



## Cliff's Perspective

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# It Ain't What You Don't Know That Gets You Into Trouble

June 20, 2018

My title is the first half of a Mark Twain quote. The second half is "It's what you know for sure that just ain't so." Now, in the age of quotes being widely debunked on the internet, I can't promise he really said it (and I'm conscious that being too sure actually violates the spirit of the quote itself!).<sup>1</sup> But I hope he did as it's a pretty cool quote.

Recently, my colleagues have written two papers questioning things we thought we knew. The [first](#) questions what we really know about current stock market valuations (e.g., the Shiller CAPE) forecasting long-horizon future returns. The [second](#) questions, among many other explorations, whether or not the patriarch of the family of anomalies or factors, the size effect, really exists. I encourage you to read them both (and, of course, [all AQR papers!](#)).

The size effect paper is the easier one to discuss in a short blog. There isn't one. That is, there isn't a pure size effect (there is a paper). In fact, there never was a size effect. Among other issues, the data used to discover it was flawed (though no fault of the author, that was the data back then) in a way that favored small stocks. Using more accurate modern data there simply is no additional premium for small stocks beyond that which comes from their having a larger market beta (and if you want to squint really hard to find some alpha in the really small stocks you run into big liquidity issues as described in the paper). I'll let you read it yourself but I had to spoil the end for you. There's a lot of other interesting stuff anyway besides the headline bad news. We know that it's likely a sobering thought to many that the Ur-anomaly, the one that's been used to practically reorganize the entire money management industry, just isn't there. But, as the man said, it just ain't so.<sup>2</sup>

The long-horizon forecasting paper is harder to think about. It doesn't change the point estimate that when the CAPE (or similar measure) is high, expected future long-horizon stock returns are low. But, it does change how certain we are about this point estimate, and changes it in the bad direction. It leaves us less certain than the standard "asymptotic corrections for overlapping observations" has long implied. In English, it's always been known that we get to observe very few independent long-horizon (e.g., ten year) periods. Researchers try to improve the situation by not just looking at independent periods but looking at overlapping ones (so examine every ten year period starting from, say, each individual month, not just the independent decades). This gets you more observations, but it's long been known it does not get you nearly ~120 times (for monthly) more independent

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<sup>1</sup> I won't promise quotes are real anymore unless I'm actually in the room when they're uttered. If you do dare to attribute a quote without a qualifier a legion of trolls attacks you because it was really said by Alexander Pushkin, Colonel Sanders, or their respective grandmothers.

<sup>2</sup> As the paper stresses, there can still be a role for size in explaining monthly returns (in an R-squared sense not an expected return sense) and, importantly, most other factors seem to work better in small caps (at least gross of costs) meaning it might still be rational to tilt towards small, but you're doing it to capture more premium from other factors, not the size effect itself.

observations.<sup>3</sup> There have been standard corrections for this problem (the “asymptotic” stuff I was babbling about above). Essentially, our current paper says these corrections were far too lenient. This means we know less than we thought or, in geek, that the confidence interval around the point estimate is far larger than we thought. Note, again, this doesn’t change the point estimate that long-horizon returns have historically been lower (higher) starting from higher (lower) CAPEs. In fact, given how intuitive we find that result, and [how many other places](#) we see value be an effective strategy, it doesn’t change much of anything for us. Economic intuition and this broad evidence for value leads us to have a pretty strong prior here, a prior that is supported by the point estimate. Thus, we’d still go with a lower forecast for long-horizon equity returns today because the CAPE is high.<sup>4</sup> We’re just a bit less sure now than before we wrote this paper! Unfortunately, being “sure” isn’t a major feature of our business and anyone looking for it is going to have to [learn to live with disappointment](#).

These issues are not unique to our field. The social sciences, and maybe even the hard sciences, are currently suffering from a “replicability” crisis. That is, if you go and independently check someone’s experiment you often find much less than they did. That needn’t make us nihilistic. In this case, we’ve frankly never been big believers in the stand-alone size effect.<sup>5</sup> We’ve always found the evidence and intuitive/theoretical story for factors like value<sup>6</sup>, momentum, carry, and quality to be far stronger than for size, and there is no similar data revision that impacts those findings. And, the story for believing high prices forecast low long-term returns was never purely empirical but rather just economically intuitive to us. And the empirical best guess (the point estimate) remains the same. In fact, I think it is a very healthy thing if we (not just AQR, but the field) continue to question all the old results not accepting anything as canon. These two papers are, I think, a real step towards doing that.

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<sup>3</sup> You literally do have ~120 times more observations if you look at every month as a separate starting point rather than independent decades. They just are now exceptionally far from independent (i.e., containing new information) observations.

<sup>4</sup> We’ve also long used a forecast for future returns that varies less with the starting CAPE than historical regression point estimates would imply – effectively believing in the “yield” effect of higher prices but not being willing to forecast mean reversion. See [here](#) and [here](#).

<sup>5</sup> “Stand-alone” is an important qualifier, as is very clear in the paper. As many of you know [we do find](#) a very strong size effect conditional on holding a stock’s quality constant.

<sup>6</sup> Actually, [as we note](#) value is kind of weak in large cap stocks with the success of Fama-French HML-type constructions very dependent on value’s power in small caps. Thankfully [measuring value using up-to-date prices](#) and examining it in a portfolio including the [momentum factor](#) saves the day even for large caps.