

## BASIC ACCOUNTING – 3

### RETURN ON INVESTMENT

*Cast thy bread upon the waters: for thou shalt find it after many days.*  
--Ecclesiastes 11:1 (KJV)--

Obviously, for it to be worthwhile, the returning bread should be more abundant than the bread originally *cast upon the waters*.

**Investment** can be described as the commitment of resources (funds) to a venture in the expectation future benefits (returns). Investment is thus every asset that an investor owns or controls (directly or indirectly) that has such characteristics. Investment also entails the assumption of risk. While in the spiritual sense, casting of bread will always bring an abundance of returns of the same kind, this does not always happen in the financial – thereby introducing the concept of **risk**.

In the financial sense investment is the commitment of funds (personal or institutional) for the purpose of deriving future benefits in the form of income, e.g. dividends, pensions, or appreciation in the value of capital, etc. Examples include: the purchase of shares, debentures, bonds, insurance policies, treasury bills, guaranteed investment certificates, etc.; all are financial investments which generate financial assets.

In the economic sense, **investment** is the addition to the capital stock of the economy. This (the capital stock) consists of goods and services that are employed in the production of other goods and services. Examples of these include new constructions of plants, machines and other infrastructure, and addition to inventories, etc. Investment in education and health also fall into this economic category – though some (mainly from the more extreme right of the political divide) might want to dispute this.

**Return** is money that is earned from an investment. The expectation of returns is an essential driving element of investment. Generally (but not always), the higher the potential return, the higher the associated risk. A high return/low risk scenario normally attracts such a high inflow of new entrants (competitors) that tends to erode those returns and bring them down to normal over time.

A popular estimation for the attractiveness of an investment is “**Return on Investment**” (ROI). “What is the ROI?” is one of the questions most frequently asked by executives and investors, when considering a new project or proposal.

ROI analysis is just one of the tools available for the assessment of the future prospects of a business proposal, and the appraisal of the performance of a business that is already up and running. It can also be used in combination with other tools to assess the value (or projected value) of a business over time. It is important to select and apply the correct tool or combination of tools to conduct the analysis that is appropriate to the decision at hand.

The purpose of conducting an ROI varies and can be one or more of the following:

- Evaluation and selection from two or more investment options;
- The place and importance of an investment in the overall structure of a state, company or enterprise;
- Performance management of business units and evaluation of the performance of individual managers in decentralized companies;
- Evaluating existing systems and providing a rationale for future investments and acquisition decisions.

Return on investment or ROI is a profitability ratio that calculates the profits of an investment as a percentage of the original cost. In other words, it measures how much money was made on the investment as a percentage of the purchase price. It shows investors how efficiently each naira (dollar or pound etc.) invested in a project is at producing a profit. Investors not only use this ratio to measure how well an investment performed, they also use it to compare the performance of different investments of all types and sizes.

#### Definition(s) of Return On Investment:

- One conceptual definition is that Return On Investment is a project's net output (cost savings and/or new revenue that results from a project less the total project costs), divided by the project's total inputs (total costs), and expressed as a percentage.
- Return On Investment is a calculation of the most tangible financial gains or benefits that can be expected from a project compared to the costs for implementing the suggested program or solution.
- Return On Investment represents a ratio of the expected financial gains (benefits) of a project to its total costs.

In summary, ROI is a performance measure used to evaluate the **efficiency** of an investment or to compare the efficiency of a number of different investments.

ROI is a fraction (or a percentage on conversion), the numerator of which is "net gain" (return, profit, benefit) earned as a result of the project (activity, system operations), while the denominator is the "cost" (investment) spent to achieve the result.

Because it is a percentage, ROI can clear up some of the confusion arising from merely looking at the monetary value of the returns of a venture or business. The monetary value is meaningless without considering the cost of the investment.

Normally the formula used for Return On Investment (ROI) calculation is given below:

$$\text{ROI} = \frac{\text{Net Benefits}}{\text{Total Cost}} \times 100$$

In the equation above net benefits equals total benefits (total income) minus total

cost. It is the incremental financial gain (or loss).

Or

$$\text{ROI} = \frac{\text{Investment Revenue} - \text{Investment Cost}}{\text{Investment Cost}} \times 100$$

Or

$$\text{ROI} = \frac{\text{Project Output} - \text{Project Input}}{\text{Project Input}} \times 100$$

Where the project outputs/investment revenue are all of the benefits of the project quantified in terms of cost savings and revenue generation, and the project inputs/investment costs are all of the costs of the project incurred to produce or sell the product(s) including operating and non-operating costs.

Or

$$\text{ROI} = \frac{\text{Net profit after taxes}}{\text{Total paid in capital}} \times 100$$

The ratio (or *percentage*) is calculated as net profit after tax divided by the total paid in capital. ROI measures the firm's efficiency in utilizing invested capital. In other words this ratio (or *percentage*) expresses company's ability to generate the required return (expected return) based on using and managing the resources invested by the shareholders.

More specialized forms of ROI include:

#### **Return on ordinary shareholders' funds (ROSF)**

The **return on ordinary shareholders' funds** compares the amount of profit available to the owners, with the owners' average stake in the business during the same period. The ratio (which is normally expressed in percentage terms) is as follows:

$$\text{ROSF} = \frac{\text{Net profit after taxes}}{\text{Ordinary capital}} \times 100$$

#### **Return on capital employed (ROCE)**

The **return on capital employed** is a fundamental measure of business performance. This ratio expresses the relationship between the net profit generated during a period and the average long-term capital invested in the business during the period. The ratio is expressed in percentage terms and is as follows:

$$\text{ROCE} = \frac{\text{Net profit before interest and taxes}}{\text{Share capital} + \text{Long term loans}} \times 100$$

## Examples of Very Simple ROI Calculations

### Example I

Investing in Joe's Pizza.

If you buy 20 shares of Joe's Pizza for \$10 a share, your investment cost is \$200.

If you share those shares for \$250, then your:

$$\text{ROI} = \frac{\$250 - 200}{\$200} \times 100 = 25\%$$

There are a couple of different ways to think about this. The popular one is to picture dollar invested in this stock paying 25 cents to you. Putting more money in the stock will result in a larger total payout, but it won't increase the ROI, which remains 25%.

### Example II

Take for example Peter & Paul Brokerage House. Peter and Paul are stockbrokers who specialize in stocks. Peter and Paul made a risky investment in a liquid platinum stock the year before when they purchased 10,000 shares at =N=4.30 per share. A year later, the market value of per share is =N=9.50 when the shares were sold. In another investment Peter and Paul purchased 1,000 shares at =N=3.20 per share in a petroleum company and sold them for =N=4.25 per share in the same time frame. Using an ROI calculator to measure their performance in both investments, we find:

Liquid platinum investment:

$$\begin{aligned} \text{ROI} &= \frac{\text{Net Benefits}}{\text{Total Cost}} \times 100 \\ &= \frac{95,000 - 43,000}{43,000} \times 100 \\ &= 121\% \end{aligned}$$

Petroleum Company investment:

$$\begin{aligned} \text{ROI} &= \frac{\text{Net Benefits}}{\text{Total Cost}} \times 100 \\ &= \frac{42,500 - 32,000}{32,000} \times 100 \\ &= 33\% \end{aligned}$$

The platinum investment yielded a much higher return than the petroleum investment and is thus more attractive, if there are no other considerations at issue.

## Limitations of The Use of ROI

A cursory comparison of investments using ROI can lead one to make some incorrect conclusions about their profitability. Given that ROI does not inherently take into account the amount of time during which the investment in question is taking place, this metric is often used in conjunction with others that necessarily pertain to a specified period of time, introducing the concept of *rate of return* and the time value of money (a dollar at hand is worth more now than it will be at a future date). These *performance measures* take such time-dependent variables as *Interest Rates*, *Inflation* and *Risk* into consideration, and thereby give a more accurate assessment of an investment or investment proposal. These measures include *Net Present Value (NPV)* and *Internal Rate of Return (IRR)*. These will be discussed in more detail in other presentations in this series.