How To Make Sense of Financial Formulas

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Understanding basic financial concepts, especially the role that interest plays in your everyday life is fundamental to your financial success.

Today, more than ever, you need to become money wise and apply the financial knowledge that will enable you to earn and keep more on what you save and invest.

When it comes to personal financial decisions such as choosing the right after-tax, tax-deferred, tax-free or tax-deductible investment, many investors do not know how to maximize their financial gain and minimize taxes, costing themselves hundreds and thousands of dollars every year.

The interest rate you earn, the period of time involved, your tax bracket, rate of inflation, how early you start, the type of investment you choose, will determine eventually how much you profit and how much you pay. Making sense of the various alternatives will enable you to come out a winner.

By using the following simple financial formulas and applying the data for specific situations, you will be able to make the right choices throughout your lifetime, rewarding yourself with thousands of more dollars earned on your money.

How long will it take an investment to double or triple?
The rule of 72 and the rule of 115 are fast, though not a 100% accurate method, to determine how many years it will take money to double and triple based upon an assumed rate of return.

WHEN MONEY DOUBLES
Simply divide 72 by the interest rate and you have your answer.
72 divided by Assumed Rate Of Return = number of Years Money Doubles
Example: 72 divided by 5% = 14.40
Conversely, if you know that your money has doubled in a certain period of time, you can determine what your annual compound interest rate was by dividing 72 by the number of years it took your money to double.
72 divided by number of Years = Rate Of Return
EX: divided by 72 divided by 12 Years = 6%

WHEN MONEY TRIPLES

Simply divide 115 by the interest rate and you have your answer.

115 divided by Assumed Rate Of Return = number of Years Money Triples

Example: 115 divided by 5% = 23 Years

Conversely, if you know how long your money took to triple, you can determine the annual compound interest rate by dividing 115 by the number of years.

115 divided by number of Years = Rate Of Return

Example: 115 divided by 23 Years = 5%

AFTER TAX EQUIVALENT YIELDS

How do you determine the after tax equivalent yield on an interest rate or investment return?

Multiply the interest rate by 1 minus your federal tax bracket.

Example: What is the after tax rate equivalent on 4% for a person in the 25% tax bracket?

Interest Rate X 1 minus Income Tax Bracket = After Tax Equivalent Yield.

6% X (1 minus .25) = 6% X .75 = 4.5% After Tax Return

TAX EQUIVALENT YIELD

The following provides a quick way for you to determine whether a tax-free/tax-deferred yield is worth more than a taxable yield.

Tax Free/Tax Deferred Yield Divided By 1 minus (Your Federal Tax Rate) = Tax Equivalent Yield

Example: You are considering two investment opportunities. The taxable one has a 5% interest rate. The tax-free offers a 4.5% interest rate. You are in the 25% marginal tax bracket. To calculate the taxable equivalent of the tax-free yield, divide the tax-free rate by 1 minus your tax bracket.

4.5% divided by 1 minus .25 = 4.5 divided by.75 = 6.75%

The tax-free/tax-deferred investment's tax equivalent yield of 6.75% is higher than the taxable investment's 5% interest rate.

TAX EXEMPT EQUIVALENT YIELD

To determine the tax-exempt equivalent of a taxable yield, just reverse the above formula.

Multiply the taxable yield by 1 minus your tax bracket.

Taxable Yield x (1 minus Federal Tax Bracket) =Tax Exempt Equivalent Yield

Example: You have a taxable investment of 5% and you are in the 25% tax bracket. What tax-free/tax-deferred yield do you need to get to equal the taxable yield?

5% x (1 minus .25) = 5% x .75 = 3.75%

The 5% taxable yield is equivalent to a 3.75% tax-free/tax-deferred yield.

WHEN MONEY DOUBLES AFTER TAXES

First multiply the interest rate by 1 minus your tax bracket to get the net after tax rate. Divide 72 by the net after tax rate to determine your answer.

Interest Rate X (1 minus Tax Bracket) = Net After Tax Rate

72 divided by Net Rate = number of Years Money Doubles After Taxes

Example: 5% x .75 (25% Tax Bracket) = 3.75%

72 divided by 3.75 = 19.2 Years

WHEN MONEY TRIPLES AFTER TAXES

First multiply the interest rate by 1 minus your tax bracket to get the net after tax rate. Divide 115 by the net after tax rate to determine your answer.

Interest Rate X 1 minus Tax Bracket) = Net After Tax Rate

115 divided by Net Rate = number of Years Money Triples After Taxes

Example: 5% X .75 = 3.75%

115 divided by 3.75 = 30.67 Years

INFLATION AND TAXES

WHAT YOU NEED TO EARN TO JUST BREAK EVEN

Inflation Rate Divided by (1 minus Tax Rate) = Break Even Interest Rate

Example: At a 2% inflation rate, someone in the 25% tax bracket would have to earn 2.67% on a taxable investment just to break even.

2% divided by (1 minus .25) = 2 divided by .75 = 2.67%

LOSS OF PURCHASING POWER

It is very easy to determine the loss of purchasing power on any amount of money, at various inflation rates.

Just as the rule of 72 shows when a sum doubles, when used in connection with inflation, it tells you when a sum is reduced in value by half.

Example: When will a sum be reduced by half if the inflation rate is 3% per year?

72 divided by Inflation Rate = number of Years It Will Take A Sum To Be Halved.

72 divided by 3% = 24 Years