

## The Graham & Dodd P/E Matrix

Based on his observations of stock over the years, Benjamin Graham developed a stock valuation model that allows for future growth. Graham observed that the average no-growth stock sold at 8.5 times earnings, and that price-earnings ratios increased by twice the rate of earnings growth. This led to the earnings multiplier:

$$P/E = 8.5 + 2G$$

where  $G$  is the rate of earnings growth, stated as a percentage.

The original formulation was made at a time when there was very little inflation, and growth could be assumed to be real growth; the AAA corporate bond interest rate prevailing at the time was 4.4%. In later years, the formula was adjusted for higher current interest rates that contained an inflationary component:

$$P/E = [8.5 + 2G] \times 4.4/Y$$

where  $Y$  is the current yield on AAA corporate bonds.

As an example, at a 6% bond yield and an assumed annual earnings growth rate of 10%, the P/E multiplier would be:

$$\begin{aligned} P/E &= [8.5 + 2(10)] \times 4.4/6 \\ &= 28.5 \times 0.73 \\ &= 20.9 \end{aligned}$$

The Graham and Dodd P/E Matrix uses this valuation formula to show the price-earnings ratio that results from a given bond yield at a given rate of earnings growth. You can see from the table that changes in interest rates will have a dramatic effect on price-earnings ratios for any given earnings growth rate.

## Graham & Dodd P/E Matrix

Bond Yield	Expected 5-Year Annual Growth Rate:								
	0%	5%	10%	15%	20%	25%	30%	35%	40%
1%	37.4	81.4	125.4	169.4	213.4	257.4	301.4	345.1	389.4
2%	18.7	40.7	62.7	84.7	106.7	128.7	150.7	172.7	194.7
3%	12.5	27.1	41.8	56.5	71.1	85.8	100.5	115.1	129.8
4%	9.4	20.4	31.4	42.4	53.4	64.4	75.4	86.4	97.4
5%	7.5	16.3	25.1	33.9	42.7	51.5	60.3	69.1	77.9
6%	6.2	13.6	20.9	28.2	35.6	42.9	50.2	57.6	64.9
7%	5.3	11.6	17.9	24.2	30.5	36.8	43.1	49.3	55.6
8%	4.7	10.2	15.7	21.2	26.7	32.2	37.7	43.2	48.7
9%	4.2	9.0	13.9	18.8	23.7	28.6	33.5	38.4	43.3
10%	3.7	8.1	12.5	16.9	21.3	25.7	30.1	34.5	38.9
11%	3.4	7.4	11.4	15.4	19.4	23.4	27.4	31.4	35.4
12%	3.1	6.8	10.5	14.1	17.8	21.5	25.1	28.8	32.5
13%	2.9	6.3	9.6	13.0	16.4	19.8	23.2	26.6	30.0
14%	2.7	5.8	9.0	12.1	15.2	18.4	21.5	24.7	27.8
15%	2.5	5.4	8.4	11.3	14.2	17.2	20.1	23.0	26.0
16%	2.3	5.1	7.8	10.6	13.3	16.1	18.8	21.6	24.3
17%	2.2	4.8	7.4	10.0	12.6	15.1	17.7	20.3	22.9
18%	2.1	4.5	7.0	9.4	11.9	14.3	16.7	19.2	21.6
19%	2.0	4.3	6.6	8.9	11.2	13.5	15.9	18.2	20.5
20%	1.9	4.1	6.3	8.5	10.7	12.9	15.1	17.3	19.5



Contact and/or follow me on Twitter: @sautterlas65

[www.sautterinvest.ch](http://www.sautterinvest.ch)

email: [sautterlas65@bluewin.ch](mailto:sautterlas65@bluewin.ch)

+41 79 514 17 96