

Abstract

This thesis is about inferring the market beliefs by extracting real-world probability distribution from option price data employing the Ross' recovery theorem. We provide an overview of the Recovery Theorem along with an approach to implementing it on real world options data. We implement the Recovery Theorem for Nifty 50 index and 3 stocks namely Bharti Airtel, Coal India Ltd and Sun Pharma to check the effectiveness of the recovery process across different industries. As far as the author is aware such a study has not been undertaken for Indian data yet.

We use Berkowitz Likelihood test to check whether the density forecasts are in line with the realised future returns. We find that we can reject the null hypothesis that the future returns are drawn from the density forecast for all the stocks. However, Berkowitz test in the distribution's tail show that for CIL and Sun Pharma we cannot reject the null. We also find that recovered distribution exhibits high excess kurtosis which could be one of the reasons that tails of the recovered distribution fit the actual returns well.