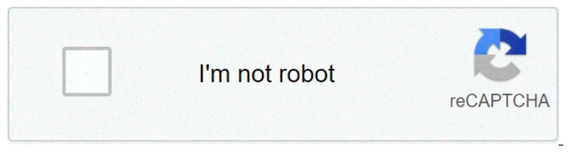

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Working capital and capital expenditure

Working Capital, Net Working Capital and Non-Cash Working Capital 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. In investment analysis, 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 would lead 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.Bills0). Thus, the cash is productive and changes in the cash should not affect our cash flows. To the degree that cash cannot be invested to earn market returns, and is needed for day-to-day operations, it is appropriate to look at changes in net working capital, with cash included. Operating versus Capital Expenditures Accountants draw a distinction between expenditures that yield benefits only in the immediate period or periods (such as labor and material for a manufacturing firm) and those that yield benefits over multiple periods (such as land, buildings and long-lived plant). The former are called operating expenses and are subtracted from revenues in computing the accounting income, while the latter are capital expenditures and are not subtracted from revenues in the period that they are made. Instead, the expenditure is spread over multiple periods and deducted as an expense in each period - these expenses are called depreciation (if the asset is a tangible asset like a building) or amortization (if the asset is an intangible asset like a patent or a trade mark). While the capital expenditures made at the beginning of a project are often the largest and most prominent, many projects require capital expenditures during their lifetime. These capital expenditures will reduce the cash available in each of these periods.Depreciation, Amortization and Other Non-cash Charges The distinction that accountants draw between operating and capital expenses leads to a number of accounting expenses, such as depreciation and amortization, which are not cash expenses. These non-cash expenses, while depressing accounting income, do not reduce cash flows. In fact, they can have a significant positive impact on cash flows, if they affect the tax liability of the firm. Some non-cash charges reduce the taxable income and the taxes paid by a business. The most important of such charges is depreciation, which, while reducing taxable and net income, does not cause a cash outflow. Consequently, depreciation is added back to net income to arrive at the cash flows on a project. For projects that generate large depreciation charges, a significant portion of the cash flows can be attributed to the tax benefits of depreciation, which can be written as follows Tax Benefit of Depreciation = Depreciation * Marginal Tax Rate While depreciation is similar to other tax deductible expenses in terms of the tax benefit it generates, its impact is more positive because it does not generate a concurrent cash outflow. Amortization is also a non-cash charge, but the tax effects of amortization can vary depending upon the nature of the amortization. Some amortization, such as the amortization of the price paid for a patent or a trade mark, are tax deductible and reduce both accounting income and taxes. Thus, they provide tax benefits similar to depreciation. Other amortization, such as the amortization of the premium paid on an acquisition (called goodwill), reduces accounting income but not taxable income. This amortization does not provide a tax benefit. Capital Expenditures and Depreciation In project analysis, it is important that assumptions about capital expenditures, depreciation and working capital be consistent. For instance, - If the project is assumed to have a very long life or an infinite life, the firm will have to make much larger capital maintenance expenditure. As a simple rule of thumb, when projects have infinite life, the capital maintenance expenditures should approach depreciation. This will, if nothing else, ensure that the book value of the investment does not decline. More importantly, it is necessary to preserve the earning power of the assets - For projects with shorter lives, it is possible that capital expenditures occur up front, and that depreciation in subsequent years is much greater than capital expenditure. The book value of the investment will decline over time to the salvage value. ROC, Cost of Capital, NPV and EVA Economic value added is a value enhancement concept that has caught the attention of both firms interested in increasing their value and portfolio managers, looking for good investments. EVA is a measure of dollar surplus value created by a firm or project and is measured by doing the following: Economic Value Added (EVA) = (Return on Capital - Cost of Capital) (Capital Invested) where the return on capital is measured using "adjusted" operating income, where the adjustments eliminate items that are unrelated to existing investments, and the capital investment is based upon the book value of capital, but is designed to measure the capital invested in existing assets. Firms which have positive EVA are firms which are creating surplus value, and firms with negative EVA are destroying value. In the context of investment analysis, the present value of the EVA created by a project should be equal to the net present value of the project. ROE, Cost of Equity and Equity EVA While EVA is usually calculated using total capital, it can be easily modified to be an equity measure: Equity EVA = (Return on Equity - Cost of Equity) (Equity Invested in Project or Firm) Again, a firm which earns a positive equity EVA is creating value for its stockholders while a firm with a negative equity EVA is destroying value for its stockholders. Equity EVA may be the better way of thinking about value created for firms where capital is tough to measure (such as banks and insurance companies). Equity Analysis versus Firm Analysis An investment project can be analyzed in terms of all of the capital invested in the project (firm) or just from the perspective of the equity investors in the firm. If done consistently, cash flows to the firm discounted at the cost of capital or cash flows to equity discounted at the cost of equity, the two approaches should yield similar results if the following conditions hold: a. The project is financed using the same mix of debt and equity as is used in the computation of the cost of capital. b. The debt is assumed to have an interest rate equal to the pre-tax cost of debtCurrency Effects on Investment Analysis One of the debates that analysts often engage in when doing investment analysis is whether the analysis should be done in one currency or another. Intuitively, an analysis of whether a project is a good or bad one should not depend upon what currency the analysis is done in. The important fact to keep in mind is that cash flows and the discount rate have to be estimated consistently. To convert the analysis from one currency to another would have required the following steps: Step 1: Estimate the expected exchange rate for each period of the analysis. While forward rates might be available for some currencies for a few periods, there are very few cases where forward rates will be available for the entire project life. To estimate the expected exchange rate, draw on the purchasing power parity theorem that argues that changes in exchange rates between two countries will reflect differences in inflation in those countries. Step 2: Convert the expected cashflows from one currency to the other in future periods, using these exchange rates. Step 3: Discount the expected cashflows at a discount rate, based upon the same currency.Real versus Nominal Investment Analysis Investment analyses can be done in terms of real or nominal cash flows. The discount rates have to be defined consistently - real for real cash flows and nominal for nominal cash flows. If done consistently, each analysis should yield the same net present value. The choice between nominal and real cash flows therefore boils down to one of convenience. When inflation rates are low, it is better to do the analysis in nominal terms since taxes are based upon nominal income. When inflation rates are high and volatile, it is easier to do the analysis in real terms. Given a choice, I would rather do the analysis in nominal terms, since taxes and financial statements are usually based upon nominal results.Corporate Strategy and Project Quality In the process of analyzing new investments in the preceding chapters, we have contended that good projects have a positive net present value and earn an internal rate of return greater than the hurdle rate. While these criteria are certainly valid from a measurement standpoint, they do not address the deeper questions about good projects including the economic conditions that make for a "good" project and why it is that some firms have a more ready supply of "good" projects than others. Implicit in the definition of a good project -- one that earns a return that is greater than that earned on investments of equivalent risk -- is the existence of super-normal returns to the business considering the project. In a competitive market for real investments, the existence of these excess returns should act as a magnet, attracting competitors to take on similar investments. In the process, the excess returns should dissipate over time; how quickly they dissipate will depend on the ease with which competition can enter the market and provide close substitutes and on the magnitude of any differential advantages that the business with the good projects might possess. Take an extreme scenario, whereby the business with the good projects has no differential advantage in cost or product quality over its competitors, and new competitors can enter the market easily and at low cost to provide substitutes. In this case the super-normal returns on these projects should disappear very quickly. An integral basis for the existence of a "good" project is the creation and maintenance of barriers to new or existing competitors taking on equivalent or similar projects. These barriers can take different forms, including a. Economies of scale: Some projects might earn high returns only if they are done on a "large" scale, thus restricting competition from smaller companies. In such cases, large companies in this line of business may be able to continue to earn super-normal returns on their projects because smaller competitors will not be able to replicate them. b. Cost Advantages: A business might work at establishing a cost advantage over its competitors, either by being more efficient or by taking advantage of arrangements that its competitors cannot use. For example, in the late 1980s, Southwest Airlines was able to establish a cost advantage over its larger competitors, such as American and United Airlines by using non-union employees, the company exploited this cost advantage to earn much higher returns. c. Capital Requirements: Entry into some businesses might require such large investments that it discourages competitors from entering, even though projects in those businesses may earn above-market returns. For example, assume that Boeing is faced with a large number of high-return projects in the aerospace business. While this scenario would normally attract competitors, the huge initial investment needed to enter this business would enable Boeing to continue to earn these high returns. d. Product Differentiation: Some businesses continue to earn excess returns by differentiating their products from those of their competitors, leading to either higher profit margins or higher sales. This differentiation can be created in a number of ways - through effective advertising and promotion (Coca Cola), technical expertise (Sony), better service (Nordstrom) and responsiveness to customer needs. e. Access to Distribution Channels: Those firms that have much better access to the distribution channels for their products than their competitors are better able to earn excess returns. In some cases, the restricted access to outsiders is due to tradition or loyalty to existing competitors. In other cases, the firm may actually own the distribution channel, and competitors may not be able to develop their own distribution channels because the costs are prohibitive. f. Legal and Government Barriers: In some cases, a firm may be able to exploit investment opportunities without worrying about competition because of restrictions on competitors from product patents the firm may own to government restrictions on competitive entry. These arise, for instance, when companies are allowed to patent products or services, and gain the exclusive right to provide them over the patent life. Quality of Management and Project Quality In the preceding section we examined some of the factors that determine the attractiveness of the projects a firm will face. While some factors, such as government restrictions on entry, may largely be out of the control of incumbent management, there are other factors that can clearly be influenced by management. may largely be out of the control of incumbent management, there are other factors that can clearly be influenced by management. Considering each of the factors discussed above, for instance, we would argue that a good management team can increase both the number of and the returns on available projects by - taking projects that exploit any economies of scale that the firm may possess; in addition, management can look for ways it can create economies of scale in the firm’s existing operations. - establishing and nurturing cost advantages over its competitors; some cost advantages may arise from labor negotiations, while others may result from long-term strategic decisions made by the firm. For instance, by owning and developing SABRE, the airline reservation system, American Airlines has been able to gain a cost advantage over its competitors. - taking actions that increase the initial cost for new entrants into the business; one of the primary reasons Microsoft’s was able to dominate the computer software market in the early 1990s was its ability to increase the investment needed to develop and market software programs. - increasing brand name recognition and value through advertising and by delivering superior products to customers; a good example is the success that Snapple experienced in the early 1990s in promoting and selling its iced tea beverages. - nurturing markets in which the company’s differential advantage is greatest, in terms of either cost of delivery or brand name value. In some cases, this will involve expanding into foreign markets, as both Levi Strauss and McDonalds did in the 1980s in order to exploit their higher brand name recognition in those markets. In other cases, this may require concentrating on segments of an existing market as The Gap did, when it opened its Banana Republic division, which sells upscale outdoor clothing. - improving the firm’s reputation for customer service and product delivery; this will enable the firm to increase both profits and returns. One of the primary factors behind Chrysler’s financial recovery in the 1980s was the company’s ability to establish a reputation for producing quality cars and minivans. - developing distribution channels that are unique and cannot be easily accessed by competitors. Avon, for instance, employed large sales force to go door-to-door to reach consumers who could not be reached by other distribution channels. - getting patents on products or technologies that keep out the competition and earn high returns; doing so may require large investments in research and development over time. It can be argued that Intel’s success in the market for semiconductors can be traced to the strength of its research and development efforts and the patents it consequently obtained on advanced chips, such as the Pentium. While the quality of management is typically related to the quality of projects a firm possesses, a good management team does not guarantee the existence of good projects. In fact, there is a rather large element of chance involved in the process; even the best laid plans of the management team to create project opportunities may come to naught if circumstances conspire against them – a recession may upend a retailer, or an oil price shock may cause an airline to lose money.