

ANALYSIS OF FUND FLOW AND CASH FLOW

ANALYSIS OF FUND FLOW

6.1 INTRODUCTION:

One of the most fundamental objectives of business is to make a profit. Long run survival requires that the business must be able to deal with any liquidity problems which arise in the short term. Basically any business must be concerned with making a profit and maintaining a solvent financial position. The financial statement of the business indicates assets, liabilities and capital on a particular date and also the profit or loss during a period. But it is possible that there is enough profit in the business and the financial position is also good and still there may be deficiency of cash or of working capital in business. If the management wants to find out as to where the cash is being utilized, financial statement cannot help.

In the other words, the profit and loss account and balance sheet statements are the common important accounting statements of a business organization. The profit and loss account provides the financial information relating to only a limited range of financial transactions entered into during an accounting period and which have impact on the profits to be reported. The balance sheet contains information relating to capital debt raised or assets purchased. Along with the information about the assets and liabilities as well as the profit and loss, it is equally important to know what funds became available during the accounting year and how such funds were applied. This information may be obtained by preparing a statement of source and application of funds. This statement demonstrates the movement of funds into and out of the business during the course during the accounting period.

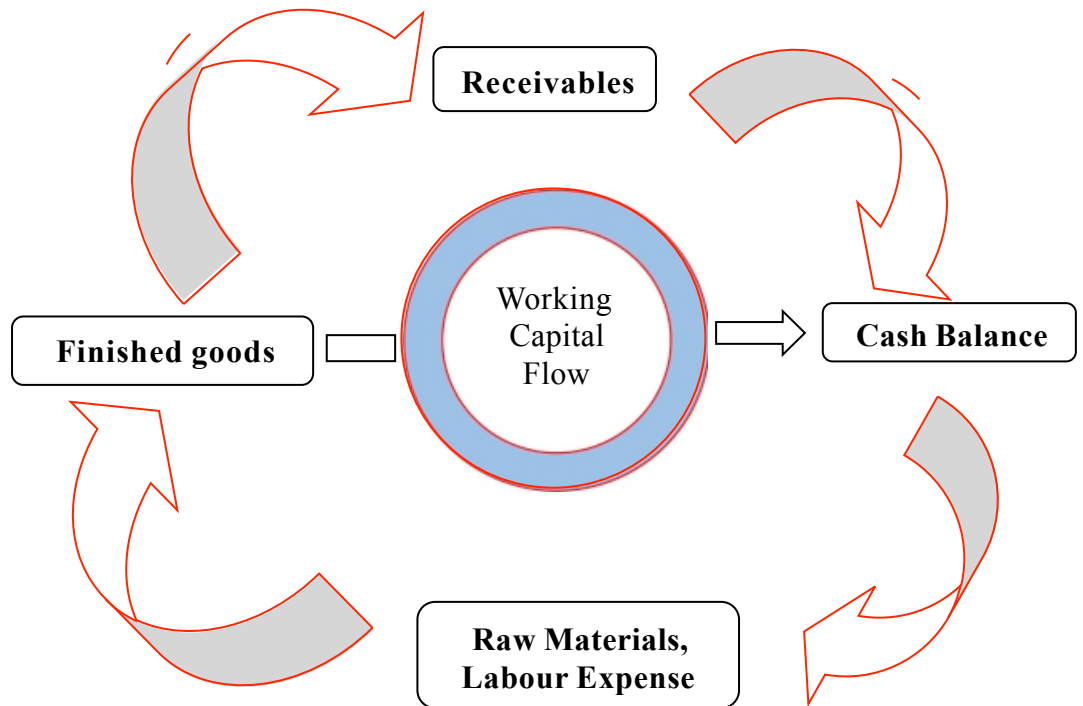
6.2 CONCEPT OF “FUND”:

The term ‘*fund*’ has been defined and interpreted differently by different experts. Broadly the term ‘*fund*’ refers to all the financial resources of the company. On the other extreme, fund has been understood as ‘cash’ only. According to the *International Accounting Standard No. 7*, the term generally refers to cash, to working capital and to cash and cash equivalents (long term financial sources).

A) Fund means cash: Under this concept, the term “funds” is used only in the sense of cash and bank balance. Here, only the changes in cash and bank are considered. Hence, the statement is called “Cash Flow statement. This statement aims at listing the various items which bring about changes in the cash balance between two balance sheet dates. Cash planning becomes useful for control purposes. Since cash is considered as short term assets, they are subjected to short term fluctuations. A delay in making payment to suppliers and a provision of one month’s credit for making a payment of land purchases may show sufficient cash flow. They may reflect a satisfactory position, but it is not a reality. Therefore, cash equivalent concept of fund is useful only for short term financial planning and not for long term. Thus cash and bank is one part of fund.

B) Fund means Working Capital: Working capital is the excess of current assets over current liabilities. It means working capital = Current assets - current liabilities. It is an alternative measure of the changes in the financial position. All those transactions which increase or decrease working capital are included in this statement. It excludes all such items which do not affect the working capital. The working capital concept of funds is in conformity with normal accounting procedures. Hence, a funds flow statement based on this concept fits well with the other statements. Moreover, working capital is also a measure of short term liquidity of the firm. Therefore, an analysis of factors bringing about a change in the amount of net working capital is useful for decision making by shareholders, creditors and management. Due to these reasons, the working capital approach to funds is more useful than the cash approach.

The operating cycle of working capital (working capital flow) is as follow:



C) Fund means total financial resources: The term “funds” is very often used in the sense of useful financial resources also. Cash approach and working capital approach both are incomplete and inadequate to the extent that they omit a few major financial and investment transactions. Such items do not affect net working capital. But, if they are included, they would certainly provide qualitative information for the decision making, For example issuing equity shares and debentures for purchase of buildings or assets shall not have any effect on the working capital. But it is a significant financial transaction that should be disclosed. Therefore, this concept seems to be the best approach to disclose the changes in the financial position as compared to other concepts. It is in conformity with the statutory regulations and legal requirements.

6.3 CONCEPT OF FUND FLOW:

The term "Flow of Funds" refers to changes or movement of funds or changes in working capital in the normal course of business transactions. The changes in

working capital may be in the form of inflow of working capital or outflow of working capital. In other words, any increase or decrease in working capital when the transactions take place is called as "Flow of Funds." If the components of working capital results in increase of the fund, it is known as Inflow of Fund or Sources of Fund. Similarly, if the components of working capital effects in decreasing the financial position it is treated as Outflow of Fund. For example, if the fund raised by way of issue of shares will be taken as a source of fund or inflow of fund. This transaction results in increase of the financial position. Like this, the fund used for the purchase of machinery will be taken as application or use of fund or outflow of fund, because it stands to reduce the fund position.

Increase the funds while others decrease the funds. Some may not make any change in the funds position. In case a transaction results in increase of funds, it will be termed as a "sources of funds". In case a transaction results in decrease of funds it will be taken as an application or use of funds. In case a transaction does not make any change in the funds position, it is said that it is a non-fund transaction.

According to R.N. Anthony, "Fund Flow is a statement prepared to indicate the increase in cash resources and the utilization of such resources of a business during the accounting period."

According to Smith Brown, "Fund Flow is prepared in summary form to indicate changes occurring in items of financial condition between two different balance sheet dates."

No Flow of Funds:

Some transactions may not make any movement or changes in the fund position. Such transactions are involved within the business concern. Like the transaction which involves both between current assets and current liabilities and between non-current assets and non-current liabilities and hence do not result in the flow of funds. For example, conversion of shares in to debenture. Such transaction

involves between non-current accounts only and this activity does not effect in increase or decrease of the working capital position.

6.4 CONCEPT OF FUND FLOW STATEMENT:

It is a statement showing the movement of funds into and out of business. In other words it is a statement showing sources and application of fund. A fund flow statement deals with the financial resources required for running the business activities. It explains how were the funds obtained and how were they used.

A fund flow statement matches the funds raised and funds applied during a particular period. The sources and applications of fund may be of capital as well as of revenue nature. A fund flow statements provide a meaningful link between the balance sheets at the beginning and at the end of the period and profit and loss account of the period. In view of recognized importance of capital inflows and outflows which often involve large amount of money should be reported to stake holders, the fund flow statement is devised.

In the words of **Dr. Shailesh Ransariya**, “*Funds flow statement is a modern technique of analyzing financial statement. Fund flow statement shows as to where have the funds come from and where have they been used during the accounting period. It helps in analyzing the movement of funds of a firm between the two balance sheet dates.*”

As per **Foulk** point of view “A statement of sources and applications of fund is a technical device deigned to analyze the changes in the financial condition of a business enterprise between two dates.”

In the words of **Anthony**, “The fund flow statement describes the sources from which additional funds were derived and the uses to which these sources were put.”

The *I.C.W.A.* in glossary of management accounting terms defines fund flow statement as “a statement prospective or retrospective, setting out the sources and applications of the funds of an enterprise. The purpose of this statement is to indicate clearly the requirement of funds and how they are proposed to be raised and the efficient utilization and application of the same.”

6.5 OBJECTIVES OF FUNDS FLOW STATEMENT:

The main objectives of the fund flow statement are:

(1) **Helpful in finding the answer to some important financial question:-**

A fund flow statement is prepared to give satisfactory answer to the following question:-

- (a) What have been the main source and application of funds during the period?
- (b) How much funds have been generated from business operations?
- (c) Where did the profits go?
- (d) Why were dividends not larger?
- (e) How was it possible to distribute dividends in excess of current earning or in the presence of net loss for the period?
- (f) Why the net current assets are up even though there is a net loss for the period?
- (g) How was the expansion in plant and equipment financed?
- (h) How was the repayment of long term debt accomplished?
- (i) How was the increase in working capital financed?

(2) **Helpful in financial analysis:-** A fund flow statement provides a complete analysis of the financial position of a firm.

(3) **It provides more reliable figures of profit and loss of the business:-** It gives much more reliable figure of the profits of the business than the figures shown by P/L account because the figure of profit shown by P/L account is affected by the personal decision of management in deciding the amount of depreciation and other adjustments regarding the writing off preliminary expenses etc.

- (4) **It enables to know whether the funds have been properly used:-** The funds flow statement enables the management to know whether the funds have been properly used in purchasing various assets or repaying loans etc.
- (5) **Helpful in proper management of working capital:-** While managing working capital in a business, it becomes essential to ensure that it should neither be excessive nor inadequate. A fund flow statement indicates the excessiveness or inadequacy in working capital.
- (6) **Helps in preparation of budget for the next period:-** A fund flow statement is prepared for next year, it will enable the management to plan its financial resources properly. The firm will know how much funds it requires, how much the firm can manage internally and how much it should arrange from outside source. This is helpful in preparing the budgets for the future period.
- (7) **It helps a firm in borrowing operations:-** A fund flow statement prepared for the future period indicates whether the company will have sufficient funds to repay the interest & loans in time.
- (8) **Helpful in determining dividend policy:** - Sometimes, there may be sufficient profit but the distribution of dividend may not be possible due to its adverse effect on the liquidity and working capital of the business. In such cases a funds flow statement help in leading whether to distribute the dividend or not because a funds flow statement will reveal from where and how much funds can be managed for distributing the dividends.
- (9) **Useful to shareholders:-** Shareholders also get information about the financial policies of the enterprise with the help of fund flow statement.

6.6 SOURCES AND USES (APPLICATIONS) OF FUNDS:

Since a fund flow statement describes the various sources and uses of funds, it is imperative that one should know the various sources and uses of funds:

Sources of funds:

Generally funds are derived from:

1. Operating of business i.e. operating income
2. Income from investment

3. Sale of assets
4. Sale of long term investments
5. Contribution of share holders
6. Increase in long term liabilities, e.g., issue of debentures
7. Gifts, damages awarded in legal action etc.

Uses (Applications) of funds:

Generally funds are utilized to:

8. Operating loses
9. Repayment of long term loan and debentures
10. Redemption of preference share capital
11. Payment of cash dividends
12. Purchase of fixed assets
13. Purchase of long term investments

Loss of cash by embezzlement costs in legal action etc.

6.7 IMPORTANCE/SIGNIFICANCE OF FUND FLOW STATEMENT:

Fund flow statement is a useful tool in the financial managers' analytical kit. The basic propose of this statement is to indicate where funds came from and where it was used during certain period. Following are the uses of this which show its importance:

- [1] Fund flow statement determines the financial consequences of business operations. It shows how the funds were obtained and used in the past. Financial manager can take corrective actions.
- [2] The management can formulate its financial policies – dividend, reserve etc. on the basis of the statement.
- [3] It serves as a control device, when comparing with budgeted figures. The financial manager can take remedial steps, if there is any deviation.

[4]Other points:

1. It points out the sound and weak financial position of the enterprise.
2. It points out the causes for changes in working capital.

3. It enables the Bankers, creditors or financial institutions in assessing the degree of risk involved in granting credit to the business.
4. The management can rearrange the firm's financing more effectively on the basis of the statement.
5. Various uses of funds can be known and after comparing them with the uses of previous years, improvement or downfall in the firm can be assessed.
6. It provides a basis for preparation budgets for the future.
7. The statement compared with the budget concerned will show to what extent the resources of the firm were used according to plan and what extent the utilization was unplanned.
8. It tells whether sources of funds are increasing or decreasing or constant.
9. It points out the financial strengths and weaknesses of the business.
10. It helps in working capital management of the company.
11. It appraises the shareholders regarding the uses of funds in the business.

6.8 LIMITATION OF FUND FLOW STATEMENT:

The main limitations of fund flow statement are as under:

- (1) The statement lacks originality because it is only rearrangement of data appearing in account books
- (2) It indicates only the past position and not future.
- (3) It indicates Fund flow a summary form and it does not show various changes which take place continuously.
- (4) When both the aspects of a transaction are current, they are not considered.
- (6) When both the aspects of a transaction are non- current, even then they are not included in this statement.
- (6) It is not an ideal tool for financial analysis.

- (7) It is not an original statement but simply a rearrangement of two statements or financial data.
- (8) It is not a substitute of income statement or a balance sheet. It is only a supplement to them.

6.9 COMPONENTS OF FLOW OF FUNDS:

In order to analyze the sources and application of funds, it is essential to know the meaning and components of flow of funds given below:

- (1) Current Assets
- (2) Non-Current Assets (Fixed or Permanent Assets)
- (3) Current Liabilities
- (4) Non-Current Liabilities (Capital & Long-Term Liabilities)
- (5) Provision for Tax
- (6) Proposed Dividend

- 1. Current Assets:** The term "Current Assets" refer to the assets of a business of a transitory nature which are intended for resale or conversion into different form during the course of business operations. For example, raw materials are purchased and the amount unused at the end of the trading period forms part of the current as stock on hand. Materials in process at the end of the trading period and the labour incurred in processing them also form part of current assets.

- 2. Non-Current Assets (Permanent Assets):** Non-Current Assets also refer to as Permanent Assets or Fixed Assets. These classes of asset include those of tangible and intangible nature having a specific value and which are not consumed during the course of business and trade but provide the means for producing saleable goods or providing services. Land and Building, Plant and Machinery, Goodwill and Patents etc. are the few examples of Non-Current assets.

- 3. Current Liabilities:** The term Current Liabilities refer to amount owing by the business which are currently due for payment. They consist of

amount owing to creditors, bank loans due for repayment, proposed dividend and proposed tax for payment and expenses accrued due.

- 4. Non-Current Liabilities:** The term Non-Current Liabilities refer to Capital and Long-Term Debts. It is also called as Permanent Liabilities. Any amount owing by the business which are payable over a longer period time, i.e., after a year are referred as Non-Current Liabilities. Debenture, long-term loans and loans on mortgage etc., are the few examples of non-current liabilities.
- 5. Provision for Taxation:** Provision for taxation may be treated as a current liability or an appropriation of profit. When it is made during the year it is not used for adjusting the net profit, it is advisable to treat the same as current liability. Any amount of tax paid during the year is to be treated as application of funds or non-current liability. Because it is used for adjusting the net profit made during the year.
- 6. Proposed Dividend:** Like provision for taxation, it is also treated as a current liability and noncurrent liability, when dividend may be considered as being declared. And thus, it will not be used for adjusting the net profit made during the year. If it is treated as an appropriation, i.e., an non-current liability when the dividend paid during the year.
- 7. Provisions Against Current Assets and Current Liabilities:** Provision for bad and doubtful debts, provision for loss on inventories, provision for discount on creditors and provision made against investment etc. are made during the year, they may be treated separately as current assets or current liabilities or reduce the same from the respective gross value of the assets or liabilities.

6.10 ANALYSIS OF FUND FLOW:

FUND FLOW STATEMENTS OF DGVCL

DESCRIPTION	2013-14	2012-13	2011-12	2010-11
Sources of Funds:				
Cash Profit from operations	195.87	146.05	179.10	154.72
Decrease in Investments	1.89	61.11	0.00	0.00
Increase in Share Capital	1.66	0.00	0.00	0.00
Increase in Share warrants/outstanding	0.00	10.94	0.00	0.00
Increase in Sec. Loans	0.00	52.86	0.00	0.00
Increase In Unsecured Loans	165.13	51.15	824.97	0.00
Decrease in Working Capital	186.50	45.68	0.00	115.56
Others	211.92	164.75	233.11	149.80
Total	762.97	532.55	1237.17	420.08
Application of Funds:				
Increase in Gross Block	625.42	532.55	285.61	204.48
Decrease in Share Capital	0.00	0.00	0.00	0.00
Decrease in Sec. Loans	126.61	0.00	97.76	124.41
Decrease in Un. Sec Loans	0.00	0.00	0.00	91.19
Decrease in Share warrants/outstanding	10.94	0.00	0.00	0.00
Increase in Investments	0.00	0.00	85.78	0.00
Interim Dividend Paid	0.00	0.00	0.00	0.00
Equity Dividend Paid	0.00	0.00	0.00	0.00
Corporate dividend tax paid	0.00	0.00	0.00	0.00
Increase in Working Capital	0.00	0.00	768.02	0.00
Others	0.00	0.00	0.00	0.00
Total	762.97	532.55	1237.17	420.08

Analysis:

The above table no.6.1 presents the fund flow statement of DGVCL during the study period of 2010-11 to 2013-14. It would provide the valuable information about the changes in the long-term sources of funds and in the quantum of working capital. First part of the statement shows the sources of funds. Profit

from operations shows the mixed trend during the study period. It is ranged between 146.05 in 2012-13 and 195.87 in 2013-14. The company has sold the investments during last two years of the study period. Company has issued additional share capital 1.66 crore in 2013-14. Again it shows that company has taken a secured loan of 52.86 in the year 2012-13. Company has borrowed huge amount in form unsecured loan in the year 2011-12, 2012-13 and 2013-14. 824.97% increase in unsecured loan in 2011-12 as compare to 2010-11. Amount in working capital was also decreased in the year 2010-11, 2012-13 and 2013-14.

Second part of the statement shows the application of funds. Company has purchased the fixed assets of Rs.204.48 crore, Rs.285.61 crore, Rs.532.55 crore and Rs.625.42 crore in the year 2010-11, 2011-12, 2012-13 and 2013-14 respectively. It shows the progressive trends during the study period. 86.46% increase in fixed assets in 2012-13 as compare to the year 2011-12. Company has repaid the secured loans in the year 2010-11, 2011-12 and 2013-14. Company's working capital was increased of Rs.768.02 crore in the year 2011-12. Company has invested Rs.85.78 crore in investments in the year 2011-12.

FUND FLOW STATEMENTS OF MGVCL

DESCRIPTION	2013-14	2012-13	2011-12	2010-11
Sources of Funds:				
Cash Profit from operations	151.46	135.27	142.92	125.92
Decrease in Investments	0.00	0.00	0.00	0.00
Increase in Share Capital	7.07	0.00	0.00	0.00
Increase in Share warrants/outstanding	0.00	42.42	0.00	0.00
Increase in Sec. Loans	0.00	1.61	0.00	0.00
Increase In Unsecured Loans	30.47	58.33	36.42	467.88
Decrease in Working Capital	199.54	19.51	0.00	0.00
Others	138.66	86.03	200.16	57.82
Total	527.20	343.17	379.50	651.62

Application of Funds:				
Increase in Gross Block	426.30	327.12	287.69	205.48
Decrease in Share Capital	0.00	0.00	0.00	0.00
Decrease in Sec. Loans	40.37	0.00	57.02	39.45
Decrease in Un. Sec Loans	0.00	0.00	0.00	0.00
Decrease in Share warrants/outstanding	42.42	0.00	0.00	0.00
Increase in Investments	18.11	16.05	4.13	43.30
Interim Dividend Paid	0.00	0.00	0.00	0.00
Equity Dividend Paid	0.00	0.00	0.00	0.00
Corporate dividend tax paid	0.00	0.00	0.00	0.00
Increase in Working Capital	0.00	0.00	30.66	363.39
Others	0.00	0.00	0.00	0.00
Total	527.20	343.17	379.50	651.62

Analysis:

The above table no.6.2 shows the fund flow statement of MGVCL during the study period of 2010-11 to 2013-14. It would provide the valuable information about the changes in the long-term sources of funds and in the quantum of working capital of the MGVCL. First part of the statement shows the sources of funds. Profit from operations shows the mixed trend during the study period. It is ranged between 125.92 in 2010-11 and 151.46 in 2013-14. The Company has issued additional share capital 7.07 crore in 2013-14 and increased in Share warrants/outstanding of 42.42 crore in the year 2012-13. Again it shows that company has taken a secured loan of 1.61 crore in the year 2012-13. Company has borrowed huge amount in form unsecured loan of Rs. 467.88 crore, Rs. 36.42 crore, Rs. 58.33 crore and Rs. 30.47 crore in the year 2010-11, 2011-12, 2012-13 and 2013-14 respectively. Amount in working capital was also decreased in the last two years of study period by Rs. 19.51 crore and Rs. 199.54 respectively. Moreover company has received funds in form of other sources by Rs. 57.82 crore, Rs. 200.16 crore, Rs. 86.03 crore and Rs. 138.66 crore in the year 2010-11, 2011-12, 2012-13 and 2013-14 respectively. It is increased by 246.18 % in the year 2011-12 as compared to year 2010-11.

Second part of the statement shows the application of funds. Company has purchased the fixed assets of Rs.20548 crore, Rs.287.69 crore, Rs. 327.12 crore and Rs. 426.30 crore in the year 2010-11, 2011-12, 2012-13 and 2013-14 respectively. It shows the continuously progressive trends during the study period of 2010-11 to 2013-14. 30.32% increase in fixed assets in 2013-14 as compare to the year 2012-13. Company has repaid the secured loans in the year 2010-11, 2011-12 and 2013-14. Company's working capital was increased of Rs. 363.39 crore and Rs. 30.66 in the year 2010-11 and 2011-12 respectively. Company has purchased investment of Rs. 43.30, Rs.4.13, Rs.16.05 and Rs.18.11 crore in the year 2010-11, 2011-12, 2012-13 and 2013-14 respectively.

FUND FLOW STATEMENTS OF PGVCL

DESCRIPTION	2013-14	2012-13	2011-12	2010-11
Sources of Funds:				
Cash Profit from operations	385.40	321.22	259.17	216.84
Decrease in Investments	0.00	26.31	0.00	0.00
Increase in Share Capital	440.12	324.00	0.00	0.00
Increase in Share warrants/outstanding	0.00	0.00	2.38	0.00
Increase in Sec. Loans	20.09	164.32	0.00	36.61
Increase In Unsecured Loans	0.00	319.52	10.78	41.75
Decrease in Working Capital	352.80	93.74	495.72	265.43
Others	169.65	231.64	372.52	394.25
Total	1368.06	1480.74	1140.57	954.88
Application of Funds:				
Increase in Gross Block	1196.22	1381.90	1115.67	911.25
Decrease in Share Capital	0.00	0.00	0.00	0.00
Decrease in Sec. Loans	0.00	0.00	18.68	0.00
Decrease in Un. Sec Loans	164.88	0.00	0.00	0.00
Decrease in Share warrants/outstanding	3.54	98.84	0.00	6.84
Increase in Investments	3.42	0.00	6.21	36.84

Interim Dividend Paid	0.00	0.00	0.00	0.00
Equity Dividend Paid	0.00	0.00	0.00	0.00
Corporate dividend tax paid	0.00	0.00	0.00	0.00
Increase in Working Capital	0.00	0.00	0.00	0.00
Others	0.00	0.00	0.00	0.00
Total	1368.06	1480.74	1140.57	954.88

Analysis:

The above table no.6.3 indicates the fund flow statement of PGVCL during the study period of 2010-11 to 2013-14. It would provide the valuable information about the changes in the long-term sources of funds and in the quantum of working capital of the PGVCL. First part of the statement shows the sources of funds. Profit from operations shows the mixed trend during the study period. It is ranged between 216.84 in 2010-11 and 385.40 in 2013-14. The Company has issued additional share capital of Rs. 324.00 crore and Rs.440.12 crore in 2012-13 and 2013-14 respectively and increased in Share warrants/outstanding of Rs.2.38 crore in the year 2011-12. Again it shows that company has taken a secured loan of Rs. 36.61 crore, Rs. 164.32 crore and Rs. 20.09 crore in the year 2010-11, 2011-12 and 2013-14 respectively. Company has borrowed huge amount in form unsecured loan of Rs. 41.75 crore, Rs. 10.78 crore and Rs. 319.52 crore in the year 2010-11, 2011-12 and 2012-13 respectively. It is increased by 2864% in the year 2012-13 as compared to 2011-12. Amount in working capital was also decreased by Rs. 265.43 crore, Rs. 495.72 crore, Rs. 93.74 crore and Rs. 352.80 crore in the year 2010-11, 2011-12, 2012-13 and 2013-14 respectively. Moreover company has received funds in form of other sources by Rs. 394.25 crore, Rs. 372.52 crore, Rs. 231.64 crore and Rs. 169.65 crore in the year 2010-11, 2011-12, 2012-13 and 2013-14 respectively.

Second part of the statement shows the application of funds. Company has purchased the fixed assets of Rs. 911.25 crore, Rs. 1115.67 crore, Rs. 1381.90 crore and Rs. 1196.22 crore in the year 2010-11, 2011-12, 2012-13 and 2013-14 respectively. It shows the mixed trends during the study period of 2010-11 to 2013-14. Company has repaid the secured loans in the year 2011-12 by Rs. 18.68

crore. Company has purchased investment of Rs. 36.84, Rs. 6.21 and Rs. 3.42 crore in the year 2010-11, 2011-12 and 2013-14 respectively.

FUND FLOW STATEMENTS OF UGVCL

DESCRIPTION	2013-14	2012-13	2011-12	2010-11
Sources of Funds:				
Cash Profit from operations	187.39	155.91	144.43	132.16
Decrease in Investments	3.44	0.00	74.41	68.32
Increase in Share Capital	29.56	0.00	0.00	0.00
Increase in Share warrants/outstanding	0.00	168.50	0.00	0.00
Increase in Sec. Loans	29.38	0.00	0.00	0.00
Increase In Unsecured Loans	0.00	282.21	0.00	0.00
Decrease in Working Capital	296.08	0.00	113.52	126.37
Others	261.12	120.27	59.43	43.62
Total	806.98	726.89	391.80	370.47
Application of Funds:				
Increase in Gross Block	541.55	544.95	293.70	272.31
Decrease in Share Capital	0.00	0.00	0.00	0.00
Decrease in Sec. Loans	0.00	8.28	29.04	34.98
Decrease in Un. Sec Loans	96.93	0.00	69.05	63.18
Decrease in Share warrants/outstanding	168.50	0.00	0.00	0.00
Increase in Investments	0.00	0.99	0.00	0.00
Interim Dividend Paid	0.00	0.00	0.00	0.00
Equity Dividend Paid	0.00	0.00	0.00	0.00
Corporate dividend tax paid	0.00	0.00	0.00	0.00
Increase in Working Capital	0.00	172.68	0.00	0.00
Others	0.00	0.00	0.00	0.00
Total	806.98	726.89	391.80	370.47

Analysis:

The above table no.6.4 indicates the fund flow statement of UGVCL during the study period of 2010-11 to 2013-14. It would provide the valuable information about the changes in the long-term sources of funds and in the quantum of working capital of the UGVCL. First part of the statement shows the sources of funds. Profit from operations shows the progressive trend during the study period. It is ranged between 132.16 crore in 2010-11 and 187.39 crore in 2013-14. The Company has issued additional share capital of Rs. 29.56 crore in the year 2013-14. It shows that the amount increased in Share warrants/outstanding of Rs. 168.50 crore in the year 2012-13. Again it shows that company has taken a secured loan of Rs. 29.38 crore in the year 2013-14. Company has borrowed huge amount in form unsecured loan of Rs. 282.21 crore in the year 2012-13. Amount in working capital was also decreased by Rs. 126.37 crore, Rs. 113.52 crore and Rs. 296.08 crore in the year 2010-11, 2011-12 and 2013-14 respectively. Moreover company has received funds in form of other sources by Rs. 43.62 crore, Rs. 59.43 crore, Rs. 120.27 crore and Rs. 261.12 crore in the year 2010-11, 2011-12, 2012-13 and 2013-14 respectively.

Second part of the statement shows the application of funds. Company has purchased the fixed assets of Rs. 272.31 crore, Rs. 293.70 crore, Rs. 544.95 crore and Rs. 541.55 crore in the year 2010-11, 2011-12, 2012-13 and 2013-14 respectively. It shows the fluctuated progressive trends during the study period of 2010-11 to 2013-14. Company has repaid the secured loans of Rs. 34.98 crore, 29.04 crore and Rs. 8.28 in the year 2010-11, 2011-12 and 2012-13. Company has purchased investment of Rs. 0.99 crore in the year 2012-13.

ANALYSIS OF CASH FLOW

6.11 INTRODUCTION:

The separation of management from ownership in modern business calls for the use of some form of connection between the managers and the owners and other interested parties. Financial reporting is the most efficient and extensively used medium of communicating the operating results as well as latest financial position of a concern for the management. Constancy and achievement of any

business largely depend on its capacity to generate enough cash. As part of conveying an end result of companies operation managements use financial statement as an important vehicles through which financial information is furnished to the stakeholders. But the three basic financial statements present only fragmentary information about a company's cash flows (cash receipt and cash payments).

The balance sheet is a snapshot of a firm's financial resources and obligations at a single point in time, and the income statement summarizes a firm's financial transactions over an interval of time. These two financial statements reflect the accrual basis accounting used by firms to match revenues with the expenses associated with generating those revenues.

6.12 CONCEPT OF CASH FLOW:

A cash flow statement is a financial report that describes the sources of a company's cash and how that cash was spent over a specified time period. It does not include non-cash items. The cash flow statement is a cash basis report on three types of financial activities: operating activities, investing activities, and financing activities. Non-cash activities are usually reported in footnotes. This makes it useful for determining the short-term viability of a company, particularly its ability to pay bills. Because the management of cash flow is so crucial for businesses and small businesses in particular, most analysts recommend that an entrepreneur should study a cash flow statement at least every quarter. The cash flow statement is similar to the income statement in that it records a company's performance over a specified period of time. The difference between the two is that the income statement also takes into account some non-cash accounting items such as depreciation. The cash flow statement strips away all of this and shows exactly how much actual money the company has generated. Cash flow statements show how companies have performed in managing inflows and outflows of cash. It provides a sharper picture of a company's ability to pay creditors, and finance growth.

The Cash Flow Statement (CFS) provides relevant financial information about the cash receipts and cash disbursements of a firm during a fiscal year. This information is especially important to shareholders and creditors. As part of their investment return, shareholders often expect to receive dividends, and the ability to pay cash dividends depends on the availability of cash flows. Creditors are concerned about a firm's ability to make interest and principal payments on loans they have made to the firm. Other stakeholders such as employees and suppliers are also concerned about a firm's ability to meet its financial obligations.

It is perfectly possible for a company that is shown to be profitable according to accounting standards to go under if there isn't enough cash on hand to pay bills. Comparing amount of cash generated to outstanding debt, known as the "operating cash flow ratio," illustrates the company's ability to service its loans and interest payments. If a slight drop in a company's quarterly cash flow would jeopardize its ability to make loan payments that company is in a riskier position than one with less net income but a stronger cash flow level.

Unlike the many ways in which reported earnings can be presented, there is little a company can do to manipulate its cash situation. Barring any outright fraud, the cash flow statement tells the whole story. The company either has cash or it does not. Analysts will look closely at the cash flow statement of any company in order to understand its overall health. Statement of cash flows provides the answer to the following simple but important question about an enterprise. (Keiso and Weygand, 1998: 1275-76)

- i. Where did cash come from during the period?
- ii. What was the cash used for during the period?
- iii. What was the change in the cash balance during the period?

The use of cash flow information is gaining value in the analysis of financial statements. Cash flow information is measured less open to manipulation than information on earnings, because it is based on the actual receipt and payment of

cash only and not on the accrual and other accounting principles. However, the literature on the cash flow statement indicates that there are grey areas in cash flow reporting that are open to various interpretations. The perceived simplicity of the cash flow statement may therefore create synthetic confidence in the reliability of companies' cash flow reporting and the comparability of various companies' cash flow information. The acceptance of AS-3: The Cash Flow Statement has added a new dimension to the preparation and presentation of financial statements in Bangladesh. This paper is an effort to investigate into the state of cash flow reporting by the listed Bangladeshi non-banking financial companies in general. The focal point is not on the quality of the reporting of the companies but rather on what the reporting levels are in general.

6.13 IMPORTANCE OF CASH FLOWS

Investors, creditors, and managers use cash flow information to make decisions about a company's ability to meet obligations, or to take advantage of business opportunities. Information about a current period's cash flows provides a basis for predicting the amount, timing, and certainty of future cash flows. Cash flow information is also useful in evaluating the liquidity, solvency, and financial flexibility of a company. **Liquidity** refers to the ability of a company to pay its current liabilities with existing liquid assets. **Solvency** is the ability to pay all debts as they come due. A company may wish to raise money by issuing shares, for instance. **Financial flexibility** relates to the ability of a company to use its resources to adapt to change and take advantage of business opportunities as they arise.

A cash flow statement (formerly known as a statement of changes in financial position) is designed to help a user make these evaluations and to answer specific questions such as

- What accounts for the difference between cash and cash equivalents at the beginning of the year and at the end of the year?
- What was done with the cash raised from the sale of bonds or shares?
- How did the business finance its purchases of machinery or other capital assets?

- How was it possible to pay dividends when the business reported a net loss on its income statement?
- Does the firm have the ability to pay off the mortgage on its office building?

6.14 CASH FLOW STATEMENT:

In 1998, the CICA revised section 1540 of the *CICA Handbook*, changing the “statement of changes in financial position” to “cash flow statement.” This does not affect the preparation of the cash flow statement, which is still based on cash and cash equivalents. This applies to all businesses unless a business has relatively simple operations, with few or no significant financing and investing activities, and their effects on cash flows are apparent from the other financial statements or are adequately disclosed in the notes to the financial statements. For example, the cash flow statement does not apply to pension plans or not-for-profit organizations.

The CFS is similar to an income statement in that it summarizes the activities of a company during a given period. An income statement, however, only reports on operating activities. The CFS not only reports on operating activities, but also on investing and financing activities. Another key difference between the income statement and the CFS is that the income statement is prepared using the accrual basis of accounting, but the CFS includes inflows and outflows of cash or cash equivalents, thus it is prepared on a cash basis.

6.15 CLASSIFICATION OF CASH FLOW TRANSACTIONS:

Cash flows result from operating, financing, and investing activities. You must be able to distinguish among these types of cash flows. These activities are explained as follows.

- 1. Operating activities:** Cash flows from operating activities include all cash flow transactions that are *not* classified as investing or financing activities. **Operating activities** are related to the primary operations of the company in generating revenues and incurring related expenses. Companies expect to generate more cash inflows from selling goods and

services than they spend in doing so. As you know, revenues are recorded when they are earned and expenses are recorded when incurred. Revenues and expenses therefore seldom match perfectly with their corresponding cash flows. For example, of \$20,000 sales during the current fiscal period, perhaps only \$10,000 are collected in the same period as the sales. The income statement also includes noncash expenses such as amortization. Amortization expense reduces income without a corresponding reduction in cash. You should think of operating cash flow activities as those that affect net income as well as current assets and current liabilities (the working capital accounts or operating accounts). Changes in working capital accounts are very much affected by a company's rate of growth. Expanding businesses will usually report significant increases in accounts receivable and inventories. If a business uses suppliers to finance these increases, you will see an upward change in accounts payable. Some changes in current liabilities, however, are not usually classified as operating activities. For instance, changes in dividends payable and interest charged to retained earnings are classified as financing activities. In the previous example, a business may finance increases in accounts receivable and inventory with borrowing or equity financing. However, borrowing and equity financing are not considered to be operating activities.

- 2. Investing activities:** In general, **investing activities** are transactions for purchasing and selling capital assets and other productive assets. Capital assets are acquired in order to increase productive capacity. Cash needed for this expansion may come from the sale of existing assets that are less productive. Usually this section of the CFS shows a net cash outflow because companies typically spend more cash than they receive from the sale of non-current assets. Additional cash, therefore, has to come from operations or other sources to finance capital expansion. Investing activities also include purchasing and selling of long-term investment securities such as bonds or shares of other companies.

3. Financing activities: Financing activities affect a business' capital structure, its debt and equity. This includes a company's transactions with its owners and creditors but does not include cash payments to settle credit purchases of merchandise, which are operating activities. Financing activities include the use of cash to pay dividends to shareholders, the borrowing or payment of debt, and the issue or repurchase of shares. Do not confuse dividends declared and paid with dividends received from investments. Dividends paid are a cash outflow that is a financing activity, but dividends received are a cash inflow reported on the income statement. Dividends received are therefore classified as an operating activity.

6.15 COMPARISON OF FUND FLOW STATEMENT & CASH FLOW STATEMENT

FUND FLOW STATEMENT	CASH FLOW STATEMENT
1. This analysis shows the changes in working capital fixed assets etc. between two periods	1. This analysis shows the changes in cash position between two periods.
2. Increase in funds does not always mean increase in cash.	2. Increase in cash does always mean increase in fund.
3. Fund flow analysis notes the overall changes in funds of the company and we can decide overall stability of business unit.	3. Cash flow analysis notes the changes in cash position only and one can't know the stability of Co. by this analysis
4. It reveals the long term stability of business.	4. It reveals the short term cash position of the business.
5. Management can take long term major decisions with the help of this statement.	5. Management can take short term decisions regarding cash only.

6. This analysis includes cash flow analysis because cash is a part of working capital.	6. This analysis does not include fund flow analysis because this covers only cash transactions.
7. While preparing statement of changes in working capital if current assets increase or current debts decrease, working capital increases.	7. In cash flow analysis increase in current assets or decrease in current debts means reduction in cash.

6.17 ANALYSIS OF CASH FLOW:

Cash flow analysis is primarily used as a tool to evaluate the sources and uses of funds. Cash flow analysis provides insights into how a company is obtaining its financing and deploying its resources. It also is used in cash flow forecasting and as part of liquidity analysis. The cash flow statement was previously known as the flow of Cash statement. The cash flow statement reflects a firm's liquidity. The balance sheet is a snapshot of a firm's financial resources and obligations at a single point in time, and the income statement summarizes a firm's financial transactions over an interval of time. These two financial statements reflect the accrual basis accounting used by firms to match revenues with the expenses associated with generating those revenues. The cash flow statement includes only inflows and outflows of cash and cash equivalents; it excludes transactions that do not directly affect cash receipts and payments. These non-cash transactions include depreciation or write-offs on bad debts or credit losses to name a few. The cash flow statement is a cash basis report on three types of financial activities: operating activities, investing activities, and financing activities. Noncash activities are usually reported in footnotes. The cash flow statement is intended to

1. Provide information on a firm's liquidity and solvency and its ability to change cash flows in future circumstances
2. Provide additional information for evaluating changes in assets, liabilities and equity
3. Improve the comparability of different firms' operating performance by eliminating the effects of different accounting methods

4. Indicate the amount, timing and probability of future cash flows.

The cash flow statement has been adopted as a standard financial statement because it eliminates allocations, which might be derived from different accounting methods, such as various timeframes for depreciating fixed assets.

CASH FLOW STATEMENTS OF DGVCL

DESCRIPTION	2013-14	2012-13	2011-12	2010-11
Profit Before Tax	67.26	31.85	95.26	88.09
Adjustment	255.20	258.34	205.25	223.05
Changes In working Capital	289.44	93.44	-47.42	122.03
Cash Flow after changes in Working Capital	611.91	383.63	253.10	433.16
Interest Paid	-	-	-	-
Tax Paid	8.75	-6.45	-13.80	-56.32
Other Direct Expenses paid	-	-	-	-
Extra & Other Item	-1.21	3.42	-17.77	-0.60
Cash From Operating Activities	619.44	380.59	221.54	376.24
Cash Flow from Investing Activities	-628.54	-532.61	-286.11	-205.52
Cash from Financing Activities	47.95	169.56	115.56	-146.40
Net Cash Inflow / Outflow	38.86	17.54	50.98	24.32
Opening Cash & Cash Equivalents	152.03	134.49	83.50	59.18
Cash & Cash Equivalent on Amalgamation / Take over / Merger	-	-	-	-
Cash & Cash Equivalent of Subsidiaries under liquidations	-	-	-	-
Translation adj. on reserves / op cash balances frgn subsidiaries	-	-	-	-
Effect of Foreign Exchange Fluctuations	-	-	-	-
Closing Cash & Cash Equivalent	190.88	152.03	134.49	83.50

Analysis:

The above table no.6.5 shows the cash flow statement of DGVCL during the study period 2010-11 to 2013-14. Cash flow after changes in working capital was Rs. 433.16 crore, Rs.253.10 crore, Rs.383.63 crore and Rs.611.91 crore in the year 2010-11, 2011-12, 2012-13 and 2013-14 respectively. It shows progressive trend during the year 2011-12 to 2013-14. It was increased by 85.57 % in 2013-14 as compare to 2012-13. Cash flow from operating activities was Rs. 376.24 crore, Rs.221.54 crore, Rs.380.59 crore and Rs.619.44 crore in the year 2010-11, 2011-12, 2012-13 and 2013-14 respectively. It shows fluctuated and progressive trend during the study period. It was increased by 62.76 % in 2013-14 as compare to 2012-13. Cash flow from investing activities was Rs. -205.52 crore, Rs.-286.11 crore, Rs.-532.61 crore and Rs.-628.54 crore in the year 2010-11, 2011-12, 2012-13 and 2013-14 respectively. It shows progressive trend during the study period. It was increased by 86.16 % in 2012-13 as compare to 2011-12. Cash flow from financing activities was Rs. -146.40 crore, Rs.115.56 crore, Rs.169.56 crore and Rs.47.95 crore in the year 2010-11, 2011-12, 2012-13 and 2013-14 respectively. It shows fluctuated trend during the study period. Closing balance of cash and equivalent was Rs.83.50 crore, Rs.134.59 crore, Rs.152.03 crore and Rs.190.88 crore during the year 2010-11, 2011-12, 2012-13 and 2013-14 respectively. It shows the progressive trend during the study period.

CASH FLOW STATEMENTS OF MGVCL

DESCRIPTION	2013-14	2012-13	2011-12	2010-11
Profit Before Tax	24.84	22.92	46.08	32.27
Adjustment	124.62	117.97	120.64	110.78
Changes In working Capital	229.70	98.10	59.03	86.93
Cash Flow after changes in Working Capital	379.16	238.99	225.75	229.98
Interest Paid	-	-	-	-
Tax Paid	-2.87	-0.22	-6.53	-16.55
Other Direct Expenses paid	-	-	-	-
Extra & Other Item		0.13	-0.49	16.58
Cash From Operating Activities	376.29	238.91	218.73	230.01

Cash Flow from Investing Activities	-433.43	-345.57	-289.35	-227.36
Cash from Financing Activities	55.14	117.63	84.41	4.43
Net Cash Inflow / Outflow	-2.00	10.96	13.78	7.08
Opening Cash & Cash Equivalents	60.61	49.65	35.87	28.79
Cash & Cash Equivalent on Amalgamation / Take over / Merger	-	-	-	-
Cash & Cash Equivalent of Subsidiaries under liquidations	-	-	-	-
Translation adj. on reserves / op cash balances frgn subsidiaries	-	-	-	-
Effect of Foreign Exchange Fluctuations	-	-	-	-
Closing Cash & Cash Equivalent	58.62	60.61	49.65	35.87

Analysis:

The above table no.6.6 shows the cash flow statement of MGVCL during the study period 2010-11 to 2013-14. Cash flow after changes in working capital was Rs. 229.98 crore, Rs.225.75 crore, Rs.238.99 crore and Rs.379.16 crore in the year 2010-11, 2011-12, 2012-13 and 2013-14 respectively. It shows fluctuated and progressive trend during the study period. It was increased by 58.65 % in 2013-14 as compare to 2012-13. Cash flow from operating activities was Rs. 230.01 crore, Rs.218.73 crore, Rs.238.91 crore and Rs.376.29 crore in the year 2010-11, 2011-12, 2012-13 and 2013-14 respectively. It shows fluctuated and progressive trend during the study period. It was increased by 57.50 % in 2013-14 as compare to 2012-13. Cash flow from investing activities was Rs. -227.36 crore, Rs.-289.35 crore, Rs.-345.57 crore and Rs.-433.43 crore in the year 2010-11, 2011-12, 2012-13 and 2013-14 respectively. It shows progressive trend during the study period. It was increased by 25.43 % in 2013-14 as compare to 2012-13. Cash flow from financing activities was Rs. 4.43 crore, Rs.84.41 crore, Rs.117.63 crore and Rs.55.14 crore in the year 2010-11, 2011-12, 2012-13 and 2013-14 respectively. It shows fluctuated trend during the study period. Closing balance of cash and equivalent was Rs.35.87 crore, Rs.49.65 crore, Rs.60.61 crore and Rs.58.62 crore during the year 2010-11, 2011-12, 2012-13 and 2013-14 respectively. It shows the mixed trend during the study period.

CASH FLOW STATEMENTS OF PGVCL

DESCRIPTION	2013-14	2012-13	2011-12	2010-11
Profit Before Tax	19.37	10.56	11.48	24.65
Adjustment	608.30	478.83	359.63	378.64
Changes In working Capital	791.78	-447.97	351.93	313.03
Cash Flow after changes in Working Capital	1419.44	41.42	723.04	716.32
Interest Paid	-	-	-	-
Tax Paid	-0.03	-3.10	-24.02	-15.12
Other Direct Expenses paid	-	-	-	-
Extra & Other Item	-	-	-	-
Cash From Operating Activities	1419.42	38.32	699.02	701.20
Cash Flow from Investing Activities	-1194.15	-1384.24	-1127.65	-666.48
Cash from Financing Activities	-265.70	1403.89	415.74	-25.53
Net Cash Inflow / Outflow	-40.43	57.97	-12.90	9.19
Opening Cash & Cash Equivalent	124.34	66.37	79.27	70.08
Cash & Cash Equivalent on Amalgamation / Take over / Merger	-	-	-	-
Cash & Cash Equivalent of Subsidiaries under liquidations	-	-	-	-
Translation adj. on reserves / op cash balances frgn subsidiaries	-	-	-	-
Effect of Foreign Exchange Fluctuations	-	-	-	-
Closing Cash & Cash Equivalent	83.91	124.34	66.37	79.27

Analysis:

The above table no.6.7 presents the cash flow statement of PGVCL during the study period 2010-11 to 2013-14. Cash flow after changes in working capital was Rs. 716.32 crore, Rs.723.04 crore, Rs.41.42 crore and Rs.1494.44 crore in the year 2010-11, 2011-12, 2012-13 and 2013-14 respectively. It shows fluctuated and progressive trend during the study period. There was sharp decline in the year 2012-13 in cash flow after changes in working capital by 681.62 crore. It

was increased by 3508 % in 2013-14 as compare to 2012-13. Cash flow from operating activities was Rs. 701.20 crore, Rs.699.02 crore, Rs.38.32 crore and Rs.1419.42 crore in the year 2010-11, 2011-12, 2012-13 and 2013-14 respectively. It shows fluctuated trend during the study period. It was increased by 3604 % in 2013-14 as compare to 2012-13. Cash flow from investing activities was Rs. -666.48 crore, Rs.-1127.65 crore, Rs.-1384.24 crore and Rs.-1194.15 crore in the year 2010-11, 2011-12, 2012-13 and 2013-14 respectively. It shows progressive trend during the year 2010-11 to 2012-13. Cash flow from financing activities was Rs. -25.53 crore, Rs.415.14 crore, Rs.1403.89 crore and Rs.-265.70 crore in the year 2010-11, 2011-12, 2012-13 and 2013-14 respectively. It shows fluctuated trend during the study period. Closing balance of cash and equivalent was Rs.79.27 crore, Rs.66.37 crore, Rs.124.34 crore and Rs.83.91 crore during the year 2010-11, 2011-12, 2012-13 and 2013-14 respectively. It shows the fluctuated trend during the study period.

CASH FLOW STATEMENTS OF UGVCL

DESCRIPTION	2013-14	2012-13	2011-12	2010-11
Profit Before Tax	13.33	-1.72	46.51	19.71
Adjustment	278.34	316.82	187.87	218.03
Changes In working Capital	246.29	-143.37	269.83	320.63
Cash Flow after changes in Working Capital	537.95	171.73	504.21	558.37
Interest Paid	-	-	-	-
Tax Paid	-1.50		-2.55	-27.25
Other Direct Expenses paid	-	-	-	-
Extra & Other Item	-0.08	-0.57	-0.38	-0.31
Cash From Operating Activities	536.37	171.16	501.28	530.81
Cash Flow from Investing Activities	-545.57	-549.74	-293.09	-222.05
Cash from Financing Activities	-44.68	374.74	-148.95	-301.05
Net Cash Inflow / Outflow	-53.88	-3.84	59.23	7.71
Opening Cash & Cash Equivalent	128.04	131.87	72.64	64.93
Cash & Cash Equivalent on	-	-	-	-

Amalgamation / Take over / Merger				
Cash & Cash Equivalent of Subsidiaries under liquidations	-	-	-	-
Translation adj. on reserves / op cash balances frgn subsidiaries	-	-	-	-
Effect of Foreign Exchange Fluctuations	-	-	-	-
Closing Cash & Cash Equivalent	74.16	128.04	131.87	72.64

Analysis:

The above table no.6.8 presents the cash flow statement of UGVCL during the study period 2010-11 to 2013-14. Cash flow after changes in working capital was Rs. 558.37 crore, Rs.504.21 crore, Rs.171.73 crore and Rs.537.95 crore in the year 2010-11, 2011-12, 2012-13 and 2013-14 respectively. It shows fluctuated trend during the study period. There was sharp decline in the year 2012-13 in cash flow after changes in working capital by 332.48 crore as compare to year 2011-12. It was increased by 213.25 % in 2013-14 as compare to 2012-13. Cash flow from operating activities was Rs. 530.81 crore, Rs.501.28 crore, Rs.171.16 crore and Rs.536.37 crore in the year 2010-11, 2011-12, 2012-13 and 2013-14 respectively. It shows fluctuated trend during the study period. It was increased by 213.37 % in 2013-14 as compare to 2012-13. Cash flow from investing activities was Rs. -222.05 crore, Rs.-293.09 crore, Rs.-549.74 crore and Rs.-545.57 crore in the year 2010-11, 2011-12, 2012-13 and 2013-14 respectively. It shows progressive trend during the year 2010-11 to 2012-13. Cash flow from financing activities was Rs. -301.05 crore, Rs.-148.95 crore, Rs.374.74 crore and Rs.-44.68 crore in the year 2010-11, 2011-12, 2012-13 and 2013-14 respectively. It shows sharp fluctuated trend during the study period. Closing balance of cash and equivalent was Rs.72.64 crore, Rs.131.87 crore, Rs.128.04 crore and Rs.74.16 crore during the year 2010-11, 2011-12, 2012-13 and 2013-14 respectively. It shows the fluctuated trend during the study period.

