REVELATION
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RIR RESEARCH BRIEF

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Another Look at Free Cash Flow vs Earnings for Stock Selection

Issue

Equity managers of all styles use earnings as a key input to their stock valuation assessments. But while the importance of earnings is undisputable, the effectiveness of EPS-based stock selection factors may be. In an efficient stock market, how can investors possibly misprice something as highly visible as reported EPS? Such concerns have motivated alpha-seeking analysts to gauge companies' true "earnings" power using other metrics such as free cash flow.

What is the difference between reported earnings, operating cash flow, and free cash flow? Does it matter how free cash flow is calculated? How effective are free cash flow-based valuation, momentum, growth, and stability factors for stock selection? Do free cash flow metrics outperform those based on earnings alone?

Research Approach

Our research universe was all MSCI U.S. IMI members back to 2001, but we excluded financials since free cash flow is difficult to define for such firms. For comparison purposes, we used net income, earnings from continuous operations (i.e., before extraordinaries and one-time events), and several free cash flow variants as inputs for five factor formulations that capture valuation, momentum, growth, growth consistency, and stability characteristics.

Each month, we calculated and ranked stocks on each factor into quintile groups and aggregated subsequent 12-month stock selection performance. We summarized factor predictive power using equal weighted excess returns, return standard deviations, and Information Coefficients (i.e., correlation between factor ranks and subsequent returns).

Results

Before sharing test results, let's review the difference between earnings, operating cash flow, and free cash flow. Net income (NI) is defined as Revenues minus Expenses in a fiscal reporting period, whereas Operating cash flow (OCF) is operating cash received minus cash outlays in a fiscal reporting period. The difference between the two is primarily due to timing differences, i.e., accounting accruals.

By contrast, Free Cash Flow (FCF) does not have a precise accounting definition. Conceptually, FCF is OCF plus non-cash expenses less non-expensed cash outlays necessary to maintain the business' operating capabilities. However, which non-cash expenses to include and which non-expensed cash outlays to exclude is often debated by accountants and equity analysts.

The simplest bridge from NI to FCF is as to add Depreciation & Amortization (DEP) and to subtract Capital Expenditures (CE). But some analysts argue that additional items such as deferred taxes, changes in non-cash working capital, the tax shield from deductible interest payments, dividend payouts, and the distinction between "maintenance" CE and "investment" CE are important to consider in computing FCF. We would further assert that excluding one-time receipts or charges from NI (NIX) is a better starting point for computing sustainable FCF.

Ultimately, RIR believes that the best way to define FCF for stock selection purposes is an empirical question, not a philosophical one, so we decided to test numerous alternative FCF factor formulations. Conveniently, we found that more complex FCF formulations generally detracted from performance. In fact, our two simplest FCF definitions were the strongest overall predictors, with FCF defined as OCF + CE slightly outperforming FCF defined as NIX + DEP – CE. To illustrate, Table 1 shows the performance of five stylistic factors using two FCF definitions with differing complexity:

- FCF1 = OCF – CE
- FCF2 = OCF – CE + Int Exp net of tax shield – Dividends

Table 1: FCF Factor Return Prediction Performance

Factor	Style	Avg IC	Std IC	Avg 12M Excess Return Qn1	Qn2	Qn3	Qn4	Qn5
FCF1 / EnterpriseValue	Value	0.074	0.089	0.78	1.33	0.87	0.02	-2.59
FCF2 / EnterpriseValue	Value	0.054	0.099	-0.68	1.63	1.54	0.04	-2.12
(FCF1-4QAgo) / Mcap	Momentum	0.011	0.039	0.98	0.58	-0.52	-1.22	1.02
(FCF2-4QAgo) / Mcap	Momentum	0.004	0.045	0.65	0.33	-0.20	-0.93	1.10
(FCF1-12QAgo) / Mcap	Growth	0.033	0.044	1.70	0.67	0.11	-1.00	0.24
(FCF2-12QAgo) / Mcap	Growth	0.025	0.054	1.03	0.88	0.53	-0.96	0.34
Net 3Y #Up Qtrs FCF1	Gth Persist	0.047	0.053	1.24	0.87	0.44	0.10	-2.83
Net 3Y #Up Qtrs FCF2	Gth Persist	0.009	0.043	0.41	0.47	1.36	0.77	0.18
12Q FCF1 Stdev / Avg	Stability	0.041	0.079	0.01	0.38	0.16	0.21	0.52
12Q FCF2 Stdev / Avg	Stability	0.024	0.074	-0.58	0.30	-0.05	0.70	1.09

Note how each FCF1-based factor had greater predictive power than the more complex FCF2-based factor. Another observation from Table 1 is that the FCF-based value factors performed best, the Momentum factors performed worst, and the Growth Persistency and Stability factors were in between. We observed these same performance differences by factor style over all the different FCF formulations tested (not shown).

After confirming that FCF factors are generally effective return predictors and that simple FCF formulations worked best, we thought it would be insightful to benchmark FCF-based factors against income-based factors. For these tests, we defined FCF as OCF – CE and Net Income as NIX (NI before Extraordinaries and One-time Events). We hypothesized that the FCF-based factors would outperform the NIX-based factors since earnings information is so highly scrutinized by investors.

As expected, Table 2 shows that the FCF factors tended to be stronger return predictors than the NIX factors, with generally higher IC's lower IC variability, and wider excess return spreads. That said, the NIX factors did perform pretty well, and better than most of the FCF alternatives we researched in this study.

Table 2: FCF vs Net Income Factor Return Prediction

Factor	Style	Avg IC	Std IC	Avg 12M Excess Return Qn1	Qn2	Qn3	Qn4	Qn5
FCF1 /EV	Value	0.074	0.089	0.78	1.33	0.87	0.02	-2.59
NIX / EV	Value	0.071	0.101	0.52	0.42	-0.26	-0.57	0.11
(FCF1-4QAgo) / Mcap	Momentum	0.011	0.039	0.98	0.58	-0.52	-1.22	1.02
(NIX-4QAgo) / MktCap	Momentum	0.005	0.073	0.17	-0.55	-0.32	-0.38	1.60
(FCF1-12QAgo) / Mcap	Growth	0.033	0.044	1.70	0.67	0.11	-1.00	0.24
(NIX-12QAgo) / Mcap	Growth	0.031	0.069	1.15	0.04	-0.24	-0.78	1.29
Net 3Y #Up Qtrs FCF1	Gth Persist	0.047	0.053	1.24	0.87	0.44	0.10	-2.83
Net 3Y #Up Qtrs NIX	Gth Persist	0.054	0.078	0.55	0.61	0.28	0.26	-1.28
12Q FCF Stdev / Avg	Stability	0.041	0.079	0.01	0.38	0.16	0.21	0.52
12Q NIX Stdev / Avg	Stability	0.046	0.112	-0.26	0.03	-0.27	0.67	0.98

Switching our attention to risk, we found the volatility prediction results summarized in Table 3 to be quite interesting. First, the NIX-based formulations were *stronger* predictors of relative volatility than the FCF-based formulations for all five stylistic factors, with wider average Quintile 1 to Quintile 5 volatility spreads. Second, return volatility tended to steeply rise across Quintile cohorts 2 – 5 for all style factors, while Quintile 1 cohort volatility varied by factor style. This result is consistent with past RIR research that has found that most value and growth factors produce Quintile 1 rank cohorts with above-average volatility risk.

A third interesting observation from Table 3 is the remarkably similar color patterns of the return volatility data for each stylistic factor pair. These patterns suggest that stock rankings based on FCF vs NIX are quite alike, yet we all know that FCF and NIX can be and often are very different for a given firm. Indeed, we found that the average correlation between the FCF and NIX stylistic factors to be only 0.18 – definitely not the same.

Table 3: FCF vs Net Income Factor Volatility Prediction

Factor	Style	Avg 12M Return Stdev % Qn1	Qn2	Qn3	Qn4	Qn5
FCF1 /EV	Value	38.6	33.2	35.4	41.3	62.2
NIX / EV	Value	35.1	30.1	32.2	41.3	67.8
(FCF1-4QAgo) / Mcap	Momentum	47.8	36.7	34.3	38.5	54.3
(NIX-4QAgo) / MktCap	Momentum	49.5	34.6	32.0	37.6	56.7
(FCF1-12QAgo) / Mcap	Growth	44.2	33.7	32.7	37.5	57.1
(NIX-12QAgo) / Mcap	Growth	42.1	33.2	31.6	35.7	60.5
Net 3Y #Up Qtrs FCF1	Gth Persist	38.5	39.3	41.6	50.7	49.8
Net 3Y #Up Qtrs NIX	Gth Persist	33.9	36.9	40.2	45.7	58.0
12Q FCF Stdev / Avg	Stability	32.1	39.5	43.3	46.5	50.5
12Q NIX Stdev / Avg	Stability	30.1	37.0	41.6	47.7	54.4

For our final set of tests, we create three composite models from our value, growth, growth persistency, and stability factors: M1 using only FCF1 inputs, M2 using only NIX inputs, and M3 using FCF1 and NIX inputs

Table 4: FCF vs NIX Model Performance

Model	Avg IC	Std IC	Avg/ Std	Avg 12M Excess Return Qn1	Qn2	Qn3	Qn4	Qn5	Avg 12M Return Stdev Qn1	Qn2	Qn3	Qn4	Qn5
M1	0.061	0.060	1.02	1.40	1.06	-0.11	-0.81	-1.53	39.0	37.9	38.5	41.6	58.6
M2	0.062	0.085	0.74	0.67	0.47	-0.24	-0.55	-0.37	35.2	35.0	37.5	41.9	62.7
M3	0.072	0.081	0.89	1.06	0.81	0.20	-0.90	-1.20	36.2	35.2	38.1	41.3	62.1

Table 4 shows that M1 was better than M2 at the more challenging and valuable task of predicting relative returns, but M2 was slightly better at predicting relative volatility. Given FCF and NIX factor effectiveness and their low correlation, we hoped that combining these factors might prove useful, but M1 outperformed M3 in return prediction based on its higher Information Ratio (i.e., Avg IC / Stdev IC) and wider quintile return spread, benefits that more than offset M3's edge in volatility prediction.

Conclusion

This study has shown that stock selection factors based on simpler FCF definitions distinctly outperformed more complex FCF formulations. We also confirmed our expectation that FCF-based factors would outperform earnings-based factors, but the earnings factors still provided positive performance.

RIR always cautions against drawing strong conclusions from a non-exhaustive research study like this one, but we love instances when simple factor formulations work best and digging deeper (e.g., beyond reported earnings) seems to be rewarded!