Working Capital in Valuation

Understanding the relationship between working capital needs and free cashflow.

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5 minute read

Introduction

I was recently puzzled about the relationship between working capital to free cash flow. Free cash flow is the cash flow produced by the business that is left after making the necessary required investments in long-lived and short-term

assets. FCFF = EBIT (1- tax rate) + Depreciation - Capital Expenditures - Changes in Working Capital.

It is easy to understand how capital expenditures reduce free cash flow. These are the investments that the company needs to make to maintain operating assets. To illustrate, a company that operates a factory sees that factory tear off with normal business use, capex is thus the maintenance expense for the factory to return to its position at the start of the year. Changes in working capital, on the other hand, are more abstract.

Working capital is sometimes used to refer only to current assets, while net working capital is defined to be the difference between current assets and current liabilities. Non-cash working capital looks at the difference between non-cash current assets and current liabilities. When estimating the free cashflows of a company, we look at changes in net non-cash working capital because they represent cash that is being tied up or released.

Increases in working capital are viewed as cash outflows because cash tied up in working capital cannot be used elsewhere in the business and does not earn returns. It is the "does not earn returns" component of this definition that leads us to look at non-cash working capital. Firms with significant cash balances today, especially in the US, earn market returns on their cash (by investing in at least T.Bills). Thus, the cash is productive and changes in the cash should not affect our cash flows.

Furthermore, we subtract current liabilities from non-cash working capital to arrive at net non-cash working capital because it allows us to see only the capital that the business has tied up in working capital. For example, suppliers can finance some of the company's assets, like inventory, by subtracting them we can view only the capital the business has put in.

Finally, when estimating net non-cash working capital we do not include interest-bearing current liabilities. This debt will be considered when computing the cost of capital and it would be inappropriate to count it twice.

Analysis

Considering the above, the question and scenario that puzzled me was why only changes in non-cash working capital were subtracted to calculate a company's free cash flow.

Say XYZ company sells shoes. If the amount of inventory does not change from one year to the next, but the company is operational and generates a profit, how can we estimate free cash flow to the firm? Is not cash flow being tied up in inventory for the company to end up with the same amount?

Let us model the scenario:

Income Statement

1. Company XYZ has $100 in cash and $100 in inventory
2. Company XYZ sells all inventory and earns $200 in revenue, has $100 as the cost of sales, and pays $50 as operation expenses. For illustration purposes, assume no financial expenses or taxes.
3. Company XYZ's net profit is $50

Balance Sheet

1. Before
    a. $200 in assets as $100 in cash and $100 in inventory
    b. $0 Liabilities
    c. $200 in Equity
2. After
    a. $250 in assets as $150 in cash and $100 in inventory
    b. $0 Liabilities
    c. $250 in Equity

Cashflow Statement

1. $50 in net income
2. Changes in Working Capital
    a. $0 as -$50 in inventory (inventory sold) +$50 in inventory (inventory bought),
3. $100 Cash at the beginning of the period
4. $150 Cash at the end of the period

The above displays how if XYZ invests $100 in inventory again, changes in working capital are canceled out with the ones the company sold. Illustrating how the company does not have to tie up more or less capital to achieve the same free cash flow.

Conclusion

Although we experienced a cashflow outflow to buy inventory, we also experienced a cash inflow when we sold it. So if at the end of the period, we maintained the same levels of inventory and then are able to produce the same operating income, then our free cash flow does not change. Notice also that our free cash flow is not $250, the amount it would have been if we did not reinvest in inventory, ***it is $50 because this is the free cash flow that the business can generate with current levels of working capital***. If the business were to require additional working capital to earn the same operating income, then that would effectively reduce our free cash flow, because it is more capital tied up in the business to generate the same return. Likewise, if the business can release working capital and maintain the same operating income, then that would increase free cash flow, and increase the company's return on invested capital.

Notice how working capital needs affect a business's profitability. Firms with significant working capital requirements will find that their working capital

grows as they do, and this working capital growth will reduce their cash flows. Given this relationship between working capital and cash flows, companies that require less working capital as a percentage of revenue are better businesses than companies with high working capital requirements. Better businesses can grow with less capital and thus for every new dollar invested can achieve a higher return.

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