



A test on mean-variance efficiency of the tangency portfolio in high dimensional setting

Stanislas Muhinyuza

September 2019

Abstract

In this paper we derive the asymptotic distribution of the test of the efficiency of the tangency portfolio in high dimensional settings, namely when both the portfolio dimension and the sample size grow to infinity. Moreover, we propose a new test based on the estimator for the slope parameter of the efficient frontier in the mean-variance space when there is a possibility in investing into the riskless asset, and derive the asymptotic distribution of that test statistic under both the null and alternative hypotheses. Additionally, we study the finite sample performance of the derived theoretical results via simulations.

Keywords Tangency Portfolio, Mean-variance portfolio, High dimension settings.