

Predicting Dividend Omission Behaviour of Indian Firms using Machine Learning Algorithms

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Abstract

The life-cycle theory of dividends suggests that dividend omissions may indicate significant strategic changes in the firm's life-cycle. Such behaviours at the same time have implications for investor perception as dividend omissions may signal weak operating performance or financial distress situation. A firm's preference for dividend payments relative to omitting dividend payments is also used to cater to investor time-varying preferences. This paper aims to test the prediction models of dividend omission behaviour of firms in India. The financial data of 12942 firm-year observations from 2013 to 2018 indicate 55 percent dividend omissions. The paper uses five classes of machine learning algorithms to predict this behaviour. The multi-layer perceptron (MLP) ANN approach using the RProp algorithm achieves a predictive accuracy of 82.36 percent with an ROC (area under the curve) of 0.901. The feature set relating to the financial parameters of a firm contributes to the prediction accuracy.

JEL Code : C53, D21, G35

Keywords : Dividend Policy, Life Cycle Theory, Machine Learning, Behavioural Finance, Algorithms, Firms, Investors, India

I. Introduction

EARNINGS DISTRIBUTION THROUGH dividends to shareholders has been a well-researched topic in finance. Lintner (1956), in a seminal paper, suggested that managers prefer the stability of dividends and follow a target dividend payout policy. They adjust their payouts towards this target over a period of time. On the theoretical side, Miller and Modigliani's (1961) hypothesis suggests that dividends are pure residual numbers that have no impact on a firm's value. Between these two competing hypotheses, the negative impact of dividend reduction or omission announcements on stock prices is a well-researched topic in finance (Dielman and Openheimer 1984, Healy and Palepu, 1988). Baker and Wurgler (2004) find that stocks deliver higher negative abnormal returns at the time of dividend omission

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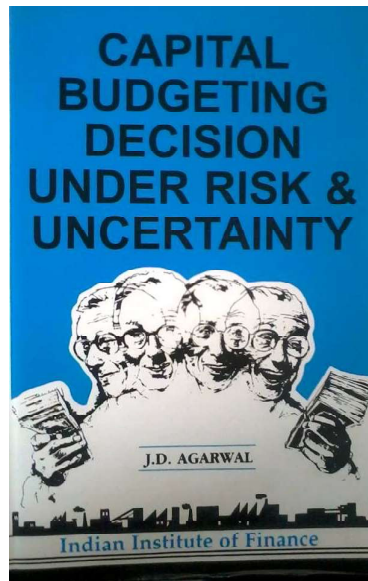
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