



# Cash Flow Analytics

*Determine the Value*

## **A Comparison of Reported and Cash Flow Analytics' Proprietary Cash Flow**

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## Introduction

Traditional measures of cash flow are typically based on GAAP-defined calculations of operating cash flow. However, as documented extensively in Financial Warnings (Mulford and Comiskey, 1996), The Financial Numbers Game: Detecting Creative Accounting Practices (Mulford and Comiskey, 2002), and especially, Creative Cash Flow Reporting: Uncovering Sustainable Financial Performance (Mulford and Comiskey, 2005), cash flow measures based on GAAP are easily open to manipulation and are often misleading. In this note, we illustrate that the proprietary Cash Flow Analytics measure of free cash flow outperforms various commonly used measures of reported cash flow.

## Design

Our sample covers the period from the beginning of 1997 through the end of December 2008. We focus on non-financial firms followed by COMPUSTAT and examine three measures of cash flow: reported operating cash flow, reported free cash flow, and Cash Flow Analytics' proprietary measure of sustainable free cash flow. We scale each measure by revenue, and consequently, focus on a margin.

For each of these three margins and for each quarter in our sample period, we define a signal that takes the value of one if the margin is greater than the corresponding industry median value (high industry cash flow margin) and zero (low industry cash flow margin) otherwise. We then follow these companies until the subsequent earnings announcement date and focus on the average daily returns between these two dates.

## Results

Table 1 presents the simple correlations between the three cash flow metrics. The three cash flow measures are far from perfectly correlated. The Cash Flow Analytics' proprietary free cash margin (also referred to as free cash margin) has a correlation coefficient with reported operating cash margin of only 0.36. Its correlation with reported free cash margin is about 0.48. In untabulated results, free cash margin and reported operating cash margin give conflicting buy/sell signals in roughly 30% of the observations. Free cash margin and reported free cash margin give conflicting signals in roughly 25% of the observations. In sum, the proprietary free cash margin signal differs significantly from reported measures of cash flow.

**Table 1: Correlations**

### Panel A: Correlation among different cashflow measures

	FCM	ROCM	RFCM
FCM	1.00	0.36	0.48
ROCM		1.00	0.69
RFCM			1.00

FCM – Cash Flow Analytics' proprietary free cash margin

ROCM – Reported operating cash margin

RFCM – Reported free cash margin

Given the significant differences in the signals created from the different cash flow measures, we next examine which metric is more informative. Table 2 shows average daily return differences using the cash

flow signals discussed above over the entire 1997 to 2008 sample period. We follow stocks between successive earnings announcement dates and track differences between the cash flow signals on a daily basis.

As shown below, high Cash Flow Analytics' proprietary free cash margin firms outperform high reported operating cash margin firms by a statistically significant 0.009 bps per day. Compounded over one year (where one year is assumed to be 250 trading days), this amounts to outperformance of 2.15% per annum. Similar results are obtained when Cash Flow Analytics' proprietary free cash margin is compared to reported free cash margin. The outperformance is a statistically significant 1.00% per year.

**Table 2: Return differences to alternative cash flow measures**

	<b>Avg. Daily Return Difference (in bps)</b>	<b>P- value</b>	<b>Compounded over one year</b>
High FCM vs. High ROCM	0.009	0.01	2.15%
High FCM vs. High RFCM	0.004	0.04	1.00%
Low FCM vs. Low ROCM	-0.008	0.01	-1.98%
Low FCM vs. Low RFCM	-0.003	0.25	-0.75%
High FCM – Low FCM	0.027	0.00	6.98%
High ROCM – Low ROCM	0.010	0.17	2.53%
High RFCM – Low RFCM	0.020	0.01	5.05%
(High – Low FCM) – (High – Low ROCM)	0.017	0.01	4.26%
(High – Low FCM) – (High – Low RFCM)	0.007	0.00	1.77%

High (Low) FCM – Cash Flow Analytics' proprietary free cash margin is above (below) the industry median.

High (Low) ROCM – Reported operating cash margin is above (below) the industry median.

High (Low) RFCM – Reported free cash margin is above (below) the industry median.

Similar results hold for low Cash Flow Analytics proprietary free cash margin firms. Low free cash margin firms outperform low reported operating cash margin firms by 1.98% over one year. Similarly, low free cash margin firms outperform low reported free cash margin firms by a statistically significant 0.75% per year.

The signal developed using free cash margin outperforms the other measures. High free cash margin firms outperform low free cash margin firms by approximately 6.98% per annum. Reported operating cash margin is not a reliable signal. High reported operating cash margin firms do not outperform low reported operating cash margin firms. High reported free cash margin firms outperform low reported free cash margin firms by approximately 5.05% per annum. This is significantly less than the value generated by free cash margin.

Furthermore, portfolios that go long the difference between high and low free cash margin and short the difference between high and low reported operating cash margin produce a statistically significant gain of 4.26% per year, while the corresponding figure for reported free cash margin is 1.77% per year.

## **Conclusion**

In sum, the results show a signal based on Cash Flow Analytics proprietary free cash margin produces a significantly higher return than the corresponding signals produced using either reported operating cash margin or reported free cash margin. Any quantitative model currently using a cash flow signal could potentially benefit from using the Cash Flow Analytics' proprietary metric.