

Non-linear Relationship Between Working Capital Management and Profitability in Japanese Companies

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Abstract

Aktas found a non-linear relationship between working capital management (WCM) and profitability when the industry median of the WCM indicator was used as the target. This implies a relatively negative relationship between WCM and profitability in firms with excess working capital and a relatively positive one in firms with working capital less than the industry median. However, there are two limitations to the aforementioned study. First, it used only the industry median as an indicator to test the non-linearity of the relationship between WCM and profitability. Second, it did not consider socially influential events, such as COVID-19. Therefore, this study had two objectives. The first is to verify the results obtained when the analysis is conducted for Japanese firms using a non-linear model and including the period during which COVID-19 occurred. Second, we test whether the relationship between WCM and profitability is non-linear using the industry mean as an indicator along with the industry median. We use a non-linear model to analyse the financial data of companies listed on the Tokyo Stock Exchange from 2000 to 2022, which includes the COVID-19 period. The results are similar to those of a previous study, which used the industry median for the WCM indicator as the target. However, the analysis using the industry mean for WCM indicators as targets did not yield significant results. This is because some industries had unusual amounts of working capital because of the impact of COVID-19.

Keywords

Working capital management, non-linear relationship, industry median and industry mean.

Biographies

Koshiro Shiba is a graduate student of the Department of Industrial Engineering and Management at Kanagawa University, Japan.

Ayuko Komura is an assistant professor at the Department of Industrial Engineering and Management at Kanagawa University, Japan. Her research topics include operating profit stability and management controls. She earned her PhD in Business Administration at Meiji University. She received a fellowship from the Japan Society for the Promotion of Science between 2017 and 2019.

Hirohisa Hirai is a professor at the Department of Industrial Engineering and Management at Kanagawa University, Japan. He earned his PhD in Engineering at Osaka University. His research is an empirical study of management accounting, firm analysis, and applied statistics, particularly firm valuations. He has received awards from several academic societies in accounting and management.