

Coupon Trading and its Impacts on Consumer Purchase and Firm Profits

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Abstract

When a retailer distributes manufacturer coupons to consumers without perfectly identifying their product valuations, consumers may have incentives to trade coupons. We develop a model to capture the coupon trading phenomenon and compare three scenarios: (I) no coupon, (II) coupon without trading, and (III) coupon with trading. We find that coupon trading can increase the profits of either the retailer or the manufacturers, but not at the same time. The retailer benefits from coupon trading when the coupon market is competitive and consumer hassle cost is low, while the manufacturers benefit from coupon trading when the coupon market is uncompetitive and consumer hassle cost is high. In addition, coupon trading does not always increase total demand. Firms benefit from coupon trading by charging higher prices, which leads to a decreased total demand. As a result, consumers end up with a higher average cost under coupon trading. We also compare coupon trading with improved coupon targeting, and find that coupon trading may allow firms to gain higher profits than improved coupon targeting. Further, we extend the main model to a competitive setting where the products are substitutable, and find that the main results still hold. Finally, we employ numerical analysis to identify the optimal coupon face values in different scenarios, and the results suggest that coupon trading combined with incentive mechanisms may lead to Pareto improvement for the channel as a whole.

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“Coupons have become a very lucrative and booming business with thousands being bought and sold everyday on the world’s number one auction website. A growing number of people are now using coupons to save money and make money in today’s tough economy. If you are looking for a way to make extra money on the side then selling coupons may be the perfect home business for you.” – From editorial reviews of the book, “How to Sell Coupons on eBay and Really Make Money”

Introduction

As an important promotion tool, coupon can achieve price discrimination either by consumers’ self-selection based on hassle costs (e.g., mass media coupons) or by firms’ effortful targeting (e.g., one-to-one coupons). Perfect targeting allows firms to better price discriminate, but it is very costly and firms may encounter enormous difficulties when using it in practice. Instead, a coupon campaign combining some degree of targeting with consumers’ self-selection may be more profitable for firms. In practice, an increasingly popular phenomenon that combines these two is consumers’ coupon exchanging or trading behavior (i.e., selling or buying coupons), which is especially popular on the Internet (e.g., thecouponclippers.com and eBay³). Northeast Ohio Couponers, a bargain hunting group, frequently organizes coupon-trading events and has attracted over 3,000 regular members. On eBay, consumers buy and sell thousands of coupons every day, and through online coupon clipping services such as couponmaster.com and thecouponclippers.com,

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³ For examples of coupons sold on eBay, please refer to [Appendix A](#).

consumers can shop from a million national-brand coupons. The coupon trading phenomenon has recently led to the publication of a book promoting the idea of selling coupons on eBay.⁴

In developing countries such as China, the coupon trading market is especially active. Cheap labor and low opportunity costs may explain the presence of professional coupon traders (i.e., coupon arbitragers) in shopping centers and malls. These arbitragers buy extra coupons from some consumers and sell to others who can then redeem them immediately. Coupon traders make profits by arbitraging the coupons, while consumers enjoy the benefit of immediate discounts through coupon trading. However, the impact of coupon trading on firm profits is still unclear, especially when the interactions between the manufacturers and the retailers are taken into account (Gerstner and Hess 1991; Katz 1987).

When a coupon market comes into play, one may expect an increased demand since more consumers can obtain and redeem coupons. For example, consumers with low product valuations may buy a coupon from an arbitrager, and then purchase a product by redeeming the coupon, causing *sales increase*. However, coupon trading may also induce *sales decrease*. This occurs when consumers sell the coupon to get immediate benefits rather than use it to purchase additional products. The net effect of sales increase and sales decrease depends on consumers' coupon trading and redemption behaviors. In terms of profits, the impact of coupon trading is further complicated since both the manufacturers and the retailer will adjust their prices strategically in the presence of coupon trading.

In this paper, we analyze the impact of coupon trading in a setting where a retailer helps manufacturers distribute coupons to attract potential customers. This setting is similar to the Catalina coupons and fits to the real world situation where multiple manufacturers sell products and distribute coupons through the same retailer. In particular, we address the following research questions. First, when do firms benefit from the presence of coupon trading? Second, what are the effects of coupon trading on consumer purchase and firms' pricing strategies? Third, do consumers on average incur a higher or a lower cost when they make purchases under coupon trading? Finally, can coupon trading lead to higher firm profits than improved coupon targeting? To answer these questions, we develop an additive linear utility function to specify consumers' choices and a game theoretical approach to model a retailer and its upstream manufacturers' pricing decisions under different scenarios.

Key findings of this paper are as follows. First, when the coupon face value is fixed, coupon trading can increase the profits of either the retailer or the manufacturers, but not at the same time. The retailer benefits from coupon trading when the coupon market is competitive and consumer hassle cost is low, while the manufacturers benefit when the coupon market is uncompetitive and consumer hassle cost is high. Second, coupon trading does not necessarily increase demand. Firms benefit from coupon trading by charging higher prices, which leads to a lower demand. Third, in the presence of coupon trading, consumers end up with a higher average cost than in the absence of coupon trading. Fourth, compared with improved coupon targeting, coupon trading may allow firms to gain higher profits. This finding implies that coupon trading may function as a mechanism to help reallocate the imperfectly targeted coupons to the "right" consumers. Further, we extend the main model to a competitive setting and find that the main results remain valid. Finally, we employ numerical analysis to identify the optimal coupon face values in different scenarios. We find that the results of the main model still hold when coupon trading occurs. When the manufacturers maximize profits over the entire feasible parameter space, their optimal profit with coupon trading is lower than that without coupon trading, but the retailer's equilibrium profit and the total channel profit may be higher.

This paper contributes to the literature in several aspects. First, it is the first attempt to examine whether and when firms can benefit from coupon trading. It starts from modeling consumers' utilities and purchase behaviors, in the absence and presence of coupon trading, and further extends to competitive settings to incorporate demand substitution. Our theoretical framework provides insights into consumer choices in the pricing and retailing context, responding to the calls by Grewal and Levy (2009). Second, while some studies investigate the retailer's pricing policy with or without coupons, little is known about how manufactures and retailers adjust their prices in the presence of coupon trading. We contribute by incorporating the strategic interaction between the manufacturers and the retailer into the model with consumers' coupon trading behavior. Third, we compare coupon trading with a scenario in which the manufacturers improve targeting by distributing different face-valued coupons. This extends the coupon targeting literature by introducing coupon trading as a potential mechanism to help achieve better coupon targeting through consumers' self-selection. Fourth, when we treat coupon face value as a decision variable, we find that the optimal face value under coupon trading may result in a higher total channel profit. This finding extends the channel coordination literature by suggesting that coupon trading combined with some incentive mechanisms (e.g., a lump-sum payment contract) may lead to a win-win situation for the channel members.

The rest of the paper is organized as follows. We first review the related literature, and then derive consumers' demand specifications and set up the model. Following that, we analyze and compare the equilibrium outcomes of different scenarios. We further extend the main model to check the robustness of the results. In addition, we employ numerical analysis to identify and compare the optimal coupon face values and corresponding firm profits in different scenarios. Finally, we conclude the paper and discuss the limitations.

⁴ *How to Sell Coupons on eBay® and Really Make Money*. The Editors of SmartBuddy Books (SmartBuddy Books, 2010).

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