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Nonlinearities Everywhere: Sparse Supervised Learning of Market Anomalies
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Abstract: This paper studies various regularization terms of nonparametric return forecasting models to identify a reduced set of characteristics associated with expected return spreads in the cross-section. The models employed are outlier-resistant, computationally efficient, and able to handle high dimensional data. The number of discovered firm characteristics range between two and eight, out of a total of 90, taken from a novel market anomaly database. This study finds that in a multivariate setting, nonlinearities as well as variations in time matter for the cross-section of expected returns. Out-of-sample results suggest that Elastic Net regularization terms tend to overfit the data, while MCP and SCAD penalties suggest sparse models with remarkable Sharpe ratios.

https://gabrielkaiserqfin.github.io/JMP_GabrielKaiser.pdf