The S&P 500, including dividends, has produced a meager 4.86% annualized return for the 19-year period since 2000. That return has beaten inflation, but I call it meager because it?s not the 10% or so that many stock brokers, financial advisors, and market historians have taught much of the public to expect for such a long period of time. The return is way below the market's long term average, even if our starting point is a bit arbitrary and convenient (the start of the technology stock meltdown).

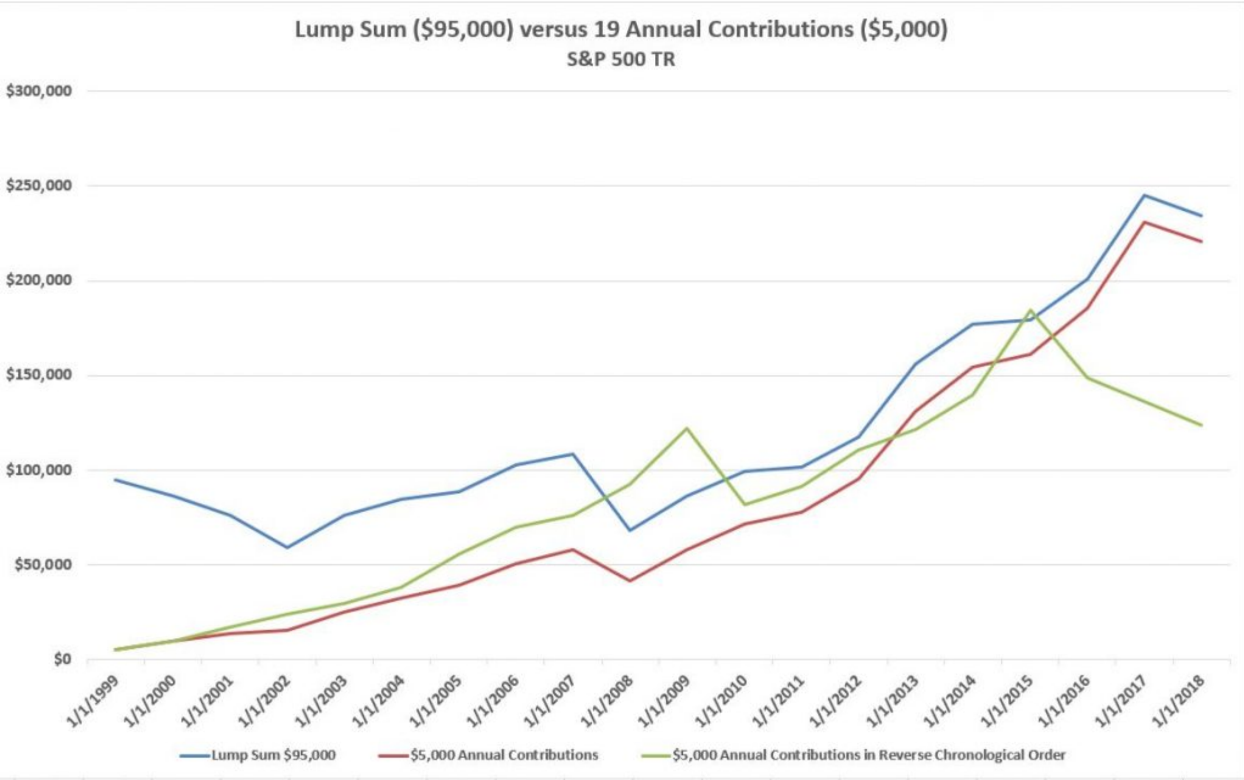
But there is another lesson from the past 19 years besides subpar annualized returns. Those returns are radically bifurcated or back-loaded. In other words, they have accumulated recently or in the second half of the nearly two-decade period, not the first. And that means people in the age range of, say, 45-55, who have been investing by contributing steadily to work-sponsored savings plans like 401(k)s and 403(b)s for the past couple of decades, have been the beneficiaries of an amazing sequence of returns. It also means they may be unprepared for a less beneficial sequence in the future.

A way to illustrate this point is to compare a $95,000 lump sum investment in the S&P 500 TR Index in 2000 to a series of 19 $5,000 annual investments from 2000 through 2018. Amazingly, the final dollar value of the periodic investments nearly equals the dollar value of the initial large lump sum.

If the compounding is steady a large lump sum should outstrip periodic contributions because only a few of the contributions are getting the benefit of compounding for a long time. Only if the compounding is completely lop-sided, with positive returns occurring overwhelmingly in later years (which is what has happened), should these investments be nearly at the same dollar level. Another way of saying this is that, assuming reasonably even compounding, you should always want to invest a large lump sum immediately rather than dribble money into an investment over time. But the sequence of compounding over the last two decades has been anything but even or steady.

Volatility doesn?t matter for a one-time, lump sum investment. It makes no difference to the final amount when, over the investment period, the returns arrive; the annualized return will tell you what you have at the end. But when you get the returns matters a lot in cases of periodic contributions or withdrawals. When you?re saving periodically, you want the big returns, if possible, after you?ve accumulated some money. And you?d like to get the inevitable bad years out of the way in the beginning of a periodic saving or investment period when you don?t have a lot invested. That?s exactly how it?s worked out for middle aged people today who have been lucky enough to work steadily and earn enough to save periodically for the past two decades. The bad years came early when very little was at stake, and the good years came much later when much more was at stake.

To illustrate the importance of sequence of returns further, the chart below repeats the first chart with an additional line showing contributions made in reverse chronological order (2018-2000). Clearly, getting the big returns in the beginning, and poor returns at the end of a contribution period matters a lot for the final result. In the reverse chronological order scenario, the amount of final savings decreased roughly $97,000 (or 43%), from around $221,000 to around $124,000.



If investors were also able to ramp up their savings in the second decade, when returns were much higher, that?s worked out even worse for them in the reverse chronological scenario and better for them in the chronological scenario. Of course, it could also work out badly in the future if the larger contributions are buying stocks that, in retrospect, look like they might have been overpriced. Time will tell.

Last, it?s likely that those doing periodic investing haven?t realized how lucky they are in taking their lumps early and reaping benefits later. The poor overall or annualized return of the market over the full 19 years is less apparent to them. It also might not be apparent to them how quickly their luck can change, and that losses would matter a lot now that they have much more money saved. The poor returns of their early investing years could re-materialize, and that would be much worse for them now than it was when they first started saving money.

Target date funds might provide some protection to middle-aged investors in that they are surely less allocated to stocks for someone who?s 45, 50, or 55 than they were when the person was 25 or 30. But are they as conservative as they should be given today?s valuations, which the boffo returns of the past decade have produced?

Many financial pundits and advisors say you should just try to control the things you can. As an investor, that means the rate of savings, fees, and little else. You can?t know what your sequence of returns might be, according to the conventional advice. Sometimes you?ll get lucky, and sometimes you won?t; either way, just keep investing in an allocation driven by age and distance to retirement. Maybe that?s true in the end, but if you?re not wondering about how lucky the past long sequence has been for middle-aged savers and whether the next one will be as favorable to them, now that they have more at stake than they did 15-20 years ago, you might not be thinking hard enough. Even if you make no moves in your portfolio or investment strategy, you should probably be girding yourself emotionally for a less benign environment.