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Duopoly competition with non-deceptive counterfeiters

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ABSTRACT

This paper considers that two differentiated branded firms compete in the Hotelling's framework and face outside competition from non-deceptive counterfeiters. The presence of counterfeit goods gives rise to two various effects on branded firms' profit: on the one hand, it undermines the sale of branded goods (substitution effect); on the other hand, it alleviates the intensity of price competition between branded firms (price increasing effect). We argue that, under certain circumstances, the price increasing effect may dominate the substitution effect, thereby boosting the branded firms' profits. We also discuss the impact of the strength of intellectual property right (IPR) enforcement on the price and profit of the branded firms. The discussion may shed light on a long-standing debate on criminalizing the purchase of counterfeit goods.

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1. Introduction

The conventional argument for anti-counterfeiting laws or intellectual property right (hereafter, IPR) enforcement states that counterfeiting gives rise to financial harm to branded firms because it deprives the branded firms of sale, and it undermines the incentives for further creation and innovation (Raustiala and Sprigman, 2014; Wall and Large, 2010). However, this argument has been constantly challenged. For example, many have argued that counterfeiting may not be so harmful (particularly when consumers are not deceived),[3] or it may promote rather than impede innovation.[4] We also observe that branded firms in certain industries can actually turn counterfeits into their advantage.[5] Hence, a more compelling argument for anti-counterfeiting laws is required, and naturally it is related to the properties of various types of counterfeiting. As argued in Wall and Large (2010), to clarify what the real market impacts are and where the public interest lies in the presence of counterfeiting, we may need to distinguish between various types of counterfeits.

By the terminology of Grossman and Shapiro (1988a,b),[6] a non-deceptive counterfeit good refers to the counterfeit good that consumers can distinguish from branded goods either by close inspection or by the distribution channels through which it is sold (Grossman and Shapiro, 1988b). Counterfeits of luxury fashion goods are typical examples of this category because most counterfeits of this type are sold in evidently nonofficial distribution outlets at extremely lower prices. For example, most consumers are aware that the vendors on Canal street in New York city are selling counterfeit goods, and very few consumers are deceived into buying those counterfeit goods. In the presence of such non-deceptive counterfeit goods, a natural question is its market impact on branded firms. Particularly, when the market of branded goods is dominated by a number of competing firms, we question how the presence of non-deceptive counterfeit goods affects the intensity of

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[3] See the news report "Fake goods are fine, says EU study", *The Telegraph*, August 29, 2010 and the related studies cited in Wall and Large (2010).

[4] For example, see Barnett et al. (2010) and Raustiala and Sprigman (2012).

[5] See the case of Microsoft and Monsado in "Piracy: Look for the Silver Lining", The Economist, July 19–25, 2008.

[6] As was argued in Grossman and Shapiro (1988a,b), counterfeit goods are generally classified into two various types: deceptive and nondeceptive counterfeit goods. For nondeceptive counterfeit goods, consumers can distinguish them from genuine ones, and they knowingly purchase the good at a lower price.

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competition between branded firms, and inquire what its impacts are on the price and profit of branded firms.

To answer the aforementioned questions, we construct a stylized model with two differentiated branded firms that compete each other in the Hotelling's framework, and meanwhile face outside competition from non-deceptive counterfeiters. In this setting, non-deceptive counterfeit goods serve as an imperfect substitute for branded goods, and consumers are heterogeneous with respect to their preferences for the two branded goods as well as the attitudes towards using counterfeit goods. The presence of counterfeit goods gives rise to two various effects on branded firms: on the one hand, the presence of counterfeit goods undermines the sale of the branded good (*substitution effect*); on the other hand, it softens the intensity of price competition between branded firms, which in turn leads to a higher branded price (*price increasing effect*). We argue that this price increasing effect may dominate the substitution effect, and therefore the presence of counterfeit goods can indeed boost the branded firms' profit.

The rationale behind this price increasing effect is as follows. Because the presence of counterfeit goods leads those disloyal consumers more likely to purchase the counterfeit good, branded firms realize that the remaining consumers are more loyal ones. Hence, the presence of counterfeit goods forces branded firms to ignore disloyal consumers and focus on those loyal consumers who have higher willingness to pay for branded goods. It also reduces the branded firms' incentive to compete for disloyal consumers by lowering their price. In this sense, the presence of counterfeit goods serves as a buffer that alleviates the intensity of price competition between two branded firms.

We propose an argument claiming that non-deceptive counterfeiting may not be so harmful, and under certain circumstances it may even benefit branded firms. While several academics have proposed various rationales for this seemingly intriguing phenomenon (see the related literature below), we provide an alternative justification that was overlooked in the existing literature: the presence of counterfeit goods may alleviate the intensity of price competition between competing branded firms. This result carries an implication for the policies of IPR enforcement: the relationship between the strength of IPR enforcement and the branded firms' profit is non-monotonic, and more stringent IPR enforcement may lead to lower branded firms' profit. This result also sheds light on a long-standing debate on criminalizing the purchase of counterfeit goods.

The remainder of this paper is organized as follows. Section 2 reviews the related literature, and Section 3 describes the model. Section 4 analyzes the equilibrium prices and profits with the market presence of non-deceptive counterfeit goods. Section 5 discusses the impact of the strength of IPR enforcement and the implications of our analysis for anti-counterfeiting laws. Finally, Section 6 concludes this paper, and proofs of the propositions are relegated to Appendix A.

2. Related literature

Several streams of literature have documented various justifications for how branded firms may turn counterfeiting into their advantage. We categorize the related literature into various streams of research that focus on luxury fashion goods, information goods, and durable goods, respectively.

For luxury fashion goods, a number of papers have argued why branded firms may prefer a certain level of imitation, and they accentuate various driving forces that benefit branded firms. Most arguments in this line of research rest upon the status-good nature of luxury fashion goods, and they are related to two relevant concepts: the Veblen effect and snob effect.[7] Barnett (2005) argues that the presence of visibly imperfect counterfeits boosts the "snob premium" of elite consumers as well as the expected status benefits of non-elite consumer. Raustiala and Sprigman (2006) claim that the counterfeiting of fashion goods may motivate consumers' desire for new fashion goods because it accelerates the fashion cycle and induces product obsolescence. Yao (2005) and Bekir et al. (2012) consider that branded firms may benefit from the sanctions imposed on counterfeiters. Bekir et al. (2013) show that branded firms may benefit from the aspirational effect, indicating that certain group of consumers (aspirational consumers) purchase luxury or fashion goods with an intention to imitate the behavior of elite consumers. In an empirical study, Romani et al. (2012) provide experimental evidence showing that several psychological mechanisms[8] increase consumers' willingness to pay for the luxury goods being counterfeited.

For information goods, a main stream of the literature argues that the presence of counterfeits/piracy may be favorable due to the network effects. This is simply because consumers' valuation for information goods (such as software or digital goods) increases as the number of users rises; for example, see Gayer and Shy (2003), Takeyama (1994), or Peitz and Waelbroeck (2006) for a comprehensive survey. A number of other studies have investigated the theoretical rationales for firms' disincentives to enforcing trademark/copyright protection. For example, Ben-Shahar and Jacob (2004) argue that an incumbent may strategically induce infringement to lower the market price and deter potential competitors. Minniti and Vergari (2010) show that piracy may allow firms to expand their business to consumers who would not buy at all.

In the context of a durable good monopolist, the well known Coase conjecture (Coase, 1972) argues that a durable good monopolist's market power is eroded because the monopolist is actually in price competition with itself over periods, and it cannot convince consumers that it would not reduce price in later periods. A small number of studies have argued the presence of counterfeit goods may be favorable because it enhances a monopolist's credibility of commitment to maintaining a high price over time, and mitigates the Coase's time-inconsistency problem. For example, Takeyama (1997) analyzes the impact of unauthorized reproduction of intellectual property on original firms' profitability in an intertemporal setting. When unauthorized copies are close substitutes for the originals, original firms may abandon the future sales, and this makes uniform pricing credible. Wu and Chiu (2014) show that when consumers of lower valuation are more likely to purchase counterfeit goods, the presence of non-deceptive counterfeit goods weakens the monopolist's incentive to lower the price in later periods, thereby alleviating the problem of self-competition. Ding (2014) claims that the presence of deceptive counterfeit goods necessitates a higher price for a branded firm to establish a credible signal of high quality and separate itself from deceptive counterfeiters.

Some empirical studies provide evidence supporting the view that counterfeiting may boost the price or profit of branded firms. For example, using the data from shoe companies in China, Qian (2008) shows that branded prices increase on average after the entry of counterfeiters. In a subsequent study, Qian (2014) investigates the impact of counterfeiting on the sale of branded goods, and she finds that the overall impact differs for branded goods of

[7] The Vebelen effect refers to that consumers exhibit a higher willingness to pay for the "status goods" that confer higher social status on their users (Bagwell and Bernheim, 1996); the snob effect refers to that a status good confers more benefits if the perceived number of users is lower (Barnett, 2005).

[8] For example, consumers derive much pleasure from being envied or in distinguishing themselves.

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