

# The True Way to Use the Graham Number and Formula

I've talked about [valuing stocks with the Graham Formula](#) a lot on old school value and how to use it properly.

With valuation, taking things into context is very important. If you aren't careful, it's easy to think that everything is a nail when you have a hammer.

With the [OSV Stock Analyzer](#), the Graham method gets a lot of attention because

1. it's easy to understand
2. it's easy to use
3. it's easy to adjust for different scenarios

Here's the formula that I'm talking about.

But with the Graham formula in the [stock analysis software](#), instead of using 1.5 x growth, I've adjusted it down to simply 1x growth.

After calculating and valuing hundreds of companies with the formula and testing its robustness, I've concluded that using 1x is the best way to go.

## Why Graham Created This Valuation Formula

It's no secret that Graham was a cheap stock investor who bought baskets of stocks instead of concentrating.

His approach was much more mechanical.

His first criteria was cheapness and that was usually enough. But after going through countless number of stocks, here's what he says.

*Our study of the various methods has led us to suggest a foreshortened and quite simple formula for the valuation of growth stocks, which is intended to produce figures fairly close to those resulting from the more refined mathematical calculations. - [The Intelligent Investor](#)*

In 3 short bullets, he used the formula himself for;

- Shorthand
- Simplicity
- Estimate of intrinsic value

It's definitely not the golden rule and it's not something he went with blindly, but it's a good approximation and a good starting point to use in your investigation.

After all, Buffett says that

$$V_* = \frac{EPS \times (8.5 + 2g) \times 4.4}{Y}$$

Modified Graham Formula

| *It is better to be approximately right, than precisely wrong.*

The great thing about the Graham formula is that it can be applied to any company with a positive EPS.

Although EPS is not ideal, when you are trying to study and value businesses with negative FCF, weak balance sheet and low EBIT, you only have EPS and past or expected growth to work with.

Relative valuation such as PE multiples compared to peers isn't a method that I use often.

Relative multiples don't account for the market value. In a hot market, everything can look expensive, while a bear market can make things look cheap.

## Quick Filtering Process Explained

I have a process of valuing stocks.

If you're not sure about your own, [here's a guide](#) I made a while back that you can reference and use to tweak your own.

The way I go about doing things is much different now.

The first thing I do is to simply calculate a quick and dirty valuation of a company.

Graham's formula obviously helps a lot with this, but I have about [8 valuation tools](#) to choose from depending on the type of company I'm looking at.

The good thing about having a lot of valuation models in your toolbox is that you're not stuck trying to fit a square into a circle.

At this point, if some numbers pop out, I'll do some [financial statement analysis](#), and go deeper with the numbers like looking up the [Sloan ratio](#), [DuPont Analysis](#) and [inventory analysis](#).

Then with all this newfound knowledge based on the financials, I can do a cleaner valuation.

If the numbers look good, then it's time to check everything by going through filings, conference calls etc to find problems with the company.

That's my short hand method.

Graham doesn't go into exact details of his complete short hand method, but his formulas and checklists were a big part of them.

I made a [stock screener](#) based on the highest performing criteria from [Graham's checklist](#) which you can use for free.

But one number that I haven't written about is the **Graham Number**, another conservative way to look at stock values.

## The Graham Number

| *Using the EPS and book value, the Graham Number is a value for the upper range of what a defensive investor should pay for a stock. – [investopedia](#)*

Before getting into the meat of the formula, you can use tangible book value to make the number more reflective of tangible assets instead of goodwill and intangibles.

The formula you see at the top is the final form.

Again, Graham was a cheap stock investor so he didn't want to pay too much for anything.

So he created a rule of thumb so that he didn't buy stocks with a PE above 15 and a P/B greater than 1.5.

Guessing wildly, in today's terms it could mean something like staying away from stocks with a PE above 25 and P/B greater than 3.

A more accurate method would be to go back and calculate how inflation affects the PE from 1973 to today.

But what's the 22.5? It's based on his max 15 PE and 1.5 P/B criteria.

$$15 (P/E) \times 1.5 (P/B) = 22.5$$

And if you do some algebra to get the "price" to one side, it looks a little something like this.

$$P/EPs \times P/BVPS = 22.5$$

$$P(\text{sqr}) / (EPs \times BVPS) = 22.5$$

$$P(\text{sqr}) = 22.5 \times EPs \times BVPS$$

$$P = \text{Square Root} (22.5 \times EPs \times BVPS)$$

## How to Put into Practice

This is a very conservative formula/criteria so it's important to put it into context.

You wouldn't try to apply the [net net working capital](#) criteria to every stock, and it's the same case here.

Recall that in [The Intelligent Investor](#)

, Graham classified two types of investors.

1. The Defensive Investor
2. The Enterprising Investor (A nice way of saying "aggressive" investors)

Graham mentioned that this number should be used for a defensive investor. i.e. a passive investor after solid companies for long term appreciation.

And this value goes hand in hand with the following requirements for a defensive investor.

## The 7 Filters to Use the Graham Value

1. **Seek Safety with Large Predictable companies.**

$$\sqrt{22.5 * (\text{Earning Per Share}) * (\text{Book Value Per Share})}$$

The Graham Number Formula

Look for stocks with at least \$100m in sales (back in 1970's). Adjusted for inflation, that number should be around \$465 million.

## 2. Strong Financial Condition to Prevent Bankruptcy

- Current ratio > 2
- Long term debt < working capital

## 3. Earnings Stability

No losses over the past 10 years. Companies that can maintain positive earnings are more stable.

## 4. Consistent Dividends

The company should have a history of paying dividends without problems for the past 20 years. Check the payout ratio here.

## 5. Earnings Growth

Net income per share should have increased by at least a 1/3 in the past 10 years.

## 6. Price to Earnings Ratio below 15

## 7. Price to Book below 1.5

You can see that points number 6 and 7 make up the Graham number.

Combine criteria 1 through 5 and you've got the full Graham number methodology.

## Important Notes About the Graham Value

All the talk above tells you where and how to apply the method to get the Graham value.

But there are limitations you have to know.

- Only works for companies with positive earnings and positive tangible book value.
- The Graham Number doesn't include any growth assumptions. Won't work well for growing companies.
- Cyclical stocks or businesses with one time low earnings are punished with this method. A better adjustment is to use normalized figures over the past 3 or 5 years.
- Underestimates stocks with little tangible assets. Industries like software, service and information won't make the list.

## My Recommendation on the Graham Number and Formula?

Go with the [Graham formula](#) as it is more versatile and applicable.

If you do use the Graham number, or plan to check it out, adjust the criteria to your standards.

This is just a rule of thumb so it's up to you to take the parts that will make your investment process better.

The whole point of studying Graham and going through his ideas isn't to be Graham. It's to expand your own ideas, stock selection methods and improve your valuation.

## Looking for a Way to Use the Graham Formula and other Valuation Methods?

With Old School Value, you can spend your valuable time analyzing and researching stocks deeply yet quickly, instead of manually entering numbers.

The Analyzer automatically imports 10 years and 16 quarters of financial data to speed up your analysis time.

Check out what you get with the [Old School Value Analyzer package here](#).

### Further Reading

- <http://www.investopedia.com/terms/g/graham-number.asp>
- [http://en.wikipedia.org/wiki/Graham\\_number](http://en.wikipedia.org/wiki/Graham_number)
- <http://www.forbes.com/sites/gurufocus/2012/06/29/graham-number-and-warren-buffett-portfolio/>
- <http://beginnersinvest.about.com/cs/valueinvesting1/a/101302a.htm>
- <http://www.minyanville.com/trading-and-investing/stocks/articles/RS-MOFG-ANCX-Reliance-Steel-2526/5/23/2012/id/41191>

### About Jae Jun

Jae Jun is the founder of Old School Value. He is on a mission to provide practical and actionable value investing tools, tutorials and educational material to help empower the individual investor. Keep in touch with Jae via any of the methods linked below.

