



The Role of Cash Flow in Explaining the Change in Company Liquidity

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ABSTRACT

In recent years, the rise in corporate bankruptcy has led to an increased interest in the examination of company's liquidity. Credit analysts and other users of accounting data involved in the evaluation of a firm's financial position are often concerned with both the measurement of current liquidity. This study focused on the need for analyzing the accounting information in the reports by listed companies in ASEM to help decision makers especially those related to the variables affecting liquidity.

This study replicates and extends prior research on the relationship between changes in accounting flow variables and company liquidity. Accounting flow measures include earning (E), working capital from operations (WCFO), and cash flows from operations (CFFO). , cash flow from operations is significant in explaining the variation of current and quick ratio but it is not significant in explaining the variation in cash conversion cycle. LJJ found that cash flow from operations is significant in explaining changes in the current ratio and cash conversion cycle but it is not significant in explaining changes in quick ratio. Also LJJ found that cash flows from operations have a negative relationship with Current ratio. He argued that higher current assets (uses of cash) and lower current liabilities (uses of cash) lead to higher current ratios but lower cash flows from operations. The results of this study indicate that cash flows from operations have a positive relationship with current ratio.

1. Introduction

In recent years, the rise in corporate bankruptcy has led to an increased interest in the examination of company's liquidity. Credit analysts and other users of accounting data involved in the evaluation of a firm's financial position are often concerned with both the measurement of current liquidity, as well as the accurate prediction of future liquidity. Trends in a company's liquidity position make it possible to use past and current information to help examine liquidity. These measurements are often used to examine the company's financial position and evaluate its ability to meet financial obligations including the likelihood of bankruptcy.

Since Liquidity is considered a crucial input for financial decisions, a major point of interest is whether earnings — which include accruals — or cash flows provide the superior explanatory ability with respect to Liquidity. Cash flow according to international accounting standards: IAS 7 has the ability to evaluate company's liquidity and its ability to face short term and long term obligations.

2. The Importance of the study

This study focused on the need for analyzing the accounting information in the reports by listed companies in ASEM to help decision makers especially those related to the variables affecting liquidity.

And we can summaries the importance of this study in the following points:

1- To know the ability of cash flow in predicting and explaining the future performance of a company especially liquidity.

2- To know Liquidity measures tools and how they could reflects the level of liquidity in the company.

3. The Questions of the study

- 1- Do the accounting flow variables of accrual earnings, working capital from operations, and cash from operations individually provide information useful in explaining changes in company liquidity?
- 2- Do the accounting flow variables of accrual earnings, working capital from operations, and cash from operations incrementally provide information useful in explaining changes in company liquidity?

4. The Methodology and Data of the study

This paper begins with brief summary and previous studies that have been written in this field of the cash flow statement. Then analyze and test these data by using spread sheet (Excel) and the researcher use some statistic programs such as SPSS and Eviwes 4.

The researchers used two methods in this paper to collect the data and information:

1-Used an appropriate model to test the hypotheses that we will tested in this study.

2-Secondary data: from previous studies, references, and university thesis related to the study topic.

5. The Previous Studies

AL-Attar, 2003, This article examined the ability of current accounting data to explain future cash flows for UK firms, as disclosed under FRS1 (1991). Rather than examining price data - from which cash flow implications have to be inferred - he followed the more direct approach used in several recent US studies, in which actual future cash flow data are examined. Specifically, his methodology is a development of the OLS regression framework employed by Barth et al. (2001). He provides a replication of their main OLS analysis, and then extends this to deal with fixed effects and time trends in the levels of cash flow data. His

study found that the disaggregating of earnings into cash flows and accruals, generates superior explanatory power with regard to future cash flows.

AL-Khadash, (2005), this article aimed to determine which are better an earnings or cash flows as performance measure. He follows the more direct approach used in several recent US studies, in which earnings and cash flows are considered as competing variables. Specifically, his methodology is a development of the study of Dechow (1994). He provides a replication of her main analysis, and then extends this to deal with the effect of earnings permanence, earnings growth and firm size on the value relevance of cash flow and earnings. His study provides evidence on the relevance of cash flow figures for investors in their investment decision in an emerging stock market. The study covered the case of ASE and employs data on a sample of industrial firms. The time horizon of this study includes the period of 1993-2001. The results of the current study indicate that earnings and cash flows have information content regarding the prediction of future cash flows. Cash flows and earnings separately have a significant association with stock return. The results show that there is no significant difference between the ability of earnings and cash flows in explaining the variation in stock return. Furthermore, as the earnings growth is low and the firm's size is small, the operating cash flow considered better than earnings as performance measure.

Ronald, 2005, He studies a continuous time model of a levered firm with fixed assets generating a cash flow that fluctuates with business conditions. Since external finance is costly, the firm holds a liquid (cash) reserve to help survive periods of poor business conditions. Holding liquid assets inside the firm is costly as some of the return on such assets is dissipated due to agency problems. He solved for the firms optimal dividend, share issuance, and liquid asset holding policies. The firm optimally targets a level of liquid assets which is a non-monotonic function of business conditions. In good times, the firm does not need a high liquidity reserve, but as conditions deteriorate, it will target higher reserve. In very poor conditions, the firm will declare bankruptcy, usually after it has depleted its liquidity reserve. Our model can predict liquidity holdings, leverage ratios, yield spreads, expected default probabilities, expected loss given default and equity volatilities all in line with market experience. He apply the model to examine agency conflicts associated with the liquidity reserve, will often enhance the debt value as well as the equity value.

Liu,2006, Contrary to the common perception that operating cash flows are better than accounting earnings at explaining equity valuations, recent studies suggest that valuations derived from industry multiples based on reported earnings are closer to traded prices than those based on reported operating cash flows. We extend those analyses to determine if the balance tilts in favor of cash flows when we consider a) forecasts rather than reported numbers, b) dividends rather than operating cash flows, c) individual industries rather than all industries combined, and d) firms in other markets beyond the U.S. Our main finding is that in all venues cash flows (both operating and dividends) are dominated by earnings. Our results imply that those seeking quick valuations should use multiples based on forecasted earnings, since they are remarkably close to traded prices.

6. Concept of Cash Flow

Cash flow is essentially the movement of money into and out of your business; it's the cycle of cash inflows and cash outflows that determine your business' solvency. Cash flow analysis is the study of the cycle of your business' cash inflows and outflows, with the purpose of maintaining an adequate cash flow for your business, and to provide the basis for cash flow management. Cash flow analysis involves examining the components of your business that affect cash flow, such as accounts receivable, inventory, accounts payable, and credit terms. By performing a cash flow analysis on these separate components, you'll be able to more easily identify cash flow problems and find ways to improve your cash flow.

A quick and easy way to perform a cash flow analysis is to compare the total unpaid purchases to the total sales due at the end of each month. If the total unpaid purchases are greater than the total sales due, you'll need to spend more cash than you receive in the next month, indicating a potential cash flow problem. The diagram shown below is the type often used to illustrate the cash flow cycle using the analogy of water. (In the next page)

When cash flow statements are used in conjunction with the other financial statements, it provides such information which enables the users to evaluate the changes in net assets of an enterprise, its financial structure, its liquidity and solvency position and its ability to affect the amounts and timing of cash flows in order to adapt to changing circumstances and opportunities. The ability of the enterprises to generate cash and cash equivalents can be accessed through studying the cash flow statements. It enables the users to develop models to assess and compare the present value of the future cash flows of different enterprises and enhances the comparability of the reporting of operating performance by different enterprises because in eliminates the effects of using different accounting treatments for the same transactions and events. Historical cash flows. It is also useful in checking the accuracy of past assessments of future cash flows and in examining the relationship between profitability and net cash flow and the impact of changing prices.

The information in the Cash Flow Statement enables the users to determine whether the enterprise is investing adequately in the maintenance of its operating capacity, failure of which may prejudice future profitability for the sake of current liquidity and distributions to owners. An example of the circumstance, where the cash and cash equivalent balances held by an enterprise but not available for use by it, is holding them by a subsidiary that operates in a country where exchange controls or other legal restrictions apply when the balances are not available for general use by that enterprise.



Fig. 1 Cash flow Pipeline

7. Classification of cash flows

Cash flows are to be classified according to operating, investing and financing activities. The basis of such classification is derived from the financial theory, which state that enterprise derives the cash used for investing activities and settlement of outstanding financial obligation in an accounting period from internal and external sources. Internal cash sources emanate from the net cash generated from current operation and perhaps disinvesting and depletion of cash resources at start of the period. External cash sources come from financing activities such as borrowing, and receiving cash from the sale of equity shares to existing and new shareholders.

Cash flows from operating activities are in general the cash effects of transactions and other events relating to operating or trading activities. Net cash flow from operating activities represents net increase or decrease in cash resulting from operations shown in the income statements in calculating profit from operation.

IAS 7 permits a choice between two possible methods for reporting net cash flow from operating activities.

✓ The direct method whereby major sources of gross cash receipt and gross cash payments are shown.

✓ The indirect method starts with profit before tax and adjusts it for non-cash charges and credits to reconcile it to the net cash flow from operating activities.

Cash flow from investing activities is the acquisition and disposal of long-term assets and other investment not included in cash equivalent.

Cash flow from financing activities is activities that result in changes in the size in the size and composition equity capital and borrowing of the enterprise.

8. Cash Flow and Liquidity

Liquidity management is the ability to meet financial obligations at a reasonable cost in a timely manner. The essence of liquidity is having cash when you need it. Each association must maintain sufficient liquidity to ensure safe and sound operations.

Cash flows into the business from various sources such as crop and livestock sales, other farm receipts, sale of capital assets, nonfarm receipts, and borrowed money. You use this money to meet financial obligations like production expenses, capital expenditures, loan payments, and family living expenditures. Inflows and outflows seldom coincide with each other. Consequently, farm managers need to manage a liquidity or cash reserve to prevent cash shortages from disrupting normal farm business operations and to prevent noninterest-earning cash reserves from building up.

9. How Do I Use a Cash Flow Statement to Monitor Liquidity?

The best way to maintain your liquidity reserve is through cash flow planning. The tool used in this process is the "Cash Flow Statement." It records the timing and size of cash inflows and outflows that occur over a given accounting period, normally one year. The accounting period is broken down into smaller periods, usually months.

You normally keep two kinds of cash flow statements for each accounting period: projected and actual. The projected cash flow statement is completed at the beginning of the accounting period and projects expected cash inflows and outflows for the period to estimate the liquidity reserve or ending cash balance for each month. If the ending cash balance is short in any month, you can make plans for borrowing or setting up a line of credit.

As the accounting period progresses, keep an actual cash flow statement to record cash transactions as they take place. Then compare the actual cash flow statement with the projected cash flow statement to see if things are going as planned, to devise remedies for solving previously unforeseen problems, or to take advantage of opportunities not anticipated. At the end of the accounting period, use the actual cash flow statement to estimate the projected cash flow statement for the next accounting period. The formats for cash flow statements vary but most contain similar information.

10. Ways to Solve Cash Flow Problems

Most firms at one time or at other experience cash flow problems. A cash flow statement is one of the best ways to pinpoint these problems, and there are ways to deal with them. No one strategy will work at all times. Rather, a combination of strategies is the basis for solving cash flow problems. However, in adopting methods to remedy these problems, be sure the strategies used do not adversely affect profitability. Treating cash flow problems at the expense of profitability is a short-term remedy that may have bad long-term effects.

 \bullet Improving profitability, Cash flow problems may be the symptom of the greater problem of low profitability. In approaching cash flow problems, Increasing profits and profitability is often the best way to remedy cash flow problems. Once the farm is profitable, you can then concentrate on cash flow problems.

✤ Improving marketing plans. For non-perishable commodities, you have some flexibility in timing sales. Improving farm profitability should be your main goal in formulating a marketing plan. However, you should also consider cash needs in timing sales.

✤ Leasing or renting. The down payments and loan payments associated with purchasing land, buildings, and machinery sometimes put a heavy burden on cash flow. Leasing or rental payments on these may be considerably lower and will free cash that you need for other obligations. However, be sure to assess the impact of these leasing and rental arrangements on the profitability of your farm operation.

❖ Refinancing. Cash flow problems are sometimes caused by a poor balance of short-, intermediate-, and long-term debts on the farm. Some farmers use short-term loans to finance intermediate- and long-term assets. Normally, operating loans are used to purchase variable inputs such as seed, feed, fertilizer, and chemicals. The loans are then paid back as the commodities are sold. Refinancing can effectively deal with cash flow problems but sometimes it may just be buying time for you. If the farm is not profitable, refinancing is an indication that the problem is just being prolonged.

✤ Liquidating assets. Selling your assets is usually a more drastic measure for dealing with cash flow problems; however, it may be justified. Sell unprofitable assets first. Excessive personal assets (boats, campers) and other assets such as timber, replacement stock, unused machinery, and unproductive land are good candidates. Then consider downsizing the operation through selling off breeding livestock, machinery, and land, but only after doing an in-depth long-term financial analysis of the impact of these corrective actions. When selling assets, do not overlook the income tax consequences of capital gains. Also, do not sell assets without discussing it with creditors who have an interest in those assets.

✤ Changing production plans. Carefully look at the combination of enterprises on the farm. Perhaps another crop rotation or livestock enterprise would increase cash flow and allow you to maintain profitability at the same time. For example, introducing legume hay into a rotation may bring in some needed cash during the summer months. You can maintain profitability through lower nitrogen fertilizer costs for subsequent crops.

11. The Role of cash Flow in predicting Liquidity

The value relevance of cash flow and earnings is examined either by relating them to stock prices or cash flows. The use of stock prices as dependent variable to draw evidence on the value relevance of cash flow is already criticized on the last section. The use of cash flow as depended variable is a direct examining for the International Accounting Standard (IAS) claim that the cash flow is a good predictor for future cash flow. In the IAS 7 the IAS setters also claim that cash flow will provide new information that will help the accounting

information users in predicting the liquidity from this point many researchers have been to examine this point.

12. Liquidity Measurement

Liquidity could be determined by using models such as financial distress models. Otherwise liquidity can be measured by using ratios such as current ratio, quick ratio, or cash conversion cycle.

Phil Weiss (2000) view how a company's liquidity could be tested by two important ratios derived from the cash flow statement which are the operating cash flow ratio and the cash current debt coverage ratio. Phil Weiss pointed that the cash flow statement is one of the most frequently overlooked financial statements normally plays third fiddle to the income statement and the balance sheet. Also he explains the problem with using just the balance sheet for liquidity analysis is that it presents data that measure only where a company stands at a particular point in time. And the income statement includes many non-cash allocations, accounting conventions, accruals, and reserves that don't reflect a company's true cash position but cash flow ratios can be used to evaluate how much cash a company generated over a period of time and compare that figure to its near-term obligations. The result is a more dynamic picture of what resources a company has available to meet its current financial commitments.

13. Hypotheses of the Study

Hypotheses are presented concerning the incremental explanatory power of each of the three accounting variables. The first two hypotheses concern the incremental explanatory power of E, and are stated in the null form as:

- H₁: E provides no incremental information over that provided by WCFO in explaining changes in company liquidity.
- H₂: E provides no incremental information over that provided by CFFO in explaining changes in company liquidity.
- The next two hypotheses concern the incremental explanatory power of WCFO over the information contained in the other accounting flow variables, which is stated in the null form as:
- H₃: WCFO provides no incremental information over that provided by E in explaining changes in company liquidity.
- H₄: WCFO provides no incremental information over that provided by CFFO in explaining changes in company liquidity.
- Finally, hypotheses concern the incremental explanatory power of CFFO over the information contained in the other accounting flow variables, and are stated in the null form as:
- H₅: CFFO provides no incremental information over that provided by E in explaining changes in company liquidity.
- H₆: CFFO provides no incremental information over that provided by WCFO in explaining changes in company liquidity.

Two main research questions are asked. First, do the variables E, WCFO, and CFFO individually provide information useful in explaining changes in company liquidity? Regression analysis is conducted to test relationships between E, WCFO, and CFFO and liquidity measures over time. Second, do E, WCFO, and CFFO provide incremental information useful in explaining changes in company liquidity? The second question is addressed by testing for the significance of adding a given variable to an existing model.

14. Sample Selection

The sample for this study is extracted from the financial data presented in Jordanian Shareholding Companies for the years 2000 to 2005. And the data for the year's insurance sector are not included, because of differences in the components of their financial statements relative to the non-finance sector. The relevant data is collected from listed firms' in the ASE, The data has a sample of 35 industrial firm for the period from (2000-2005).

In this study for each firm-year, the following data is collected: earnings (E) defined as Net Income, Working Capital From Operations (WCFO) which equal the total of Net Income and depreciation; Cash Flow (CFFO) defined as Net Cash Flow from Operating Activities; Current Ratio (CR) which equal Current Assets / Current Liabilities; Quick Ratio (QR) which equal ((Cash on Hand & at Banks + Account Receivables, Net) / Current Liabilities); Cash Conversion Cycle. After that the change in liquidity is measured as follows:

Change in Variable in Period t = (Variable t - Variable t-1) / Variable t-1

This study then made adjustments on the above data (Independent Variables) by dividing earnings, Working Capital from Operations and Cash Flow over Total Assets so as to make data more comparable to the dependable Variables data, which is the change in liquidity.

	CFFO	CR	E	QR	WCFO
Mean	3628559.	4.596915	1014900.	2.965429	1817207.
Median	579594.0	1.950000	184400.0	0.870000	462598.0
Maximum	64265500	42.43000	14010573	42.43000	23727012
Minimum	-3545819.	0.770000	-1337881.	0.000000	-568886.0
Std. Dev.	11893767	7.674472	2749707.	7.185031	4263768.
Skewness	4.331208	3.864702	3.405794	4.947153	4.148388
Kurtosis	21.42378	18.60752	15.70462	27.58196	21.32588
Jarque-Bera	604.4402	442.3684	303.0490	1023.998	590.1499

Table 1: Descriptive Statistics for the main variables used in this study

Probability	0.000000	0.000000	0.000000	0.000000	0.000000
Sum	1.27E+08	160.8920	35521514	103.7900	63602253
Sum Sq. Dev.	4.81E+15	2002.516	2.57E+14	1755.239	6.18E+14
Observation	35	35	35	35	35

Table 1 provides the descriptive statistics for the main variables used in this study. It reveals that the mean values for Earnings, Working Capital from Operations, Cash Flow from Operation, Current Ratio and Quick Ratio have positive signs. Mean operating cash flow is greater than earnings in both magnitude and variation. The greater standard deviation reflects the fact that operating cash flow is more volatile than earnings. Indeed, this cash flow volatility, which is, to some extent, smoothed out by the accruals procedure, is a reason why earnings could prove a more reliable indicator of future performance and cash generating ability.

	CFFO	CR	Е	QR	WCFO
WCFO	0.536523	-0.084933	0.977435	-0.089757	1.000000
QR	-0.019809	0.952534	-0.073290	1.000000	-0.089757
E	0.609138	-0.068280	1.000000	-0.073290	0.977435
CR	-0.037516	1.000000	-0.068280	0.952534	-0.084933
CFFO	1.000000	-0.037516	0.609138	-0.019809	0.536523

Table 2: Correlation Matrix for the main variables used in this study

Table 2 shows the correlation matrix of the study's variables. Earnings are significantly positively correlated with operating cash flow and Working Capital from Operations. Operating cash flow is significantly positively correlated with Working Capital from Operations, and changes in Current Ratio, Quick Ratio, and Cash conversion cycle. On the other hand Cash conversion cycle is negatively correlated with Quick Ratio. Caution must be exercised, however, when using Pearson correlation coefficients because they cannot provide a reliable indicator of association in a manner that controls for additional explanatory variables.

15. Conclusions

This study replicates and extends prior research on the relationship between changes in accounting flow variables and company liquidity. Accounting flow measures include earning (E), working capital from operations (WCFO), and cash flows from operations (CFFO). An extension in this study is the use of additional procedure to provide additional evidence on the significance of E, WCFO, and CFFO in explaining company liquidity in addition to F-statistic used in LJJ study. This procedure is examining the incremental information content of accounting flows measure when two of them using together to explain company liquidity. This procedure is done by comparing the adjusted R-squared values of the models.

In this study, cash flow from operations is significant in explaining the variation of current and quick ratio but it is not significant in explaining the variation in cash conversion cycle. LJJ found that cash flow from operations is significant in explaining changes in the current ratio and cash conversion cycle but it is not significant in explaining changes in quick ratio. Also LJJ found that cash flows from operations has a negative relationship with Current ratio. He argued that higher current assets (uses of cash) and lower current liabilities (uses of cash) lead to higher current ratios but lower cash flows from operations. The results of this study indicate that cash flows from operations have a positive relationship with current ratio. That mean lower current assets (source of cash) and higher current liabilities (source of cash) lead to higher cash flows. But the decrease in current assets is larger than increase in current liabilities, which lead to higher current ratio. Tests of the incremental significance of cash flows from operations indicates that cash flow from operations fails to add significance incremental information content over earnings and working capital from operations in explaining the three liquidity measure.

Regarding working capital from operation and earning, both of them are significant in explaining the variation in current and quick ratios but not in explaining the variation in cash conversion cycle. Tests of the incremental significance of working capital from operations and earnings add significant incremental explanatory power over only cash flow from operations in explaining quick and current ratios but they are not significant to explain the changes in cash conversion cycle.

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Appendix

Variable Coefficient Std. Error t-Statistic Prob. QR 7478.634 70373.47 0.106271 0.9161 E 1.602601 0.070607 22.69735 0.0000 CFFO -0.033664 0.016313 -2.063556 0.0478 C 367042.9 204343.5 1.796206 0.0825 R-squared 0.961223 Mean dependent var 1817207. Adjusted R-squared 0.956052 S.D. dependent var 4263768. S.E. of regression Softwarz criterion 30.57601 Sum squared resid 2.40E+13 Schwarz criterion 30.57601 Durbin-Watson stat 1.656740 Prob(F-statistic) 0.000000	EViews - [Equation File Edit Objects View Procs Objects Prin Dependent Variable: W Method: Least Square Date: 11/24/07 Time Sample: 1 35 Included observations:	view Procs Qu nt Name Freeze VCFO S : 14:23	iick Options W	'indow Help		23	: <u>28:</u> 5	LOFM		
E 1.602601 0.070607 22.69735 0.0000 CR -16607.43 65830.31 -0.252276 0.8025 CFFO -0.033664 0.016313 -2.063556 0.0478 C 367042.9 204343.5 1.796206 0.0825 R-squared 0.961223 Mean dependent var 1817207. Adjusted R-squared 0.956052 S.D. dependent var 4263768. S.E. of regression 893844.4 Akaike info criterion 30.37601 Sum squared resid 2.40E+13 Schwarz criterion 30.59821 Log likelihood -526.5803 F-statistic 0.000000 Durbin-Watson stat 1.656740 Prob(F-statistic) 0.000000										
Adjusted R-squared 0.956052 S.D. dependent var 4263768. S.E. of regression 893844.4 Akaike info criterion 30.37601 Sum squared resid 2.40E+13 Schwarz criterion 30.59821 Log likelihood -526.5803 F-statistic 185.9115 Durbin-Watson stat 1.656740 Prob(F-statistic) 0.000000	E CR CFFO	1.602601 -16607.43 -0.033664	0.070607 65830.31 0.016313	22.69735 -0.252276 -2.063556	0.0000 0.8025 0.0478					
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Descriptive Statistics for the main variables used in this study

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	WCFO	QR	E	CR	CFFO				
Mean	1817207.	2.965429	1014900.	4.596915	3628559.			-	
Median	462598.0	0.870000	184400.0	1.950000	579594.0				
Maximum	23727012	42.43000	14010573	42.43000	64265500				
Minimum	-568886.0	0.000000	-1337881.	0.770000	-3545819.				
Std. Dev.	4263768.	7.185031	2749707.	7.674472	11893767				
Skewness	4.148388	4.947153	3.405794	3.864702	4.331208				
Kurtosis	21.32588	27.58196	15.70462	18.60752	21.42378				
Jarque-Bera	590.1499	1023.998	303.0490	442.3684	604,4402				
Probability	0.000000	0.000000	0.000000	0.000000	0.000000				
Sum	63602253	103,7900	35521514	160.8920	1.27E+08				
Sum Sum Sq. Dev.	6.18E+14	1755.239	2.57E+14	2002.516	4.81E+15				
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Correlation matrix

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WCFO	WCFO	1.000000	-0.089757	0.977435	-0.084933	0.536523						
QR	QR	-0.089757	1.000000	-0.073290	0.952534	-0.019809						
E	E	0.977435	-0.073290	1.000000	-0.068280	0.609138						
CR	CR	-0.084933	0.952534	-0.068280	1.000000	-0.037516						
CFF0	CFFO	0.536523	-0.019809	0.609138	-0.037516	1.000000						
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