# Stock Returns Aren't Limited By Growth Rates

By Timothy B. Lee

In an otherwise interesting post on whether Social Security is a Ponzi scheme, Karl Smith makes the following confused argument:

Investment brokers will confidently and with pride point out how stocks returned over 10% per year since the Great Depression.

They do not realize – I believe – that they are obviously leading their clients to believe that unsustainable returns are possible. The economy is only growing at 3% a year. One cannot have a stock portfolio that perpetually returns 10% a year inside of an economy that only returns 3% per year.

That would imply that the share of the economy claimed by stocks is rising each year. First, this is empirically inaccurate but more fundamentally it's a problem because one cannot have a sensible claim on more than 100% of the entire economy.

The easiest way to see why this argument is wrong is with a concrete example. Suppose we're in an economy with a 0% annual growth rate. Its stock market has just one stock, ACME, which always costs $100/share. Every year, ACME pays dividends of $10 per share to its shareholders. If you have a portfolio consisting entirely of ACME stock, and you always re-invest your dividends in buying more ACME stock, then you'll consistently get a return of 10 percent a year.

Now, Smith is right in a trivial sense. Obviously, everyone holding ACME stock can't simultaneously grow their portfolios by 10 percent per year, because they'd have no one to buy stock from. But that fact doesn't tell us anything about individual investors. At any given time, some investors will be looking to cash out, while others will be looking to buy in. As long as enough people cash out each year to keep the price at $100, the ones who are looking to grow their holdings can enjoy 10 percent returns indefinitely.

In short, there's no necessary connection between the long-term rate of return enjoyed by the average investor and the long-term growth rate of the economy. Rather, the long-term rate of return on stocks is determined by the ratio of share price to dividends. If share prices are low, then stock returns are high, and vice versa. I don't know if stocks will average return 6-7 percent real returns (~10 percent nominal) over the next century as they did during the last one, and neither does Smith. But it's a non sequitur to say this can only happen if the American economy grows at 6 or 7 percent per year.