Machine Learning

Can Machines Time Markets? The Virtue of Complexity in Return Prediction

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Machine learning techniques can be used to improve market timing strategies by picking up nonlinearities between the predictor variables (i.e., signals) and returns. In order to identify the nonlinearities, complex models – i.e., models where the number of predictor variables is larger than the number of return time series observations – must be estimated. More complex models better identify the true nonlinear relationships and, thus, produce better market timing strategy performance.

This "virtue of complexity" result is validated in three practical market timing applications: timing the stock market, the bond market, and the long/short value factor. The performance improvements are real but modest, consistent with the view that machine learning applied to return prediction leads to evolutionary, not revolutionary, wealth gains.

eliminate the risk of experiencing investment losses.

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