



# INVESTMENT CALCULATOR

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**Abstract:** Return on Investment is a Level Five training evaluation model that compares costs to benefits and expresses the return as a percent. It is a useful model to communicate the benefits of training to program stakeholders. ROI (return on investment) calculators are becoming especially powerful tools for marketers today. This type of interactive content helps your customer project their ROI should they buy your product or service. With this personalized information in hand, they can make an educated decision about whether or not to buy. Using an ROI formula, an investor can separate low-performing investments from high-performing investments. With this approach, investors and portfolio managers can attempt to optimize their investments.

**Keywords:** Investment calculator for Return of Investment.

## 1. INTRODUCTION:

Return on Investment or ROI shows you the return from your investments. It helps you to choose the best investment across different investment options. You may evaluate the investment based on your financial goals and risk tolerance. You could also gauge the cost of your investment and look for hidden charges that could eat up your returns. The return on investment is usually expressed as a percentage. In simple terms, the return on investment is a financial ratio that helps you determine the benefit of your investment against the costs. You may calculate the return on investment using the formula:  $ROI = \text{Net Profit} / \text{Cost of the investment} * 100$  If you are an investor, the ROI shows you the profitability of your investments. If you invest your money in mutual funds, the return on investment shows you the gain from your mutual fund schemes. ROI may be positive or negative. If the return on investment is negative, you are actually losing money on the investment. You must pick an investment that may offer you the maximum return over a period. The ROI calculator is a simulation that helps you gauge the profitability of your investments. You may use the ROI calculator to determine the return from investments across various periods. The ROI Calculator consists of a formula box, where you enter the initial amount invested, the amount returned, and the investment period. The ROI Calculator shows you the total gain on investment. It also shows you the absolute return on investment, annualised return on investment, and the CAGR or the compounded annual growth rate.

## 2. LITERATURE REVIEW:

In finance, Return on Investment, usually abbreviated as ROI, is a common, widespread metric used to evaluate the forecasted profitability on different investments. Before any serious investment opportunities are even considered, ROI is a solid base from which to go forth. The metric can be applied to anything from stocks, real estate, employees, to even a sheep farm; anything that has a cost with the potential to derive gains from can have an ROI assigned to it. While much more intricate formulas exist to help calculate rate of return on investments accurately, ROI is lauded and still widely used due to its simplicity and broad usage as a quick-and-dirty method. Many money-making schemes involve several businessmen seated at a table during lunch talking about potential investments to dive into, until one of them exclaims about one with a very high ROI after doing the calculations on a napkin.

ROI maybe confused with ROR, or rate of return. Sometime, they can be used interchangeably, but there is a big difference: ROR can denote a period of time, often annually, while ROI doesn't.

The basic formula for ROI is:

$$ROI = \frac{\text{Gain from Investment} - \text{Cost of Investment}}{\text{Cost of Investment}}$$

As a most basic example, Bob wants to calculate the ROI on his sheep farming operation. From the beginning until present, he invested a total of \$50,000 into the project, and his total profits to date sum up to \$70,000.

$$\frac{\$70,000 - \$50,000}{\$50,000} = 40\%$$



\$50,000

Bob's ROI on his sheep farming operation is 40%. Conversely, the formula can be used to compute either gain from or cost of investment, given a desired ROI. If Bob wanted an ROI of 40% and knew his initial cost of investment was \$50,000, \$70,000 is the gain he must make from the initial investment to realize his desired ROI.

### 3. HOW TO CALCULATE RETURN ON INVESTMENT:

Return on investment (ROI) is a financial metric that is widely used to measure the probability of gaining a return from an investment. It is a ratio that compares the gain or loss from an investment relative to its cost. It is as useful in evaluating the potential return from a stand-alone investment as it is in comparing returns from several investments.

In business analysis, ROI and other cash flow measures—such as internal rate of return (IRR) and net present value (NPV)—are key metrics that are used to evaluate and rank the attractiveness of a number of different investment alternatives. Although ROI is a ratio, it is typically expressed as a percentage rather than as a ratio.

#### KEY TAKEAWAYS

- Return on investment (ROI) is an approximate measure of an investment's profitability.
- ROI has a wide range of applications; it can be used to measure the profitability of a stock investment, when deciding whether or not to invest in the purchase of a business, or evaluate the results of a real estate transaction.
- ROI is calculated by subtracting the initial value of the investment from the final value of the investment (which equals the net return), then dividing this new number (the net return) by the cost of the investment, and, finally, multiplying it by 100.
- ROI is relatively easy to calculate and understand, and its simplicity means that it is a standardized, universal measure of profitability.
- One disadvantage of ROI is that it doesn't account for how long an investment is held; so, a profitability measure that incorporates the holding period may be more useful for an investor that wants to compare potential investments.

#### ROI can be calculated using two different methods:

##### First method:

$$ROI = \frac{\text{Net Return on Investment}}{\text{Cost of Investment}} \times 100$$

##### Second method:

$$ROI = \frac{\text{Final Value of Investment} - \text{Initial Value of Investment}}{\text{Cost of investment}} \times 100$$

#### **Interpreting the Return on Investment (ROI):**

When interpreting ROI calculations, it's important to keep a few things in mind. First, ROI is typically expressed as a percentage because it is intuitively easier to understand (as opposed to when expressed as a ratio). Second, the ROI calculation includes the net return in the numerator because returns from an investment can be either positive or negative.

When ROI calculations yield a positive figure, it means that net returns are in the black (because total returns exceed total costs). Alternatively, when ROI calculations yield a negative figure, it means that net returns are in the red because total costs exceed total returns. (In other words, this investment produces a loss.) Finally, to calculate ROI with the highest degree of accuracy, total returns and total costs should be considered. For an apples-to-apples comparison between competing investments, annualized ROI should be considered.



#### 4. RETURN ON INVESTMENT (ROI) EXAMPLE:

Assume an investor bought 1,000 shares of the hypothetical company Worldwide Wicket Co. at \$10 per share. One year later, the investor sold the shares for \$12.50. The investor earned dividends of \$500 over the one-year holding period. The investor also spent a total of \$125 on trading commissions in order to buy and sell the shares.

The ROI for this investor can be calculated as follows:

$$\text{ROI} = [(\$12.50 - \$10.00) * 1000 + \$500 - \$125] \div (\$10.00 * 1000) * 100 = 28.75\%$$

Here is a step-by-step analysis of the calculation:

1. To calculate net returns, total returns and total costs must be considered. Total returns for a stock result from capital gains and dividends. Total costs would include the initial purchase price as well as any commissions paid.
2. In the above calculation, the gross capital gain (before commissions) from this trade is  $(\$12.50 - \$10.00) \times 1,000$ . The \$500 amount refers to the dividends received by holding the stock, while \$125 is the total commissions paid. If you further dissect the ROI into its component parts, it is revealed that 23.75% came from capital gains and 5% came from dividends. This distinction is important because capital gains and dividends are taxed at different rates in most jurisdictions.

$$\text{ROI} = \text{Gross Capital Gains \%} - \text{Commission \%} + \text{Dividend Yield}$$

$$\text{Gross Capital Gains} = \$2500 \div \$10,000 * 100 = 25.00\%$$

$$\text{Commissions} = \$125 \div \$10,000 * 100 = 1.25\%$$

$$\text{Dividend Yield} = \$500 \div \$10,000 * 100 = 5.00\%$$

$$\text{ROI} = 25.00\% - 1.25\% + 5.00\% = 28.75\%$$

#### 5. THE USE OF THE ROI FORMULA CALCULATION:

ROI calculations are simple and help an investor decide whether to take or skip an investment opportunity. The calculation can also be an indication of how an investment has performed to date. When an investment shows a positive or negative ROI, it can be an important indication to the investor about the value of their investment. Using an ROI formula, an investor can separate low-performing investments from high-performing investments. With this approach, investors and portfolio managers can attempt to optimize their investments.

##### 5.1. Benefits of the ROI Formula:

There are many benefits to using the return on investment ratio that every analyst should be aware of.

1. Simple and Easy to Calculate

The return on investment metric is frequently used because it's so easy to calculate. Only two figures are required – the benefit and the cost. Because a “return” can mean different things to different people, the ROI formula is easy to use, as there is not a strict definition of “return”.

2. Universally Understood

Return on investment is a universally understood concept so it's almost guaranteed that if you use the metric in conversation, then people will know what you're talking about.

##### 5.2. Limitations of the ROI Formula:

While the ratio is often very useful, there are also some limitations to the ROI formula that are important to know. Below are two key points that are worthy of note.

1. The ROI Formula Disregards the Factor of Time



A higher ROI number does not always mean a better investment option. For example, two investments have the same ROI of 50%. However, the first investment is completed in three years, while the second investment needs five years to produce the same yield. The same ROI for both investments blurred the bigger picture, but when the factor of time was added, the investor easily sees the better option. The investor needs to compare two instruments under the same time period and same circumstances.

## 2. The ROI Formula is Susceptible to Manipulation

An ROI calculation will differ between two people depending on what ROI formula is used in the calculation. A marketing manager can use the property calculation explained in the example section without accounting for additional costs such as maintenance costs, property taxes, sales fees, stamp duties, and legal costs. An investor needs to look at the true ROI, which accounts for all possible costs incurred when each investment increases in value. Generally, any positive ROI is considered a good return. This means that the total cost of the investment was recouped in addition to some profits left over. A negative return on investment means that the revenues weren't even enough to cover the total costs. That being said, higher return rates are always better than lower return rates.

### Advantages of Return Of Investment:

#### ROI has the following advantages:

##### 1. Better Measure of Profitability:

It relates net income to investments made in a division giving a better measure of divisional profitability. All divisional managers know that their performance will be judged in terms of how they have utilized assets to earn profit, this will encourage them to make optimum use of assets. Also, it ensures that assets are acquired only when they are sure to give returns in consonance with the organisation's policy. Thus, the major focus of ROI is on the required level of investment. For a given business unit at a given point of time, there is an optimum level of investment in each asset that helps maximise earnings. A cost-benefit analysis of this kind helps managers find out the rate of return that can be expected from different investment proposals. This allows them to choose an investment that will enhance both divisional and organisational profit performance as well as enable effective utilisation of existing investments.

##### 2. Achieving Goal Congruence:

ROI ensures goal congruence between the different divisions and the firm. Any increase in divisional ROI will bring improvement in overall ROI of the entire organization.

##### 3. Comparative Analysis:

ROI helps in making comparison between different business units in terms of profitability and asset utilization. It may be used for inter firm comparisons, provided that the firms whose results are being compared are of comparable size and of the same industry. ROI a good measure because it can be easily compared with the related cost of capital to decide the selection of investment opportunities.

##### 4. Performance of Investment Division:

ROI is significant in measuring the performance of investment division which focuses on earning maximum profit and making appropriate decisions regarding acquisition and disposal of capital assets. Performance of investment centre manager can also be assessed advantageously with ROI.

##### 5. ROI as Indicator of Other Performance Ingredients:

ROI is considered the single most important measure of performance of an investment division and it includes other performance aspects of a business unit. A better ROI means that an investment centre has satisfactory results in other fields of performance such as cost management, effective asset utilization, selling price strategy, marketing and promotional strategy etc.



#### 6. Matching with Accounting Measurements:

ROI is based on financial accounting measurements accepted in traditional accounting. It does not require a new accounting measurement to generate information for calculating ROI. All the numbers required for calculating ROI are easily available in financial statements prepared in conventional accounting system. Some adjustments in existing accounting numbers may be necessary to compute ROI, but this does not pose any problem in calculating ROI.

#### Disadvantages of Return Of Investment:

##### ROI has the following limitations:

1. Satisfactory definition of profit and investment are difficult to find. Profit has many concepts such as profit before interest and tax, profit after interest and tax, controllable profit, profit after deducting all allocated fixed costs. Similarly, the term investment may have many connotations such as gross book value, net book value, historical cost of assets, current cost of assets, assets including or excluding intangible assets.
2. While comparing ROI of different companies, it is necessary that the companies use similar accounting policies and methods in respect of valuation of stocks, valuation of fixed assets, apportionment of overheads, treatment of research and development expenditure, etc.
3. ROI may influence a divisional manager to select only investments with high rates of return (i.e., rates which are in line or above his target ROI). Other investments that would reduce the division's ROI but could increase the value of the business may be rejected by the divisional manager. It is likely that another division may invest the available funds in a project that might improve its existing ROI (which may be lower than a division's ROI which has rejected the investment) but which will not contribute as much to the enterprise as a whole.

These types of decisions are sub-optimal and can distort an enterprise's overall allocation of resources and can motivate a manager to make under investing in order to preserve its existing ROI. A good or satisfactory return is defined as an ROI in excess of some minimum desired rate of return, usually based on the firm's cost of capital.

Business units having higher ROI and some other units having lower ROI are impacted differently by using ROI as investment selection criteria, ROI evaluation provides disincentive to the best division (having higher ROI) to grow, whereas the division with the lowest ROI will have an incentive to invest in new projects to improve their ROI. In this situation, the most profitable units are demotivated to invest in a project that does not exceed their current ROI, although the project would give a good return. This may be in conflict with goal congruence and interests of the firm as a whole.

Suppose a division's ROI is 25%

$$\text{ROI} = \text{Profit Rs } 1,00,000 / \text{Investment Rs } 4,00,000 \times 100$$

Suppose, there is an opportunity to make additional investment of Rs 2,00,000 which will give 20% ROI. This investment is acceptable to the company because the company requires a minimum 15% ROI for this type of investment.

#### This investment lowers the division's ROI to 23.3% calculated as follows:

$$\text{New ROI} = \text{Rs } 1,00,000 + (\text{Rs } 4,00,000 / \text{Rs } 4,00,000) + (\text{Rs } 2,00,000 \times 100)$$

A comparison of old ROI (25%) with the new ROI 23.3% would imply that performance has declined. Consequently, a divisional manager might decide not to make such an investment.

4. ROI provides focus on short term results and profitability; long term profitability focus is ignored. ROI considers current period's revenue and cost and do not pay attention to those expenditures and investments that will increase long



term profitability of a business unit. Based on ROI, the managers tend to avoid the new investments and expenditure due to returns being uncertain or return may not be realized for sometime.

Managers using ROI may cut spending on employee training, productivity improvements, advertising, research and development with the narrow objective of improving the current ROI. However, these decisions may impact long term profitability negatively. Therefore, it is advisable for the investment division or business unit to use ROI as only one parameter of an overall evaluation criteria to decide the acceptances/rejection of new investment.

5. Investment Centre managers can influence (manipulate) ROI by changing accounting policies, determination of investment size or asset, treatment of certain items as revenue or capital. Sometimes, managers may reduce the investment base by scrapping old machines that still earn a positive return but less than others. Thus, the practice of abandoning old machines that are still serviceable may be used by managers to increase their ROI and a series of such actions may be harmful to the organisation as a whole.

## 6. PROPOSED SYSTEM

In this web-based investment calculator, anybody can simply sit in the consolation of anywhere he/she is and calculate any respective number of calculation he/she needs. The client can very easily make his decision of his money where to invest and how much to invest respectively with his choice because its so easy to use that he can get all his plans executed through this web based calculator. Even if the person makes mistake while putting the number or forgets executing some options could be given in order that he/she will be able to get what he/she wants to put in particular option available out there. And the best thing is ,users logging on to the web page doesn't require any passcode to enter the program as its free for everyone and anytime .This is a simple tool that allows individuals to get an idea of returns on their mutual fund investments made through this web based sip calculator .

## 7.SUMMARY CONCLUSION

The Web Based Calculator is one step closer to growing productiveness and pleasant of service provided . The return on investment is an analytic tool that helps investors understand how successful a business or project is. Still, the ROI can provide a good foundation for understanding the current condition of an investment. With the implementation of this system; involved persons can very simply calculate all his money which he wishes to invest.

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