AN EFFECTIVE WAY TO ESTIMATE EQUITY RETURNS

This piece summarizes an excellent research article published on the Philosophical Economics website. All credit should go to the anonymous website owner, this note is solely meant to recap his findings. His article outlines a framework that has been extremely effective at estimating future stock returns. The framework is simple and its construction is unique. It is not based on any commonly used valuation metrics like the P/E ratio or dividend yields. The framework is based on a simple supply/demand equation. If investors, in aggregate, currently have a high demand for stocks (represented by a large portfolio allocation), then future demand (and thus future stock prices) will likely be low.

Look at the graph below. In 1975, investors had about 28% of their portfolio in stocks (the dark blue line and left axis). This was a historically low allocation percentage (demand was low). Over the next ten years, stocks went on to grow at 13% per year (the green line and right axis). In contrast, at the top of the tech bubble, investors had around half of their portfolio in stocks (demand was high). Stocks went on to compound at -3% per year from 2000 to 2010. The two measures have had a correlation north of 90%. The rest of this research summary details exactly how the average investor equity allocation is calculated, and why it matters to future long-term returns.

STOCKS, BONDS, AND CASH

Investors basically have three choices when they choose to allocate their wealth: stocks (public or private), bonds (bills, notes, and bonds), and cash (currency or bank deposits). If no investor can be found to allocate their wealth into stocks at the current market price, stock prices will fall until someone thinks the price is fair and allocates some of their wealth into stocks. The same thing applies to cash. If nobody wants to hold cash, the prices of stocks and bonds will rise until someone eventually thinks prices are too high and wants to allocate some of their money in cash.

Next, we will outline the supply/demand equation and then calculate the total supply of stocks, bonds, and cash.
THE EQUATION

To calculate the average percentage amount investors have allocated to stocks, we need to know two things: 1) the value of all stocks held by investors and 2) the value of all cash and bonds held by investors. Once we know them, we can solve for the below equation:

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\text{Avg. Investor Stock Allocation} = \frac{\text{Market Value of All Stocks}}{\text{Market Value of All Stocks} + \text{Market Value of All Cash & Bonds}}
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The market value of all stocks held by investors is simply the market capitalization of the entire stock market. This figure is published quarterly in the Federal Reserve's Flow of Funds report. To figure out the value of all cash and bonds held by investors, we can't just sum up all of the cash and bonds floating around in the economy. This is because a large portion of bonds are held by banks (the original issuers), not investors. So instead, we need to sum together the total outstanding value of cash and bonds held by parties who then go on to invest the money. This includes households, non-financial corporations, state/local governments, the federal government, and the rest of the world. This information can also be found in the Flow of Funds report.

THE SUPPLY OF CASH, BONDS, AND STOCKS

As the economy grows, the amount of cash and bonds owned by the five parties also expands. They borrow money to fund investment in a growing economy. The more they borrow, the more the supply of cash and bonds grows. As you can see in the graph to the right, this figure grows by 3-15% per year.

If an investor is going to maintain a constant portfolio allocation to equities, the supply of equities must grow 1:1 with the supply of cash and bonds for stock prices to remain the same. Equity supply increases through equity issuance. On average, since companies buy back a large amount of stock through repurchases, the supply of equities has actually been flat for the past few decades.

This means the growth in the supply of equities does not keep pace with the growth in the supply of cash and bonds.
TYING IT ALL TOGETHER

Value investors say valuation multiples (like P/E) are inversely related to stock returns. And they are. But what makes this relationship true? Stock prices don’t change because investors target a different valuation multiple. Stock prices change because investors, in aggregate, get more or less eager to own stocks.

For example, let’s say investors hold $100 of cash and bonds and they choose to allocate 25% of their portfolio to stocks. If the economy grows and investors borrow money like they do in an expansion, the supply of cash and bonds might grow by something like 10%. Investors would then have $110 in cash and bonds. But if the supply of equities remained flat, there is now 25% of $110 being allocated to stocks as opposed to 25% of $100. There’s more money having to be allocated to the same finite amount of stocks, therefore stock prices have to rise.

So what matters most is the growth of the supply of cash and bonds and the average investor equity allocation preference. In the above example, what if the supply of cash and bonds grew to $110 but the average equity allocation preference fell to 22.5%? Then the same amount of money ($25) would be allocated to stocks, meaning stock prices would stay flat. So rather than saying valuations multiples revert to the mean, we should say the equity allocation preference of investors changes.

In bull markets, people become more optimistic about the future and are willing to pay a higher price for stocks. In bear markets, people get pessimistic and concerned about paying a high price for the uncertain returns of stocks. This explains things like the earningless bull market of the 1980s. In this period, earnings did not rise. Stock prices didn’t care, they soared to a P/E of 20 even when interest rates were >10%. At the start of this period, investors were drastically underexposed to equities and what caused the bull market was that investors gradually got comfortable having more of their portfolio in stocks.

WHERE WE STAND NOW

Let’s revisit the original graph from the first page. As you can see by the dark blue line, the average investor equity allocation is currently elevated at 40%. This has historically translated to forward 10-year compound returns (including dividends) of around 5% per year.

When you compare this estimated rate of return with the historical 8-10% from stocks, yes, stocks are overvalued now. Considered within the context of cash earning 1% and the 10-year U.S. Treasury yielding 2.5%, stocks begin to appear a bit more attractive. Obviously we can’t know for sure if stocks in 2016 proved to be a good buy, but based on the average investor’s equity allocation, stock owners should expect total returns in the mid single digits.
Average investor equity allocation data is sourced from the St. Louis Federal Reserve’s FRED database. Subsequent 10-year CAGR data is calculated based on the returns of the Wilshire 5000. Subsequent returns were simulated and hypothetical and were not realized in a client account. Value of investor owned assets, yearly growth in cash and bonds, and yearly growth in equity supply were all sourced from the St. Louis Federal Reserve’s FRED database.

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