Does Stock Market Over-react? Some Findings on Stock Reactions and Operating Performances of Technologically New Products

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Abstract: Although stock markets are assumed to operate efficiently and rationally in terms of reflecting the expectations of investor on a firm's activities and decisions, several studies have documented that investors over-react and under-react to organizational events. In this study, we provided some empirical evidence on the argument on stock market over-reaction by examining the difference between what the stock market revealed and what annual financial statements reported associated with the technologically new product (TNP) introductions in the electronics industry.

Technological development has been regarded as one of the major sources for economic growth and a potent way to help firms create substantial financial value. The development of TNP, in which advanced or breakthrough technologies are incorporated, has been considered as one of the best ways to help firms grow. TNP allows firms to leverage their core technologies in other future product introductions and give a signal to their shareholders that they are committed to developing technology innovations. However, the development of TNP requires substantial R&D investment and is also a highly risky process. Innovators must face the fact that other firms might imitate their actions, typically earning a share of the profits that is much greater than their initial investment. Studies also have cast doubt on whether a firm's efforts in developing TNP yield positive economic returns.

If investors expect that TNP could help supporting firms to increase financial performance, it will be firstly reflected in the market evaluation upon the announcements of TNP introductions. By employing OLS market model and based on a sample of 156 announcements, we found that the stock returns increased about 2.11% during a two-day (Day -1 to 0) event period. This finding indicates that investors expect TNP to help supporting firms enhance their competitive advantages and create higher financial gains.

Studies of trader markets have shown that investors often make investment decisions based on collectively believed evaluations rather than individual assessment of a firm's economic performance. Technological innovations are widely believed to be a major source of competitive advantages among investors, while their actual financial impact to supporting firms is not widely known (or cannot be accurately evaluated by investors). Therefore, it seems important to investigate whether the financial consequences of TNP introductions follow the expectations of investors. We employed the event study methodology and examined the performance changes in returns on assets (ROA), returns on sales (ROS) and sales over assets (SOA), after the introductions of TNP. By selecting a portfolio of control firms for each sample firm with similar firm performance and firm size, we compared the performance changes between sample firms and their corresponding control portfolios. We found that TNP did not necessarily bring higher financial gains. They led to a drop of -2.34% in ROA in the electronics industry during the first two years of their introductions.

Based on the findings in this study, we found the existence of inconsistency between the stock market reactions on TNP introductions and the later impacts on operating performance. Our findings provide empirical evidence against stock market efficiency. Technological innovations are widely believed to be a major source of competitive advantages among investors, while their actual financial impact may not be positive. It also provides some practical implications to practitioners in the electronics industry – the introduction of TNP does not guarantee positive financial gains though investors have put a higher expectation on these products' financial values.

Keywords: Over-react, Stock Reactions, Operating Performances