

Mosaics of Predictability

We propose that return predictability is a latent, asset-specific, and state-dependent characteristic. We develop a Panel Tree that endogenously partitions the U.S. equity panel into interpretable, out-of-sample, and persistent “mosaics” patterns and jointly estimates cluster-specific forecasting models. Predictability concentrates in stocks with large earnings surprises, high earnings-price ratios, and low trading volume. It is countercyclical, stronger when market dividend yields are high and liquidity is low. Accounting for predictability gaps ignored by homogeneous models improves forecasts and yields long-short portfolios with out-of-sample monthly alphas above 1%. Across 50 years of data, the mosaics map shows where signals arise and where noise dominates.



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Yuanzhi Wang is a Ph.D. candidate in Business Statistics and Asset Pricing at City University of Hong Kong, specializing in empirical asset pricing and machine learning applications in finance. His research integrates machine learning techniques to solve financial problems, such as using deep learning methods to construct enhancement device for tangency portfolios and detecting heterogeneity of return predictability. Some of his works have been presented at leading conferences including AFA, SoFiE, and CICC. Yuanzhi also has practical experience in financial text analysis and predictive modeling as a research assistant at AI FinTech Lab.



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