***Income, Capital and Total Returns***

Total returns on stocks, bonds, real estate, and any asset can be broken into two parts, the income return and the capital return.

**Income return** is the proportion of the asset's price that is paid out in cash per time period.

$$r\_{income,0-1}=\frac{C\_{1}}{P\_{0}}$$

Where $C\_{1}$ is the cash flow at t=1 and $P\_{0}$ is the price at t=0.

The cash flow income:

Last modified 26.2.17 KW

* from equity is called dividends or drawings,
* from debt is called coupon or loan payments,
* from real estate is rent.

**Capital return** is the rate of increase in the asset's price per time period.

$$r\_{capital,0-1}=\frac{P\_{1}-P\_{0}}{P\_{0}}$$

When a dividend is paid (actually when the ex-dividend date occurs), the stock price falls. Therefore, all things remaining equal, dividends (income returns) come at the expense of price (capital returns).

**Total return** is the sum of the income and capital returns.

$$r\_{total,0-1}=r\_{capital,0-1}+r\_{income,0-1}$$

$$ = \frac{P\_{1}-P\_{0}}{P\_{0}} + \frac{C\_{1}}{P\_{0}} = \frac{P\_{1}-P\_{0}+C\_{1}}{P\_{0}}$$

***Calculation Example: Components of Returns***

**Question:** A stock was bought for $10 at t=0.

At t=1 the stock paid a dividend of $1 and immediately afterwards the price of the stock was $9.50.

At t=2 the stock paid no dividend and its price was $12.

All time periods are measured in years.

Find the total, dividend and capital returns of the stock over the first and second years.

**Answer:**

Over the first year (from t=0 to t=1):

$$r\_{income,0-1}=\frac{C\_{1}}{P\_{0}}=\frac{1}{10}=0.1=10\%$$

$$r\_{capital,0-1}=\frac{P\_{1}-P\_{0}}{P\_{0}}=\frac{9.50-10}{10}=-0.05=-5\%$$

$$r\_{total,0-1}=r\_{income,0-1}+r\_{capital,0-1}$$

$$ = 0.1 + -0.05 =0.05=5\%$$

Over the second year (from t=1 to t=2):

$$r\_{income,1-2}=\frac{C\_{2}}{P\_{1}}=\frac{0}{9.50}=0=0\%$$

$$r\_{capital,1-2}=\frac{P\_{2}-P\_{1}}{P\_{1}}=\frac{12-9.50}{9.50}=0.263157895=26.32\%$$

$$r\_{total,1-2}=r\_{income,1-2}+r\_{capital,1-2}$$

$$ = 0 + 0.263157895$$

$$ =0.263157895=26.32\%$$

Note that all of these returns are effective annual rates.

***Questions: Income and Capital Returns***

<http://www.fightfinance.com/?q=476,490,478,508,477,136,151,21,404,>