MEASURING THE EFFECTS OF NON-CASH INVESTING & FINANCING ACTIVITIES

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In this study, for a sample of 120 companies, we identify and recast the statement of cash flows for the implied cash effects of six general categories of non-cash activity, transactions affecting 1) capital expenditures and operating activities, 2) capital expenditures and other investing activities, 3) capital expenditures and financing activities, 4) other investing activities and operating activities, 5) other investing activities and financing activities, and 6) financing activities and operating activities. We focus on the implied cash effects of two key non-cash activities from category three, debt issued for capital assets and capital lease financing of capital assets. These are transactions that directly affect capital expenditures and free cash flow. When revising the statement of cash flows to include the implied cash effects of these two non-cash transactions, we find a reduction in free cash flow in 62 instances for a median amount that comprised 2.8% of reported free cash flow. Among the 62 firms, 24 saw free cash flow decline by more than 5%, 16 by more than 10% and 9 by more than 25%. In a paired t-test, adjusted free cash flow was significantly less than reported free cash flow at the .00 level.

Given the importance of non-cash capital expenditures to calculations of free cash flow, the FASB may wish to revise its stance regarding the exclusion of all non-cash activities from the statement of cash flows. As to analysts and investors, in the absence of changes to the reporting of non-cash activities, such users of financial statements will want to ensure that such non-cash activities are given explicit consideration when analysing financial results.

INTRODUCTION

Non-cash investing and financing activities are transactions that affect recognised assets or liabilities but do not result in actual cash receipts or disbursements. Examples include debt to equity conversions, asset acquisitions with liability assumptions, capital lease transactions and exchanges of non-cash assets or liabilities for other non-cash assets or liabilities. In accordance with Accounting Standards Codification (ASC) Topic 230, Statement of Cash Flows, the implied cash flow effects of such non-cash transactions are excluded from the statement of cash flows.[1] Rather, they are relegated to a supplementary disclosure either appended to the Statement of Cash Flows or in a separate footnote to the financial statements.

Consider, for example, the case of Green Mountain Coffee Roasters, Inc. Excerpts from the company's statement of cash flows are presented in Exhibit 1. During the fiscal year ended September 29, 2012, the company generated $477,785 thousand in cash from operating activities. Among the company's investing activities were capital expenditures of $401,121 thousand. If an analyst or investor were to use the statement of cash flows to calculate free cash flow, defined here as operating cash flow less capital expenditures, the derived amount would be $76,664 thousand ($477,785 thousand minus $401,121 thousand). It should be noted, however, that supplemental disclosures provided with the statement of cash flows include important non-cash financing and investing activities. In particular, in its supplemental disclosures, the company reports fixed assets acquired under capital lease and financing obligations in the amount of $66,531 thousand. These are capital expenditures, but capital expenditures purchased with financing provided at the time of purchase either by the equipment vendor or by a financial institution who forwarded the financing proceeds directly to the equipment vendor. Because Green Mountain Coffee Roasters did not directly receive and disburse the funds, the financing proceeds are considered to be a non-cash activity that is not reported on the statement of cash flows but is instead relegated to a supplemental disclosure.

There is little substantive difference between a transaction that entails an explicit transfer of cash and one that entails a non-cash activity. For example, in the case of Green Mountain, the non-cash transactions result in increases in fixed assets and financing obligations in the same manner as cash-based transactions. However, for purposes of the statement of cash flows, the two transactions are reported very differently.

Had the analyst or investor who calculated free cash flow for Green Mountain included this non-cash activity in the calculations, free cash flow would have been reduced by $66,531 thousand to $10,133 thousand from the originally calculated amount of $76,664 thousand — a material difference.

Non-cash investing and financing activities were not always excluded from a statement designed to communicate cash flow activity. Accounting Principles Board Opinion No. 19, Reporting Changes in Financial Position, used an all-financial resources approach for the reporting of funds flows.[2] In particular, the Opinion noted that, prior to the Opinion, a funds statement may, at times, exclude '. . . certain financing and investing activities because they do not directly affect cash or working capital.'[3] However, according to the Opinion,

> To meet all of its objectives, a funds statement should disclose separately the financing and investing aspects of all significant transactions that affect financial position during a period. These transactions include acquisition or disposal of property in exchange for debt or equity securities and conversion of long-term debt or preferred stock to common stock. [4]

Before the original Statement of Financial Accounting Standards No. 95, The Statement of Cash Flows, the precursor to ASC Topic 230, was issued, a majority of respondents to the Standard's Exposure Draft urged that non-cash transactions be excluded from the statement of cash flows and be reported separately. Respondents noted that to include such transactions within the statement would, '. . . unduly complicate it and detract from its objective of providing information about an enterprise's cash receipts and cash payments during a period'. [5]

While non-cash investing and financing activities may complicate the statement of cash flows, members of the original Accounting Principles Board who wrote Opinion No. 19 clearly believed that the implied cash flows related to non-cash investing and financing activities contained important information for users of financial statements. To them, supplementary disclosure of non-cash investing and financing activities was not sufficient to communicate the implied cash flow effects of such transactions.

The objective of this study is to identify the more common types of non-cash investing and financing activities and to measure their significance relative to reported cash flow. We identify a sample of 120 companies with market capitalisations greater than $500 million who report the existence of non-cash activities. We recast their statements of cash flow to incorporate their reported non-cash transactions. What we find is that there are numerous examples of non-cash investing and financing activities, the implied cash flow effects of which are material to the statement of cash flows. Among the many non-cash activities identified, there are four primary types that occur more frequently. The first two are particularly important to the analysis of cash flow because they directly impact capital expenditures and calculations of free cash flow. In particular, they are 1) debt issued for capital assets and 2) capital lease financing of capital assets. The third item could impact free cash flow through its implied effect on cash provided by operating activities. It is 3) equity issued to fund employee compensation, retirement benefits or other operating items. Item four is more benign as it does not affect either cash provided by operating activities or capital expenditures and, accordingly, has no effect on free cash flow. The item is, 4) debt or equity issued for business acquisitions.

Among the four more frequently observed non-cash activities, the first two, debt issued for capital assets and capital lease financing of capital assets, stand out for their similarity to cash-based transactions that are reported on the statement of cash flows and for their direct effect on free cash flow. In addition, both of these non-cash transactions entail subsequent cash payments that are not classified as capital expenditures, permanently understating that cash flow measure.[6] Among the 120 sample companies, free cash flow recalculated to include the implied cash effects of these non-cash transactions was lowered in 62 instances for a median amount that comprised 2.8% of reported free cash flow. Among the 62 firms, 24 saw free cash flow decline by more than 5%, 16 by more than 10% and 9 by more than 25%. In a paired t-test, adjusted free cash flow was significantly less than reported free cash flow at the .00 level.

In an effort to simplify the statement of cash flows, the FASB opted to exclude the implied cash flow effects of all non-cash activities, relegating them to a supplemental disclosure. As observed in this study, for companies with non-cash activities that directly affect capital expenditures, in particular, debt or equity issued for capital assets or capital lease financing of capital assets, non-cash transactions are especially material to reported capital expenditures. Given the importance of such non-cash transactions to calculations of free cash flow, the FASB may wish to revise its stance and require the reporting of the implied cash effects of those specific non-cash activities. As to analysts and investors, in the absence of changes to the reporting of non-cash activities, such users of financial statements will want to ensure that such non-cash activities are given explicit consideration when analysing financial results.

Exhibit 1. Green Mountain Coffee Roasters, Inc. Excerpts from Statement of Cash Flows for the Years Ended September 29, 2012, September 24, 2011 and September 25, 2010 (dollars in thousand)

Source: Green Mountain Coffee Roasters, Inc. Form 10-K Annual Report to the Securities and Exchange Commission, September 29, 2012, p. 49.

	2012	2011	2010
Net cash provided by (used in) operating activities	$477,785	$785	$(2,297)
Cash flows from investing activities			
Change in restricted cash	(2,875)	2,074	(75)
Proceeds from sale of short-term investments	--	--	50,000
Acquisition of Timothy's Coffee of the World Inc.	--	--	(154,208)
Acquisition of Diedrich Coffee, Inc., net of cash acquired	--	--	(305,261)
Acquisition of LJVH Holdings, Inc., net of cash acquired	--	(907,835)	--
Proceeds from the sale of subsidiary, net of cash acquired	137,733	--	--
Capital expenditures for fixed assets	(401,121)	(283,444)	(126,205)
Other investing activities	618	1,533	2,314
Net cash used in investing activities	(265,645)	(1,187,672)	(533,435)
Net cash (used in) provided by financing activities	(173,124)	1,199,845	298,322
Change in cash balances included in current assets held for sale	5,160	(5,160)	--
Effect of exchange rate changes on cash and cash equivalents	1,124	790	--
Net increase (decrease) in cash and cash equivalents	45,300	8,588	(237,410)
Cash and cash equivalents at beginning of period	12,989	4,401	241,811
Cash and cash equivalents at end of period	$58,289	$12,989	$4,401

Non-cash investing and financing activities were not always excluded from a statement designed to communicate cash flow activity. Accounting Principles Board Opinion No. 19, *Reporting Changes in Financial Position*, used an all-financial resources approach for the reporting of funds flows.[2] In particular, the Opinion noted that, prior to the Opinion, a funds statement may, at times, exclude '. . . certain financing and investing activities because they do not directly affect cash or working capital.'[3] However, according to the Opinion,

> To meet all of its objectives, a funds statement should disclose separately the financing and investing aspects of all significant transactions that affect financial position during a period. These transactions include acquisition or disposal of property in exchange for debt or equity securities and conversion of long-term debt or preferred stock to common stock. [4]

Before the original Statement of Financial Accounting Standards No. 95, *The Statement of Cash Flows*, the precursor to ASC Topic 230, was issued, a majority of respondents to the Standard's Exposure Draft urged that non-cash transactions be excluded from the statement of cash flows and be reported separately. Respondents noted that to include such transactions within the statement would, '. . . unduly complicate it and detract from its objective of providing information about an enterprise's cash receipts and cash payments during a period'.[5]

While non-cash investing and financing activities may complicate the statement of cash flows, members of the original Accounting Principles Board who wrote Opinion No. 19 clearly believed that the implied cash flows related to non-cash investing and financing activities contained important information for users of financial statements. To them, supplementary disclosure of non-cash investing and financing activities was not sufficient to communicate the implied cash flow effects of such transactions.

The objective of this study is to identify the more common types of non-cash investing and financing activities and to measure their significance relative to reported cash flow. We identify a sample of 120 companies with market capitalisations greater than $500 million who report the existence of non-cash activities. We recast their statements of cash flow to incorporate their reported non-cash transactions. What we find is that there are numerous examples of non-cash investing and financing activities, the implied cash flow effects of which are material to the statement of cash flows. Among the many non-cash activities identified, there are four primary types that occur more frequently. The first two are particularly important to the analysis of cash flow because they directly impact capital expenditures and calculations of free cash flow. In particular, they are 1) debt issued for capital assets and 2) capital lease financing of capital assets. The third item could impact free cash flow through its implied effect on cash provided by operating activities. It is 3) equity issued to fund employee compensation, retirement benefits or other operating items. Item four is more benign as it does not affect either cash provided by operating activities or capital expenditures and, accordingly, has no effect on free cash flow. The item is, 4) debt or equity issued for business acquisitions.

Among the four more frequently observed non-cash activities, the first two, debt issued for capital assets and capital lease financing of capital assets, stand out for their similarity to cash-based transactions that are reported on the statement of cash flows and for their direct effect on free cash flow. In addition, both of these non-cash transactions entail subsequent cash payments that are not classified as capital expenditures, permanently understating that cash flow measure.[6] Among the 120 sample companies, free cash flow recalculated to include the implied cash effects of these non-cash transactions was lowered in 62 instances for a median amount that comprised 2.8% of reported free cash flow. Among the 62 firms, 24 saw free cash flow decline by more than 5%, 16 by more than 10% and 9 by more than 25%. In a paired t-test, adjusted free cash flow was significantly less than reported free cash flow at the .00 level.

In an effort to simplify the statement of cash flows, the FASB opted to exclude the implied cash flow effects of all non-cash activities, relegating them to a supplemental disclosure. As observed in this study, for companies with non-cash activities that directly affect capital expenditures, in particular, debt or equity issued for capital assets or capital lease financing of capital assets, non-cash transactions are especially material to reported capital expenditures. Given the importance of such non-cash transactions to calculations of free cash flow, the FASB may wish to revise its stance and require the reporting of the implied cash effects of those specific non-cash activities. As to analysts and investors, in the absence of changes to the reporting of non-cash activities, such users of financial statements will want to ensure that such non-cash activities are given explicit consideration when analysing financial results.

BACKGROUND: EXAMPLES OF NON-CASH INVESTING AND FINANCING ACTIVITIES

In the Green Mountain Coffee Roasters, Inc. example provided above, inclusion of the implied cash flow effects of the non-cash capital expenditures would have reduced 2012 cash used in financing activities by 38.4% from the $173,124 thousand use of cash originally reported to a use of cash of $106,593 thousand. Cash used for capital expenditures that year would have increased 16.6% from the $401,121 thousand use of cash originally reported to a use of cash of $467,652 thousand. Similarly cash used in investing activities would have increased 25.05% from the $265,645 thousand use of cash originally reported to a use of cash of $332,176 thousand.

Non-cash capital expenditures, that is, debt issued for capital assets, is not the only example of non-cash investing and financing activities being reported by companies. Consider, for example, the case of Huron Consulting Group. Excerpts from Huron Consulting Group's statement of cash flows are presented in Exhibit 2. In the year ended December 31, 2011, Huron's reported cash from operating activities was $108,617 thousand. The company also reported cash used by financing activities of $71,469 thousand. A supplemental disclosure of non-cash activities indicated that the company issued common stock in connection with the settlement of a class action lawsuit for $13,648 thousand. This is a non-cash transaction that would have reduced cash provided by operating activities to $94,969 thousand ($108,617 thousand less $13,648 thousand) and increased cash provided by financing activities to $85,117 thousand ($71,469 thousand plus $13,648 thousand) had the common stock been issued for cash and the cash used to settle the obligation.

Exhibit 2. Huron Consulting Group, Inc. Excerpts from Statement of Cash Flows for the Years Ended December 31, 2011, December 31, 2010 and December 31, 2009 (dollars in thousands)

Source: Huron Consulting Group, Inc., Form 10-K Annual Report to the Securities and Exchange Commission, February 23, 2012, p. F-6.

	2011	2010	2009
Net cash provided by operating activities	108,617	50,051	113,926
Net cash used in investing activities	(38,490)	(87,817)	(64,561)
Net cash (used in) provided by financing activities	(71,469)	37,557	(56,560)
Effect of exchange rate changes on cash	75	97	(452)
Net decrease in cash and cash equivalents	(1,267)	(112)	(7,647)
Cash and cash equivalents at beginning of the period	6,347	6,459	14,106
Cash and cash equivalents at end of the period	$5,080	$6,347	$6,459
Supplemental disclosure of cash flow information:			
Non-cash investing and financing activities:			
Note received for sale of business	$2,680	$ –	$ –
Debt issuance costs	2,699	–	–
Issuance of Common Stock in Connection with Settlement of Class Action Lawsuit	13,648	–	–
Capitalised Lease Obligations Incurred	–	–	18

As another example, consider the case of Northern Oil and Gas, Inc. In the company's supplemental disclosure of non-cash activities for the year ended December 31, 2011, Northern Oil and Gas reported non-cash stock compensation in the amount of $19,278 thousand. Had the company issued these shares for cash and used the cash to remunerate its employees, cash provided from operating activities would have been reduced by $19,278 thousand to $65,872 thousand ($85,150 thousand minus $19,278 thousand) and cash provided by financing activities would have increased by the same amount to $89,165 thousand ($69,887 thousand plus $19,278 thousand). Excerpts from the company's statement of cash flows are presented in Exhibit 3.

THE IMPORTANCE OF OPERATING CASH FLOW AND FREE CASH FLOW

ASC Topic 230 indicates that the primary objective of a statement of cash flows is to '. . . provide relevant information about the cash receipts and cash payments of an entity during a period.' While the standard does not show preference for one measure of cash flow over another, that is operating, investing or financing, corporate managers, analysts and investors tend to focus their attention on operating cash flow and its closely-related non-GAAP measure, free cash flow, which is typically calculated as operating cash flow less capital expenditures.[7] The following observation provided by the management of Amazon.com, Inc. helps to demonstrate the importance of free cash flow to corporate performance, 'Our financial focus is on long-term, sustainable growth in free cash flow per share'. [8]

As primary indicators of continuing or recurring cash flows, operating cash flow and free cash flow are arguably the more important indicators of a company's ongoing financial health. It would truly be the exception if a company, in a manner similar to Amazon.com, expressed a long-term financial focus as one of 'maximising invested cash flow' or 'growing borrowed cash flow'. Investing cash flow, other than capital expenditures, and financing cash flow, are important measures of cash flow activity, but tend to be considered as secondary to cash generated by operating activities and free cash flow. As such, while we are interested in the effects of non-cash activities on cash provided or used for investing and financing activities, our primary attention here will be on operating cash flow and, in particular, free cash flow.

Exhibit 3. Northern Oil & Gas, Inc. Excerpts from Statement of Cash Flows for the Years Ended December 31, 2011, December 31, 2010 and December 31, 2009 (dollars in thousands)

Source: Northern Oil & Gas, Inc., Form 10-K Annual Report to the Securities and Exchange Commission, February 29, 2012, p. F-6.

	2011	2010	2009
Net cash provided by operating activities	$85,150	$73,307	$9,813
Net cash used for investing activities	(300,868)	(207,893)	(71,849)
Net cash provided by financing activities	69,887	280,464	67,488
Net (decrease) increase in cash and cash equivalents	(145,831)	145,877	5,453
Cash and cash equivalents – beginning of period	152,111	6,233	781
Cash and cash equivalents – end of period	$6,280	$152,111	$6,233
Non-Cash Financing and Investing Activities			
Purchase of Oil and Gas Properties through Issuance of Common Stock	$ –	$12,679	$ 1,116
Payment of Compensation Through Issuance of Common Stock	19,278	8,733	1,213
Capitalised Asset Retirement Obligations	401	232	137
Cashless Exercise of Stock Options	–	–	518
Fair Value of Warrants Issued for Debt Issuance Costs	–	–	221
Non-Cash Compensation Capitalised in Oil and Gas Properties	13,114	5,167	1,226
Payment of Debt Issuance Costs through Issuance of Common Stock	–	–	475

DESIGN

Using EdgarPro, we drew a sample of all companies with a market capitalisation of more than $500 million and fiscal year-ends falling between December 31, 2011 and June 30, 2012 reporting the existence of non-cash investing and financing activities. From this group of companies we manually examined the statements of cash flow and footnotes for disclosures of the existence and amount of non-cash activities. An initial sample of 191 companies was compiled. From this initial sample we deleted 71 companies whose only non-cash transaction entailed the purchase of capital assets for accounts payable. Because these transactions entail a subsequent payment of cash recorded as capital expenditures, they were excluded from our sample. Our final sample consisted of 120 companies.

For each company we recorded the amount of reported cash provided (used) by operating activities, cash provided (used) by capital expenditures, cash provided (used) by investing activities and cash provided (used) by financing activities. Non-cash activities were grouped into one of six general categories and labelled as affecting 1) capital expenditures and operating activities, 2) capital expenditures and other investing activities, 3) capital expenditures and financing activities, 4) other investing activities and operating activities, 5) other investing activities and financing activities, and finally, 6) financing activities and operating activities. An implied source and (use) of cash adjustment was then determined and recorded for each non-cash activity. Adjusted cash flow amounts for operating activities, capital expenditures, investing activities and financing activities were derived by combining the reported cash flows with the adjustment amounts. Reported free cash flow was calculated for each sample company by combining reported capital expenditures, an outflow of cash, with reported cash provided (used) by operating activities. An adjusted measure of free cash flow was calculated by combining capital expenditures adjusted for non-cash activities with cash provided (used) by operating activities that was also adjusted for non-cash activities. We identified the number of positive and negative adjustments for each of the six general categories of cash flow and the median change in cash flow resulting from each adjustment. A paired t-test was used to determine if there was a significant difference between each reported and adjusted cash flow activity.

RESULTS

The results follow. Exhibit 4 presents the six general categories of non-cash activities and the number of occurrences of each. The Exhibit also presents the nature of the adjustment that was made for the implied cash flow related to each non-cash activity. Table 1 presents the effects of the adjustments made for the implied cash flow effects of the non-cash activities.

As seen in Exhibit 4, where each category of non-cash activity is presented as a separate panel, four non-cash activities dominate the adjustments. From category 3), non-cash activities affecting capital expenditures and financing activities, there are 23 instances of companies or 19.2% of the sample that issued debt for capital assets. Also from this category there are 40 occurrences of firms or 33.3% of the sample that employed capital lease financing of capital assets. The implied cash flow effects of both of these non-cash transactions would impact free cash flow through their effects on capital expenditures. From category 5), non-cash activities affecting other investing activities and financing activities, there are 35 occurrences of companies or 29.2% of the sample that issued debt or equity for business acquisitions. While the implied cash flow effects of these non-cash transactions would affect other investing activities and financing activities, they would have no effect on free cash flow. Finally, from category 6), financing activities and operating activities, there are 28 instances of firms or 23.3% of the sample that issued equity to fund employee compensation, retirement benefits or other operating items. The implied cash flow effects of these non-cash transactions would impact both operating cash flow and free cash flow.

Other non-cash activities are much less frequent than the four examples identified above. Among the remaining non-cash activities, inventory transferred to capital assets was the next most frequently occurring item. It occurred in five instances among the sample firms. The implied cash flow effects of this non-cash item would affect both operating cash flow as a source of cash and capital expenditures as a use of cash. As a result, there would be no net effect on free cash flow derived from this non-cash activity.

Table 1 presents a summary of reported cash flow compared with cash flow adjusted for the implied cash flow effects of non-cash activities. The Table is presented in five panels, where each panel corresponds to a different measure of cash flow: cash provided (used) by operating activities, capital expenditures, free cash flow, cash provided (used) by investing activities, and cash provided (used) by financing activities.

The first three panels of Table 1 present the effects of adjustments for non-cash activities on measures of cash flow that are particularly important to analysis: cash provided (used) by operating activities, capital expenditures and free cash flow. As noted in panel 1, cash flow adjustments for the implied cash effects of non-cash activities led to positive adjustments to cash provided (used) by operating activities in 9.2% of the sample. The median percentage increase in cash flow from the adjustments was 2.7%. Negative adjustments to cash provided (used) by operating activities occurred in 25.0% of the sample. The median reduction in cash flow was 2.9%. In a paired t-test there was no significant difference between reported and adjusted cash provided (used) by operating activities. Panel 2 compares reported capital expenditures with adjusted capital expenditures. In 55.8% of the sample, adjustments were negative, resulting in increased capital expenditures by a median of 5.1%. There was only 1 instance, or .8% of the sample, where adjustments led to reductions in capital expenditures. Adjusted capital expenditures were significantly more negative (increased expenditures) than reported capital expenditures at the .00 level. Combining cash provided (used) by operating activities with capital expenditures provides free cash flow. Panel 3 compares reported with adjusted free cash flow. Adjustments led to reductions in free cash flow in 67.5% of the sample for a median reduction of 3.6%. There were only two instances where adjusted free cash flow was higher than reported free cash flow. Adjusted free cash flow was significantly less than reported free cash flow at the .05 level.

Panels four and five of Table 1 present the effects of adjustments to cash provided (used) by investing activities and financing activities. Negative adjustments to cash provided (used) by investing activities were noted in 84.2% of the sample companies, reducing reported cash flow, that is, increasing the amount of cash used, by a median of 5.5%. Positive adjustments were noted in 2.5% of the sample for a median adjustment of 7.6%. Adjusted cash provided (used) by investing activities was significantly less than reported cash provided (used) by investing activities at the .05 level. As to financing activities, reported in panel 5, positive adjustments were noted in 86.7% of the sample, increasing reported cash flow by a median of 9.9%. Negative adjustments were noted in 1.7% of the sample for a median adjustment of 15.8%. Adjusted cash provided (used) by financing activities was significantly higher than reported cash provided (used) by financing activities at the .025 level.

Given the importance of free cash flow to financial analysis, it is important to note that adjustments had a significant effect on that measure of cash activity, driven by non-cash capital expenditures and capital leases. Non-cash capital expenditures also resulted in significant increases in the amount of outflows recorded for cash provided (used) by investing activities. The non-cash forms of investing activities noted in the sample were offset by significant amounts of implied non-cash inflows classified as cash provided (used) by financing activities.

Exhibit 4. Implied Cash Flow Effects of Non-Cash Activities

Source: Annual Report Filings on Form 10-K to the Securities and Exchange Commission.

The number of occurrences represents the number of observations of each non-cash activity in the sample. There are 120 companies in the sample. Some companies reported more than one non-cash activity. The implied cash flow effects, represent the implied source and (use) of cash arising from each non-cash transaction assuming the transaction entailed an actual cash receipt and payment.

Impact of Non-Cash Activities (By Category)	Number of Occurrences	Implied Cash Flow Effects			Financing
		Operating	Capital Expenditures	Other Investing	
1. Capital Expenditures and Operating Activities					
Capital assets contributed to retirement plan	1	(Use)	(Source)		
Capitalised interest (non cash) added to capital assets	3	Source	(Use)		
Increase in capital assets from deferred tax adjustment	1	Source	(Use)		
Inventory transferred to capital assets	5	Source	(Use)		
2. Capital Expenditures and Other Investing Activities					
Exchange of Capital Assets for Investments	1		Source	Use	
3. Capital Expenditures & Financing Activities					
Debt issued for capital assets	23		(Use)		Source
Capital lease financing of capital assets	40		(Use)		Source
4. Other Investing Activities & Operating Activities					
Reclassification from notes receivable to accounts receivable	1	(Use)		Source	

Tax Benefit Derived From Intangible Asset	2	Source		(Use)	
5. Other Investing Activities & Financing Activities					
Debt or Equity Issued for Business Acquisitions	35			(Use)	Source
6. Financing Activities & Operating Activities					
Common stock issued to settle lawsuit	1	(Use)			Source
Leasehold improvements on operating leases financed by landlord	2	(Use)			Source
Equity issued to fund employee compensation, retirement benefits or other operating items	28	(Use)			Source

Table 1 presents a summary of reported cash flow compared with cash flow adjusted for the implied cash flow effects of non-cash activities. The Table is presented in five panels, where each panel corresponds to a different measure of cash flow: cash provided (used) by operating activities, capital expenditures, free cash flow, cash provided (used) by investing activities, and cash provided (used) by financing activities.

The first three panels of Table 1 present the effects of adjustments for non-cash activities on measures of cash flow that are particularly important to analysis: cash provided (used) by operating activities, capital expenditures and free cash flow. As noted in panel 1, cash flow adjustments for the implied cash effects of non-cash activities led to positive adjustments to cash provided (used) by operating activities in 9.2% of the sample. The median percentage increase in cash flow from the adjustments was 2.7%. Negative adjustments to cash provided (used) by operating activities occurred in 25.0% of the sample. The median reduction in cash flow was 2.9%. In a paired t-test there was no significant difference between reported and adjusted cash provided (used) by operating activities. Panel 2 compares reported capital expenditures with adjusted capital expenditures. In 55.8% of the sample, adjustments were negative, resulting in increased capital expenditures by a median of 5.1%. There was only 1 instance, or .8% of the sample, where adjustments led to reductions in capital expenditures. Adjusted capital expenditures were significantly more negative (increased expenditures) than reported capital expenditures at the .00 level. Combining cash provided (used) by operating activities with capital expenditures provides free cash flow. Panel 3 compares reported with adjusted free cash flow. Adjustments led to reductions in free cash flow in 67.5% of the sample for a median reduction of 3.6%. There were only two instances where adjusted free cash flow was higher than reported free cash flow. Adjusted free cash flow was significantly less than reported free cash flow at the .05 level.

Panels four and five of Table 1 present the effects of adjustments to cash provided (used) by investing activities and financing activities. Negative adjustments to cash provided (used) by investing activities were noted in 84.2% of the sample companies, reducing reported cash flow, that is, increasing the amount of cash used, by a median of 5.5%. Positive adjustments were noted in 2.5% of the sample for a median adjustment of 7.6%. Adjusted cash provided (used) by investing activities was significantly less than reported cash provided (used) by investing activities at the .05 level. As to financing activities, reported in panel 5, positive adjustments were noted in 86.7% of the sample, increasing reported cash flow by a median of 9.9%. Negative adjustments were noted in 1.7% of the sample for a median adjustment of 15.8%. Adjusted cash provided (used) by financing activities was significantly higher than reported cash provided (used) by financing activities at the .025 level.

Given the importance of free cash flow to financial analysis, it is important to note that adjustments had a significant effect on that measure of cash activity, driven by non-cash capital expenditures and capital leases. Non-cash capital expenditures also resulted in significant increases in the amount of outflows recorded for cash provided (used) by investing activities. The non-cash forms of investing activities noted in the sample were offset by significant amounts of implied non-cash inflows classified as cash provided (used) by financing activities.

Table 1. A Summary of Reported Cash Flow Compared with Cash Flow Adjusted for the Implied Cash Flow Effects of Non-cash Activities (dollars in millions)

Panel 1. Reported Cash Provided (Used) by Operating Activities Compared with Cash Provided (Used) by Operating Activities Adjusted for the Implied Cash Flow Effects of Non-cash Activities*:

	Number of Occurrences	Percent of Sample
Positive adjustments	11	9.2%
Median % change from positive adjustments	2.7%	
Negative adjustments	30	25.0%
Median % change from negative adjustments	-2.9%	

**Using a paired t-test, there is no significant difference between reported cash provided (used) by operating activities and adjusted cash provided (used) by operating activities.*

Panel 2. Reported Capital Expenditures Compared with Capital Expenditures Adjusted for the Implied Cash Flow Effects of Non-Cash Activities*:

	Number of Occurrences	Percent of Sample
Positive adjustments (reduced expenditures)	1	.8%
Median % change from positive adjustments	7.0%	
Negative adjustments (increased expenditures)	67	55.8%
Median % change from negative adjustments	-5.1%	

** Using a paired t-test, adjusted capital expenditures are significantly greater than reported capital expenditures at the .00 level.*

Panel 3. Reported Free Cash Flow Compared with Free Cash Flow Adjusted for the Implied Cash Flow Effects of Non-Cash Activities:

	Number of Occurrences	Percent of Sample
Positive adjustments (reduced expenditures)	2	1.7%
Median % change from positive adjustments	3.0%	
Negative adjustments (increased expenditures)	81	67.5%
Median % change from negative adjustments	-3.6%	

* *Using a paired t-test, adjusted free cash flow is significantly less than reported free cash flow at the .05 level*

Panel 4. Reported Cash Provided (Used) by Investing Activities Compared with Cash Provided (Used) by Investing Activities Adjusted for the Implied Cash Flow Effects of Non-Cash Activities

	Number of Occurrences	Percent of Sample
Positive adjustments	3	2.5%
Median % change from positive adjustments	7.6%	
Negative adjustments (increased expenditures)	101	84.2%
Median % change from negative adjustments	-5.5%	

* *Using a paired t-test, adjusted free cash flow is significantly less than reported free cash flow at the .05 level*

Table 1. (Continued)

Panel 5. Reported Cash Provided (Used) by Financing Activities Compared with Cash Provided (Used) by Financing Activities Adjusted for the Implied Cash Flow Effects of Non-cash Activities:		
	Number of Occurrences	**Percent of Sample**
Positive adjustments	104	86.7%
Median % change from positive adjustments	9.9%	
Negative adjustments	2	1.7%
Median % change from negative adjustments	-15.8%	

** Using a paired t-test, adjusted cash provided (used) by financing activities is significantly less than reported cash provided (used) by financing activities at the .025 level.*

Source: Adjustments were made using data provided in annual report filings on Form 10-K to the Securities and Exchange Commission.

The reported results summarize the net effects on the 120 companies in the sample of all non-cash activities, including the effects of some non-cash activities that may offset the effects of other non-cash activities.

Positive adjustments represent the number of occurrences and the percent of the sample that adjustments for the implied cash flow effects of non-cash activities increased cash flow (or reduced capital expenditures).

Negative adjustments represent the number of occurrences and the percent of the sample that adjustments for the implied cash flow effects of non-cash activities decreased cash flow (or increased capital expenditures).

Median % change from positive adjustments reports the median percent increase in cash flow (reduction in capital expenditures) for all companies reporting a positive adjustment.
Median % change from negative adjustments reports the median percent decrease in cash flow (increase in capital expenditures) for all companies reporting a negative adjustment.

A FOCUS ON CAPITAL EXPENDITURES AND FREE CASH FLOW

The results of this study indicate that if reported cash flows were adjusted for the implied cash effects of non-cash activities, there would be no significant difference in operating cash flow. In contrast, capital expenditures would increase significantly, as would cash used for investing activities and cash provided by financing activities.

Non-cash activities were originally excluded from the statement of cash flows because of concerns that they would unduly complicate it and detract from the statement's objective of providing information about an entity's cash receipts and payments. Having carefully examined many non-cash transactions, we think that this approach is an effective one and one that should be maintained, at least for most non-cash transactions. Non-cash transactions are often quite complex and they are, as their title suggests, non-cash. Including them on the statement of cash flows is tantamount to working toward converting the statement to one that is accruals based. That is not the purpose of the statement of cash flows.

However, among the non-cash activities observed in the sample, there are two that stand out for their frequency of occurrence, their similarity to other cash-based transactions that are reported on the statement of cash flows, and their direct effect on free cash flow. The two items, debt issued for capital assets and capital lease financing of capital assets, are both from category 3) non-cash activities affecting capital expenditures and financing activities. While both of these transactions are factually non-cash, they are both economically identical to cash-based transactions. We think that both should be reported on the statement of cash flows.

When funds are borrowed to purchase capital assets, the transaction results in a financing source and a capital expenditure, that is, an investing use of cash. In a substantively similar transaction, if the borrowed funds are wired directly to the equipment vendor, the transaction is treated as a non-cash transaction and is not reported on the statement of cash flows.[12] Yet both transactions result in a balance sheet increase to capital assets and borrowings. Similarly, both transactions result in future payments for interest on the borrowings, which are reported as operating uses of cash, and for principal reductions of the borrowings, which are reported as financing uses of cash. In effect, capital expenditures are permanently understated. Yet, while the transactions are so similar, the former results in an increase in capital expenditures, resulting in a direct reduction to free cash flow, while the latter does not. Given the importance of free cash flow to financial analysis, we think that the usefulness of the statement of cash flows could be increased markedly if these two non-cash transactions were reported on the statement of cash flows.

To gauge the significance to free cash flow of these two adjustments, we calculated free cash flow adjusted for the implied cash effects of only the two items in question. The results are presented in Table 2.

Table 2 presents details for each sample firm of reported and adjusted free cash flow and the percent difference between the two measures. Adjusted free cash flow was adjusted only for the implied cash effects of debt issued for capital assets and capital lease financing of capital assets. The amount of the adjustment to capital expenditures is also presented in the Table.

Among the 120 sample companies, adjustments for the implied cash effects of debt issued for capital assets and capital lease financing of capital assets led to reductions in free cash flow in 61 instances for a median amount that comprised 2.8% of reported free cash flow. Among the 61 firms, 24 saw free cash flow decline by more than 5%, 16 by more than 10% and 9 by more than 25%. In a paired t-test, adjusted free cash flow was significantly less than reported free cash flow at the .00 level.

CONCLUSION

In this study, for a sample of 120 companies, we identify and recast the statement of cash flows for the implied cash effects of six general categories of non-cash activity, transactions affecting 1) capital expenditures and operating activities, 2) capital expenditures and other investing activities, 3) capital expenditures and financing activities, 4) other investing activities and operating activities, 5) other investing activities and financing activities, and 6) financing activities and operating activities.

For most non-cash transactions, the inclusion of non-cash activities adds an unwanted level of complexity to the statement of cash flows and detract from the statement's objective of providing information about an entity's cash receipts and payments. Further most non-cash transactions do not entail future cash payments. They are truly non-cash. However, among the non-cash activities identified here, there are two that are particularly important because of their effect on capital expenditures and free cash flow: debt issued for capital assets and capital lease financing of capital assets. Both transactions are from the third category, transactions affecting capital expenditures and financing activities. Moreover, both of these transactions entail future cash payments for principal reductions on the outstanding obligations that are classified as financing cash flows and are not included with capital expenditures. In effect, capital expenditures are permanently understated. When adjusting free cash flow for these two non-cash transactions only, free cash flow is reduced by a statistically significant amount.

Given the importance of these two specific non-cash transactions to calculations of free cash flow, the FASB may wish to revise its stance regarding the exclusion of all non-cash activities from the statement of cash flows. The usefulness of the statement of cash flows could be increased by requiring the inclusion of the implied cash effects of both types of transactions. As to analysts and investors, in the absence of changes to the reporting of non-cash activities, such users of financial statements will want to ensure that such non-cash activities are given explicit consideration when analysing financial results.

Table 2. A Summary of Reported Free Cash Flow Compared with Free Cash Flow Adjusted for the Implied Cash Flow Effects of Two Non-cash Activities Affecting Capital Expenditures (dollars in millions)

Company	Reported Free Cash	Cap Ex Adjustment	Adjusted Free Cash	Percent Difference
Air Methods	46.74	(75.48)	(28.74)	-161.49%
Akamai Technologies	269.85	(7.47)	262.38	-2.77%
Allied Nevada Gold	(64.25)	(40.33)	(104.58)	-62.77%
Alpha Natural Resources	101.62	0.00	101.62	0.00%
Altisource Portfolio	95.17	0.00	95.17	0.00%
American Water Works	(169.63)	0.00	(169.63)	0.00%
Ancestry.com	(14.99)	0.00	(14.99)	0.00
BJ's Restaurants	(5.99)	(0.20)	(6.19)	-3.34%
Broadridge Financial	243.90	0.00	243.90	0.00%
Bruker Corp	33.30	0.00	33.30	0.00%
CACI International	248.41	(5.01)	243.40	-2.02%
California Water Service	(7.22)	(24.38)	(31.60)	-337.67%
Cavium	13.90	0.00	13.90	0.00%
CEC Entertainment	82.56	(0.93)	81.63	-1.13%
Ceradyne Inc	79.21	0.00	79.21	0.00%
Choice Hotels	125.57	(0.91)	124.67	-0.72%
Churchhill Downs	150.57	0.00	150.57	0.00%
Clearwater Paper Corporation	(52.84)	(12.69)	(65.53)	-24.02%
Clearwire Corp	(1,336.45)	(19.69)	(1,356.14)	-1.47%
Cogent Communications	30.00	(41.96)	(11.96)	-139.87%
Coinstar	227.98	(15.12)	212.86	-6.63%
Conn's Inc	60.13	(0.64)	59.49	-1.06%
Cott Corporation	115.10	(0.20)	114.90	-0.17%
Crown Media Holdings	37.06	(0.06)	37.00	-0.17%
Cymer Inc	141.71	(0.74)	140.97	-0.52%
Delek US Holdings	52.60	0.00	52.60	0.00
Deltek	36.02	(0.12)	35.90	-0.33%
D.R. Horton Inc	(285.20)	(1.90)	(287.10)	-0.67%
DSW	139.47	0.00	139.47	0.00%
Electronic Arts	131.00	0.00	131.00	0.00%
EMC Corporation	4,425.10	0.00	4,425.10	0.00%
Endo Pharmaceutical	644.39	(4.28)	640.11	-0.66%
Estee Lauder	706.00	(8.60)	697.40	-1.22%
Exact Sciences	(29.94)	0.00	(29.94)	0.00%
EXCO Resources	(859.16)	(30.08)	(889.24)	-3.50%
Fred's Inc	31.01	(3.50)	27.51	-11.29%
Frontier Communications	745.84	0.00	745.84	0.00%
FTI Consulting	142.74	0.00	142.74	0.00%
General Motors Co	1,925.00	0.00	1,925.00	0.00%

Table 2. (Continued)

Company	Reported Free Cash	Cap Ex Adjustment	Adjusted Free Cash	Percent Difference
Grand Canyon Education	16.55	(0.80)	15.75	-4.83%
GT Advanced Technologies	169.52	(1.02)	168.50	-0.60%
H&E Equipment Services	(20.54)	0.00	(20.54)	0.00%
Healthcare Services Group	27.42	0.00	27.42	0.00%
Heartware International	(45.60)	0.00	(45.60)	0.00%
Heckmann Corp	(164.88)	0.00	(164.88)	0.00%
Hecla Mining	(17.66)	(40.77)	(58.43)	-230.86%
Hibbett Sports	42.02	0.00	42.02	0.00%
Huron Consulting	94.68	0.00	94.68	0.00%
Hyatt Hotels	267.00	(10.00)	257.00	3.75%
Iconix Brand Group	174.37	0.00	174.37	0.00%
iGATE Corp	61.40	(0.43)	60.97	-0.70%
Infospace	22.58	0.00	22.58	0.00%
Insulet Corp	(36.56)	0.00	(36.56)	0.00%
Iron Mountain	410.52	(30.09)	380.43	-7.33%
Isis Pharmaceuticals	(122.13)	(59.73)	(181.86)	-48.91%
ITT Educational	356.93	0.00	356.93	0.00%
Johnson & Johnson	12,747.00	0.00	12,747.00	0.00
Kansas City Southern	119.70	(0.70)	119.00	-0.58%
Kenexa Corp	31.82	(0.57)	31.25	-1.79%
Krispy Kreme	22.42	(1.20)	21.22	-5.35%
Las Vegas Sands	1,160.10	0.00	1,160.10	0.00%
Legacy Reserves LP	(23.33)	(7.71)	(31.04)	-33.05%
Magellan Midstream	54.00	0.00	54.00	0.00%
Maidenform	(4.23)	0.00	(4.23)	0.00%
Mako Surgical Corp	(39.64)	0.00	(39.64)	0.00%
McMoRan Exploration	(291.06)	(39.12)	(330.18)	-13.44%
MedNax Inc	239.69	(0.75)	238.94	-0.31%
Merit Medical Systems	(27.25)	0.00	(27.25)	0.00%
Natural Resource	190.48	(0.50)	189.98	-0.26%
NetApp	1,055.50	(3.60)	1,051.90	-0.34%
Neustar Inc	180.62	(1.14)	179.48	-0.63%
Nextera Energy	686.00	0.00	686.00	0.00%
Nordstrom	666.00	0.00	666.00	0.00%
Northern Oil and Gas	(251.63)	(13.11)	(264.74)	-5.21%
Nxstage Medical	(6.68)	0.00	(6.68)	0.00%
PMC-Sierra	148.12	0.00	148.12	0.00%
Qlik Technologies	8.92	(1.76)	7.16	-19.73%
Quality Systems	53.38	0.00	53.38	0.00%

Table 2. (Continued)

Company	Reported Free Cash	Cap Ex Adjustment	Adjusted Free Cash	Percent Difference
Questcor	83.78	(0.03)	83.75	-0.04%
Quest Software	165.32	0.00	165.32	0.00%
Rackspace Hosting	79.58	(68.38)	11.20	-85.93%
Rambus	33.59	0.00	33.59	0.00%
Reliance Steel	87.40	0.00	87.40	0.00%
Revlon Inc	74.40	0.00	74.40	0.00%
Rex Energy	(129.59)	(0.47)	(130.06)	-0.36%
RPM International	225.42	0.00	225.42	0.00%
Rush Enterprises	(219.22)	(17.40)	(236.62)	-7.94%
Safeway Inc	1,116.90	(4.80)	1,112.10	-0.43%
Salesforce.com	419.20	(57.84)	361.36	13.80%
SBA Communications	122.24	(2.57)	119.67	-2.10%
Smith & Wesson	23.65	(3.28)	20.37	-13.87%
SOHU.COM	200.47	0.00	200.47	0.00%
Solar Winds	108.47	0.00	108.47	0.00%
Solera Holdings	194.43	(1.44)	192.99	-0.74%
Sonus Networks	(19.08)	(0.12)	(19.20)	-0.63%
South Jersey Industries	1.74	0.00	1.74	0.00%
Spirit AeroSystems	(296.50)	(12.60)	(309.10)	-4.25%
SPX Corp	168.50	0.00	168.50	0.00%
Steiner Leisure	60.97	0.00	60.97	0.00%
Stericycle	252.80	0.00	252.80	0.00%
Sungame Corp	(751.24)	0.00	(751.24)	0.00%
Sunpower Corp	(256.04)	(2.42)	(258.46)	-0.95%
Super Micro	(8.39)	(0.07)	(8.46)	-0.83%
SuperValu	566.00	(39.00)	527.00	-6.89%
Synchronoss Technologies	27.86	0.00	27.86	0.00%
Tennant Company	43.31	(2.89)	40.42	-6.67%
Thoratec Corp	104.50	0.00	104.50	0.00%
Under Armour	(64.17)	(38.56)	(102.73)	-60.09%
Union Pacific	2,805.00	(154.00)	2,651.00	-5.49%
United Technologies	5,607.00	0.00	5,607.00	0.00%
United Therapeutics Corp	214.22	(26.80)	187.42	-12.51%
Universal Forest Products	(20.86)	0.00	(20.86)	0.00%
Valassis Communications	178.72	0.00	178.72	0.00%
Valeant Pharma	617.95	0.00	617.95	0.00%
Vanguard Natural Resources	(60.03)	(0.13)	(60.16)	-0.22%
Viasat Inc	(63.52)	(0.00)	(63.52)	0.00%
Value Click, Inc	103.77	(0.00)	103.77	-0.00%

Table 2. (Continued)

Company	Reported Free Cash	Cap Ex Adjustment	Adjusted Free Cash	Percent Difference
Watts Water Tech	106.30	(4.30)	102.00	-4.05%
Wesco International	134.28	(1.11)	133.17	-0.83%
Western Digital	2,426.00	0.00	2,426.00	0.00%

Source: Annual Report Filings on Form 10-K to the Securities and Exchange Commission.

Reported free cash flow was calculated by combining reported operating cash flow and reported capital expenditures. The Cap Ex (capital expenditures) adjustment consists of adjustments for debt issued for capital assets and capital lease financing of capital assets.

Adjusted free cash flow was calculated by adjusting reported free cash flow by the capital expenditures adjustment.

The percent difference represents the difference between reported free cash flow and adjusted free cash flow as a percent of reported free cash flow.

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