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Product Proliferation: An Empirical Analysis of Product Line Determinants and Market Outcomes

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Abstract

Considering the number of new product introductions and available product varieties today, the practice of product proliferation is visibly evident in many diverse industries. Given its prevalence in practice, understanding the determinants and implications of firm proliferation strategies clearly has important managerial relevance.

Previous theoretical research has identified three primary effects of a proliferation strategy: (1) a broad product line can increase the overall demand faced by the firm, (2) a broad product line can affect supply by increasing costs, and (3) broad product lines can have strategic consequences (e.g., long product lines can deter entry, thereby allowing an incumbent firm to raise prices). However, despite the theoretical interest in this common business practice, there has been very little empirical research on this topic. Moreover, no empirical study has simultaneously considered all three of the possible effects associated with a proliferation strategy. Consequently, in this paper we propose a three-equation simultaneous system that captures both the determinants and market outcomes of a firm's product line decisions. In particular, we specify market share, price, and product line length equations, which are estimated by three stage least squares. Using this structure, we empirically study the personal computer industry over the period 1981–1992.

Our empirical results demonstrate that proliferation strategies do not have a uni-dimensional explanation. We find that product proliferation decisions have both demand (market share) and supply (price) implications. Our empirical results also suggest that the firm-level net market share impact of product proliferation in the personal computer industry is negative (i.e., the cost increases associated with a broader product line dominate any potential demand increases). As expected, we find that structural competitive factors play an important role in the determinants and market outcomes of a firm's product line decisions. However, we do not find evidence of firms using proliferation strategies to deter entry in this industry. Finally, we also demonstrate that some of the empirical conclusions from previous research are reversed once product line length is specified as endogenous in the share and price specifications.

(*Product Proliferation*; *Product Line Pricing*; *Entry Deterrence*; *Personal Computer Industry*)