

Impact of Working Capital Management on Firm's Profitability: Evidence from Cement Sector of Pakistan

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Chapter 1: Introduction

Finance is a great need in the establishment of businesses either it is a small business unit or a vast assembling concern. Money is the main regular component in all little and substantial specialties units. Along these lines cash administration is must that is by and large known as money related administration. Financial management can only be possible if one can put proper administration of money that business brings about compelling monetary administration. There are two basic purposes of having monetary funds(I) for foundation and (II) to meetsits everyday expenses. As we all know that for the purchase of capital asset huge amount of finance is required in order to increase production, for example, plant and apparatus, land and building, furniture and so forth furthermore for extension of business, remodel or redesigning of plant and apparatus and innovative work. The part of association's capital which is obstructed on a perpetual premise is called altered capital. In the same way funds are required for transient purposes e.g., for the buy of crude materials, installment of wages and for gathering ordinary costs. All the merchandise which are delivered in a given time period may not be sold in that period. Subsequently, a few products stay in stock, e.g. crude material; semi completed merchandise and completed products, management of these assets is called working capital management. In straightforward words working capital administration alludes to all parts of current assets and current liabilities. The administration of a working capital is of incredible essentialness at least the vitality of administration of altered capital.

Problem statement:

This research is conducted to check impact of working capital on profitability of cement sector of Pakistan stock exchange and figure out how working capital management of certain organization influenced profitability of that firm. There are many researches discussed on the importance of this topic as far as profitability is concern. It is also important to know that how effectively working capital management play their role in the profitability of firms.

The effect of working capital administration on productivity is exceedingly critical in light of the fact that organizations obliged a harmony in the middle of danger and effectiveness to accomplish an ideal level of working capital. At the point when there is a surplus working capital, it might lead to unnecessary buying and amassing of inventories bringing on more risks of burglary, waste and misfortunes. Then again for deficient working capital, the firm can't pay day-to- day costs of its operations and it makes inefficiencies, expands costs and lessens the benefits of the business. Along these lines, productive administration of working capital is a key piece of the generally speaking corporate procedure to make shareholder esteem. All in all, organizations attempt to keep an ideal level of working capital that amplifies their worth. On the off chance that we couldn't care less about benefit, we can't make due for a more drawn out period. Then again on the off chance that we couldn't care less about liquidity, we may confront the issue of indebtedness or insolvency. Consequently meeting expectations capital administration should be given legitimate thought and will eventually influence the gainfulness of the firm.

The motivation behind the present study is to break down the different ideas of working capital and find out the plausibility of the idea of working capital in the light of better arranging and control of working capital. Issues of working capital administration include the issue of deciding the ideal level of interest in every part of current holdings i.e. stock, receivables, money, and other transient speculation. The fundamental center in meeting expectations capital administration ought to be to upgrade the company's interest in working capital. A master in the budgetary administration is of the sentiment that issue of working capital is one of the elements in charge of the low gainfulness in assembling division. Better arranging and control of working capital, or as such, legitimate usage of ideal amount of working capital builds the procuring force subject to the presence of working edge should be given legitimate attention and will eventually influence the gainfulness of the firm.

LITERATURE REVIEW

Soenen (1993) studied the affiliation between working capital and return on investment in US firms. A net trade cycle was used as proxy for working capital. The results of Chi-square tests showed that there was negative relationship between length of trade cycle and return on assets (ROA). The negative relationship was found different across the industries. It depends upon the nature of industry. Results might vary from industry to industry.

In 1997 Smith and Begemann measured association between Working Capital and Return on Investment. They concluded that those who support working capital to increase profitability at the cost of liquidity it results

in reduction of returns. In their research association between conventional and unusual working capital measured and return on investment (ROI). The problem under investigation was to establish whether the more recently developed alternative working capital concepts showed improved agreement with return on investment to that of traditional working capital ratios or not. Results indicated that there were no significant differences amongst the years with respect to the independent variables. The results of their stepwise regression confirmed that total current liabilities divided by funds flow accounted for most of the unpredictability in Return on Investment (ROI). The results showed that a conventional working capital leverage ratio, current liabilities divided by funds flow, displayed the greatest correlation with return on investment. Well known liquidity concepts such as the current and quick ratios registered insignificant associations whilst only one of the newer working capital concepts, the comprehensive liquidity index, indicated significant associations with return on investment. All the above studies provided us a solid base and gave us idea regarding working capital management and its components. They also gave us the results and conclusions of those researches already conducted on the same area for different countries and environment from different aspects.

Raheman & Nasr (March 2007) found the effect of working capital management on profitability as well as liquidity. They have selected 6 years data (1999 to 2004) of 94 Pakistani firms listed on KSE. Different variables were used to check the consequence of working capital management on profitability. Variables include; average collection period, Inventory turnover in days, average payment period, cash conversion cycle (CCC) and Current ratio. Net operating profitability was used as a measure of profitability. Control variables include Debt ratio, size of the firm, measured in terms of natural logarithm of sales and financial assets to total assets ratio. Pearson's correlation and regression analysis (Pooled least square and general least square with cross section weight models) were used for analysis. The results showed that there was a strong negative relationship between variables of the working capital management and profitability of the firm. It means that as the cash conversion cycle increases it will lead to decreasing profitability of the firm, and managers can create a positive value for the shareholders by reducing the cash conversion cycle to a possible minimum level. They found that there was a significant negative relationship between liquidity and profitability. They found positive relationship between size of the firm and its profitability. There was also a significant negative relationship between debt used by the firm and its profitability.

Ikramul Haq, Muhammad Sohail, Khalid Zaman & Zareen Alam (May 2011) studied the association between working capital management and profitability. They used the 6 years data (2004-2009) of 14 cement companies of Pakistan. All the companies were listed on KSE. The secondary data were taken from the financial statements of all the firms. Various ratios were used to check the relationship between working capital management and profitability. The ratios used in their research are: Current Ratio, Liquid Ratio, Current assets to total assets ratio, Current assets to total sales ratio, Cash Turnover, Inventory Turnover Ratio, Debtor Turnover Ratio and Creditor Turnover Ratio. Proxy for profitability was Return on Investment (ROI). The data were analyzed using the techniques of correlation and multiple regression analysis (POLS). The result concluded that there was an unaffected relationship between working capital management and return on investment.

In the year 1999 Govind Rao and Rao studied the impact of working capital on profitability in India. They worked on cement sector of India. They found mixed results of working capital management both positive as well as negative correlation between ratios of working capital and profitability.

Ashraf (2012) check the consequence of working capital on the profitability of the 16 Indian firms. Results indicated that large firms are earning high profits. The study found strong negative association between working capital and profitability. Moreover, debt used by the firm, inventory turnover, average collection period, and average payment period & cash conversion cycle had a considerable negative relationship with profitability.

Sing and Penny (2008) conducted the research on the impact of working capital management on commercial profitability (profitability of business). They used the data from 1990-2008. They found that current ratio, quick ratio and receivable turnover had substantial consequence on working capital.

Padachi (2006) studied the trends in working capital management and its Impact on Firms' Performance. The sample was from Mauritian Small Manufacturing Firms. The result showed that high investment in inventories and receivables is associated with lower profitability. He used return on total assets (ROA) as proxy for profitability for a sample of 58 small manufacturing firms in Mauritius. The secondary data were used in research. 6 years data from 1998 to 2003 were used by the researcher. The findings expressed an increasing tendency in the short-term constituent of working capital financing.

In 2007 Ganesan studied the relationship of working capital and profitability. A set of secondary data (2001 to 2007) were used from the sector was Telecommunication & Equipment industry. Sample includes 349 firms. The results showed that negative relationship exists between firms WCC and profitability but the results were not significant in that particular industry.

Samiloglu & Dermigunes (2008) had done a research on effect of working capital on performance of companies in Turkey. The purpose of the study was to consider consequences of association between firm profitability and the components of cash conversion cycle. Their sample was listed manufacturing companies of Istanbul stock exchange for the period of 1998 to 2007. The results of multiple regression models were used for

analysis. The results of the study showed that inventory period, accounts receivable period and leverage negatively affect firm's profitability while growth in sales positively affects firm's profitability. Thus as the accounts receivables, inventory and leverage increases, the profitability of the firm decreases but as growth in terms of sales increases, profitability also increases.

In the publication of Azhar and Noriza (2010) the Malaysian companies were used to assess the effect of working capital management on the firm profitability and market value. Large sample size was used, i.e, 172 firms were under study. They found the strong negative correspondence in working capital variables and profitability of the firms.

In 2003 Deloof considered the affect of working capital management on profitability of Belgium Firms. The researcher had taken a sample of 1009 non-financial firms. The results showed that there was a negative relationship between day's receivables and inventory with gross operating profit. It was recommended that managers can boost profitability by rising day's payables and shortening day's receivables and inventories.

Sharma & Kumar in 2011 studied the effect of Working Capital Management on Firm Profitability in India. They took a sample data of 263 non-financial BSE 500 firms listed on Bombay stock exchange from year 2000-2008. The POLS results showed positive and significant relationship of profitability and working capital management. Inventory of number of days and number of days accounts payable were having negative correlation with profitability while number of days accounts receivable and cash conversion cycle were positively related with profitability which means that in the case of Indian companies by stretching the number of days accounts receivables and cash conversion cycle would be profitable.

Vural, Sokmen & Cetenak (2012) studied the relationship between performance of firms and the working capital management. 75 companies listed on Istanbul stock exchange were selected by them for their research. Secondary data were taken from 2002 to 2009. They had developed five models to found the said relationship. Operating profit was taken as proxies of profitability and firm value. The Panel data model was used for analysis of the research. It was concluded that cash conversion cycle and average collection period were having negative relation with profitability which means that by reducing both of them profitability can be increased. But the relationship between other components of working capital and profitability was insignificant.

Abuzayed (2012) studied a study in Jordan. The purpose of the study was to examine the effect of working capital management on firm's performance. The sample was taken from Amman stock exchange for the period 2000 to 2008. One accounting and one marketing measure was taken with the assumption that the main interest of shareholders was to maximize their own wealth. The study used panel data analysis, fixed and random effects and generalized methods of moments. The results recommended that firms should keep a balance between profitability and liquidity as it has to run the business both efficiently and profitably. Firm's profitability is proved to have a positive relation with the cash conversion cycle. Greater the cash conversion cycle, lesser will be the profitability.

Awan et al (September 2014) contemplated the effect of working capital administration on productivity. Their example was 10 bond organizations of Pakistan recorded on KSE. The optional information of these organizations was gathered from 2009 to 2013. Numerous variables were incorporated in the examination to check the effect of working capital administration on productivity, these variables incorporates current degree, brisk proportion, money transformation cycle, stock turnover in Days (ITD), Gross working capital turnover, normal installment period (APP), size and trusts distributed by Government out in the open area improvement program (another control variable). Return on Equity (ROE) was utilized as substitute for measuring the productivity of concrete organizations. All the discoveries were tried utilizing 0.01 and 0.005 level of noteworthiness. The results demonstrated that ROE was adversely connected with Cash Conversion Cycle, current degree, and stock turnover in days (ITD). ROE was decidedly corresponded with the Gross Working Capital Turnover, speedy Ratio, Average Payment Period, and Size of firms and Funds designated by government in Public Sector Development Program. The relationship of Current proportion was immaterial with ROE however the relationship was not to the extent that as it was considered.

CHAPTER NO.03 RESEARCH METHODOLOGY

Data set & Sample:

For this research I have collected the data of cement companies situated in Pakistan. There are more than 20 companies listed on KSE. But due to the short time I have selected only 10 of them. The secondary data is collected from the balance sheet and profit and loss account of these cements companies.

The data consist of only five years (2009 to 2013) due to the short time period. It comprises of 50 observations which is more than enough for regression analysis.

Data is reliable because the financial reports are published and all the companies are listed on KSE during the period from 2009 to 2013.

The sample consists of the following cement companies.

| NAMES OF CEMENT COMPANIES IN PAKISTAN | |
|---------------------------------------|-----------------|
| Cherat Cement | Fuji Foundation |
| Bestway Cement | Luck Cement |
| Attock Group of Companies | Fecto Cement |
| Maple Leaf Cement | Poineer Cement |
| | |

Theoretical Framework:

Dependent Variable

Return on Asset (ROA)

In my research I have taken ROA as a proxy for measuring the profitability of the cement sector in Pakistan. Firms are generally viewed as auspicious when they produce and gives back that can draw in further financial specialists and banks, and in a bad position on the off chance that they have to raise the account needed for development or capital needs, or if their ROA does not manipulate lenders. It is calculated by dividing the net income by the total assets of the company.

Independent Variables

Current Ratio (CR)

CA tells us the affiliation between current assets and current liabilities. It shows the capacity of the firm to fulfill its current liabilities by using the current assets. When this ratio is very it implies that the firm is in better position in other words we can say that shows the strength of the firm. Current Ratio is calculated by the given formula

$$\text{Current Ratio} = \text{CR} = \text{Current Assets} / \text{Current Liabilities}$$

Quick Ratio (QR)

It describes the association between current liabilities and current assets excluding the inventory. We can say that it shows the relationship with liquid asset because inventory cannot be converted into cash immediately.

$$\text{Quick Ratio} = \text{QR} = \frac{\text{Current Assets} - \text{Inventory}}{\text{Current Liabilities}}$$

Inventory Turnover in days (ITD)

It is a degree that decides how regularly stock of a company is sold and supplanted over a given time of time. It is a free variable and utilized as a substitute for stock strategy of a firm. It shows the association between the inventory in stock and cost of goods sold or purchases. It is calculated by the formula given below;

$$\text{ITD} = \text{Inventory} / \text{Cost of goods sold} * 365$$

Receivable Turnover in days (RTD)

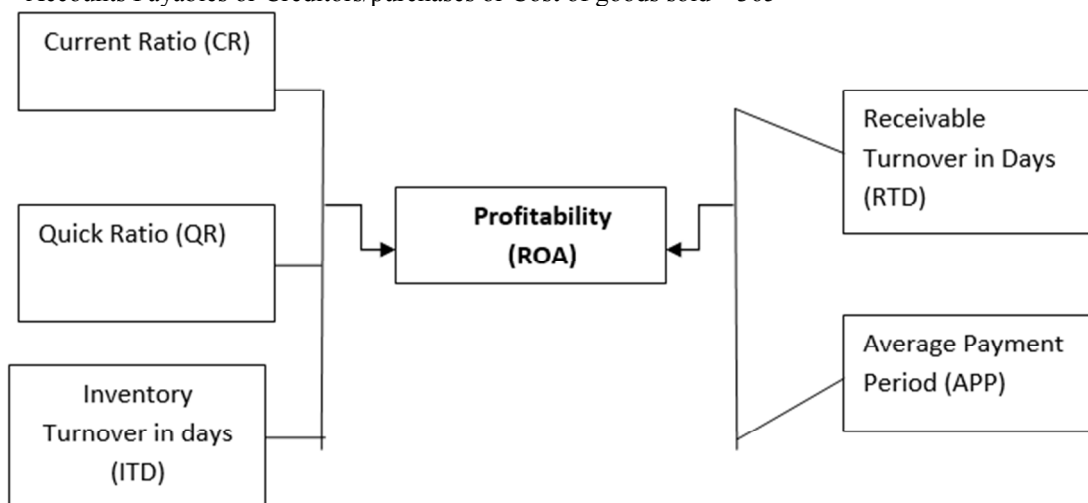
It is the time period that is taken by the firm to collect it receivables from the debtors of the company. It is an independent variable which is calculated by the formula given below;

$$\text{RTD} = \text{Accounts Receivables} / \text{Net Credit sales} * 365$$

Average Payment Period (APP)

Average payment period (APP) is the average time period for which the creditors are liable to pay the dues. Also we can say that it is the approximate amount of time that a businesstakes to pay payments to its consumers and clients. The longer the period the moreadvantageous for the firm so that funds can be put to other uses.

$$\text{APP} = \text{Accounts Payables or Creditors} / \text{purchases or Cost of goods sold} * 365$$



Hypothesis

H1: There is an association between Current Ratio and Return on Asset

- H2: There is a relationship between Quick Ratio and Return on Asset.
 H3: There is an association between Inventory Turnover in days and Return on Asset
 H4: There is significant relationship between Receivable Turnover in days and Return on Asset
 H5: There is a significant relationship between payable days and Return on Asset.

CHAPTER NO. 04 STATISTICAL ANALYSIS /RESULTS

Descriptive Analysis:

Descriptive analysis is the initial phase in this study. It served to depict applicable parts of phenomena of money transformation cycle and give definite data about every pertinent variable. E-Views programming has been utilized for investigation of the diverse variables in this study.

| | Mean | Median | Maximum | Minimum | St.Deviation |
|------------------|-------------|---------------|----------------|----------------|---------------------|
| ROA | 19.2% | 12.91% | 91.93% | -37.19% | 26.94% |
| CR(Times) | 1.28 | 0.95 | 3.38 | 0.27 | 0.78 |
| QR(Times) | 0.98 | 0.76 | 3.99 | 0.03 | 0.78 |
| ITD(Days) | 20 | 28 | 70 | 10 | 19.59 |
| RTD(Days) | 28 | 29 | 62 | 15 | 8.0 |
| APP(Days) | 36 | 31 | 69 | 10 | 15 |

The above table shows average, media, standard deviation and lower and higher values of all the variables of the research. The first row shows the mean and other values of profitability of cement sector of Pakistan. It ranges from negative value to a maximum of 91.93% with the average of 19.2%. The average time in which we will pay to our creditors is 36 days and its standard deviation is 15 days. And minimum time for payment is 10 days while the maximum period which cannot be exceeded than 69 days.

Our record of Receivable days shows that on average we collect our payment within a month in some cases the period can increase up to two month but it is not in routine. And the minimum time for collection is 15 days.

In case of stock on 20 days in are enough for normal sale with standard deviation of 18.55 days. Maximum time is 70 days, while minimum time to transfer inventory into sales is 10 days only.

By looking at the row of current ratio you can see that (CR) is 1.28 times and standard deviation is 0.78. The mean value of current ratio (CR) is below the accepted value of 2:1 ratio. The maximum value of current ratio for a cement company in a year is 3.38 times while the minimum value is 0.27 times. If current ratio of a firm is more than mean or conventional value, that may indicate the existence of surplus current assets that are trouble for the firm.

The mean of quick ratio (QR) is 0.98 times and standard deviation is 0.78 times. The maximum value of quick ratio for a cement company as per my research in a year is 3.99 times while the minimum value is 0.03 times.

Correlation Analysis:

Correlation is very important tool for checking the affiliation or association among the dependent and independent variables of the research. The given table shows the relationship between the variables of working capital and the profitability of cement sector in Pakistan.

| | ROA | CR | QR | ITD | RTD | APP |
|------------------|------------|-----------|-----------|------------|------------|------------|
| ROA | 1 | | | | | |
| CR(Times) | -0.49 | 1 | | | | |
| QR(Times) | 0.52 | 0.346 | 1 | | | |
| ITD(Days) | -0.149 | -0.059 | -0.253 | 1 | | |
| RTD(Days) | 0.56 | 0.125 | 0.46 | 0.29 | 1 | |
| APP(Days) | 0.112 | -0.48 | -0.59 | 0.56 | 0.69 | 1 |

Pearson's correlation among the variables of our research is given in above table. We have observed that ROA is positively associated with Quick ratio (QR). It is very contrary to the theory of working capital. The relationship is strong i.e. 52%.

ROA is very weak positively interrelated with the average payment period (APP). It means when payable days increases profitability will also increase. This relation between APP and Return on Asset (ROA) indicates that less profitable cement company should wait longer to pay their creditors and take full advantage permitted to them from their creditors. Its value therefore is 0.112. And the result is also significant.

The CR in my research has a significant negative relationship with ROA. The coefficient is -0.49. This shows that if the current ratio increases the profit will decrease. It indicates the need for equilibrium between current ratio and profitability because these two have a contrary connection. But the results are not significant.

The study of correlation results between the inventory turnover in days (ITD) and the ROA show a negative relationship. The correlation coefficient is -0.149. It shows that when the cement company takes a lesser amount of time to transfer stock into sales it will automatically positively influence profitability. The result is also

significant.

Data indicate high association between different measures of working capital management. The correlation between ROA and RTD is (0.56), ROA and APP is 0.122 while between the ITD and ROA is -0.149.

Regression Analysis”

Pooled ordinary least square (POLS) has been done in our research to check the dependency of various components of WCC on profitability of our sample of cement companies in Pakistan.

Following is the regression model of my research;

$$ROA = \beta_0 + \beta_1 CR + \beta_2 QR + \beta_3 ITD + \beta_4 RTD + \beta_5 APP + e$$

Regression analysis indicates the impact of working capital management on ROA.

The coefficients are given in the model given below.

| Variables | Coefficient | Std. Error | t.values | Prob. |
|---------------------|-------------|-------------------|----------|----------|
| C | -8.82756 | 3.32568 | -2.6544 | 0.0241 |
| CR | -0.021356 | 0.065995 | -0.3236 | 0.7016 |
| QR | 0.185274 | 0.063406 | 2.92203 | 0.0053 |
| ITD | -0.013669 | 0.006452 | -2.1186 | 0.0563 |
| RTD | 0.0011 | 0.00125 | 0.88 | 0.123 |
| APP | 0.01523 | 0.006874 | 2.21559 | 0.0183 |
| R-squared | 50.1983 | F-statistic | | 5.53098 |
| Adjusted R- squared | 50.291272 | Prob(F-statistic) | | 0.000078 |
| S.E. of regression | 0.204806 | Sum Squared resid | | 1.719768 |

Current ratio has a negative impact on profitability, if the current ratio change there will be only 0.021356 change in opposite direction in profitability. The results are also not significant. But confirm the studies of Rahman et al (2010), Azam&Haider (2011) and Awan et al (2014).

Quick ratio has a positive weak impact on profitability of sample cement companies of Pakistan. They have direct relationship and the results are significant and confirm the previous studies of Hassani (2013) and Awan et al (2014).

Our results of APP found to be significant positive association with profitability which means that if we increase the number of days of payment the performance will be better. The coefficient of App is 0.01523 indicates that one day increase in APP will increase 1.523% high profitability. In ideal situations the payment period which b maximum but not at the risk of credit rating of vendor relationship. Our results are in accordance with the literature of Azam&Haider (2011)

The results of Receivable period are not significant but it shows positive relationship with the profitability. If we study the theory we will find that lesser the number of receivable days higher will be the profits but my research contradicts the theory because in this sector the customers readily pay for the stock and it will finished within a very short period of time.

The stock/inventory days has negative impact on profitability of cement companies of the sample of this research. But the results are significant. And inventory is very important items in finding the higher profits.

Least but not least the “P” values which are affiliated with t-values in the table show the significance level of the variables which is 0.7016 for the current ratio and 0.123 for Receivables days and so on. These values indicate the reliability of our results.

The F value (the probability of F) tells us the overall significance of the model. By looking at the value of F we can say that the model is significant. The value of coefficient of determination (R Square) is 50.1983 it shows the strength of our model. We can say that due to the elected components of working capital management of our research the ROA will be affected by 50.29%, which is materially powerful impact on profitability.

CHAPTER NO.05 CONCLUSION & RECOMMENDATIONS

My research shows the “Impact of WCM on performance of Cement sector of selected 10 companies listed on KSE”. I have used 5 years data i.e. from 2009 to 2013. The panel data has been taken from the annual reports of cement companies. ROA is taken as proxy for profitability of cement sector of Pakistan. ITD and APP has significant negative relationship with profitability and current ratio has negative insignificant relationship with ROA. Results verify the study of Deloof (2003), Shin & Soenen (1998), Raja & Zingales (1995), Myers & Majilof (1984) and Awan et al (2014). The study extends the previous research that relationship of the firm profitability with cash holding position and profitability.

These results tells us that the prudent managers can better the position of their owners by decreasing the number of days for payment and period of inventory in stock but to a practical minimum level leading to short cash conversion cycle which will ultimately enhance the profitability of the organization.

Consequently my research shows sufficient proofs that a company can increase their profit by proper management of working capital. The chief rudiments of working capital are inventory, accounts receivables,

cash and bank balances and short term investments. Inventories are further comprises of raw materials; work in process, finished goods, stores and spares, and packing materials etc.

Cash management can be made more competent through cash flow statements, cash resources and other prudent steps taken by the higher management.

Future researchers can have a better research on this sector if they include superfluous variables like profitability ratios (gross profit ratio, net profit ratio, Cash conversion cycle etc) and critically analyzing the association between the Working capital management and profitability. Secondly every area in manufacturing sector should be considered at micro level for efficient working capital management so it can be comprehend that which factors of working capital management control profitability more and how working capital management can amplify output and profitability in different sectors of our country. The impact of different risks like interest rate risk, foreign exchange risk, business risk, political risk and competitor risk on working capital management should be studied in detail.

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