

FINANCE 101: THE BASIC ARITHMETIC OF A CORPORATE TAX INCREASE

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Executive Summary

- We have been asked by numerous clients how tax increases could affect the value of stocks.
- This numerical analysis is not intended to show support for or opposition to proposed changes to current tax policy.
- In our analysis, we have attempted to provide a general understanding of the effects of a corporate tax rate increase on the theoretical value of the S&P 500.
- Our admittedly simplified analysis shows that the proposed rate increase from 21% to 28% would be expected to negatively affect the theoretical value of the S&P 500 by approximately 9%.

Since before the presidential election last year, clients have been asking us about the potential effects that a tax increase could have on their investments. Whether that question came from clients supportive of increasing taxes or those opposed, all seemed to believe that higher taxes would be bad for stock prices.

We have heard a number of ideas from the President and members of Congress about what a future tax increase might entail, addressing a range of components of the tax rules from general tax rates for individuals and corporations to the treatment of capital gains. For the sake of brevity and simplicity, we will examine the one change being discussed that carries arguably the most direct impact on stock prices -- an increase in the corporate tax rate. (There is much discussion about the impact of a capital gains tax increase, but the effects of that change are much less direct and far more difficult to model.)

While every individual should be encouraged to hold and express their own personal political views, our duty is to be objective in assessing the implications of any given factor that has the potential to materially affect financial outcomes for our clients. Please understand that this exercise is intended to help us do just that and is not an expression of a political opinion about the merits of a corporate tax increase – just the direct effect on stock prices if all other factors were equal. Any tax change will carry multiple consequences - direct and indirect, positive and negative. The examination that follows does not factor in any of those consequences beyond the direct effect an increase in corporate rates would have on the theoretical values of stocks.

The Value of a Financial Asset

With the possible exception of cash, we own financial assets to increase our wealth. Every asset is projected to increase our wealth at a certain rate, and that rate is determined in large part by the risk of loss (temporary or permanent) in the value of that asset. The riskier the asset, the higher the rate of return we expect. That expected return determines the price we are willing to pay for that asset today.

For a stock, the return comes from the cash flows that stock is expected to generate. The price we are willing to pay today for a future cash flow is known as the “present value” of that cash flow. A stock is expected to produce future cash flows for some length of time (usually forever). Therefore, the price we are willing to pay for a stock today is the present value of all of its future cash flows.

Let’s take a simple example. Say you are considering buying 1000 shares of a company that is expected to earn \$10 per share before tax, pay tax at a rate of 20% (the corporate rate is currently 21%, but we use 20% to keep the numbers round), and distribute the entire \$8 net profit to you. We’ll assume no future earnings growth for the company, so the \$8 distribution will remain in place indefinitely if things go as

planned. However, the company's future profits, like most things, cannot be guaranteed, so you and other potential buyers of this stock have determined that an 8% return on your investment will compensate you fairly for your risk. You've probably done the math in your head already, but the equation needed to determine the price you and others are willing to pay per share of this company is simply:

$$\frac{\text{The annual distribution}}{\text{Your desired return}}$$

OR

$$\frac{\$8}{.08}$$

= \$100 per share.

Therefore, your investment is initially worth the \$100 per share price times the 1000 shares you purchased, or \$100,000.

If the company's tax rate were to change to 28% from the current 20%, the equation would look like this:

$$\frac{\$7.20}{.08}$$

= \$90 per share

With the tax rate change of 8%, your \$100,000 investment will have declined in value by 10%, or \$10,000, to \$90,000.

Analyzing the Current Proposal

Now, let's look at the numbers for the S&P 500 using its approximate actual long term rate of return of 10%², and the historical earnings growth rate of 3.5%³ for the index. This is done by making a slight adjustment to the formula, as follows:

$$\frac{\text{The annual index earnings}}{\text{The annualized index return - the annualized index earnings growth rate}}$$

For 2021, analysts estimate earnings for the index to be about \$188⁴ after applying the current corporate tax rate of 21%. Adjusting that forecast for the 28% corporate rate would take earnings to about \$171. A comparison of the current present value of the S&P 500 to its present value under a 28% tax rate would look like this:

Current tax rate:

$$\frac{188}{.10-.035}$$

= 2892 (theoretical S&P 500 value under our assumptions)

Proposed tax rate:

$$\frac{171}{.10-.035} = 2631$$

Dividing the adjusted present value by the current present value (2631/2892) results in an S&P 500 value of about 91% of its current theoretical value, representing a decline of just over 9%.

Summary

Using our somewhat simplified formulas and assumptions, including the assumption that all other factors remain equal, we would expect to see a 9% decline in the S&P 500 if corporate taxes are increased.

As we've endeavored to make clear, all things are seldom equal. There will likely be other components of the tax rule changes and numerous other factors that could affect our results positively and negatively.

Additionally, the 9% decline, if it happened, might not happen all at once. As the probability changes of passage of the rate increase by Congress, that probability will likely be factored into current prices to one degree or another.

Nonetheless, we hope this analysis is helpful in gaining an understanding of the likely direct effects of a corporate tax rate increase.

Endnotes:

1. There are many formulas commonly used to value stocks and other financial assets. We've used the dividend discount model and the present value of a growing perpetuity model, which we view as reasonable proxies. Complete formulas are significantly more complex, incorporating dividend yields, earnings retention rates, varying earnings or cash flow growth, current tax loss carryovers, inflation, and other factors. However, we view the simplified models as sufficient to illustrate the approximate magnitude of the change in share price that would theoretically accompany a corporate tax increase.
2. <https://www.investopedia.com/ask/answers/042415/what-average-annual-return-sp-500.asp>
3. <https://knowledge.wharton.upenn.edu/article/siegel-shiller-stock-market/>
4. <https://www.yardeni.com/pub/yriearningsforecast.pdf>