

Will You Make a Profit on a Company with a \$300 Billion Market Cap and \$3 Billion in Revenues?

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Let's walk through a fun little puzzle about investing in stocks—don't worry, it's not rocket science, and by the end, you'll see how straightforward it can be. Imagine you're buying a company for \$300 billion, and right now, it's bringing in \$3 billion in revenue each year. Your goal? To double your money in five years, so the company's market value hits \$600 billion. We're told that in five years, the price-to-earnings (P/E) ratio will be 20. Let's figure out what needs to happen to make this a winning investment—and we'll do it step by step, like a treasure map!

Step 1: What's the Target Earnings?

The P/E ratio tells us how much investors are willing to pay for each dollar of earnings (that's profit, or net income). A P/E of 20 means the market value is 20 times the earnings. If we want the company to be worth \$600 billion in five years, we can work backward:

- $\text{Market Value} = \text{P/E} \times \text{Earnings}$
- $\$600 \text{ billion} = 20 \times \text{Earnings}$
- $\text{Earnings} = \$600 \text{ billion} \div 20 = \30 billion

So, in five years, the company needs to earn \$30 billion in profit. That's our target!

Step 2: What's the Profit Margin Got to Do With It?

Profit margin is the percentage of revenue that turns into profit after all expenses are paid. Let's say the company keeps a steady profit margin of 20% (that means 20 cents of every dollar in sales becomes profit). If we need \$30 billion in profit, how much revenue do we need?

- $\text{Profit} = \text{Revenue} \times \text{Profit Margin}$
- $\$30 \text{ billion} = \text{Revenue} \times 0.20$
- $\text{Revenue} = \$30 \text{ billion} \div 0.20 = \150 billion

So, with a 20% profit margin, the company needs \$150 billion in revenue to hit that \$30 billion profit goal. Makes sense, right? It's just a little division!

Step 3: How Do We Get from \$3 Billion to \$150 Billion?

Right now, the company's revenue is \$3 billion. To reach \$150 billion in five years, the revenue has to grow a lot—50 times, to be exact ($\$150 \text{ billion} \div \$3 \text{ billion} = 50$). But this growth doesn't happen all at once; it compounds over five years, like a snowball rolling downhill, getting bigger each year. We need to find the compounded annual growth rate (CAGR)—the steady percentage it grows by each year to hit that target.

The formula for compound growth is:

- Final Value = Starting Value \times (1 + Growth Rate)^(Number of Years)
- \$150 billion = \$3 billion \times (1 + Growth Rate)⁵

Divide both sides by \$3 billion:

- $50 = (1 + \text{Growth Rate})^5$

Now, we need to solve for the growth rate. To undo the “raised to the 5th power,” we take the 5th root of 50 (or raise 50 to the power of 1/5):

- $1 + \text{Growth Rate} = 50^{(1/5)}$

Let's calculate that:

- $50^{(1/5)} \approx 2.187$ (you can check this on a calculator:
 $2.187 \times 2.187 \times 2.187 \times 2.187 \times 2.187 \approx 50$)

So:

- $1 + \text{Growth Rate} \approx 2.187$
- $\text{Growth Rate} \approx 2.187 - 1 = 1.187$, or 118.7%

That means the revenue needs to grow by about 118.7% each year for five years. Let's see how that plays out:

- Year 1: \$3 billion \times 2.187 = \$6.56 billion
- Year 2: \$6.56 billion \times 2.187 \approx \$14.35 billion
- Year 3: \$14.35 billion \times 2.187 \approx \$31.38 billion
- Year 4: \$31.38 billion \times 2.187 \approx \$68.63 billion
- Year 5: \$68.63 billion \times 2.187 \approx \$150.09 billion

I overshot a tiny bit due to rounding—118.7% is close, but the exact rate is 118.672%. Specifically:

- Exact CAGR = $(150 / 3)^{(1/5)} - 1 = 50^{(1/5)} - 1 \approx 1.18672 = 118.672\%$

This matches earlier—my step-by-step was just to show the logic. So, 118.672% is the magic number.

Step 4: Putting It All Together

To double your \$300 billion investment to \$600 billion in five years with a P/E of 20:

- Earnings must reach \$30 billion (\$600 billion \div 20).
- With a 20% profit margin, revenue must be \$150 billion (\$30 billion \div 0.20).
- Revenue must grow from \$3 billion to \$150 billion, a 50-fold increase.
- The compounded annual growth rate must be about 118.672% per year for five years.

If this math feels tricky, don't sweat it—you're learning it right here! This is how people figure out if a stock is a good deal. It's just breaking down what a company needs to do to grow. No fancy AI needed—just some simple steps: divide for profit, divide for revenue, and calculate the growth rate.

How's that feel? Ready to value your own stocks now?