

FACTOR / STYLE INVESTING

Fama on Momentum

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The long-term success of the momentum factor seems to be a challenge to many observers. People say things like “momentum only works among small stocks” or “momentum only works for going short, not long.” These comments, which appear to be aimed at casting doubt on the implementability of momentum, seem to be spoken about more than written. There’s a reason for that. When you run the numbers, these statements are just not close to true. We’ve disproven a whole gaggle of them [here](#). But, like many misperceptions, once in the zeitgeist they remain hard to kill.

Given this long history battling momentum myths, I have to admit I felt some trepidation when I could sense [this interview](#) with Professor Eugene Fama turning toward the momentum strategy. While my faith in Professor Fama is exceptionally high, this is one of the few topics where he can indeed give me the jitters. I wrote my dissertation for him, way too long ago now, focusing in large part on the success of the momentum strategy back when it was still big news (it is still big, just not news). Even though he was incredibly supportive of the research (and the researcher!) it is obviously a result that he’s never really liked. In fact in the video he says he’s still “hoping it goes away.” This makes sense because, as Fama discusses, it’s one of the harder factors to reconcile with the Efficient Markets Hypothesis (EMH), a contribution for which he is justifiably acclaimed. In fact, he calls momentum the “biggest embarrassment to the theory” out there. While I believe that Professor Fama and I agree on much more than we disagree (my own nuanced, perhaps cowardly, position on EMH is detailed [here](#)) and we would ultimately recommend very similar investments (at least when confined to the traditional world of long-only investments), I have differed with him on momentum before — most notably, I’m still [somewhat befuddled](#) how one stops at a five-factor model and doesn’t make momentum the sixth. So as this interview moved to the topic of momentum I braced myself as I knew it was one of the few areas where I might disagree with one of my heroes, in this case a hero with a Nobel prize! It turns out I did disagree. Kind of. Well, it’s complicated.

Not surprisingly, Professor Fama didn’t make any of the most common egregiously wrong, silly statements regarding momentum (you wouldn’t catch him saying, for instance, that momentum doesn’t work for large caps, when it indeed does — and better than value, using [his and Ken French’s data](#)). Still, he said a few things I think need a response (I say with fear as I type...).

Keeping in mind that the debate I’ve had with Professor Fama, sometimes from afar, on this topic has been ongoing for more than two decades, some of the discussion below is necessarily layered with that long history. Someone just listening to this interview may miss some of that context so I’ll try to provide it. Our respective written pieces on many of these topics cited above, and later on, also help paint the backdrop of issues.

It’s a difficult sequence to discuss as, like many conversations, the interview jumps between concepts and it’s sometimes hard to tell which concept they are referencing. I guess that’s to be expected when I choose to obsessively dissect a brief period of a live interview! So I hope you’ll bear with me. It all starts around the 24½ minute mark (though I recommend listening to it all both for context for this discussion and because it’s, you know, Professor Fama).

First, he mentions momentum’s turnover in two very different ways. One, as simply indicating it’s more costly to trade (more on that later) than a lower-turnover strategy, and two, as he believes that the higher turnover of momentum makes it implausible that “risk” can explain its high average returns. In an efficient market, higher expected returns only come with higher risk and Professor Fama states that he finds it implausible that risk changes so much so quickly that it would drive the momentum premium. I get what he’s saying about risks not changing that rapidly, but my own intuition about risk comes more from how the returns on a strategy behave rather than from a strategy’s turnover. For example, if the returns to following momentum looked risky in an economic and/or intuitive sense, such as losing money in very bad times, it would matter to me much more than the strategy’s turnover — in this case, I could believe a story where momentum had a big enough effect on risk to overcome Professor Fama’s turnover worry. The flip side is also true, in that a low-turnover strategy that never produces any risky outcomes would certainly not seem risky and indeed not have a plausible risk explanation.

Professor Fama quite correctly points out that transactions costs, even for small stocks, have come in far lower in practical well-managed portfolios than many thought possible (say back in the early 1980s). However this same observation is true for momentum and often ignored. Momentum, while higher turnover, also has the additional advantage of being one of the more historically effective factors in large-cap stocks (the opposite to one of the myths surrounding it — that it only works for small stocks!), and large-cap stocks are cheaper to trade. Professor Fama does graciously note that today’s even lower costs would, of course, make momentum even cheaper to implement going forward.

Then there's a very short odd segue where he mentions that momentum has never worked in Japan. Here I just have to lower my estimation of my own reach or ability to convince people as I thought I'd settled this one! I had hoped he'd read [this](#) and agreed that momentum and value should be studied together as a system. Well, now I hope he hasn't read it, because the alternative is that he read it and disagreed! Anyway, as the author I'm obviously incredibly biased but I can't see how someone can read the paper "[Momentum in Japan](#)" and still off-handedly drop "Momentum hasn't worked in Japan" and think it's even a glancing blow to the overall momentum story. As I detail, if one evaluates momentum in tandem with the value factor or if one accounts for any reasonable amount of randomness then the results in Japan are either supportive of, or no real blow to, the evidence in favor of the momentum factor. Anyway, given that momentum works much ... what's the word I'm looking for? ... *near everywhere*, citing its worst showing among so many markets (where it still adds in the presence of the value factor) seems exceptionally weak tea. But, I have to say, that's what Professor Fama appears to be doing here, sowing the seeds of doubt, if you will.

Then the really interesting, and frankly a little disappointing, part happened. The Professor got a question from the interviewer about a [recent paper](#) by Professor Toby Moskowitz (a colleague both of Fama's at the University of Chicago and of mine at AQR) and two other of my AQR partners on the trading costs of factors like value, momentum and size. The point of this paper, and I presume why the question was asked, is that real world trading costs for all the factors have been far lower than many believe, and this very much includes, perhaps even highlights, the momentum factor. In particular, even rudimentary "smart trading" reduced the trading costs dramatically — perhaps most dramatically for momentum, where the high turnover Professor Fama cites gives more latitude for the "smart" part of smart trading. But Professor Fama didn't answer about this paper at all. Rather, he answered about a completely different Toby Moskowitz paper that I don't think was the subject of the question (in fairness, who can keep all the great Toby Moskowitz papers straight?). Now the game is afoot!

This other [Toby Moskowitz paper](#), co-authored with Kent Daniel, studies the phenomenon of "momentum crashes." That is, the tendency for the momentum factor to demonstrate a big "left tail," where very big bad events seem to happen more often than very big good events. We don't dispute that the momentum factor has demonstrated this behavior (the now infamous Toby M. is one of my partners after all!). [We do note](#) that a well-constructed value strategy diversifies momentum (and vice versa) so well that a combination strategy of the two is far better than either alone and not particularly crash-prone (that is, value, properly constructed using up-to-date prices, has done quite well during the momentum crashes making the total diversified result not extremely "crash-like"). In addition, these momentum crashes have largely occurred during sharp market up-turns that reversed prior steep declines (though, admittedly, there's no guarantee we won't see the opposite one day). Risk isn't just the chance of losing money, it's about when you lose, and losing after the worst is over and during the rebound is not as "risky" as losing in the bad times.

So, I don't think the historical evidence that momentum is particularly "risky" (in the sense economists generally mean "risky") is very strong. This doesn't mean we won't eventually find evidence that momentum is really a risk premium — just that we haven't yet. But the important point is not what I believe, it's what Professor Fama believes or implies here. Professor Fama, by dropping that "momentum tends to blow up every now and then," is clearly implying momentum is very risky. When anyone drops a bomb like that and leaves it there he's clearly telling you it's something to be feared — with "feared" presumably corresponding to real risk!

[Not that there's anything wrong with that.](#) Except that, of course, Professor Fama earlier thought momentum was too high turnover to represent a risk factor so it's immediately confusing that we're supposed to be scared of this "crash risk" that isn't really "risk." Apparently, momentum's fast-changing exposures do, according to Fama, expose it to a potential risk factor. But I'll leave that paradox alone — clearly despite his arguments about turnover we are meant to think the risk behind momentum has been discovered and it has scary crashes! Nonetheless, Professor Fama is of course free to disagree with my discussion above (my view that momentum crashes are diversifiable and haven't happened when they'd hurt the most) and think that the left-tailed behavior we've observed in the momentum factor shows it's very risky indeed. But what's odd — and yes, I'm finally getting to the point of this whole discussion — is that he doesn't conclude these thoughts with a resounding statement akin to "and this is why I'm a deep, abiding, passionate and proselytizing believer in the momentum factor!" Now that, coming from Professor Fama, would indeed be news, and would be entirely consistent with his observation about crashes and his implied belief that they represent risk. Again, despite his protestations that high turnover momentum can't be risk-based, why mention these "crashes" if not to imply they are a very important source of risk?

You see, Professor Fama's views about expected returns are all about risk. The EMH story for any return premium is that it's rational compensation for risk. If Professor Fama thinks that momentum is indeed quite scary it should be a joyful occurrence for his confidence in the factor, not a dark soundbite. In particular, Professor Fama has been taking the "risk" side (vs. [behavioral inefficiency](#)) of the debate regarding why the value factor works for three decades now. That's a debate in which I have courageously and boldly (OK, neither of those) staked out a middle ground (again, for example, [here](#)). It's a bit ironic for him to argue for years that value represents risk, with many others finding that view quite wanting, and to argue that this is a good thing as it would mean the value premium is real and consistent with rationality. And then, suddenly find that momentum being risky (it crashes!) is somehow ominous and damning. I'd simply humbly ask, "Professor Fama, if momentum is truly so risky, doesn't that make you believe in it much more?" And if these crashes don't represent risk why mention them? ☺

To summarize, momentum's long-term success might be due to any combination of three reasons (a pet cause of mine is pointing out that people tend to argue for one of these at a time, avoiding or ignoring the fact that each could have degrees of truth and the relevance of each could vary through time):

1. Data mining. Perhaps the momentum results are just luck and won't be repeated. This is kind of what Fama mildly alludes to when he just drops "Japan" sowing the seeds of data mining angst by naming a notable supposed exception. This explanation runs into the fact that, again, it has worked for 25 years out of sample in the U.S. where it was originally studied, it has worked out of sample in other markets and asset classes, again pretty near [everywhere](#), including, yet again, [Japan](#) if considered in a portfolio with value (as it always should be!). And when researchers have [studied](#) long histories prior to the sample period used in the original study, momentum looks strong, unlike many other factors. One can never truly dismiss data mining. But surely the evidence has reduced this to the tiniest of

chances.

- 2 Momentum's success could be rational compensation for risk. While, for reasons detailed above, I don't really buy much of this story (at least the current versions of it — there's always hope for the future), it seems, based on his comments, Professor Fama does believe it, at least somewhat or, again, what's with the "crashes" comment? I just wish he'd add that, because of this belief, in his view these crashes are great news and he thus loves the momentum factor! Note: There's nothing wrong with being a risk factor with "crash risk" that still pays off over the long haul. The equity risk premium has been pretty good and it looks like that.
- 3 Momentum's success could be from some irrational behavior and investor biases showing up in prices (as biases will show up [unless they perfectly and coincidentally offset](#)). While the field is still debating what combination of biases explains momentum's success best, and even back in the 1980s Professor Fama could fairly describe such a search as a "fishing expedition," I still think it likely that the lion's share of the real explanation for momentum's success comes from this category.

Academics and practitioners can continue to debate the reasons why momentum exists, but the debate as to its existence and whether it can be captured should be put to bed at this point. We think it's easily and obviously a factor any investor, and even more certainly for an investor who also believes in the value factor, should include in their portfolio. If you have only a five-factor model without it you have little excuse not to switch to a [six-factor model](#) with it.

I am sure Professor Fama, I and others will continue to have many debates and discussions about momentum. This interview merely represents yet another sign that much confusion about the topic remains and therefore we need to continue sorting out the facts from the fictions.

Watch the Video

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