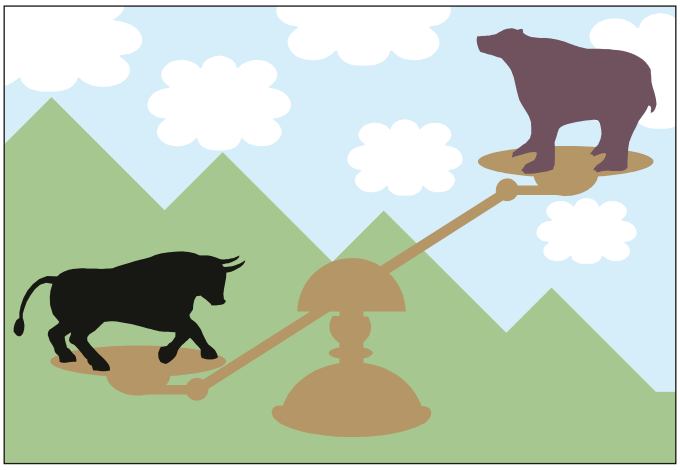
How much are stocks worth?

Warren Buffet 20 years back said: "An investor will succeed by coupling good business judgment with an ability to insulate himself from the super-contagious emotions that swirl in the markets."

Here are 6 commandments of investing one should keep in mind before selecting a stock

- **Contrarians View -** Don't go by the rumors or get misled by all the noises. Benjamin Graham said: "For above average results, investors must follow policies which are inherently sound and promising and not popular on Wall Street". In the late 1999 to early 2000, when worldwide IT boom was at its crest, investors kept piling money at PE ratios of 100 times and above. The crash wiped out 25-90% of stock value. If one would have had a contrarian's view at that time, easily booked profit and moved out of IT.

- **Pick sound companies -** How is the earnings growth of the company? Is it making increasing profits over time, what is its market share and is it increasing? Check if Return on Equity is good. The company should not raise capital too often and not generating returns on the same. The company should have a healthy equity: debt ratio. Focus on wealth creators.



- **Check the valuation -** There are various ways to value a company. PE ratio is common. Then other important ratios are PEG, P/BV, P/S ratio, OPM etc. and it's very important to interprete these numbers. Look at the stock's PE relative to market, sector and its competitors. Also look at the PE growth ratio which factors in the growth of the company's profits. IT stocks might look overvalued on PE basis, but given their growth potential of 30% plus, the PEGs would justify the price.

- **Buy what you Understand:** Warren buffet never put his money in IT stocks but still managed to give handsome returns to Hathway. He managed to do this because of his simple philosophy of not investing in the business he doesn't understand.

- **Check the management:** It's very important to know the management of the company you are investing in. Also the corporate governance of the company. Sound back ground of the promoters would cut down risk associated with the relative business company is in during the crisis. Exceptional management makes the difference between success and failure in competitive and high growth markets.

- **Invest for long term:** A good investor is the one who waits patiently to get his returns unlike others who move in or out of the market based on euphoria. If one has invested in sound companies, with a good business model and excellent management then wait for wealth creation. Your patience will garner sweet fruits

How much is a share of stock really worth? Not just in terms of analysts' opinions, but logically, based on facts?

In theory, the answer is simple: a company today is worth the total amount of cash it will generate over its lifetime, discounted to its present value. (And don't panic if you don't really understand that last sentence, because the next page explains it. You do not need any background to read this article)

This article presents a simple discounted cash flows calculation methodology, along with some popular variations and shortcuts, to simplify the concept of stock valuations

But before we get started, it' would be a good idea to remember Warren Buffet's advice, "it's far better to buy a wonderful company at a fair price than a fair company at a wonderful price". The idea is to find a company whose prospects you really believe in, and then use a valuation technique as a reality check, to make sure the purchase price is acceptable. By this, you are simply making your valuation estimates realistic and

conservative. :This will help you avoid paying more for a stock's intrinsic worth. And your investment decision will never be swayed by over enthusiasm.

Investment Valuation: A Little Theory

We'll start with a little theory before we get to the calculation.

A company is valuable to stockholders for the same reason that a bond is valuable to bondholders: both are expected to generate cash for years into the future. Company profits are more volatile than bond coupons, but as an investor your task is the same in both cases: make a reasonable prediction about future earnings, and then "discount" them by calculating backward how much they are worth today i.e. Net Present Value.

So then you don't buy unless you can get a purchase price that's less than the sum of these present values (future earnings), to make sure that owning a particular stock is worth the time and effort taken to invest.

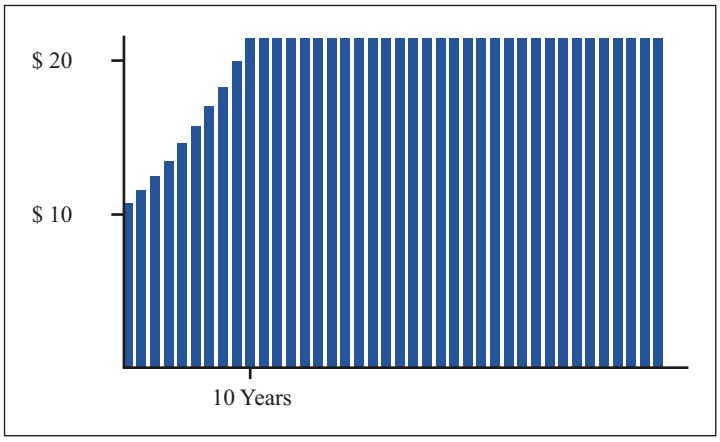
To put it in a nutshell, you calculate this NPV (today's stock price) to determine if the stock price today justifies future anticipated earnings. This will help determine if the stock is overpriced or reflecting its true value.

If the price of a stock is reflecting its true value it will be less than the sum of its future earnings. That is precisely why you find it sensible to invest in such a stock.

On the other hand, an overpriced stock becomes evident if you pay more for the stock today for probably the same level of future earnings. If not less. Your potential for growth is possibly inhibited, unless the earnings actually prove to be far more than your anticipations.

So, one needs to determine whether a stock price today is justified by its future earnings.

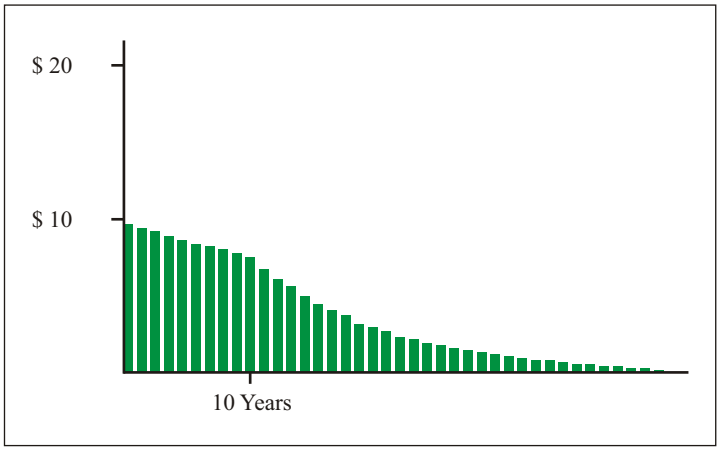
Let's take an example. Suppose you are interested in a company that earned $10 per share over the last twelve months. Assume you expect the company to grow over the foreseeable future, so that its earnings will grow at a rate of 8% annually for the next 10 years; then, to play it safe, you make no assumptions about earnings after that, but just expect the company to stay at the same size from then on. Your earnings expectations look like this:



Here the height of each blue bar is the earnings per share that you expect for a particular year in the future. (The first bar is earnings over the next twelve months: that is, it's what you expect the company's reported annual earnings to be one year from now.)

Now for the discounting, finding how much each "blue bar of the future" is worth to you in the present. We'll be using a discount rate of 11%, which is derived by the following formula: Risk Free Rate + (Risk Premium + Beta). Here we consider risk free rate as 7% and Risk free premium as 4% and beta would be 1 another simple way of deriving discount rate is just considering the average return of the stock market over 15-20 years which again come to roughly around 11%. We would explain you all these terms later after this article. The idea is that earnings of $1.11 next year is only worth $1.00 to you right now, since you could invest the $1.00 in the SENSEX and expect it to grow to $1.11 in one year's time. Finding the present value of all of the blue bars gives a new graph:

Here each green bar is the value to you, today, of each corresponding blue bar in the first graph.



What about Debt?

What does debt do to the value of a company? The quick answer is that any valuation based on earnings has already accounted for debt. That's because interest payments - the "cost" of the debt - are an expense, and have already been deducted from earnings. So if the present value of future earnings adds up to $20 a share, the company's stock is worth $20 a share, regardless of the amount of debt it has.

Of course the real world is more complicated than that glib theoretical answer; for example:

1. **Debt is better than that:** interest is an expense, so debt financing gives business a tax break unavailable with other forms of financing.

2. **Debt is worse than that:** interest is an absolute obligation, so debt increases the risk that some years will have low reported earnings (not to mention the risk of bankruptcy).

If you put those two contradictory statements together they actually form a coherent whole: Debt is a cheap way for a company to raise capital; and the superior profits that result will be a reward for stock investors willing to accept the added risk.

Stock Valuation based on Earnings

Stock valuation based on earnings starts out with one giant logical leap: you assume that each dollar of earnings per share of a company is really worth one actual dollar of income to you as a stockholder. This is theoretically because you expect the company to use that dollar in a beneficial way: for example, they could use it to pay you a dividend; or they could invest it in their own growth, which would cause future earnings to be even greater.

You also generally assume that the company will go through several distinct phases, starting with a "growth" phase where earnings are increasing at a predictable rate, followed by a "mature" phase where earnings level off to a constant level.

To find the value of a stock, you need to calculate all of these future earnings (out to infinity!), and then use your own desired rate of return as a discount rate to find their present value. The infinite sum of these present values is the fair market value of the stock; or more accurately, it's the maximum price you should be willing to pay.

The formula for this is a complicated one and is a complete lesson in itself which is out of the scope of this article. However we would cover this and more in our subsequent Intellects.

To derive at the present value of the stock considering its future earnings the usual method used in **Discount cash flow** as explained above.

What follows is a series of shortcuts - simple ratios people use to estimate valuation quickly - and some variations.

Price to Earnings Ratio

Although discounted cash flows is the correct way to value a company, people naturally like to use simpler rules of thumb. The P/E ratio is the most popular because it's easy to understand. If you buy stock at a P/E ratio of 15, say, then it will take 15 years for the company's earnings to add up to your original purchase price - 15 years to "pay you back". That's assuming that the company is already in its "mature" stage, where earnings are constant.

Let's make that last paragraph a little more accurate. If you actually use the discounted cash flows formula on a zero growth company, you find that its fair P/E ratio equals 1/R, where R is the discount rate.

Of course, you'd be willing to pay a higher P/E ratio if earnings were growing - the payback time would be quicker. And you'd want to pay less if future earnings looked risky to you for some reason.

Price to Sales Ratio

The trouble with the P/E ratio is that earnings is a complicated "bottom line" number, sometimes reflecting non-recurring events; so many people look at sales revenue as a more reliable indicator of a company's size and growth. The Price/Sales ratio, also called the "PSR", is a company's stock price divided by its annual sales per share.

Since P/S = P/E x (profit margin), you can find any of these quantities if you know the other two

This calculator is telling you that for a "typical" company with a profit margin of 5%, a P/S of 1.0 is in the right ballpark because it corresponds to a P/E of 20.

One common way people abuse the Price/Sales ratio is by assuming that a PSR of 1.0 is right for all companies, and then hunting for "bargains" selling at a PSR of 0.5 or less. That simply doesn't work in general, since different industries have widely different profit margins, ranging from 2% for many discount retailers to 20% or more for some software companies; so a P/S of 1.0 would be on the pricey side for the retailer, but extremely cheap for the software company.

A second problem with the PSR is that sales, unlike earnings, contain no information about a company's debt. It's easy to find lots of companies with no profits and huge debt selling at a PSR of 0.1 or less. Some of these are on the verge of bankruptcy; definitely not "bargains".

PEG Ratio

The PEG approach is a simple valuation tool, popularized by Peter Lynch and among many others.

"The p/e ratio of any company that's fairly priced will equal its growth rate."

In other words,

P/E = G

Where P/E is the stock's P/E ratio and G is its earnings growth rate.

It looks simple and elegant, like a finance version of e = mc2, but watch out - this formula is strictly a rule of thumb, not a valid financial "law". (If you aren't convinced, just notice that the two sides of the formula have different units: you're comparing a fraction with a percent, meaning that a factor of 100 has magically appeared on one side only.)

So how accurate is this rule of thumb? It's certainly way off for at least some cases; for example, it implies that a company with zero growth should sell for a P/E of 0. But for normal values of growth stocks, this formula works surprisingly well. This calculator lets you compare the PEG approximation with the "correct" results from the cash flows calculator for different rates of "G":

If you do use this (or any other) valuation technique, remember to use it the way Lynch suggests: first find a company whose prospects seem attractive to you, and then use the techniques to make sure the price is reasonably attractive as well.

One way people misuse PEG and get themselves into trouble is by taking earnings from two successive years off of an annual report, and using them to calculate the earnings growth rate

That's dangerous! Each year's earnings is a highly refined number, potentially including significant non-recurring items. That means the change between these two numbers can be very different from what you really want, namely, a conservative estimate for earnings growth that can be sustained over the next five years or more.

Finally, note that properly speaking the PEG ratio is defined as (P/E) / G. So the quote and formula from the top of the page are equivalent to saying that if a company is fairly priced, its PEG ratio ought to equal 1.0.

Apart from the above valuation techniques there are various others used by analysts like Ben Grahams formula, warrens formula, capital asset pricing model (Modern portfolio theory) etc.