

Information-Supported Efficient Frontier for the Taiwanese Stock Market

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The mean-variance portfolio model helps investors to allocate their available funds to a set of assets, such that the portfolio return will be maximized at a specified risk level. Since the asset return rates are random variables, expected values are conventionally used to make the mathematical model tractable. If the asset return rates can be predicted in advance, then higher portfolio returns are expected, and the extra returns obtained are the value of information. This paper introduces the idea of an information-supported efficient frontier, and the difference between this curve and the conventional one is the value of information. At the lowest attainable risk level, the value of information is zero, and it increases along with the risk level. A case of the Taiwanese stock market illustrates how to calculate the value of information in portfolio selection in practice. Notably, the value of information in the Taiwanese stock market is substantial, indicating that it is worth acquiring the information to better predict the future stock return rates.

Keywords: Efficient Frontier, Portfolio Selection, Stochastic Programming, Value of Information, Taiwan Stocks.