HOKKAIDO UNIVERSITY

Title	Bridging Marketing and Economics : Introduction to Special Issue
Author(s)	Imai, Susumu; Ohno, Yuka
Citation	Japanese economic review, 69(3), 255-257 https://doi.org/10.1111/jere.12192
Issue Date	2018-09
Doc URL	https://hdl.handle.net/2115/79257
Rights	This is the peer reviewed version of the following article: Imai, S. and Ohno, Y. (2018), Bridging Marketing and Economics: Introduction to Special Issue. Jpn Econ Rev, 69: 255-257. doi:10.1111/jere.12192, which has been published in final form at https://doi.org/10.1111/jere.12192. This article may be used for non-commercial purposes in accordance with Wiley Terms and Conditions for Use of Self-Archived Versions.
Type	journal article
File Information	intro1-ohno.pdf

Hokkaido University Collection of Scholarly and Academic Papers : HUSCAP

Bridging Marketing and Economics: An introduction

Susumu Imai & Yuka Ohno, Hokkaido University

May 14, 2018

Hokkaido University, Faculty of Economics, Kita 9 Nishi 7, Sapporo, 060-0809, Japan

This special issue brings together several novel contributions that bridge marketing and industrial organization literature. In economics, traditional consumer theory assumes a consumer makes optimal consumption choice given the budget constraint without frictions. The consumption or demand is a continuous function of income and the price of the products. Such textbook consumer theory abstracts away from details that are the main focuses of marketing research. For example, in marketing literature,

- 1) Consumers can only buy a discrete number of pre-packaged products.
- 2) Since consumers face shopping costs, there are periods of no-purchase when they consume the inventories of products they purchased in the past. Therefore, the amount purchased and the amount consumed are not equal.
- 3) Consumers do not have full information on the products they buy. Therefore, brands and ads are effective in improving the consumer perception of the products.

Those aspects were well known to marketing researchers. They obtained some of those insights from studying the detailed purchase behavior of consumers from scanner data. Guardani and Little (1983), Kamakura and Russell (1989, 1993) were the early examples of such work.

Over time, economists have followed the marketing literature and have modified the model of consumer purchase decision to reflect the complex nature of consumer behavior that is revealed from the microdata. Thus, the purchase choice in those models became discrete instead of continuous, and the models became dynamic to deal with the dynamics of inventory (See Erdem et al. (2003) and Hendel and Nevo (2006)). Furthermore, they use dynamic learning models to capture the asymmetric information when consumers only get to thoroughly learn the characteristics of the product after (repeated) consumption. Erdem and Keane (1996) and others are examples of such works. Marketing researchers

also have found the empirical results based on those complex models to be useful because they enable researchers to ex-ante evaluate the effect of marketing strategies such as advertising, price cuts or the effect of the introduction of a new product. In this volume, we present the papers that reflect the active interaction between the industrial organization and marketing.

In this issue, **Osborne** constructs and estimates a dynamic model of consumers who stockpile purchased goods for future consumption. Using the estimated model, he can evaluate whether firms should conduct deep and infrequent price cuts or regular and frequent price promotions. He concludes that when consumers are stockpiling, deep and infrequent price cuts are better for firms. It is a good example of the effectiveness of the ex-ante policy evaluation in guiding firms on how to optimally conduct complex price promotion strategies. It also highlights the reader on the need to include both consumer heterogeneity and inventory behavior in the estimated model so that the model accurately captures the behavior of price-sensitive consumers who make large purchases during sales and wait until the next promotion by stockpiling the purchased products.

Until now, researchers in the analysis of stockpiling models have used purchase data that do not include any information on consumer inventories. **Kano** notes that using such data to analyze the effect of consumer stockpiling behavior faces a fundamental identification problem: researchers analyze the effect of price and inventories on consumer purchase behavior when the inventories are calculated from purchases. So far, most researchers rely on the dynamic consumer model to impute the inventory, which requires strong model assumptions. By collecting the data on actual consumer inventories, she avoids such identification issue. Using the data on purchase history and inventory of consumers, she examines the validity of the strong model assumptions that have been imposed in the literature. Preliminary results indicate that the assumption of constant consumption rate is not consistent with the data.

Ching et al. provide an example where detailed marketing data help identify and estimate the discount factor of consumers, which is an important utility function parameter, but has been well known to be difficult to estimate. The reason is that it is difficult to find variation in the data that does not change the utility of the current consumption but only changes the expected value of future consumption. For a detailed discussion on the identification issue, see Magnac and Thesmar (2002). Ching et al. point out that a candidate for such data is the data on consumer purchase records when a product has a reward program. That is, having points from past purchases does not directly affect current utility but changes the expected future utility since it changes the number of future purchases required to achieve the reward. Even if we allow for the past purchases to directly affect current consumption via state dependence, the change of purchase behavior of consumers that is caused by the reward threshold artificially set by the firm will identify the discount factor.

Hayakawa et al. provide a short survey on the economic and marketing analysis of brands. They discuss the various roles of brands and how the literature has been able to identify those roles. Researchers have extensively analyzed the role of information provision, which also includes the role of brands in sig-

naling unobserved product characteristics. In particular, signaling has been the focus of the theoretical analysis of brands in economics. On the other hand, in marketing, researchers have also estimated the utility enhancing role of brands using various methods that include experiments. Recently, advances in behavioral economics have improved our understanding of the irrational aspects of agents. In parallel, the literature in marketing has also estimated the role of brands that neither provide any information, nor enhance the utility of consumers, but manipulate consumers into irrational choices. Given those various roles of brands that researchers have uncovered, Hayakawa et al. argue that it is insufficient to attribute the effect of brands on sales as part of the residuals after regressing the price and other observed product characteristics on sales, as is done in the literature of demand estimation.

Two theoretical works focus on firms' branding strategies. **Wan** investigates competitions between a pharmaceutical company that has been producing patented branded drug and a generic pharmaceutical company after the patent expires. In particular, she constructs a two period-model to examine the incentive of the branded pharmaceutical company to launch its own generic drugs, called "authorized generics (AGs)," through a third-party entity. She finds that the branded pharmaceutical company may benefit from AG's, when patients' loyalty to the branded drug is rather weak, due to 'divisionalization' effect. Divisionalization effect refers to a well-known result in industrial organization literature that, when firms compete in quantities, a firm has the unilateral incentive to split itself into two autonomous entities, which compete against each other.

Kutlu and Nakkas analyze the symmetric multi-product firms' product line decisions when products have different potential market size. They find that firms do not segment markets (one firm sells products that other firm does not produce), but rather choose head-to-head competition in all product lines when per-product-line set up cost is small. When the set-up costs are sufficiently high, market segmentation may take place. An asymmetric equilibrium may arise even when firms are ex-ante identical in their production technologies.

As the special issue editors, we would like to thank the anonymous referees for their timely refereeing efforts, and the JER editorial office, Fumio Hayashi and Masazumi Hattori for their support. We are also grateful for financial support from The Japanese Economic Review.

References

Erdem T. and M. Keane (1996) "Decision-Making under Uncertainty: Capturing Dynamic Brand Choice Processes in Turbulent Consumer Goods Markets," Marketing Science Vol. 15, No. 1 (1996), pp. 1-20

Guardani P.M. and J.D.C. Little (1983) "A Logit Model of Brand Choice Calibrated on Scanner Data," Marketing Science, Vol. 2, No. 3, pp. 203-238.

Hendel, I. and A. Nevo (2006). Measuring the implications of sales and consumer inventory behavior. Econometrica 74, pp. 1637-1673.

Kamakura W. A. and G. J. Russell (1993) "Measuring Brand Value with Scanner Data," International Journal of Research in Marketing, Vol. 10, No. 1, pp. 9-22.

Kamakura W.A. and G. J. Russell (1989) "A Probabilistic Choice Model for Market Segmentation and Elasticity Structure," Journal of Marketing Research, Vo. 26, No. pp. 379-390

Magnac, T. and D. Thesmar (2002) "Identifying Dynamic Discrete Decision Processes," Econometrica Vol. 20, No. 2, pp. 801-816.