

Essays on Innovation and Competition

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The introduction of new products is an important method of competition in many markets. This thesis presents both empirical and theoretical insights towards understanding its impact on competition and welfare. The first paper empirically examines the effects of a new product, Crystal Pepsi, on social welfare. The second paper develops a theoretical framework of the optimal dynamic pricing of new durable goods when a perfect resale market exists.

1 The Competitive and Welfare Effects of New Product Introduction: The Case of Crystal Pepsi (job market paper)

This paper is the first to comprehensively examine the role of market structure in the impact of a new product on competition and social welfare.

Estimating a structural model of the soft drink market, the competitive effects of Crystal Pepsi's launch are decomposed into two parts: the effect on the prices of existing products from increased competition, and the effect of having additional product variety. I find that both producer and consumer surplus increased in response to the introduction of Crystal Pepsi, with the price effect accounting for nearly 90 percent of the gain in consumer surplus. The introduction of Crystal Pepsi is also used as an experiment to test the competitiveness of the soft drink market. Evidence of price collusion is found.

In comparing the welfare impact of introducing Crystal Pepsi under price collusion and price competition, I find that social welfare increases more under collusion. Under competition, rivals of PepsiCo increase prices and a new product introduction actually harms consumers; at the same time, PepsiCo's profit gain is smaller. This finding suggests that firms have a stronger incentive to invest in R&D when they collude in price than when they compete in price.

2 A Dynamic Pricing Model of Durable Goods with Resale Markets (with Viplav Saini and Haomiao Yu) (in progress)

Conventional wisdom suggests that the profit maximizing strategy for the producers of a durable good is to intertemporally price discriminate according to consumers' heterogeneous valuations of the product. However, in recent years, online auction sites like eBay and Amazon have created a well-functioning resale market. This raises the question: Is a skimming policy still optimal for producers when a perfect resale market exists?

Motivated by the Wii phenomenon and its superior performance in the game console market, this paper presents a dynamic pricing model of durable goods with a resale market in which the brokers can enter freely. We show that when a resale market exists, "skimming" is no longer the optimal pricing policy for producers. Instead, setting a relatively low and constant price leads to higher profit. Also, the presence of a resale market enhances the manufacturer's profit.