Referee report on "Average Variance Managed Investment Timing"

Review

This paper proposes a modification of the volatility-timing strategy of Moreira and Muir (2017), referred in this paper as SV. The original Moreira and Muir (2017) strategy was based on the idea that contrary to what many models imply, conditional market risk premia do not seem to line up well with conditional variance empirically. So effectively, the conditional Sharpe ratio of the market is time-varying. The SV strategy increases exposure to the market when aggregate market volatility is low, and, on average, the Sharpe ratio is high. They argue that this leads to a higher unconditional Sharpe ratio and alpha with respect to the market (they also show that this holds for other factors as well). Moreira and Muir's (2017) result is essentially a different way to state the weak relationship between conditional risk premia and conditional market variance.

This paper proposes a similar strategy built on the average variance of individual stocks (AV), and argues that it does better than SV along various dimensions. The use of AV is motivated by a decomposition of the risk-return relation of the market that holds when the market is different form the true tangency (wealth) portfolio (following Roll's critique), and in which risk is captured by a function of (among other things) 1. the correlation between the market and the true wealth portfolio (β_t), 2. the average correlation of stocks (AC), 3. the average variance of stocks (AV).

My comments

While I think the paper is exploring an interesting issue, I have several concerns with the analysis and the paper.

- My main concern is that the marginal contribution of the paper seems minor. The fact that there exist *some* variation of the SV strategy that can do better than that is not really that surprising. A key advantage of the strategy proposed by Moreira and Muir (2017) was that it is directly linked to an important and straightforward risk-return relation that holds in many models. But it is clear that Moreira and Muir (2017) is not the absolute optimal market-timing strategy: because it only uses lagged volatility alone, which may not be the best predictor of future volatility; and because it does not try to also predict returns to best estimate the conditional Sharpe ratio. However, it was a simple strategy with a clear theoretical foundation.

- This paper shows that one different variable (AV) does better. But this variable seems less solidly justified by theory. The decomposition that the paper reports (equations not numbered on page 12) simply states that AV is related to SV, to a variable (AC) that does seem to predict returns, and to other variables like β_t. So at one level, I understand that the authors argue that AV is a "cleaner" version of SV, because it does not contain AC that does predict returns. On the other hand, this seems like one of many possible ways to "clean up" or improve over SV. If one wants to go down the route of improving the SV strategy by using additional variables that predict returns, why not also look at other predictors and simply use them together to construct a strategy that best exploits the time-varying Sharpe ratio of the market? Simply showing that there exists a variable that improves over SV is, in my opinion, not a sufficient contribution to warrant publication in the RFS.

- Recent literature has pointed out some limitation of the original Moreira and Muir (2017) results: for example, "On the Performance of Volatility-Managed Portfolios" (forthcoming JFE). It would be nice to directly confront this new evidence on the implementability and out-of-sample performance of the strategies.

- The variable β_t is sometimes treated as constant, sometimes as time-varying (see for example on page 12). Also, the paper does not clearly distinguish between conditional and unconditional moments (for example, the covariances on the left hand side of the equations on page 12 are presumably conditional).

- The paper has many typos and many sentences that are written in confusing or informal ways.