



Sustainable Free Cash Flow Analysis: A Better Measure for Resource Equities

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Executive Summary

In today's challenging environment for global commodity prices, conventional valuation measures may not be the most effective in selecting resource stocks. In this paper, we examine the application of sustainable Free Cash Flow analysis for companies with high capital intensity. Our proprietary model suggests that sustainable Free Cash Flow can be a more insightful investment criterion in pursuing higher returns over the benchmark compared to ratios measuring price-to-earnings, price-to-cash-flow or net asset value. Our five-year sample study found that companies generating high sustainable Free Cash Flow yield tended to outperform.

Macroeconomic forecasts, sub-sector rotations and capital allocation are other important factors to consider in diversified resource equity investing, which we will address in future publications.

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“Our proprietary model suggests that sustainable Free Cash Flow can be a more insightful investment criterion in pursuing higher returns over the benchmark than conventional valuation measures.”

Introduction

After rising through much of the last decade, global commodity prices have entered a prolonged slump and investors today face a challenging environment for resource equities. Sluggish global growth and shifting consumption patterns mean that only those resource companies with sustainable business models and a disciplined approach to capital allocation are likely to thrive.

Widely used investment measures, such as the price-to-earnings (P/E) ratio, the price-to-cash-flow (P/CF) ratio and net asset value (NAV) fail to accurately capture the capital-intensive nature of resource companies, or fall short in gauging management’s ability to generate potential future returns for shareholders. In the absence of rising commodity prices, we believe investors could benefit from valuation methods that are specific to the resource industry.

Our work suggests that there is a strong case for using sustainable Free Cash Flow (FCF) yield to help identify resource equities that could generate excess returns over the benchmark.¹ In the first three sections of this white paper, we explore several weaknesses of some traditional metrics used to value resource companies, and explore the comparative advantages of using sustainable FCF yield.

Traditional Metrics

1.1 Earnings-Based Metrics vs. Cash Flow Metrics

Numerous studies have shown that cash flow metrics can be a more accurate predictor of future stock returns than earnings-based measures, as many investors ignore the fact that earnings backed by cash flow tend to be more persistent in the future than earnings backed by accruals.²

Accounting depreciation and accruals are generally open to subjective estimates. This is especially true within the resource sector, in which productive assets tend to have longer lives, initial capital intensity is high and margins are deeply cyclical. This means there is a greater chance that accounting depreciation estimates could be inaccurate. Moreover, depreciation charges tend to be a poor proxy for the future capital needs of resource companies.

Cash flow based metrics are more relevant to resource companies and basic industries such as chemicals or steel, in which the high capital intensity of constructing and maintaining assets results in depreciation charges that are larger than generally observed in the broader stock market. Table 1 illustrates the generally lower EBIT-to-EBITDA ratio for the Energy and Materials sectors versus the averages for the S&P/TSX Composite and S&P 500 indices, highlighting the potential impact of poorly defined depreciation charges on operating earnings. While EBITDA more closely approximates cash flow than EBIT, it is still not as useful and robust as cash-flow metrics, which are better able to capture reinvestments.

¹ The Benchmark referenced throughout this paper is a blended benchmark comprised of 16.5% MSCI World Energy Sector Index, 13.5% MSCI World Materials Sector Index, 38.5% S&P/TSX Composite Index Energy Sector, and 31.5% S&P/TSX Composite Index Materials Sector (total returns, in local currencies).

² Richard G. Sloan (1996) “Do Stock Prices Fully Reflect Information in Accruals and Cash Flows about Future Earnings?” *The Accounting Review* 71(3): 289–315. Sloan finds that earnings backed by cash flows are more persistent than earnings backed by accruals. Consequently, firms with relatively high (low) levels of accruals experience negative (positive) abnormal stock returns.

Table 1 also illustrates that the cash flow required for (re) investment appears to be relatively high in Energy and Materials. Ongoing capital expenditures can therefore deviate substantially from accounting depreciation charges.

Table 1: High depreciation charges and low fcf capture

Depreciation charges tend to be higher in the resource sector, and FCF is reduced due to high capital reinvestment needs.³

| | S&P/TSX Composite | S&P/TSX Energy | S&P/TSX Materials | S&P 500 Index | S&P 500 Energy | S&P 500 Materials |
|-----------------------------|-------------------|----------------|-------------------|---------------|----------------|-------------------|
| EBITDA | \$8,158 | \$2,153 | \$1,578 | \$924 | \$447 | \$161 |
| EBIT | \$5,084 | \$1,053 | \$1,119 | \$647 | \$288 | \$111 |
| EBIT/EBITDA | 62% | 49% | 71% | 70% | 64% | 69% |
| Operating Cash Flow | \$6,062 | \$1,838 | \$1,179 | \$845 | \$372 | \$116 |
| Cash from Investments | (\$4,819) | (\$2,031) | (\$1,284) | (\$312) | (\$321) | (\$60) |
| Free Cash Flow Capture Rate | 21% | -10% | -9% | 63% | 14% | 48% |

Source: Analysis performed by Mackenzie Investments using data from Bloomberg (cumulative US dollar per share, 2009–2013).

1.2 From Operating Cash Flow to Free Cash Flow

While Operating Cash Flow (OCF) has become an accepted measure of operating performance, it has some shortcomings. Table 1 above highlights the inherent issues with P/CF analysis as it pertains to the resource sector. P/CF focuses exclusively on OCF but ignores the reinvestment of capital, a significant figure for companies facing capital-intensive development and finite resources that decline over time.

To illustrate this point, consider a company with a single shale oil well. Its production could decline by as much as 80% in the first year, and a newly established oil producer would be required to reinvest the majority of its OCF just to maintain production and operating earnings. With such high levels of capital reinvestment needed to sustain operating earnings, investors could benefit by focusing on measures that capture the company's ability to generate FCF, not OCF.

FCF is traditionally defined as the net cash generated by operations and available for distribution to shareholders or used to take advantage of additional business opportunities beyond previously committed growth capital.⁴ It is usually estimated by taking the net cash flow from operating activities less all capital expenditures.

FCF capture rates are generally lower in the resource sector than in many other sectors, again due to high capital intensity, as illustrated in Table 1. In addition, traditional FCF yield analysis fails to define the 'true' growth capital of a resource company. Thus, in our view, investors should separate capital expenditures that merely sustain production from capital expenditures that contribute to future growth.

A Better Measure

2.1 From Free Cash Flow to Sustainable Free Cash Flow

While FCF under the traditional definition can simply be calculated from a company's financial statements and replicated using a systematic quantitative model, our proprietary sustainable FCF measure is calculated through detailed and rigorous analysis of financial statements with reclassification of productive capital expenditures, and a thorough understanding of incremental investment opportunities.

Notably, the capital expenditures used in deriving sustainable FCF differ from the narrow definition of maintenance capital expenditures because these include not only the investments required to keep production facilities in working order, but also the investment required to keep a company's assets competitive. This kind of analysis requires an assessment of the competitive forces in the industry and a comprehensive knowledge of each company.

Moreover, our work indicates that resource stocks with a superior track record of delivering high sustainable FCF over a business cycle tend to outperform the benchmark.

2.2 Maintenance Capex vs. Sustaining Capex

While sustaining capex appears to be a superior metric in evaluating a resource company's potential to create future value, it is difficult to capture. The reason is that most companies only report a narrow definition of maintenance capex. In doing so, they tend to under-report the true capital needs of the business.

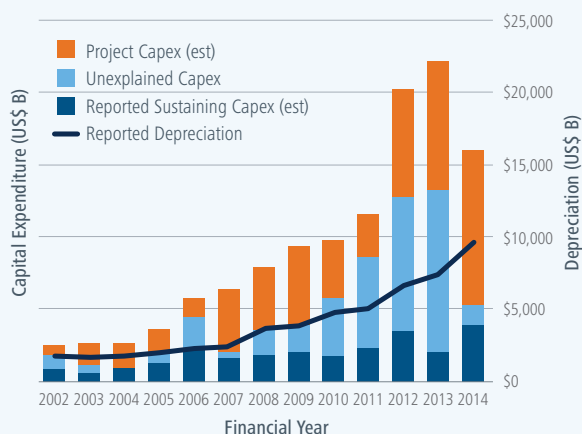
We examined BHP Billiton's capital allocation history from 2002 to 2014, which is shown in Figure 1. Historically, BHP has earmarked a minor portion of its total capex as maintenance capital. The company has also reported capital earmarked for major projects targeting production growth.

³ Free cash flow capture rate is defined as the percentage of operating cash flows remaining after deducting all capital investments.

⁴ Kenneth S. Hackel, Joshua Livnat and Atul Rai (2000) "A Free Cash Flow Investment Anomaly," *Journal of Accounting, Auditing & Finance* 15(1): 1–24.

Figure 1: BHP Billiton's Capital Allocation (2002–2014)

Divergence in total capex and maintenance capex suggests substantial sustaining capital requirements to support BHP's income.



Source: BHP Billiton and Redburn Partners LLP; analysis performed by Mackenzie Investments.

The unexplained capital expenditures that are implied from BHP's cash flow statements suggest that the company's definition of maintenance capital substantially underreports the firm's capital requirements for sustaining production. This example also shows the difficulty of establishing relevant depreciation charges in the capital-intensive and long-life resource sector. Importantly, it calls into question, once again, the reliability of earnings-based analysis.

In the context of a resource company, sustaining capex includes a large number of activities. These include:

- Additional reserve development to offset declining ore grades (e.g., larger copper mills to treat lower-grade ore)
- Drilling new oil or gas wells in response to declining production rates from aging wells in a known resource area (e.g., U.S. onshore shale)
- Replacing or rebuilding equipment at the end of its useful life (e.g., blast furnaces in the steel industry)
- Generating new product lines to preserve a company's competitive advantage (e.g., R&D and associated capital expenditures to retool a plant)

2.3 Sustainable Free Cash Flow Capture Rate and the Riskiness of a Company

Investors can evaluate the riskiness of a company's cash flow by looking at its sustainable FCF capture rate. This is the percentage of pre-tax OCF remaining after deducting all required sustaining capital investments. It simply describes the amount of cash flow a company keeps after reinvestment. Companies with lower capture rates are highly sensitive to changes in assumptions, making them inherently more risky than their counterparts with higher capture rates.

A resource company with mature assets that is struggling to maintain its income stream from current operations would have a low capture rate (we estimate in the range of 0% to 25%), indicating that nearly all cash flow from operations is being consumed just to sustain the firm's OCF. This leaves little room for future growth or shareholder returns.

We believe investors should instead look for a higher sustainable FCF capture rate, which, for superior resource companies, we believe should exceed 50%, indicating that there is a lot more cash available for reinvestment in growth opportunities or to reward shareholders. Identifying companies with high sustainable FCF capture rates is not sufficient to identify long-term outperformers. Our analysis indicates that companies with high sustainable FCF yields tend to provide better returns.

What to Look for

3.1 Management Discipline

High sustainable FCF yield is a useful criterion but raises important questions: How will the excess free cash be spent, and will it be deployed effectively? Management's ability to create or destroy value from future surplus cash flows is a factor often overlooked in regular NAV-based valuation methods. The sum of discounted future cash flows does not adequately address the timing or magnitude of the reinvestment required.

What is the solution? We believe resource investors need to spend time critically assessing management's opportunities for reinvestment, as well as its discipline in allocating any surplus capital to growth projects or returning capital to shareholders. With the average resource company struggling to beat the cost of capital, one could infer that better business acumen should be used to handle surplus FCF in this capital-intensive sector. For this reason, companies that capture relatively high sustainable FCF, and ones with management teams that allocate capital efficiently, could be expected to outperform.

3.2 Effectiveness of Sustainable Free Cash Flow Analysis

In this section, we present two exhibits from our analysis to show that companies with high sustainable FCF-to-equity yields in a particular year tend to outperform the benchmark in the following year, as observed on a quarterly basis over a five-year period.

First, in Exhibit 1 we compare a model portfolio of ten companies with the benchmark's top ten companies. We use only the top ten holdings for each quarter due to the complexity of analysis, interpretation and estimation of 'true' sustaining capex for the entire benchmark over five years of data.

We found that the equal-weighted model portfolio exhibited higher sustainable FCF yield versus the ten largest weightings in the benchmark during 13 of the 20 quarters or 65% of the time. The subsequent one-year returns of the model portfolio corresponding to these 13 quarters were higher than their top ten benchmark counterparts.

Exhibit 1: Sustainable FCF yield drives equity returns

Model portfolio relative to ten largest holdings in the benchmark, using quarterly data (2009–2013) for 1-year forward estimates (2010–2014).

| 5 Years, Using Quarterly Data (2009–2013) | Average Excess "Sustainable" FCF Yield | Avg Excess Subsequent 1-Year Total Returns | # Periods | % Periods |
|--|--|--|-----------|-----------|
| All periods | 1.1% | 14.5% | 20 | 100% |
| Periods where Excess "Sustainable" FCF Yield is positive | 2.5% | 16.1% | 13 | 65% |
| Periods where Excess "Sustainable" FCF Yield is negative | -1.5% | 11.4% | 7 | 35% |

Average excess = Average Top-10 Fund - Average Top-10 Benchmark

Source: Factset and company reports; analysis performed by Mackenzie Investments.

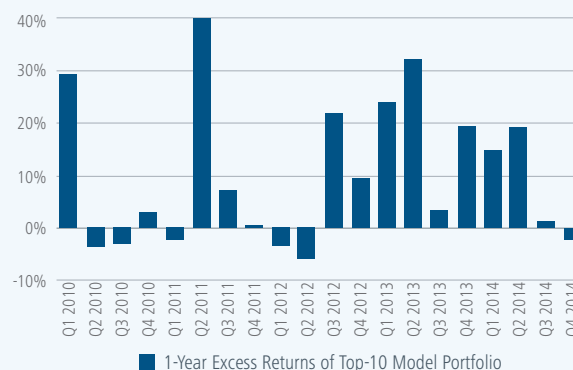
Model portfolio is an equally weighted basket of the top five energy and top five materials positions (by weight) in the Mackenzie Canadian Resource Fund; the benchmark's top ten holdings are the top five energy and top five materials positions, equally weighted. Rates of return are total returns.

The outperformance was 16.1% during these periods compared to only 11.4% for the periods in which the excess sustainable FCF yield, relative to the benchmark, was negative.

Second, we examined the performance of the model portfolio of ten holdings against the entire benchmark. We found that the model portfolio provided superior subsequent 1-year returns relative to the entire benchmark return 70% of the time, over a period of five years as shown in Exhibit 2.

Exhibit 2: Sustainable FCF analysis adds value

1-Year equity returns of the model (equal-weighted) portfolio relative to the benchmark.



Source: Analysis performed by Mackenzie Investments using data via Bloomberg. Note: "Excess" relative to the entire benchmark as opposed to only its top ten holdings (as in Exhibit 1 above).

Conclusion

Against a backdrop of moderating demand growth for commodities, resource investors could benefit from focusing on the ability of resource companies to sustain their operating earnings and generate sustainable FCF. Sustainable FCF could be redeployed towards accretive growth projects or returned to shareholders.

Commonly used valuation metrics, such as P/E, P/CF or NAV, often inaccurately address (or even ignore) the reinvestment of capital, which is significant for resource companies due to the high capital intensity of resource development and the declining nature of finite resources.

We believe resource investors should separate productive capital expenditures from non-productive expenditures that are required to sustain operating earnings, which are often under-reported as maintenance capital.

Selecting equities that offer superior sustainable FCF yield has been observed to result in above-average equity returns, provided that excess cash flows are allocated in a disciplined manner.

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