False Negatives and False Positives

One of the things that makes the COVID-19 pandemic so challenging is false negatives. Early in the pandemic, it was clear that the consequences of infection are more severe for older people, a group my wife and I were surprised to discover includes us. We also learned that most infected people do not show symptoms until two to five days after they are contagious. Because anyone we encountered might be contagious – despite feeling and appearing perfectly healthy – and because the consequences of infection could be so great, my wife and I isolated ourselves from others for about a year. In other words, from the start of the pandemic until we were vaccinated, we avoided false negatives by acting as if everyone else was positive.

Kenneth French, PhD, Director and Consultant to Dimensional Fund Advisors, reminds us to stick with an empirically sound plan – and not to change the plan unless the data presents a convincing case to do so.

The challenge for investors choosing a portfolio strategy is the reverse. Many patterns that look important in realized returns just happen by chance, telling us nothing about future investment opportunities. Although less extreme than the risk of false negatives in the pandemic, false positives in realized returns can have a big impact on your financial health – lowering your expected return while causing you to incur more expenses and take more risk. As in the pandemic, the solution is to change the default. Assume no return pattern or factor is real until you have compelling reasons to believe it is.

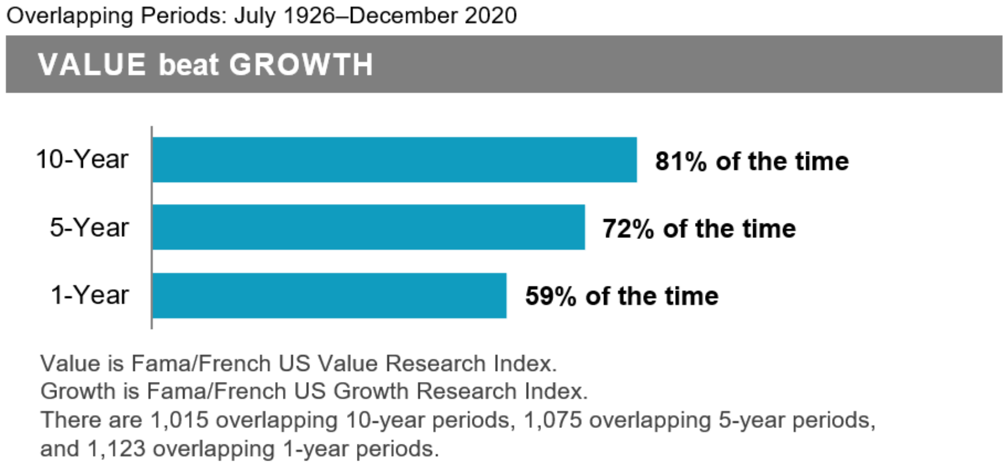
What reasons would be compelling? First, strong statistical evidence, with persistent and consistent differences in average returns across time, markets, assets, and portfolios, is compelling. Ideally, much of the evidence is out of sample, not just a repackaging of the returns used to identify the pattern or factor.

Evidence of excessive search should undermine your confidence in the pattern. Remember, academics and money managers have strong incentives to identify new patterns. Be suspicious when they use strange definitions or unusual combinations of variables to isolate the pattern, especially if the return premium weakens with a more standard approach.

Strong economic logic is the most important reason to believe a return pattern will persist. Ideally, a model predicts a pattern before it is observed in the data. Usually, however, it's data first, then the story, so be skeptical. If it looks like the model was cooked up to explain the pattern, it probably was. Don't believe the story unless the model is truly compelling.

The value effect illustrates these ideas. The first paper Gene Fama and I wrote on the value effect was published in 1992 and used US data from July 1963 to June 1991. We found that book-to-market equity and earnings-to-price ratios have a strong positive relation with future stock returns, and average returns increase systematically across portfolios when we sort on these ratios. Fama and I worked with Jim Davis on a paper that found a similar relationship between book-to-market and average stock returns in the US from 1926 to 1963. We and other researchers have also found a strong value effect in developed markets outside the US and in emerging markets. Finally, although the past 10 or 15 years have not been kind to value in the US, in the full out-of-sample period from 1991 to 2020, value outperformed growth by 1%. Reinforcing this broad evidence, other researchers have found a value effect in bonds, commodities, and currencies.

The Value Effect



Is there excessive search? Gene Fama and I have stuck with the measure of value we started with in 1991, the ratio of book equity to market equity. The only changes we have made are small adjustments to book equity to accommodate revisions in the accounting rules firms must follow. Other researchers use other definitions, but almost all use some sensible measure of a fundamental, such as earnings or cash flow, divided by price. I do wonder, however, whether a few more-recent changes researchers use are driven more by the returns they produce in-sample than by compelling economic arguments.

The economic logic for the value effect is strong. The driver is price. Stocks with high long-term expected returns or, equivalently, high long-term discount rates must have a low price relative to their expected cash flows. If fundamentals like book equity and earnings act as a proxy for expected cash flows, then value stocks, with high ratios of fundamental to price, are likely to have higher average returns than growth stocks, with low fundamental to price.

In short, the value effect is on a solid foundation, with much long-term empirical evidence, robust and complementary measures of value vs. growth, and a simple economic story. Be skeptical of patterns that lack this foundation. Presume they happened by chance, and don't change your portfolio until you have compelling reasons to believe a pattern in past returns predicts future returns.

YOLO and Memes vs. the Efficient Market Hypothesis

You only live once! Social media investors have banded together on unconventional platforms to drive up the prices of a handful of "meme stocks," seemingly without traditional evaluation of investing risks and rewards. They made headlines with their "short squeeze" of GameStop (GME), and, as they garner media attention, their tactics continue. While it's not the intended victim of the YOLO traders, will the efficient market hypothesis (EMH) be a casualty of these events? The answer depends a lot on your definition of efficient markets. Perhaps long-term investors would be better served questioning the potential impact on their investment philosophy.

Fama (1970) defines the EMH as the simple statement that prices reflect all available information. The rub is that it doesn't say how investors should use this information. EMH is silent on the "correct" ways investors should use information and who should set prices. To be testable, the EMH needs a companion model: a hypothesis for how markets and investors should behave. This leaves a lot of room for interpretation. Should asset prices be set by rational investors whose only concerns are systematic risk (the possibility of an investor experiencing losses due to factors that affect the overall performance of the financial markets in which he or she is involved) and expected returns? It seems implausible to link recent meme-stock price movements to economic risks. Rather, they seem fueled by investor demand to be part of a social movement, by investors' hopes to strike it rich with a lucky stock pick, or by plain old schadenfreude.

There is a vast ecosystem of investors, from individuals who manage their own investments to governments and corporations that invest on behalf of thousands. Ask investors why they invest the way they do, and you'll likely get a range of goals and approaches just as diverse. It's this complex system that generates the demand for stocks. Another complex system fuels the supply of stocks. Supply and demand meet at the market price. People may contend that the market is not always efficient or rational, but the stock market is always in equilibrium. Every trade has two sides, with a seller for every buyer and a profit for every loss.

There are plenty of well-studied examples that show supply and demand at work. The huge increase in demand for stocks added to a well-tracked index often creates a run-up in the stock price. Some of this price increase can be temporary and reversed once the tremendous liquidity demands at index reconstitution are met. Index reconstitution – the process of sorting, adding, and removing stocks to ensure that an index reflects up-to-date market capitalization and style – is just one example; instances of liquidity-driven price movements happen all the time. It is well documented that liquidity demands can produce temporary price movements. Investors may wonder whether temporary price dislocations motivated by users of r/WallStreetBets differ from those caused by changes to an index. Lots of buying puts temporary upward pressure on prices, which later fall back to "fundamental value" – it sounds familiar. The more relevant observation may be that markets are complex systems well adapted to facilitate the supply and demand of numerous market participants.

There are numerous reasons people may be willing to hold different stocks at different expected returns. Can all those differences be explained by risks? Doubtful. To quote Gene Fama, "The point is not that markets are efficient. They're not. It's just a model." EMH can be a very useful model to inform how investors should behave. We believe investing as if markets are efficient is a good philosophy for building long-term wealth. Trying to outguess markets might be a quick way to destroy wealth.

It's true: You only live once. The good news is that investors can look to market prices, not internet fads, to pursue higher expected returns. Theoretical and empirical research indicates higher expected returns come from lower relative prices and higher future cash flows to investors. Long-term investors can be better served by using markets, rather than chatrooms, for information on expected returns.

Inflation: An Exchange Between Eugene Fama and David Booth

With the economy starting to recover from the COVID-19 pandemic and investor concerns turning increasingly toward inflation, Dimensional Fund Advisors Founder David Booth talked with Nobel laureate Eugene Fama about inflation and how investors should think about it in their portfolios. Excerpts from their conversation have been edited for clarity.

On Predicting Inflation

David Booth: Gene, you are a founding director of Dimensional and have been involved in our research and corporate governance for more than 40 years. People may not know that you've also done a lot of research on inflation and interest rates.

We always tell people, "We don't try to forecast. We try to be prepared for various outcomes." Inflation is one of those things you want to be prepared for. There's a pickup in inflation risk that wasn't there, say, 10 years ago. Does that cause you to worry?

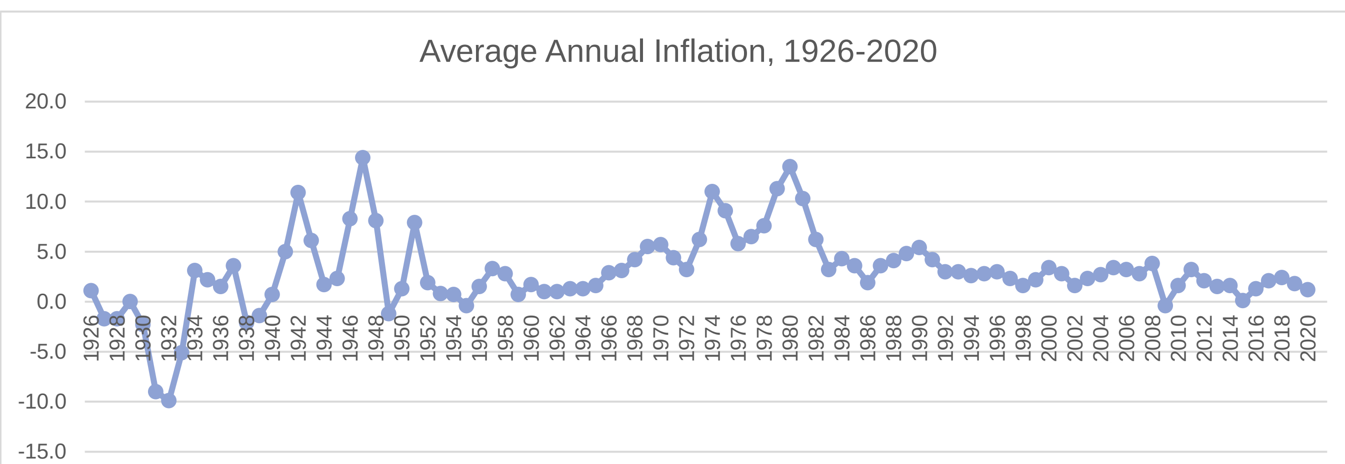
Eugene Fama: Historically what's happened is, when there's a spike, the spike persists for a long time. Inflation tends to be highly persistent once you get it. Once it goes down, it tends to be highly persistent on the downside. You've got to be prepared for that. Predicting next month's inflation may not be very hard because this month's inflation can be a pretty good predictor of next month's inflation, or next quarter's inflation, or even the next six months' inflation. Persistence is a characteristic of inflation. We haven't been in a period of high inflation, or even moderate inflation, for at least 10 years, so I'm not particularly concerned that inflation will be high soon.

On How Investors Should Think About Inflation and Their Financial Goals

Booth: Conditions change, so is there anything about the current environment and the risk of inflation heating up that would cause you to change your portfolio?

Fama: I don't think anybody predicts the market very well. Market timing is risky in the sense that you've always emphasized: You may be out of the stock market at precisely the time when it generates its biggest returns. The nature of the stock market is you get a lot of the return in very short periods of time. So, you basically don't want to be out for short periods of time, where you may actually be missing a good part of the return.

I think you take a long-term perspective. You decide how much risk you're willing to take, and then you choose a mix of bonds, stocks, and whatever else satisfies your long-term goals. And



you forget about the short term. Maybe you rebalance occasionally because the weights can get out of whack, but you don't try to time the market in any way, shape, or form. It's a losing proposition.

Booth: As you get to the point in life where you actually need to use your portfolio, does that change the kinds of allocations you'd want?

Fama: The classic answer to that was, yes, you'd shift more toward short-term hedges, short-term bonds. Once you had enough accumulated wealth that you thought you could make it through retirement, you'd want to hedge away any uncertainty that might disturb that. That's a matter of taste and your willingness to take risk and your plans for the people you will leave behind, like your charities or your kids. All of that will influence how you make that decision. But the typical person who thinks they'll spend all their money before they die probably wants to move into less risky stuff as they approach retirement.

Booth: The notion of risk is pretty fuzzy. For example, if I decide that I want to hold Treasury bills or CDs when I retire, and you did that 40 years ago when we started the firm, and you've got that 15% coupon, that's pretty exciting. With $1 million at 15%, you're getting $150,000 a year. Today you might get less than 1%.

Fama: Right, but I remember when inflation was running at about 15%, so not much better off!

Booth: Those are different kinds of risks.

Fama: When you approach retirement, you're basically concerned about what your real wealth will look like over the period of your retirement, and you have some incentives to hedge against that. You face the possibility, for example, that if you invest in stocks, you'll have a higher expected return, but you may lose 30% in a year, and that might be devastating for your long-term consumption.

Booth: I think part of planning is not only your investment portfolio, but what to do if you experience unexpected events of any kind. We're kind of back to where we start our usual conversation: "Control what you can control." You can't control markets. What you can do is prepare yourself for what you'll do in case bad events happen. Inflation is just one of many risk factors long-term investors need to be prepared for.

Is Investing in Real Estate History?

Is commercial real estate dead? Will anyone actually return to an office, at least to the same degree as pre-pandemic levels, again? Or is videoconferencing the way of the future? And taking this one step further – should you invest in real estate? Maybe now is the time to sell your real estate investments?

Perhaps you have asked these or similar questions over the past 18 months – it would certainly be a logical thought, given the pandemic. That said, we believe there are factors to consider before writing off commercial real estate as dead or searching for real estate investments that exclude commercial real estate entirely. Consider, for example, the convertibility of buildings. Even before the pandemic, we saw malls and office building structures converted into hospitals and schools. From a real estate developer's perspective, if a property can make more money serving in a different capacity, there will be no hesitation to switch. We may also see new uses for commercial real estate, such as more warehouse space to keep up with online shopping demand and also to hold more inventory (to help ward off future supply chain disruptions).

Keep in mind further that investing in real estate does not – necessarily and fortunately – mean exclusively investing in real property. Through real estate investment trusts (REITs), investors are able to gain access to several types of real estate investments without actually needing to own real property. As with all other asset classes, the underlying holdings of REITS, and the mutual funds that hold them, are numerous and varied. The Dimensional Global REIT portfolio provides exposure to over 234,000 properties around the globe (see Figure 1) in sectors ranging from health care facilities to office and retail spaces to cell phone towers.

So before you abandon one asset class in favor of another, remember that investing is a long-term game and that taking bets or speculating on industries is not part of prudent portfolio construction, and certainly not something we at Rockwood would let our clients do. Real estate investments offer diversification benefits and belong as part of a globally diversified, ultra-low-cost, institutional portfolio.

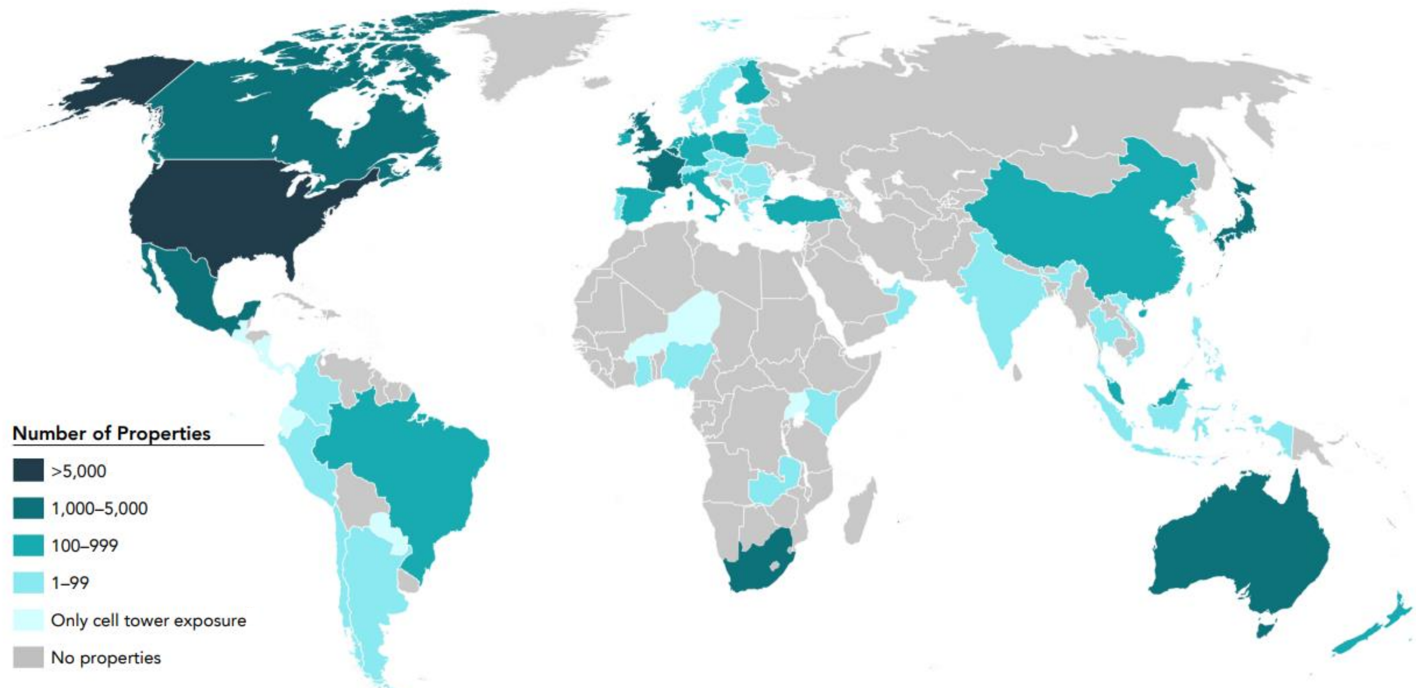


Figure 1: Global REIT Underlying Property Holdings (as of 12/31/2020)

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