

INVESTMENT NEWSLETTER

“ I haven’t changed because the stock market rebounded. I changed because I learned that there was a different way to think about investing.

NOW AND THEN

MARCH 2018
Dave Goetsch

Dave Goetsch, Executive Producer of The Big Bang Theory, reflects on his investment experience in the recent market downturn and contrasts his new perspective with memories of the 2008-2009 financial crisis.

Seeing all the recent headlines about the sudden downturn in the stock market has transported me back to February of 2009, when I was close to despair. It’s striking how different I feel now.

In February 2009, the stock market was down around 50% from its high, and everyone seemed to feel like the sky was falling. I was familiar with this state of panic because my relationship to the financial markets was that I didn’t trust them.

They were always going up and down in ways no one could predict, and I couldn’t trust those folks who said that they could anticipate what was going to happen. So when the market went down, I went down with it—sinking into a depression, knowing there was nothing I could do.

What a difference nine years make. I haven’t changed because the stock market rebounded. I changed because I learned that there was a different way to think about investing. I was right not to trust those people who thought they could predict what was going to happen in the markets, but I was wrong in thinking that there was nothing to do. I’ve learned that I can have a great investment experience if I just accept a few simple truths.

I have to understand the uncertainty of the market. The stock market, as measured by the S&P 500 Index, has returned about 10% per year over the last 90 years,¹ but there are very few individual years in which it has ever actually returned that amount. In fact, how many of those 90 years do you think the S&P 500 was up more than 20% or down more than 20% for that year? The answer is 40. Astounding, right? I wish somebody had explained that to me decades ago. Then I would have known to look at stock market returns in terms of decades—not years, months, days, or hours. I would understand that so many of those articles and cable news pieces are just noise, designed to keep an audience obsessed and unsettled.

In order to be a long-term investor, you have to have a long time horizon. This can be hard to remember when you’re being assaulted by noise, but if you can stay strong, the results are stunning. By results, I don’t mean the investment returns, which hopefully are good. The return I’m talking about is how I feel every day. I worry less—not just about the future, but also about the present. Of course, I know that there are no guarantees when it comes to investing, but I feel like I’m going to be okay. I have a plan.

There’s no way I could’ve done this without a financial advisor. I needed someone who could not just talk me through what my asset allocation should be, but also help me work through how I felt about investing and what exactly I could do to change my perspective.

I was a mess nine years ago. Now, my outlook is totally different. The markets haven’t changed; they still go up and down. The difference is, I don’t anymore.



**Wealth
Management**

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THE DIMENSIONAL APPROACH: AN INTERVIEW WITH GERARD O'REILLY

FEBRUARY 2018 | Robin Powell

One of the best things about this job is getting to meet some of the smartest people in the world of finance, and they don't come much smarter than Dr Gerard O'Reilly. After earning a doctorate in Aeronautics and Applied Mathematics from the California Institute of Technology, he joined Dimensional Fund Advisors as a Research Associate in 2004 and became Co-CIO ten years later. Last year he was appointed as Co-CEO, along with Dave Butler. I caught up with Dr O'Reilly at Dimensional's London offices, where he gave a rare and wide-ranging interview.

RP: Dimensional's philosophy is very much based on academic evidence. Briefly, what sort of evidence are we talking about? And why is it so valuable?

GO'R: Academic finance is a discipline with a long and rich history. It's been around for 50 to 60-plus years, and we at Dimensional have been involved with a lot of the great minds of academia over the past number of decades. What academics have really tried to do is understand the function of markets, how markets work, what drives prices, and what information you can get out of prices for publicly traded securities, and they've gone about answering those questions in a very theoretical, robust and empirically-driven way. So we can really address these questions with as many scientific methods as possible.

RP: What would you say to people who argue that academic finance is theoretical, but that financial markets are about the real world?

GO'R: I would agree. Academic evidence has to be, in some respects, theoretical. Academics come with models of the world, and those models are usually incomplete. But you gain insights about the real world from those models — insights about better ways to invest, better ways to structure portfolios — so that when you come to the real world you're better equipped to make rational investment decisions. Academia, by its nature, has to simplify the real world, so that you can understand the real world better. But that's the beauty of it. Academics simplify the world just enough so that it's real enough to be interesting, but understandable enough that you learn something.

For Dimensional, I would say that pretty much everything we do has a theoretical and empirical foundation — for example, in terms of how we structure portfolios, how we identify differences in expected returns, and how we go about managing those portfolios from day to day. A lot of that is based on academic finance, but we couple that with very practical experience, because you have to interact with markets, you have to understand regulation and the various frictions in markets. I think Dimensional does a great job of pairing those academic insights with a very structured way of investing, and a lot of knowhow on how to execute efficiently in real markets.

RP: For you, who are the most important academics you

work with?

GO'R: There are a number of absolutely outstanding names in academic finance we work with. I won't name them all but I'll mention a few. Gene Fama, who won the Nobel Prize a few years ago, is an academic that we have been very closely related to since the founding of the firm, along with Ken French, who is a co-author and a very close collaborator with Gene Fama. What we've used from their work is the intuition that it's given us about prices. Security prices reflect information, and in particular we think that different stocks have different expected returns, and different bonds have different expected returns. French and Fama's work has helped us tremendously in using real-time security prices to say which assets have higher expected returns and which have lower expected returns.

Other academics we've worked with are Robert Merton and Myron Scholes, both of whom have also won a Nobel Prize. Their work has also given us tremendous insights, whether it's in life-cycle finance, or how to structure portfolios.

So that's to name just a few of what I call the greatest academics in finance, and there are many more that we're associated with and work with. The work that they have done has really led to some big innovations in the field of practical investing that Dimensional has been able to use to the benefit of our clients.

RP: It's more than 25 years since French and Fama produced their famous Three-Factor Model. Tell me how Dimensional's research process works today.

GO'R: We look at up-to-the minute research, and how we approach research is like this. We need to have a good rationale to expect something in the data. How do academics answer problems? They pose the problem, they set up a model to help study the problem, they get empirical data to test the model, and then they determine if the data rejects the model. If the data does not, they may have a good working hypothesis that allows them to learn something about the problem they posed. That's the scientific process we use.

When it comes to differences in expected returns, what the Three-Factor Model did was it helped organise the historical data to show systematic ways to pick up differences in expected returns across stocks. So, should you use a new model every year? Well, there are some things that stay the same, and some things that change. So Dimensional changes where we need to change, and where we don't need to, we don't.

We think there are differences in expected returns across stocks and across bonds. How do you identify those? Well, what's the intuition from the Three- and Five-Factor Model? Lower prices and higher expected cash flows mean higher expected returns. So, how do we structure portfolios? We say, let's look for low-price stocks, relative to some fundamental measure. Then, high expected cash flows — i.e. high profitability — mean higher expected returns, so let's overweight those

stocks.

We don't think investors are suddenly going to stop demanding differences in expected returns. We think it's very unlikely that every stock in the world will have the same expected return at some point in the future. Unless that happens, you're always going to have size, value and profitability premiums.

But what changes is how you go about identifying which stocks have low relative prices, and how you go about identifying which have high expected cash flows. Those things evolve as accounting practices evolve, as data evolves, and as you get better and better data. But the underlying principle of the Three- and Five-Factor Model has been around for hundreds of years and will be around for hundreds of years.

RP: As you say, Dimensional's focus is on delivering higher expected returns through exposure to specific risk factors. But as Fama has himself said, the broad, market-cap-weighted index is still an excellent starting-point, isn't it?

GO'R: I would agree with Gene 100%. If you are investing in an entire market in a cap-weighted portfolio, that's a pretty good investment. There's nothing wrong with that investment.

What do investors do? Investors save, so they forgo consumption today, to grow their wealth, in excess of inflation, so they can consume more tomorrow. That's why most people save. They save for retirement or for consumption in the future. If you can increase the expected return of a portfolio, there are two things you can do with that. You can lower the amount that they have to save today, to afford a similar level of consumption in the future. Or you can have them afford more in the future, so they can live an even better life in the future, from making sacrifices today.

When it comes to increasing expected returns, you want to do so in a very careful way. Because the market is a very good portfolio to own, as you go about increasing expected returns by pursuing size, value and profitability premiums, you don't want to end up with a portfolio that's inferior to the market, that's a lot less diversified, that has much higher turnover, or that has much higher costs. And what we've been able to do at Dimensional is pursue those premiums in a very diversified, cost-efficient, low-turnover way, so that people can expect to consume more in the future by investing in funds that pursue these premiums than they would by just investing in the market. That's really what we're about. We're enabling people to retire either earlier or with a better standard of living in retirement, and I would say that's the main reason for anyone to pursue higher expected returns.

RP: If people do go down the factor investing route, should they be looking to capture one particular risk premium, or a combination of them? And how many is too many?

GO'R: That's a great question. You really have to examine what each new variable brings to the table. Does it improve your understanding of expected returns and, in particular, differences in expected returns across stocks? And does that

enhanced understanding allow you to build a better portfolio? That should be considered case by case.

So, as an example, Dimensional started off with small-cap portfolios back in the early '80s, and added value in the '90s, and then in the 2000s we added profitability. Each one of these enhanced our understanding of what drives differences in expected returns, and enabled us to build portfolios that were still diversified but that were better and more reliable, as you added a new premium.

Ultimately, the more premiums you pursue, the marginal impact they're going to have on the portfolio is going to diminish. It's all about expected cash flows and differences in prices. That's the motivation for all those premiums. Then, for us, the question is, how can I say something more precisely about the expected cashflows, or differences in prices? That's where the evolution comes along.

If you're into 30 or 40 or 50 factors, they're all interacting with each other, and it's not clear what you're getting in that sort of portfolio. As few as possible to describe the world well is Dimensional's preferred position.

RP: Fama and French have identified a number of risk factors that tend to deliver higher returns over time. The ones Dimensional focuses on are size, value and profitability. To what extent should investors diversify across those different factors?

GO'R: I would say a good approach is a globally diversified portfolio to begin with. Global diversification is your friend in equities and it's your friend in bonds. Now, that doesn't mean that global diversification won't result in some periods where you have disappointing returns, or negative returns; that's not what global diversification does for you. But it does improve the reliability of your ability to pursue factor premiums. So, start with a globally diversified portfolio, then overweight smaller cap stocks, lower relative price, or value, stocks, and higher profitability stocks, in a measured way. You should have all three in one portfolio.

There will be years when small caps underperform large, or value underperforms growth, or high profitability underperforms low profitability. There will be some of those years. But by having a well-diversified portfolio that pursues all of those premiums, you smooth out those years a little bit. While there will still be the possibility of underperformance, you improve the possibility of outperformance.

The other thing I would mention is the time horizon. While such a portfolio has positive expected outperformance every day, what's expected doesn't always happen. But the probability of what's expected happening increases the longer the holding period. That's what you see if you extend the holding period to ten years or 20 years — the possibility of negative size, value or profitability premiums decreases dramatically. So for folks with long horizons, the probability of them realising those premiums goes up.

RP: But is there a danger that, as more and more tilt towards these factors, the premiums associated with them will eventually disappear?

GO'R: To address that question you have to ask, is there a danger that people demand the same expected return to hold every stock in the world? If the answer to that question is Yes, and there's no difference in expected returns across stocks, there'll be no premiums of any kind. I think the probability of that happening is small. People demand differences in expected returns to hold different securities for lots of different reasons. Differences in perceived risk may be one of those reasons. But I think it's a highly unlikely state of the world where, with every stock, no matter what the stock, investors are willing to hold each and every one of those at exactly the same rate of return.

As soon as you have differences in expected returns, that's a discount rate effect, and you've got value and profitability premiums. What's value telling you? People are willing to pay a lower price for this stock and a higher price for that stock. Low price, high discount rate. Profitability? This stock has higher expected cash flows than that stock. High profitability versus low profitability. If the price is the same, there's a higher discount rate. As soon as you acknowledge that there can be differences in expected returns across stocks, it implies you have premiums.

Now, the question becomes, what's the expected magnitude of those premiums? Could they decrease over time? That's a possibility, though it's something that's difficult to measure one way or the other. They can get bigger or smaller for lots of different reasons. The way that we at Dimensional think about it is that if you take a measured approach, so that you still remain globally diversified, with thousands of stocks in your portfolio, even if the premiums are smaller or bigger (and you don't know what they're going to be in the future), you'll end up with a good investment solution.

One last point I would make is this. Imagine everyone wants to become a value investor. What happens to value stocks? They become growth stocks. What happens to growth stocks? They become value. The market has to be held by everybody, and if everybody loves value, you should expect a strong premium from value, while all the value stocks move to growth and all the growth stocks move to value. So, even from a conceptual perspective, you've got to think about it at the stock level and how those premiums are realised over time.

RP: Stock markets have had been on a good run for many years now. How, if at all, should that affect the way that investors approach the markets at the moment?

GO'R: The first thing you need to recognise when you're going to invest in the stock market is there will be periods of positive returns in the future, and there will be periods of negative returns. When those will occur, that's unpredictable. You can't say when the returns will be positive or when they will be negative. But you have to acknowledge that if you're going to invest in stocks, there's going to be volatility associated with the value of your investment. Accept that from the beginning, because it is going to happen. We will have negative returns in the future; we will have positive returns in the future.

Now the question you have to ask yourself is, at any point in time, do you think that investors, in aggregate, set prices to a level such that the expected return is negative? No. Investors don't sign up for a negative expected return when they're

putting the value of their assets at risk. When they invest in stocks there's uncertainty about what their future wealth will be. They demand compensation to bear that uncertainty. So prices are set to such a level that the expected equity premium is positive.

If what's expected comes to pass, you get positive returns. But will something worse than is currently expected today come to pass? Well, I don't know! What's expected today, and all the information that's aggregated across market participants around the world, is in the price today. So if something unexpected happens in the future, yes, we could have negative returns if it's unexpectedly bad; if it's unexpectedly good, we could have even more positive returns.

What you have to acknowledge is that, when you invest in stocks, there's going to be volatility. There's going to be tough times and good times. Set an asset allocation that you can live with, that has a good balance between stocks and bonds, so that you can ride out those tough times and stay disciplined, and then stop worrying. Markets are good at pricing information. They're good at setting themselves up to have positive expected returns. But things that are unexpected always happen. And that causes markets to go up and go down.

RP: Dimensional positively encourages investors to use a financial adviser. Why is that?

GO'R: There's a rich field of academic finance that has been developed over 50 or 60-plus years. It's complex, it's deep and it takes a lot of expertise to understand. It's just like medicine. Why do you have a medical doctor? Because they have expertise. They've dedicated their lives to understanding something that most people haven't dedicated their lives to understanding, and they can provide you valuable services that can give you a better experience, because they're keeping abreast of all that medical research and all those advances in medicine. It's the same thing when it comes to financial advice. With any field, there are going to be experts who can help people have a better experience, and that's true when it comes to investing.

Something that is very important when it comes to investing is discipline, and financial advisers can help to instil that discipline in investors, so that they stay the course. As I said, returns are going to be strong and they're going to be disappointing. You've got to get used to that right up front when you invest in markets. It's important, if you can have a long time horizon, that you increase the probability of realising positive returns in all the various asset classes that you can invest in. A financial adviser can help explain what all those different asset classes are, how they come together, and then, when returns are disappointing, help keep the investor focused and disciplined.

There are other aspects to having a financial adviser too. I have a financial adviser who can help me with tax planning, estate planning and all the different types of wealth planning that most people don't spend a lot of time gaining the expertise to be really good at. Some do, but not everybody does. So you can really have a better overall experience across all aspects of your financial health through working with an adviser.

MIND OVER MODEL

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Dimensional Fund Advisors

Checking the weather? Guess what—you're using a model. While models can be useful for gaining insights that can help us make good decisions, they are inherently incomplete simplifications of reality.

In investing, factor models have been a frequent topic of discussion. Often marketed as smart beta strategies, these products are based on underlying models with limitations that many investors may not be aware of.

To help shed light on this concept, let's start by examining an everyday example of a model: a weather forecast. Using data on current and past weather conditions, a meteorologist makes a number of assumptions and attempts to approximate what the weather will be in the future. This model may help you decide if you should bring an umbrella when you leave the house in the morning. However, as anyone who has been caught without an umbrella in an unexpected rain shower knows, reality often behaves differently than a model predicts it will.

In investment management, models are used to gain insights that can help inform investment decisions. Financial researchers frequently look for new models to help answer questions like, "What drives returns?" These models are often touted as being complex and sophisticated and incite debates about who has a better model. Investors who are evaluating investment strategies can benefit from understanding that the reality of markets, just like the weather, cannot be fully explained by any model. Hence, investors should be wary of any approach that requires a high degree of trust in a model alone.

MIND THE JUDGMENT GAP

Just like with the weather forecasts, investment models rely on different inputs. Instead of things like barometric pressure or wind conditions, investment models may look at variables like the expected return or volatility of different securities. For example, using these sorts of inputs, one type of investment model may recommend an "optimal" mix of securities based on how these characteristics are expected to interact with one another over time. Users should be cautious though. The saying "garbage in, garbage out" applies to models and their inputs. In other words, a model's output can only be as good as its input. Poor assumptions can lead to poor recommendations. However, even with sound underlying assumptions, a user who places too much faith in inherently imprecise inputs can still be exposed to extreme outcomes.

Given these constraints, we believe bringing financial research to life requires presence of mind on behalf of the user and an acute awareness of the limitations involved in order to identify when and how it is appropriate to apply that model. No model is a perfect representation of reality. Instead of asking,

"Is this model true or false?" (to which the answer is always false), it is better to ask, "How does this model help me better understand the world?" and, "In what ways can the model be wrong?"

So what is an investor to do with this knowledge? When evaluating different investment approaches, understanding a manager's ability to effectively test and implement ideas garnered from models into real-world applications is an important first step. This step requires judgment on behalf of the manager, and an investor who hires a manager to bridge this judgment gap is placing a great deal of trust in that manager. The transparency offered by some approaches, such as traditional index funds, requires a low level of trust on behalf of investors because the model is often quite simple, and it is easy to evaluate whether they have matched the return of an index. The tradeoff with this level of mechanical transparency is that it may sacrifice the potential for higher returns, as it prioritizes matching the index over anything else. For more opaque and complex approaches, like many active or complex quantitative strategies, the requisite level of trust needed is much higher. Investors should look to understand how these managers use models and question how to evaluate the effectiveness of their implementation. When doing so, rigorous attention must be paid to how any such strategy is implemented. To quote Nobel laureate Robert Merton, successful use of a model is "10% inspiration and 90% perspiration." In other words, having a good idea is just the beginning. Most of the effort required to make an idea successful is in effectively implementing that idea and making it work.

In the end, there is a difference between blindly following a model and using it judiciously to guide your decisions. As investors, cutting through the noise around the "latest and greatest" investment products and identifying an approach that employs sound judgment and thoughtful implementation may increase the probability of having a positive investment experience.

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