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RESEARCH

Three Sources of Alpha: A Conversation with Robert C. Merton

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Mar 22, 2024

Alpha is arguably the most attention-grabbing Greek letter in the investing world. After all, the quest for alpha has been a driving force behind countless strategies. But not all alphas are created equal. In this conversation with Nobel laureate Robert C. Merton, Resident Scientist at Dimensional, we delve into three different sources of alpha: traditional alpha, financial-services alpha, and dimensional alpha (spoiler alert: this is *not* referring to Dimensional with a capital D).

We discuss how financial-services alpha and dimensional alpha can exist even if the market is informationally efficient, why they are more scalable and persistent than traditional alpha, and the synergy between them in well-designed factor strategies. We hope that a deeper understanding of alpha sources can help investors better evaluate performance, allocate assets, and assess a manager's fit and potential.

Wei Dai: Bob, when hearing the term alpha, people often think of the attempt to exploit mispricing. How would you characterize this alpha source?

Bob Merton: This is what I call "traditional alpha," which comes from informational inefficiencies. That's a fancy way of saying that some investors are faster and smarter, and they extract alphas from others who are slower and less informed. Of course, everyone tends to think they are in the former camp, but the truth is that this must be a zero-sum game. Well, actually, a negative-sum game because we put a lot of resources into finding and trading on these alphas.

In fact, Ken French once estimated that the typical investor would increase her average annual return by 67 basis points over the 1980 to 2006 period if she switched to a passive market portfolio.[1] This is not surprising if we simply consider the trading aspect: If you're trading on private information, it is expensive to trade and it is not scalable. Why? Because you need to get the trades done before your information becomes public, you have no choice but to pay for the specificity and immediacy.

Wei: Indeed, my colleagues on the trading team often say that the most powerful tool they possess is the flexibility to walk away from a trade. Now, traditional alpha is what most people are familiar with, but you argue alpha can exist even if the market is perfectly informationally efficient. Can you explain that?

Bob: Actually, there are two more sources of alpha, but let me start with the first one. Suppose a commercial bank wants to long government bonds. It can get the exposure by directly buying bonds in the cash market or through swaps, but as is often the case in the real world, these options come with different regulatory capital requirements. Let's suppose the regulatory capital costs are 20 basis points higher for bonds than for swaps. What would the bank do? Get the exposure through swaps. Who should take the other side of the swaps? Well, it cannot be another commercial bank because they face similar regulatory requirements. The natural counterparty is an asset owner or asset manager who does not face the same constraints. What would be the equilibrium price for the swap? Not the theoretical price in the frictionless no-arbitrage model, but that price plus something between 0 and 20 basis points, say 10. The trade happens not because one party has more information than the other, but because both parties gain from the trade: The bank saves 10 basis points of the regulatory capital cost while the counterparty makes 10 basis points for providing a service to the bank.

"Importantly, because it is no longer a zero-sum game, the financial-services alpha can be more scalable and persistent over time."

Wei: Interesting! The classic asset pricing models often assume a frictionless world, but that is hardly the case in reality. Essentially, you're saying that alpha can come from intermediating institutional rigidities and market frictions.

Bob: Exactly. That is why I call this "financial-services alpha." To generate this alpha, one needs to identify relevant rigidities and devise an efficient trading strategy to provide "the other side" of the trade to alleviate the impact of the rigidity. This service then earns an intermediation fee in the form of an excess return on the strategy. Importantly, because it is no longer a zero-sum game, the financial-services alpha can be more scalable and persistent over time.

Wei: This reminds me of another example where flexibility and superior execution add value. In the securities lending market, investors holding broadly diversified, low-turnover portfolios with flexibility are the natural lenders. With good implementation and risk management, they should have a comparative advantage to earn more lending revenue.

Bob: Absolutely; that is a great example. Let me give you another. We talked about the defining features of an information trade. What if your investment strategy allows you to have some flexibility and trade in the opposite manner? Well, you can effectively get paid by providing liquidity instead of paying for immediacy. And that is alpha! Similarly, you can employ superior execution techniques in many other areas throughout the investment process: corporate actions, corporate governance, FX trading, you name it. I will not belabor this because you know the practical side of investing better than I do, but investors ought to pay attention to this alpha source—it is a source of scalable and persistent value-adds.

Wei: We do spend considerable efforts on implementation to reduce costs and get more out of the securities we hold, so it's interesting to frame this from the perspective of financial-services alpha. You mentioned there's another alpha source not tied to information inefficiencies. Can you elaborate?

Bob: Yes, the last source of alpha does not rely on information inefficiencies nor market frictions. It goes back to my work in the 1970s that extends the classical Capital Asset Pricing Model (CAPM) to the Intertemporal Capital Asset Pricing Model (ICAPM).[2] The CAPM identifies market risk as the only source of systematic risk. In my model, investors face nondiversifiable risks caused by unpredictable changes in the future investment opportunity set, including real interest rates, expected returns, and volatilities not reflected in the single-period CAPM. Consequently, investors demand compensation for exposures to these additional sources of risks, causing differences in equilibrium expected returns across securities along multiple risk dimensions.

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I label the premiums associated with these risk dimensions beyond the market risk as "dimensional alpha." Although they're related, I should clarify that this is "dimensional" with a small "d," rather than Dimensional, the company I work with. As you can see, such alpha relative to the passive market benchmark can exist even under both perfect-market and efficient-market conditions. I would argue that the dimensional alpha is the most scalable and permanent source of alpha because we are talking about risks that will always be there and affect everybody.

Wei: We just celebrated the 50-year anniversary of ICAPM, which provided the theoretical foundation for multifactor investing. It's also interesting to think about the "synergy" between dimensional alpha and financial-services alpha: Well-designed factor strategies can support better implementation of activities that generate financial-services alpha, which in turn support factor strategies by lowering their execution costs. Bob, it's always a treat to talk to you. Any parting thoughts?

Bob: The pleasure is mine. Ultimately, investors need to answer a perennial question: Which managers will have alpha in the future? You can't simply look at the past to predict the future; you need judgment on how persistent and scalable the value-adds are. I hope this framework for understanding different alpha sources and their distinct features can help investors ask the right questions and sharpen the assessment. A better understanding of the mix of alpha sources of different managers and their correlations should also lead to improved asset allocation within the total portfolio.

1. Kenneth R. French, "Presidential Address: The Cost of Active Investing," *Journal of Finance* 63, no. 4 (2008): 1537–1573.
2. Robert C. Merton, "An Intertemporal Capital Asset Pricing Model," *Econometrica: Journal of the Econometric Society* (1973): 867–887.

Robert Merton provides consulting services to Dimensional Fund Advisors LP.

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