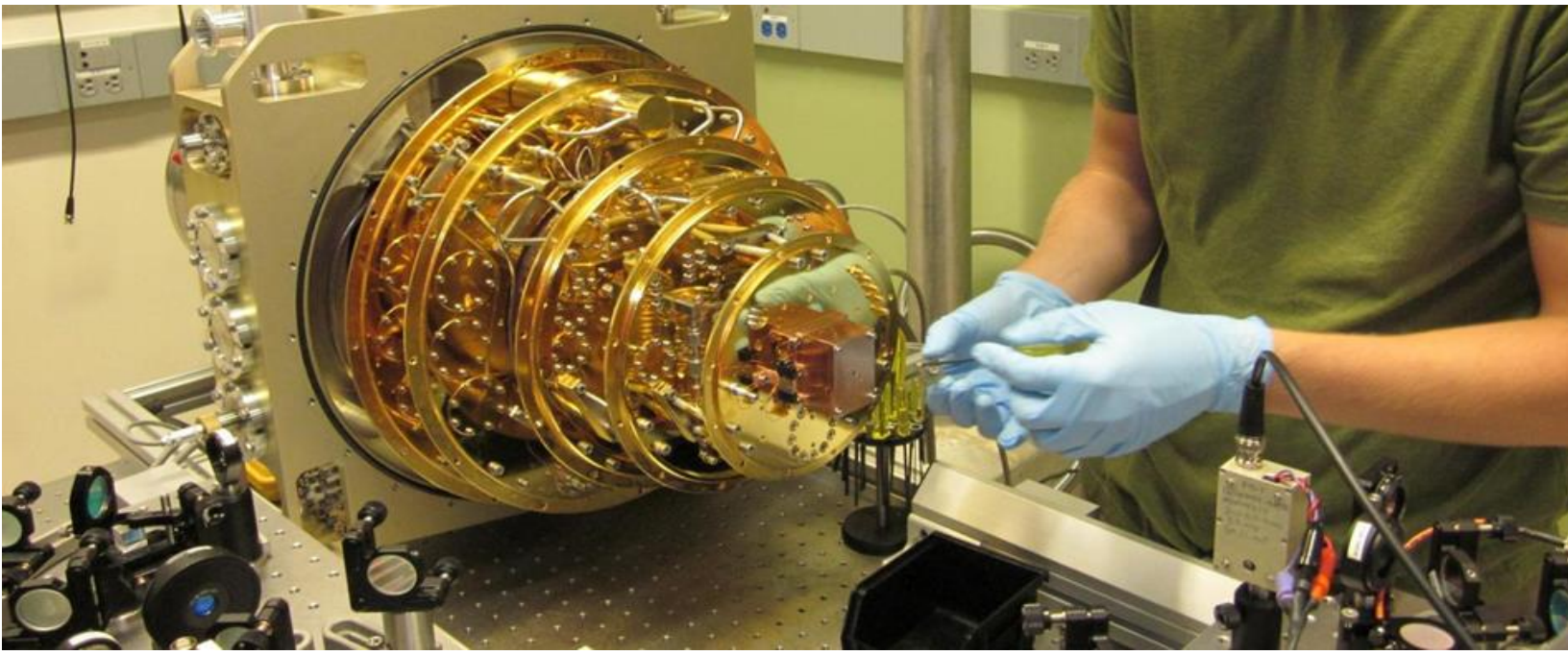
Sankala Group



A Quantum Path

Peter Burns PhD

I took a scenic route to investing, arriving fashionably late to the world of stocks and trading. I was not the type that followed the markets in high school or started day trading in college. No, my background is in physics. But more broadly speaking, my favorite subject has always been the pursuit of knowledge. Or said more honestly, I've always been a nerd. I'm not sure if it will make it on any official documents, but I was recently addressed as the Chief Nerd of the Sankala Group, which includes pretty steep competition. My love of learning initially led me to physics. I remember when I was a teenager, reading about a group of physicists meeting in Geneva to discuss why time only goes in one direction. I was blown away to find out that people were getting paid to spend time pondering such questions and was hooked.

I ended up in the field of quantum physics studying how the quantum behavior of mechanical and electrical devices could be used to make a new type of computer called a quantum computer. I moved on not because it was a solved problem (if it was, we would all be talking

about it instead of AI) but because as I have grown, my interests have become slightly less esoteric and more practical to people's lives. Not that time going forward doesn't impact all of us, I'm just not sure if there is anything for us to do with that information. I love working in a field now where we take direct action on our information and analysis.

So, why am I sharing all this? I want to illustrate my unique path into this field, showcasing our team's perspective and expertise, and highlighting a few of our investment strategies and goals along the way.

Toward the end of my graduate studies, I was reading market headlines, but did not pay close attention until I heard about a study by Morningstar[Link]. This study revealed the stark reality of most investors' performance, even among those invested in index funds. Over a decade from 2003-2013, Morningstar's average investor gained only **4.8%** compared to average growth of **7.3%** for the funds they were invested in over the same period. As someone with a scientific background, I was taken aback by this discrepancy. I had assumed investors, dealing with matters crucial to their financial well-being, would approach their decisions analytically, and therefore such a disparity would not exist. I wondered, how could there be such widespread underperformance and the failure to even match the index?

Now, maybe it speaks to the hubris of receiving a PhD in quantum physics, but I thought to myself *here is a field teeming with smart people and money all chasing the best solutions, and yet big problems remain unsolved.* That is precisely the sort of open-ended exploration I thrive on. It may not be as grand a question as why we are moving forward in time, but it fits my evolution perfectly. The biggest thing I missed during my PhD studies was the feeling that my work was having a positive impact on people's lives. Now I leverage my mathematical and analytical skills to help clients realize practical financial goals.

As I made the transition from physics to finance, I dove headfirst into learning about markets, real estate, investing, and human psychology. I read investment books, textbooks, papers about economics, and anything else I could get my hands on. The biggest thing that graduate school reinforced in me was how to be a diligent learner, but another equally valuable lesson was the importance of a good team. Nowadays, most hard problems need to be solved through collaboration. Even though society loves the image of a lone, hero scientist toiling away for long hours to finally achieve a huge breakthrough, realistically it takes a team of brilliant, hard-working people to make progress. Luckily for me, I found exactly that in the Sankala Group. What I was learning about was in perfect resonance with their strategy. I found a team dedicated to continual learning, meticulous attention to detail, and a reliance on scientific principles to navigate the world of wealth management.

I can't cover all aspects of why people struggle to manage their money in one letter. However, I can show a couple of common pitfalls and what we do at Sankala Group to avoid them. Personal finance is not a completely solved problem mainly because of what is contained in the title: *personal*. People are all different and their personal needs and timelines are all unique. One-size-fits-all models don't work, so we tailor our approach to accommodate diverse circumstances. The other impact that *personal* has on personal finance, is that markets are made up of individuals, and people are driven by fear and greed. In the long run, capitalism produces companies that are extremely good at building profits and passing these profits on to their investors. Still, in the short run, the price of a company can vary wildly as human emotion interferes. I'm not the first scientist to notice these challenges, the famous physicist Richard Feynman once said, "Imagine how much harder physics would be if electrons had feelings!" So, our goal is to construct a mathematical investing model that can be personalized to the unique circumstances of individual investors and robust enough to withstand the emotional swings of the overall market.

Considering that we probably are not going to change human nature, what can we do to protect our investments from its influence? First, it is important to realize that markets and humans have been around for a long time. The emotions that fueled the Dutch tulip mania of the 1600s are the same that drove the dot-com bubble and are the same that will drive the next exciting investment craze, including AI. In fact, even as governments have gotten better at stabilizing the real economy, the volatility of the stock market has remained almost unchanged.

Figure 1 is taken from Jeremy Siegel's book *Stocks for the Long Run* and it shows the volatility of the stock market since 1830 as measured by standard deviation of monthly returns. Outside of the Great Depression, there is almost no trend. This suggests that, even as people have supposedly gotten smarter about investing and as the government has improved regulations in financial markets, the market has not gotten smoother. One interpretation is that people, on average, are comfortable with a certain level of inherent risk. As markets become more efficient and economies more stable, individuals compensate by taking slightly more risk, resulting in similar price swings in the short term. Another way to say this is - if you want to enjoy the returns that the market provides over the long term, you have to be willing to stomach the short-term fluctuations.

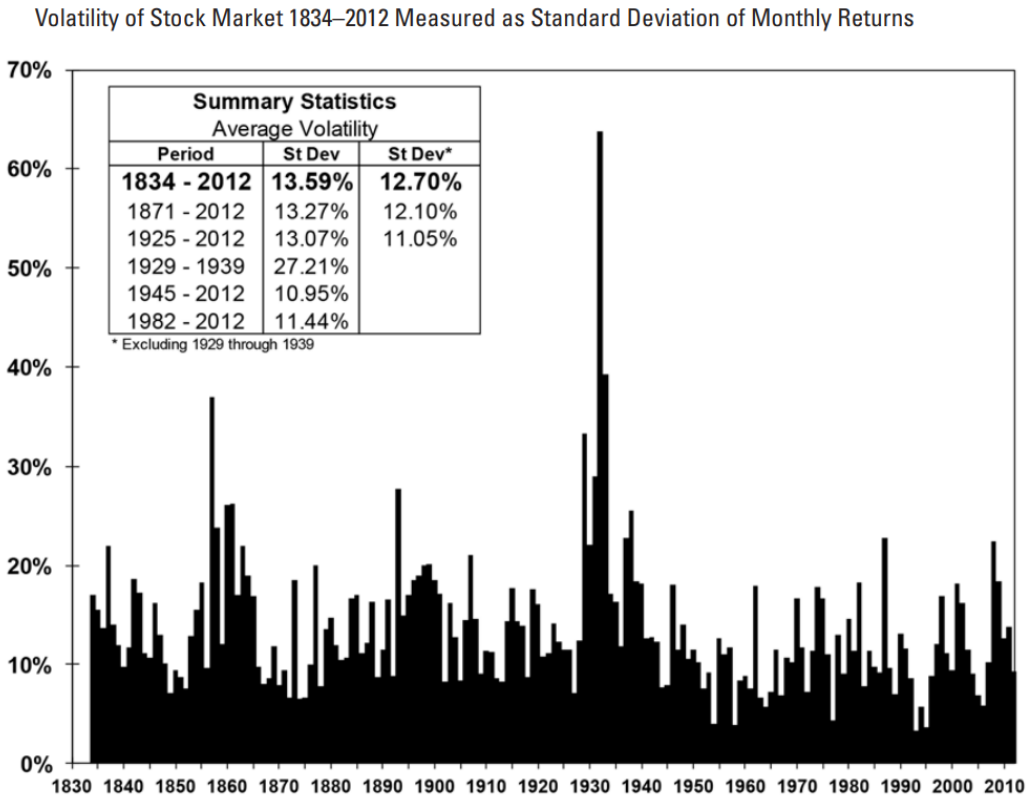


Figure 1: Average volatility of the stock market. Taken from Siegel, Jeremy J. (January 7, 2014). *Stocks for the Long Run: The Definitive Guide to Financial Market Returns and Long-Term Investment Strategies* (5th ed.). New York: McGraw-Hill.

Can we protect our clients from short-term price swings while still capitalizing on the long-term potential for growth provided by stocks? Well, one goal of an intelligently constructed portfolio is to smooth out these swings. The objective is to build a portfolio of less correlated assets and then rebalance on a disciplined schedule to minimize the volatility of a portfolio's value. You might ask, if I have a long-term horizon, why should I care? Don't I just want the highest overall return? The answer is that while we can adjust a portfolio to reduce volatility, *it is challenging to eliminate volatility in our own lives*. Each of us has a lifestyle that is full of surprises, both good and bad, from a surprise medical bill to a surprise grandchild, you never know when life will throw large expenses your way that can alter the best laid long-term plan. To illustrate the importance of a resilient portfolio in this context let's look at two simple examples.

I will use the stock market's historical returns for a 10-year period to demonstrate what the random timing of a couple of large withdrawals can do to an ending portfolio balance. *Figure 2* shows the historical returns of a portfolio with an initial value of $100,000 invested 100% in the S&P 500 from 2005 to 2015 and the effect of a couple of ill-timed withdrawals of $20,000 on the ending value. The blue line represents the total return of an initial investment of $100,000

without any additional contributions or withdrawals. The gray line represents two withdrawals when the market was recently doing well and the orange line shows the portfolio value following two poorly timed withdrawals. The high volatility of the S&P 500 means that uncertain timing of withdrawals has the potential to eat up almost all of the returns.

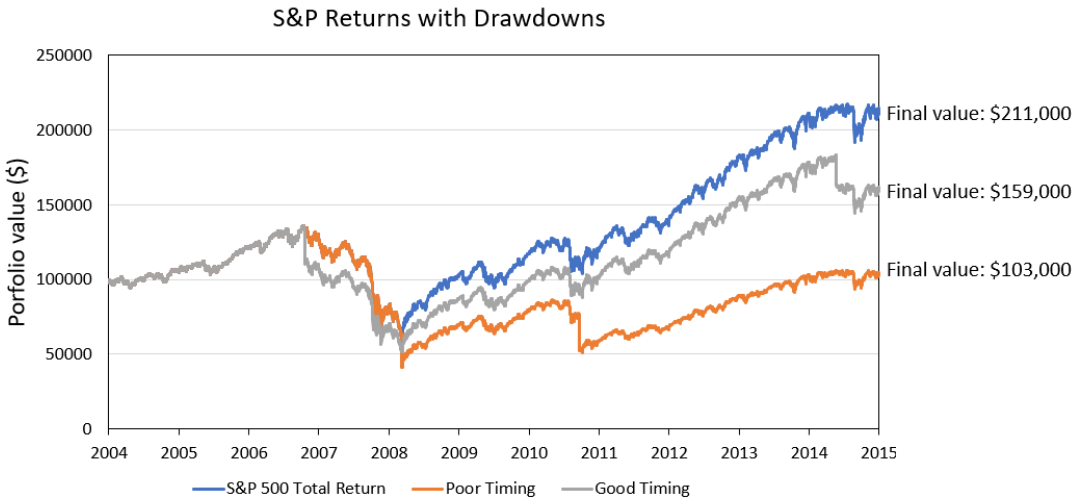


Figure 2: How life expenses impact the final value of a high volatility portfolio

If we look at the same period and withdrawal timing but with the simple switch to a basic 60/40 stock/ bond portfolio, we can see the pure benefits of reducing volatility. The results are in *Figure 3*. Although this portfolio yields slightly lower long-term returns in the case of no withdrawals, it does almost as well in the well-timed withdrawal case and outperforms in the case of poorly timed expenses. Notice that the spread in ending values is much narrower than in the S&P example, meaning that this portfolio will more closely produce similar long-term returns for a variety of life circumstances.

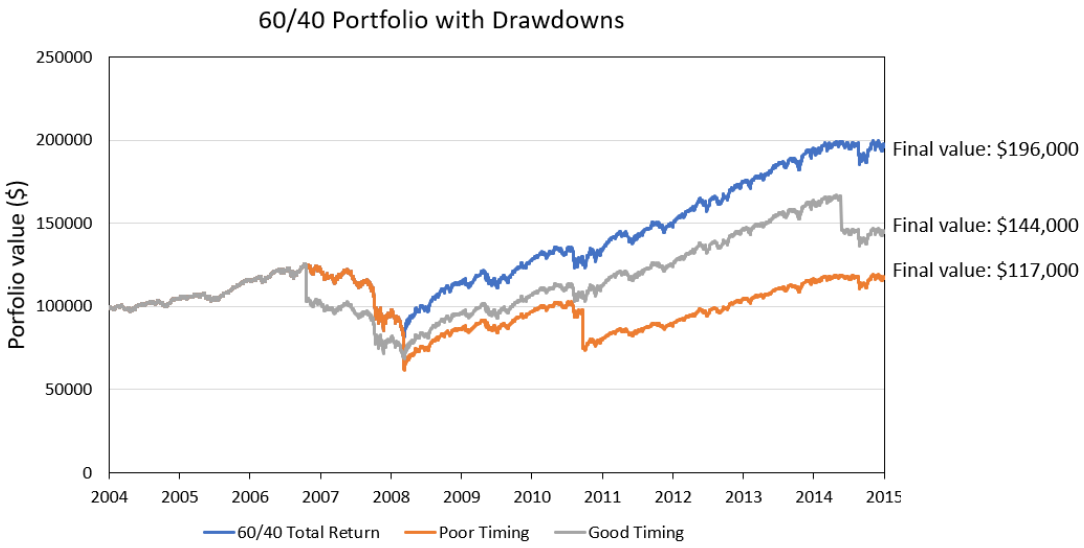


Figure 3: How life expenses impact the final value of a lower volatility portfolio

This is a simple example, but the analysis is robust to a variety of scenarios. Our actual portfolio draws on the benefit of having many differently correlated asset classes to produce lower volatility while preserving long-term growth. The bottom line is clear: if you are going to build a portfolio to produce the best possible results given life's surprises, aiming for lower overall volatility is key. This also shows a tradeoff that helps us adjust a portfolio to individuals' life stages. For those consistently contributing to their portfolios, we can utilize dollar-cost averaging and adjust the risk profile slightly to pursue larger long-term returns. Conversely, for individuals entering retirement and beginning to draw down their portfolios, reducing volatility and slightly adjusting the risk profile lower becomes even more crucial.

As custodians of your hard-earned savings, we aim to produce portfolios that foster long-term growth while offering stability in an uncertain world. Most investors cannot tolerate losing half their investment's value, which is a risk inherent (and somewhat common) to 100% equity investing. We achieve more stability by steering clear of short-lived investment fads and instead placing our trust in long-term research. At an individual level, we tailor a plan to match each person's unique circumstances, crafting a portfolio with their various goals in mind. We focus on minimizing taxes through disciplined rebalancing and selecting low-cost index funds composed of assets that build long-term wealth.

While we won't be unpacking the nature of black holes, or causing time itself to move backwards, we will certainly be increasing the probability clients reach their goals and providing

them more free time to focus on their own highest calling—and hopefully having much less anxiety in the process.

Best,

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