

Karrilyn Wilcox (undergraduate student)
Sobey School of Business
Saint Mary's University

How Reliable is Non-cash Working Capital Reported on the Cash Flow Statement?

Investors and analyst frequently rely on the non-cash working capital reported on the cash flow statement to assess the financial health of a firm. Analysis of the cash flow statement from 98 companies shows that the non-cash working capital reported on the cash flow statement is frequently being misstated with a bias towards overstating the cash flow position of the company.

INTRODUCTION

Net change in non-cash working capital reported on the cash flow statement is supposed to balance with changes in current assets and current liabilities that occurred for the period. An increase in a liability (or a decrease in an asset) account is a source of cash for a firm; while a decrease in a liability (or an increase in an asset) account is a use of cash. Current accounts are accounts due within one year or fiscal period.

Analysts and investors frequently use the non-cash working capital account when assessing the financial health of a business. Working capital tells investors and analysts how well companies are paying their short-term borrowings and how well they are collecting from customers and moving inventory. It also sends important signals to the market of changes in policy that have occurred in the company throughout the year; it can reveal increases in efficiency in inventory turnover, more aggressive credit policy for customers, and an increase in efficiency in paying bills to short-term borrowers, such as suppliers. When the figures reported on the cash flow statement cannot be supported by what is presented on the balance sheet, it becomes difficult to analyze a company's financial health and determine its free cash flow.

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A valuation method used by analysts to estimate a company's intrinsic value, discounts its free cash flow¹. There are two variations of free cash flow that analysts use - free cash flow to equity (FCFE) and free cash flow to the firm (FCFF). The main difference between the two methods is the treatment of debt. Specifically, FCFF keeps debt in the free cash flow calculation and is used when the analyst believes the company's debt level will change in the future; while FCFE eliminates the effects of debt and looks at the free cash flow that specifically can go to the shareholders.

Both cash flow methods typically adjust earnings before interest and taxes (EBIT) or net income (NI) reported on a company's income statement. Depreciation is added back because it is a non-cash expense- it helps reduce pre-tax income but does not affect cash. Capital expenditures are drains on cash that do not show up on the income statement for the period in question. These expenses need to be subtracted because of their effects on cash. Non-cash working capital reflects cash tied up (e.g. credit sales) or essentially loaned (e.g. suppliers paid within 60 days) to a firm. For example, an increase in accounts payable is a source of cash for a firm; eventually suppliers will need to be paid, but for a temporary period, this represents cash that the firm can use. The opposite holds true for an increase in a non-cash current asset account (i.e., inventory and accounts payable). An increase in an asset account, results in money being tied up. Misrepresentation of these variables results in inaccurate free cash flow that can affect analyst recommendations. Siegel (2006, p.39) mentions that the simplest thing a company can do to improve their reported operating cash flow, is to slow down the rate of payments to its suppliers. Although individual examples of inaccurate reporting can be found in the literature, no in-depth study has yet been undertaken. The purpose of this study is to evaluate the reliability of non-cash working capital reported on the cash flow statement.

Literature Review

The cash flow statement includes all balance sheet items, and shows the change that has occurred to those accounts over the year, in terms of cash inflows (source) and outflows (use), and as such, it provides useful information about what the company has been doing over the year. Much research supports the notion as to the usefulness of the cash flow statement (Gup and Dugan, 1988; Jones, 1998; Purr, 2004; Sharma and Iselin, 2003).

It can be prepared using either the indirect or the direct method. Although the CICA handbook prefers the direct method, the indirect method is also acceptable (CICA, Section 1540.21). The direct method presents more information than the indirect method

¹ Analysis typically discount free cash flow because it cannot be as easily manipulated through accounting policy as earnings before interest and taxes (EBIT) - a crude measure of operating income - or net income (NI) - a measure of profitability.

and is better for analysis. Brahmairene, Shrupeck and Whitten (2004) found in its US study that chief executive and financial officers, managers, investors and analysts mostly preferred the indirect method. However, Klammer and Reed's (1990) study found bank analysts preferred the direct method.

The cash flow statement is divided into three sections: operating, investing and financing activities. (Hoskin, Fizzell, Cherry, 2006) Investing activities focus on non-current assets, financing activities focus on non-current liabilities and shareholders' equity, and operating activities focus on everything else, including non-cash working capital. The operating activities section of an indirect method starts with net income and makes adjusts for non-cash items, such as, amortization, gains and losses, and future income taxes. (Hoskins, Fizzell, Cherry, 2006; Rosen 2003)

Much literature can be found on various valuation models that rely on cash flows from operations (Beneda, 2003; Brief and Lawson, 1992). For instance, Brief and Lawson's (1992) model uses the financial statement accounting data - specifically the balance sheet and free cash flow - to calculate a rate of return for the company.

In recent years, the cash flow statements clarity and reliability has been called into question (Broome, 2004; Hill et al, 2003; Kilpatrick, 1998; Rosen, 2003).

In June 1998, the Canadian Institute of Chartered Accountants (CICA) changed the focus of the cash flow statement. The CICA noted, "investing and financing transactions that do not require the use of cash or cash equivalents should be excluded from a cash flow statement. Such transactions should be disclosed elsewhere in the financial statements in a way that provides all relevant information about these investing and financing activities" (CICA: Section 1540, 2006, Para. .46) This change has meant that accountants no longer need to account for transactions that were done without any exchange of cash. For example, if assets were obtained entirely on credit, neither the asset nor the liability would be reported on the cash flow statement. Rosen (2003) mentions that when one item is a short-term and the other a long-term item, not reporting it, misdirects and inappropriately increases cash from operating activities and free-cash flow.

STUDY

As previously mentioned, the purpose of this study was to evaluate the reliability of non-cash working capital reported on the cash flow statement. If the change in the procedure that occurred in 1998 for deriving the cash flow statement, resulted in a confusing and unreliable cash flow statement, someone could argue that the statement prior to the change should be clear and understandable, and as such, the following two hypotheses were tested:

H1: Is there a noticeable difference in the calculated net change in working capital off the balance sheet and the reported amount on the cash flow statement prior- and post-1998?

H2: Has the difference between the calculated and reported amounts for non-cash working capital become progressively better or worse overtime?

Methodology

A list of publicly held Canadian companies was obtained from a Canadian Corporation List. In order to be used in the study, 1) the company had to be in existence from 1996 to 2005, 2) it had to be a Canadian publicly traded company that used Canadian Generally Accepted Accounting Principals (GAAP), and 3) could not be acquired during the study period by another company used our sample. Insurance companies and other companies that were in the investing, real estate, or financing industry were excluded from the study, as they produce financial reports that would not be useful to the study.

The annual financial statements for the companies used in the study were obtained from System for Electronic Document Analysis and Retrieval (SEDAR) website (www.sedar.com). The company's financial statements were analyzed over a three-year period (1997, 1998 and 2004). If a company under review had a year-end other than December 31st, the financial statements for the year prior (e.g. instead of using the 1997 financial statements, the 1996 financial statements were used) were analyzed. This ensured that the statements released prior to the change in 1998 were being analyzed.

Some of the companies in the study released their financial statements in United States dollar amounts. To ensure that the results were comparable, the United States dollar amounts were converted into Canadian dollar amounts using the exchange rates reported by the Bank of Canada for the period under review (Bank of Canada, 2006).

To conduct the comparison, the net increase or decrease in current accounts found on the balance sheet was calculated, subtracting out any cash and cash equivalents and other accounts that was noticeably accounted elsewhere in the cash flow statement. If the company had a net change in working capital note in its financial statements, only the current accounts mentioned in the note were included in the calculation. Most of the difference found was not in the actual accounts that the company used to arrive at the net change in working capital figure found on the cash flow statement, but rather in the computed and reported numbers.

The difference between the calculated figures from the information obtained from the balance sheet information with the reported figure on the cash flow statement was recorded as overstated, understated, or balanced (i.e. equivalent). If a difference occurred, that dollar amount difference was tested for materiality. CICA Handbook states, "materiality is the term used to describe the significance of financial statement

information to decision makers” (“CICA: Section 1000”, 2006, Para. .17). The test used for materiality was 1% of total assets (Pany et. al., 1996, p.235). This meant that if the difference in the amount was greater than 1% of the companies’ total assets it was material. If the difference “is material it is probable that its... misstatement would influence or change a decision” of a user of financial statements (“CICA: Section 1000”, 2006, Para. 17).

Results of the Study

The study produced interesting findings. Materiality has steadily increased over the three years. In 1997, the number of companies that had material differences was 35.71%; by 2004 that increased to 45.92%. The amount of the discrepancy between the two figures has been steadily increasing since 1997. There was an overall increase (10.21%) between the years 1997 and 2004 in the number of companies that had material discrepancies. (See appendix 3)

In 1997, only 16.33% of companies had no difference between the two figures. That number increased to 19.39% in 1998, but sharply decreased to 6.12% in 2004. Since the change in the CICA handbook occurred in 1998, it is possible that not all companies at that time had changed their means of accounting items on the cash flow statement. This means that 1998 could be viewed as a hybrid year, and the real focus should be on the drastic change from 1997 to 2004, with a decrease of 10.21%. Only six companies out of the 98 analyzed were able to balance in 2004. The number of companies that have overstated their net changes in working capital account has increased over the years. In 1997, 37.76% of companies in the sample overstated the results; this amount increased to 40.82% in 1998, and by 2004, almost 50% of the companies reported overstated results. (See appendix 2)

Analysis of Overstated and Understated Differences

Of the 98 companies analyzed, 16.3% balanced in 1997. 75.0% of the companies that balanced in 1997 also balanced in 1998, although only 12.5% of the 1997 balanced companies still balanced in 2004. Only two companies, out of the 98 companies, balanced in all three years—Newfoundland light & power Co. Ltd. and Vasogen Inc.(See appendix 2)

Of the companies that were overstated in 1997, 67.6% were overstated in 1998, and of the companies that were understated in 1997, 62.2% were understated in 1998. The results from 1998 to 2004 show a similar trend; companies who overstated the results in 1998 were 60% more likely to be overstated in 2004, and companies who were understated in 1998 were 56.4% more likely to be understated in 2004. These results tell us that if a company was overstating (understating) the working capital number in one

year, they were more likely to continue overstating (understating) it in the following year. The results of the cross analysis between 1997 and 2004, though, produced even results. If a company was overstated (understated) in 1997 and produced a difference in 2004, there was a 50% chance of being overstated (understated) in 2004. (See appendix 2)

Analysis of Materiality

In 1997, companies who produced overstated differences, between the calculated and reported net changes in working capital, were 70.3% more likely to have material differences; the companies that produced understated differences, were 53.3% more likely to generate immaterial differences. The opposite was the case in 1998. (See appendix 3)

In 1997, if a company was overstated, it was 70.3% more likely to be material, and in 2004, of the 49.0% of companies that were overstated, 52.1% of them were material. This shows that the conservatism principal, in which when computing financial statements, “uncertainty exists, estimates of a conservative nature attempt to ensure that assets, revenues and gains are not overstated and, conversely, that liabilities, expenses and losses are not understated” (“CICA: Section 1000”, 2006, Para. .21(d), is not fully being adhered to.(See appendix 3)

CONCLUSION

The analysis found that balancing to the net changes in working capital account on the cash flow statement from the information found on the balance sheet has become progressively more difficult over time. More companies are having differences between the calculated and reported amounts and these differences are continually becoming larger as a percent of the company’s total assets. The results in 2004 show a drastic increase in the number of companies producing material differences. The research also shows a bias towards overstating the reported figure, which has serious consequences for the users of financial statements. Dealing specifically with free cash flow valuations, using an overstated working capital account results in a lower value for the firm than is the case. These findings question the reliability, credibility, and usefulness of the cash flow statement.

The question arises as to whether companies are taking advantage of the change in the CICA handbook. No longer having to account for non-cash transactions has given companies more freedom to use this account as a balancing account to ensure that the cash and cash equivalents number found on the cash flow statement balances to the number reported on the balance sheet - since the cash and cash equivalents number is a lot more difficult to manipulate.

It should be noted that 1998 might have been a hybrid year – not all companies may not have fully moved over to the new accounting principals that year. Therefore, further research needs to be conducted to determine whether the increase was a direct result of the change, or just something that has gotten progressively worse on its own over time. At least for the time being, readers of financial statements should be cautious using and interpreting the cash flow statement.

Appendices

Appendix 1: Summary of results for the three years

	1997		1998		2004	
Not Material	63	64.29%	58	59.18%	53	54.08%
Material	35	35.71%	40	40.82%	45	45.92%
Total	98	100.00%	98	100.00%	98	100.00%

	1997		1998		2004	
Balanced(0)	16	16.33%	19	19.39%	6	6.12%
Overstated(1)	37	37.76%	40	40.82%	48	48.98%
Understated(2)	45	45.92%	39	39.80%	44	44.90%
Total	98	100.00%	98	100.00%	98	100.00%

Appendix 2: Cross Tabulation of overstated and understated differences between years

The Code used for Overstated and Understated	
0	Balanced
1	Overstated
2	Understated

97 over/under * 98 Over/under Crosstabulation

			98 Over/under			Total
			0	1	2	
97 over/under	0	Count	12	1	3	16
		% within 97 over/under	75.0%	6.3%	18.8%	100.0%
		% within 98 Over/under	63.2%	2.5%	7.7%	16.3%
		% of Total	12.2%	1.0%	3.1%	16.3%
	1	Count	4	25	8	37
		% within 97 over/under	10.8%	67.6%	21.6%	100.0%
		% within 98 Over/under	21.1%	62.5%	20.5%	37.8%
		% of Total	4.1%	25.5%	8.2%	37.8%
	2	Count	3	14	28	45
		% within 97 over/under	6.7%	31.1%	62.2%	100.0%
		% within 98 Over/under	15.8%	35.0%	71.8%	45.9%
		% of Total	3.1%	14.3%	28.6%	45.9%
Total	Count	19	40	39	98	
	% within 97 over/under	19.4%	40.8%	39.8%	100.0%	
	% within 98 Over/under	100.0%	100.0%	100.0%	100.0%	
	% of Total	19.4%	40.8%	39.8%	100.0%	

97 over/under * 04 over/under Crosstabulation

			04 over/under			Total
			0	1	2	
97 over/under	0	Count	2	9	5	16
		% within 97 over/under	12.5%	56.3%	31.3%	100.0%
		% within 04 over/under	33.3%	18.8%	11.4%	16.3%
		% of Total	2.0%	9.2%	5.1%	16.3%
	1	Count	1	18	18	37
		% within 97 over/under	2.7%	48.6%	48.6%	100.0%
		% within 04 over/under	16.7%	37.5%	40.9%	37.8%
		% of Total	1.0%	18.4%	18.4%	37.8%
	2	Count	3	21	21	45
		% within 97 over/under	6.7%	46.7%	46.7%	100.0%
		% within 04 over/under	50.0%	43.8%	47.7%	45.9%
		% of Total	3.1%	21.4%	21.4%	45.9%
Total	Count	6	48	44	98	
	% within 97 over/under	6.1%	49.0%	44.9%	100.0%	
	% within 04 over/under	100.0%	100.0%	100.0%	100.0%	
	% of Total	6.1%	49.0%	44.9%	100.0%	

98 Over/under * 04 over/under Crosstabulation

			04 over/under			Total
			0	1	2	
98 Over/under	0	Count	3	9	7	19
		% within 98 Over/under	15.8%	47.4%	36.8%	100.0%
		% within 04 over/under	50.0%	18.8%	15.9%	19.4%
		% of Total	3.1%	9.2%	7.1%	19.4%
	1	Count	1	24	15	40
		% within 98 Over/under	2.5%	60.0%	37.5%	100.0%
		% within 04 over/under	16.7%	50.0%	34.1%	40.8%
		% of Total	1.0%	24.5%	15.3%	40.8%
	2	Count	2	15	22	39
		% within 98 Over/under	5.1%	38.5%	56.4%	100.0%
		% within 04 over/under	33.3%	31.3%	50.0%	39.8%
		% of Total	2.0%	15.3%	22.4%	39.8%
Total	Count	6	48	44	98	
	% within 98 Over/under	6.1%	49.0%	44.9%	100.0%	
	% within 04 over/under	100.0%	100.0%	100.0%	100.0%	
	% of Total	6.1%	49.0%	44.9%	100.0%	

Appendix 3: Cross tabulation between overstated/understated and Material/Immaterial for each year.

The Code used for Overstated and Understated	
0	Balanced
1	Overstated
2	Understated

The Code used for Materiality	
0	Material
1	Immaterial

97 over/under * 97 Material Crosstabulation

			97 Material		Total
			0	1	
97 over/under	0	Count	16	0	16
		% within 97 over/under	100.0%	.0%	100.0%
		% within 97 Material	25.4%	.0%	16.3%
		% of Total	16.3%	.0%	16.3%
	1	Count	26	11	37
		% within 97 over/under	70.3%	29.7%	100.0%
		% within 97 Material	41.3%	31.4%	37.8%
		% of Total	26.5%	11.2%	37.8%
	2	Count	21	24	45
		% within 97 over/under	46.7%	53.3%	100.0%
		% within 97 Material	33.3%	68.6%	45.9%
		% of Total	21.4%	24.5%	45.9%
Total	Count	63	35	98	
	% within 97 over/under	64.3%	35.7%	100.0%	
	% within 97 Material	100.0%	100.0%	100.0%	
	% of Total	64.3%	35.7%	100.0%	

98 Over/under * 98 material Crosstabulation

			98 material		Total
			0	1	
98 Over/under	0	Count	19	0	19
		% within 98 Over/under	100.0%	.0%	100.0%
		% within 98 material	32.8%	.0%	19.4%
		% of Total	19.4%	.0%	19.4%
	1	Count	18	22	40
		% within 98 Over/under	45.0%	55.0%	100.0%
		% within 98 material	31.0%	55.0%	40.8%
		% of Total	18.4%	22.4%	40.8%
	2	Count	21	18	39
		% within 98 Over/under	53.8%	46.2%	100.0%
		% within 98 material	36.2%	45.0%	39.8%
		% of Total	21.4%	18.4%	39.8%
Total	Count	58	40	98	
	% within 98 Over/under	59.2%	40.8%	100.0%	
	% within 98 material	100.0%	100.0%	100.0%	
	% of Total	59.2%	40.8%	100.0%	

04 over/under * 04 matieral Crosstabulation

			04 matieral		Total	
			0	1		
04 over/under	0	Count	6	0	6	
		% within 04 over/under	100.0%	.0%	100.0%	
		% within 04 matieral	11.3%	.0%	6.1%	
		% of Total	6.1%	.0%	6.1%	
		1	Count	25	23	48
		% within 04 over/under	52.1%	47.9%	100.0%	
		% within 04 matieral	47.2%	51.1%	49.0%	
		% of Total	25.5%	23.5%	49.0%	
		2	Count	22	22	44
		% within 04 over/under	50.0%	50.0%	100.0%	
		% within 04 matieral	41.5%	48.9%	44.9%	
		% of Total	22.4%	22.4%	44.9%	
Total		Count	53	45	98	
		% within 04 over/under	54.1%	45.9%	100.0%	
		% within 04 matieral	100.0%	100.0%	100.0%	
		% of Total	54.1%	45.9%	100.0%	

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