



# Machine Learning

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## Machine Learning and the Implementable Efficient Frontier

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We propose that investment strategies should be evaluated based on their net-of-trading-cost return for each level of risk, which we term the "implementable efficient frontier." While numerous studies use machine learning return forecasts to generate portfolios, their agnosticism toward trading costs leads to excessive reliance on fleeting small-scale characteristics, resulting in poor net returns. We develop a framework that produces a superior frontier by integrating trading-cost-aware portfolio optimization with machine learning. The superior net-of-cost performance is achieved by learning directly about portfolio weights using an economic objective. Further, our model gives rise to a new measure of "economic feature importance."

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