INDIAN INSTITUTE OF TECHNOLOGY GUWAHATI
SHORT ABSTRACT OF THESIS

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SHORT ABSTRACT

In this thesis, we use LPM as a measure of risk and then develop the theoretical framework of portfolio management with LPM. We present various properties of LPM and discuss their practical importance in the area of investment management. We then investigate various important open problems in the mean-LPM (MLPM) portfolio theory. Some of the problems remain unsolved nearly three decades later. We analytically solve all these problems.

The second part of the thesis discusses asset pricing theory in the MLPM framework. Similar to Sharpe's CAPM, several asset pricing models have been developed in the MLPM framework. We analytically develop a new pricing model that generalizes all the existing MLPM models. We further notice that one of the underlying assumptions about the existence of a risk-free asset for deriving the pricing model is unrealistic. Excluding this assumption and incorporating a practical assumption, we derive another pricing model which is analogous to the Black's zero-beta CAPM. It is also shown that, under the assumption of normally distributed returns, this model reduces to the classical zero-beta CAPM.

In the last part of the thesis, we explore the domain of performance analysis. We propose a set of desirable axioms that a performance measure should satisfy in the context of asset management. A performance measure satisfying these axioms is called ideal. We examine various measures whether they are ideal or not. While verifying the presence of ideal properties in LPM based measures, we found that one of the widely used ratios is not ideal. Thus, as an alternative, we propose a new ideal measure, Upside beta ratio (UBR). The performance of UBR is empirically examined through ranking risky funds for the UBR as well as for the other measures. We compare the rankings produced by all the measures and find that, in most scenarios, the funds chosen by UBR perform significantly better than the funds selected by all the other measures.