

Understanding Returns

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WHAT'S COVERED

In this lesson, you will learn about the total percentage return of an investment. Specifically, it will cover:

1. Securities to Report
2. Reporting Obligations
 - 2a. Capital Gains
 - 2b. Potential Reductions and Deferrals
3. Dollar Returns
4. Percentage Returns
 - 4a. Total Returns
 - 4b. Annual Returns
5. Historical Returns: Market Variability and Volatility

1. Securities to Report

Both organizations and individual investors trade a wide variety of financial securities with the intention of gaining returns upon these investments. **Securities** include exchanges involving:

- Debt securities (bonds, banknotes, debentures, etc.)
- Equity securities (mutual funds, stock, commodities, etc.)
- Derivatives (options, forwards, futures, swaps, etc.)

When considering the returns derived from these various investments, organizations and individuals must be aware of the reporting obligations in the country in which those securities are traded. Organizations like the IRS have a wide variety of taxation requisites depending upon different investment situations, and understanding these regulations is critical to ethical trading and adherence to legalities.



TERM TO KNOW

Securities

2. Reporting Obligations

2a. Capital Gains

Most commonly, reporting of investments will fall under the reporting of capital gains. Both organizations and individuals must report any and all capital gains within a given time period. These **capital gains** are profits derived from the sale of investments, which is to say that existing investments where capital is still tied in the underlying asset is not taxable (though it must be reported on the balance sheet for organizations as assets).

When profits from short-term investments are derived in a taxation period for an organization, this profit is reported on the income statement and taxed accordingly. Capital gains taxes can differ based on the duration and type of investment made, but for the sake of this discussion, it is enough to understand that an existing investment is an asset on the balance sheet and profit from the trade of an investment should be reported as profit (or loss) on the income statement.



TERM TO KNOW

Capital Gains

Values captured from the trade of assets on the securities market.

2b. Potential Reductions and Deferrals

As with most regulatory environments, it is not a one-size-fits-all model. There are various situations where capital gains taxes can be reduced through understanding the legislation and reporting accurately and strategically.

A few examples of potential reductions or deferrals in capital gains reporting include:

- In some countries, specific industry investments receive tax breaks to stimulate economic growth. For instance, an investment in new green technologies is often a source of potential tax breaks, as it is beneficial to the broader economy and world at large.
- Retirement investments are often tax-free (until withdrawn) to stimulate responsible saving and retirement planning. This allows companies to accumulate interest on what would have been taxable income until the capital is removed from the account.
- The sale of an asset at a loss is often a tax-deductible, as are other capital losses.
- Donations of assets or capital to charity are tax-deductible in most situations.
- Occasionally, the acquisition of certain assets will have the value reevaluated. In such situations, the difference between the original price and the new price may be a source of tax deduction.

While there are countless other small legislative items that may indicate tax implications on capital gains, this gives a reasonable overview of the types of considerations accountants make when considering capital gains.

3. Dollar Returns

The **dollar return** of a security is the difference between the initial and ending value. Finding the dollar return for securities that trade in open markets is a matter of finding the difference in price from year to year.

IN CONTEXT

Consider a scenario in which a \$100 security earns a stated return of 5% per year.

\$100 security	Year 1	Year 2	Year 3	Year 4
Rate of Return	5%	5%	5%	5%
Geometric Average at End of Year	5%	5%	5%	5%
Capital at End of Year	\$105.00	\$110.25	\$115.76	\$121.55
Dollar Profit/Loss	\$5.00	\$10.25	\$15.76	\$21.55

At the end of year 1, it is worth \$105, which is \$5 more than \$100 (its value at the beginning of Year 1), so the dollar return is \$5. The capital value at the end of Year 2 is \$110.25, which is \$5.25 more than at the end of Year 1, and \$10.25 more than at the beginning of Year 1. Therefore, the dollar gain is \$10.25. This continues for each successive year.

The dollar return does not take into account things like the time value of money or the amount of return earned per year; it is simply the difference in nominal values. This means that dollar returns can provide an incomplete picture if used incorrectly.

⇒ **EXAMPLE** Suppose an investor has two investment options, both of which promise a dollar return of \$1,000,000. They cannot tell which option is better without knowing additional details such as the risk or how long it will take to realize the returns. If the first option has a \$1,000,000 return over two years and the other has a \$1,000,000 return over 10 years, the first option is clearly more attractive.

Dollar returns are valuable for comparing the nominal differences in investments. If two investments have similar profiles (risk, duration, etc.), then dollar returns are a useful way to compare them. The investor will always choose the option with the higher dollar return. Furthermore, the dollar return is useful because it provides an idea about how the assets of a firm will change.

⇒ **EXAMPLE** If a firm is looking for an additional \$50,000 from investment, they will only accept investments with a \$50,000 dollar return, regardless of the percent return.



TERM TO KNOW

Dollar Return

The difference between the final value and the initial value in nominal terms.

4. Percentage Returns

The conventional way to express the return on a security (and investments in general) is in percentage terms. This is because it does not only matter how much money was earned on the investment, it matters how much was earned in proportion to the cost.

There are two types of percentage returns:

- Total Returns
- Annual Returns

Total returns calculate how much the value of the investment has changed since it was first purchased, while annual returns calculate how much the value changed each year.



HINT

When the length of time for the investment is one year, the total and annual returns are equivalent.

4a. Total Returns

The total percentage return is based on the final value (V_f), the initial value (V_i), and all dividend payments or additional incomes (D). If the investment is a security such as a stock, the final value is the sales price, the initial value is the purchase price, and D is the sum of all dividends received.



FORMULA TO KNOW

Total Return

$$\text{Total Return} = \frac{(V_f - V_i) + D}{V_i}$$

This type of return is also called the **return on investment (ROI)**, where the numerator is the dollar return. The ROI is calculated for each individual year by dividing the dollar return by the initial value.



FORMULA TO KNOW

Total ROI

$$\text{Total ROI} = \frac{\text{Dollar Return}}{\text{Initial Value}}$$

Let's look at an example:

\$1,000 investment	Year 1	Year 2	Year 3	Year 4
Dollar Return	\$100	\$55	\$60	\$50
ROI	10%	5.5%	6%	5%

In this case, the ROI is the percentage return and is calculated by dividing the dollar return by the initial value of the investment of \$1,000.



TERM TO KNOW

Return on Investment (ROI)

The dollar return of the investment divided by the initial value.

4b. Annual Returns

Annual returns show the percentage by which the value of the asset changes in each individual year. The average annual percentage return of an investment can be calculated with the following three methods:

- **Average Return on Investment (Average ROI):** The average ROI is the arithmetic average: divide the total ROI by the number of periods. It is useful for quick calculations and specific securities (such as bonds purchased at par), but does not account for compounding returns.
- **Compound Annual Growth Rate (CAGR):** The CAGR is derived from the future value formula with compounding interest. It accounts for compounding returns and measures the return per year. It is widely used because it allows for the easy comparison of the growth rates of multiple investments.
- **Internal Rate of Return (IRR):** The IRR is the discount rate at which the net present value (NPV) is equal to 0. Using IRR allows for easy comparison between investment options. It is also known as the effective interest rate.



BIG IDEA

For all three methods, the higher the rate, the more desirable the investment.



TERMS TO KNOW

Average Return on Investment (Average ROI)

ROI divided by the number of years between the purchase and sale of the security.

Compound Annual Growth Rate (CAGR)

A method for finding the average annual return of an investment.

Internal Rate of Return (IRR)

The rate of return on an investment which causes the net present value of all future cash flows to be zero.

5. Historical Returns: Market Variability and Volatility

Historical analysis of markets and of specific securities is a useful tool for investors, but it does not predict the future of the market. There are general trends and expectations of future behavior, but they are just

generalizations.

⇒ **EXAMPLE** The Dow Jones Industrial Average has generally increased overall since 1900, but its past performance is not a guarantee of future performance, such as the market crash of 1929.

Inherent in all markets is something called systemic risk. Systemic risk is the risk of collapse of an entire financial system or entire market, as opposed to risk associated with any one individual entity, group, or component of a system. Macroeconomic forces, such as the Great Depression, affect the entire stock market and can't be predicted from past market performance. The failure of one company affects all the companies who purchase from it or sell to it, which in turn affects all the companies that rely on them. These types of interlinkages are a cause of the overall market variability and volatility.

Furthermore, market variability and volatility can be the cause of what John Maynard Keynes called *animal spirits*. Animal spirits are the emotions felt by investors who affect markets. Expectations of investors affect how they act, which in turn affects the markets. If investors are feeling optimistic, for example, the market may go up, even without an improvement in the financials of the underlying companies.

Markets and stocks are affected by many factors beyond the information in their financial statements and past performance. Historical returns may provide an idea of the overall trend but certainly are not enough to accurately predict future performance.



SUMMARY

In this lesson, you learned about how investment returns are calculated and reported to comply with IRS requirements. **Securities to report** include debt securities, equity securities, and derivatives if investors derive returns from them. Specifically, investors are **obligated to report** capital gains, although taxes owed on **capital gains** may be adjusted with **potential deductions and deferrals**. Investors can determine their **dollar returns** and **percentage returns** on an investment by considering the initial value of the investment, its final value, and any dividends received. Percentage returns can be calculated for **total returns** (also known as ROI) or for **annual returns**. **Historical returns** can provide information about the performance of an individual security or a market overall, but **market variability and volatility** are not always predictable.

Best of luck in your learning!

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TERMS TO KNOW

Average Return on Investment (Average ROI)

ROI divided by the number of years between the purchase and sale of the security.

Capital Gains

Values captured from the trade of assets on the securities market.

Compound Annual Growth Rate (CAGR)

A method for finding the average annual return of an investment.

Dollar Return

The difference between the final value and the initial value in nominal terms.

Internal Rate of Return (IRR)

The rate of return on an investment which causes the net present value of all future cash flows to be zero.

Return on Investment (ROI)

The dollar return of the investment divided by the initial value.

Securities

Assets purchased in the securities market, such as equity, debt and derivatives.

**FORMULAS TO KNOW****Total ROI**

$$\text{Total ROI} = \frac{\text{Dollar Return}}{\text{Initial Value}}$$

Total Return

$$\text{Total Return} = \frac{(V_f - V_i) + D}{V_i}$$