.10	0.57	1.42	0.47
BANKD	0.21	0.00	0.00	0.13	0.41	0.88	0.23
SIZE	170131431	8050755	28418657	93770809	248092989	749210084	185652745
No of enterprises	10	10	10	10	10	10	10
No of observations	100	100	100	100	100	100	100

Descriptive Statistics for Private enterprises

Variables	Mean	Minimum	25%	50%	75%	Maximum	St.deviation
CASH	0.06	0.00	0.02	0.03	0.06	0.46	0.09
AVCASH	29842011	61952	2560517	7900364	30453439	417421454	63070000
CONCASH	24786804	45755	2139450	6795740	25300229	330761850	51272291
GROWTH	0.03	0.00	0.01	0.02	0.04	0.13	0.03
LEV	0.76	0.07	0.36	0.73	0.93	3.78	0.58
CFLOW	0.05	-0.88	0.01	0.03	0.11	0.33	0.15
LIQ	0.51	0.05	0.31	0.47	0.78	0.97	0.27
STA	1.03	0.04	0.54	0.73	1.32	6.75	0.88
INT	11.57	9.98	10.91	11.78	12.24	12.73	0.83
ACP	92.12	0.07	20.47	34.93	137.19	700.68	132.96
CR	1.69	0.19	0.85	1.31	2.14	9.37	1.42
QR	1.22	0.14	0.45	0.89	1.72	8.27	1.23
CFVA	0.10	0.02	0.05	0.08	0.10	0.35	0.09
BANKD	0.25	0.00	0.00	0.11	0.51	0.93	0.29
SIZE	218927149	334018	15152933	84855152	365259138	1103928750	277605888
No of enterprises	10	10	10	10	10	10	10
No of observations	100	100	100	100	100	100	100

Descriptive Statistics for small enterprises

Variables	Mean	Minimum	25%	50%	75%	Maximum	St.deviation
CASH	0.06	0.00	0.02	0.03	0.06	0.46	0.08
AVCASH	5081093	61952	1545194	3259500	6682411	24680500	5570916
CONCASH	4131515	45755	1453856	2775535	5181243	20307369	4358362
GROWTH	0.02	0.00	0.01	0.01	0.03	0.07	0.01
LEV	0.85	0.07	0.34	0.73	1.05	3.78	0.74
CFLOW	-0.09	-2.69	-0.09	0.02	0.09	0.88	0.51
LIQ	0.64	0.05	0.39	0.72	0.86	0.97	0.28
STA	0.92	0.04	0.42	0.70	1.15	6.75	0.95
INT	11.57	9.98	10.91	11.78	12.24	12.73	0.83
ACP	144.15	1.92	28.92	124.62	204.85	700.68	146.16
CR	1.86	0.19	1.16	1.61	2.25	9.37	1.40
QR	1.43	0.16	0.70	1.19	1.74	8.27	1.29
CFVA	0.33	0.05	0.05	0.13	0.57	1.09	0.36
BANKD	0.28	0.00	0.00	0.27	0.55	0.88	0.29
SIZE	26383619	334018	8663544	16150718	35505602	94188017	26106705
No of enterprises	7	7	7	7	7	7	7
No of observations	70	70	70	70	70	70	70

Descriptive Statistics for medium enterprises

Variables	Mean	Minimum	25%	50%	75%	Maximum	St.deviation
CASH	0.11	0.00	0.05	0.09	0.14	0.49	0.10
AVCASH	82288651	4019903	19389924	47972504	113780625	417421455	91021188
CONCASH	67498585	2968909	15454579	43133614	101118610	330761850	69887204
GROWTH	0.03	0.00	0.01	0.02	0.04	0.13	0.03
LEV	0.72	0.06	0.53	0.70	0.80	1.92	0.35
CFLOW	0.01	-0.24	-0.07	0.01	0.05	0.33	0.12
LIQ	0.47	0.10	0.30	0.40	0.64	0.95	0.22
STA	1.24	0.00	0.55	1.08	1.98	2.76	0.73
INT	11.57	9.98	10.91	11.78	12.24	12.73	0.83
ACP	27.68	0.00	16.23	22.98	35.31	182.28	25.27
CR	1.38	0.34	0.91	1.30	1.54	5.57	0.87
QR	0.64	0.14	0.33	0.63	0.90	2.11	0.38
CFVA	0.09	0.06	0.07	0.09	0.10	0.12	0.02
BANKD	0.21	0.00	0.00	0.16	0.36	0.93	0.23
SIZE	231726125	16476557	50546031	143073736	351093546	875946710	240256629
No of enterprises	7	7	7	7	7	7	7
No of observations	70	70	70	70	70	70	70

Descriptive Statistics for large enterprises

Variables	Mean	Minimum	25%	50%	75%	Maximum	St.deviation
CASH	0.09	0.00	0.02	0.07	0.13	0.33	0.09
AVCASH	263255621	44500	25543125	78210750	160023000	2152199206	466151292
CONCASH	227639937	42830	24456313	64357417	153132576	2009523068	427349279
GROWTH	0.02	0.00	0.00	0.01	0.03	0.09	0.02
LEV	1.06	0.03	0.38	0.88	1.11	5.55	1.12
CFLOW	-0.09	-2.85	-0.03	0.01	0.06	0.32	0.45
LIQ	0.84	0.08	0.49	0.67	0.75	6.32	1.05
STA	1.72	0.18	0.41	0.59	1.66	12.25	2.54
INT	11.57	9.98	10.91	11.78	12.24	12.73	0.83
ACP	85.06	0.07	23.41	60.68	121.48	319.08	85.05
CR	1.59	0.38	0.77	1.49	1.98	4.40	0.94
QR	1.05	0.18	0.50	0.79	1.34	3.19	0.71
CFVA	0.32	0.02	0.04	0.06	0.33	1.42	0.50
BANKD	0.19	0.00	0.00	0.02	0.42	0.78	0.26
SIZE	347302931	41176795	145923900	313214446	461013868	1103928750	248877000
No of enterprises	6	6	6	6	6	6	6
No of observations	60	60	60	60	60	60	60

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