Google Stock Performance after Earning Report

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November 30, 2021

1 Introduction

Each public company files a report quarterly to its shareholders to state its performance, which is called Quarterly Earning Report (Hereinafter ER). After ER is published, stock price will fluctuate accordingly. The rise and fall of stocks actually respond to whether the shareholders are satisfied with each ER.

In this project, we are interested in how likely Google's stock price increases after its ER. We use Bayesian Data Analysis method to build three Bayesian models based on three different priors, one is Jeffreys Prior, one is based on knowledge and experience, and the last one is derived from Facebook data. Then we use these three models to predict recent outcome and analyze performance. In addition, we compare variances and HPD of prior and posterior, and use two discrepancy methods to check our model performance.