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Estimating Risk-Neutral Distribution and Risk Aversion for the Indian Options Index Market

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ABSTRACT

Use of risk-neutral density functions to estimate the degree of risk aversion of the representative agent using the options market data has gained tremendous popularity over the last decade. Studying option prices can provide information about the market participants' probability assessment of the future outcome of the underlying asset. This paper explores a nonparametric technique to compute risk-neutral density (RND) functions directly from option index prices and further tests the forecast ability of future densities. This analysis also examines the need to extract the subjective distribution of future asset prices from option prices using utility functions. Results indicate that risk-neutral PDFs are reasonably good forecasts of future densities. The study finds an inverse relation between the computed measure of investor risk aversion and equity risk. Results indicate a phenomenon that is theoretically consistent – there is presence of risk-neutrality among investor.

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