Visible Beta: Finding Value with Dimensionality Reduction

Vincent Lee, Yi-Hsin Chien, Stephen Edwards

Introduction

Following the Great Recession in 2008, growth stocks started outperforming value stocks, and many investors believed that value investing with the Fama-French model was “dead”. Our project aims to redefine how we identify value stocks, to hopefully revive value investing as a viable strategy. We used stocks in the RUSSELL 1000 from 2016 to 2022 to simulate stock returns of different strategies.

HBM (Traditional Model)

We replicated the value factor of the Fama-French model by creating a portfolio that took a long position in the stocks that were in the top 30th percentile of book-to-market ratio and taking a short position in the stocks that were in the bottom 30th percentile each month.

PCA (New Model)

We created a new factor that we derived by performing PCA (with two components) on twenty one financial metrics of the stocks, and again took a long position in the stocks that were in the top 30th percentile of this factor, and took a short position in the stocks that were in the bottom 30th percentile each month.

Returns

HBM: -11.56%

PCA: 3.16%