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Why were FIFA World Cup tickets so cheap? Monopoly pricing, demand quality and two-sided markets

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ABSTRACT

We examine the pricing decision of a multi-product monopolist in a two-sided market with capacity constraints where the type structure of buyers on one side is an important determinant of profit on the other side. Prices below the maximum sellout price and rationing demand in the first market might be optimal to reach a demand quality, i.e. a type distribution more favorable for sales in the second market. The model explains frequently observed underpricing and resale deterrence, e.g. in the (sports) entertainment industry, where the spectators' extraversion is negatively related to their income and serves as an input factor for sponsors.

1. Introduction

The FIFA World Cup, the soccer world championship, is one of the most important events in the sports and entertainment industry. Every four years, it gathers a tremendous amount of spectators and serves numerous sponsoring firms as a promotional platform. The sale of tickets for its 2006 edition in Germany has been a great deal of public discussion. During the first selling-period in February and March 2005, ticket prices ranged from 35 Euro for a group match in the forth seating category to 600 Euro for the final in the first category. Though some reader may think that was not cheap, demand exceeded supply already three days after ticket orders were possible. At the end of the selling-period excess demand amounted to more than factor 10. The FIFA rationed the demand by a random allocation of tickets. Moreover, the tickets were personalized in order to prevent resale in the black market. Resale of tickets was allowed only at the purchase price via an official platform installed and controlled by the FIFA. Given the huge excess demand it is, prima facie, surprising that ticket prices were not

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set higher ex ante or determined by an auction-like mechanism. Why were the tickets so cheap? And why did the FIFA incur so much effort to deter customers from resale?[1]

The model developed in this paper simultaneously solves both the underpricing puzzle and the one of resale deterrence without giving up the assumption of profit maximizing behavior.[2] We examine the pricing decision of a multi-product monopolist in a two-sided market with capacity constraints.

The classical literature on two-sided markets – an overview is provided by Rochet and Tirole (2006) – takes into account that the customer base in one market determines sales in a second market due to demand externalities. However, the respective papers hitherto ignore capacity constraints[3] and exclusively consider externalities of *quantitative* nature. Therefore price structures that do not imply a change in the transaction volume in the market, from which a one-sided link to another market originates, are equivalent. In particular, prices below the maximum price for which the product is sold at the production capacity in the first market, call it *maximum sellout price*, seem to be unreasonable. However, like in the FIFA World Cup example above, such prices are frequently observed, especially in the entertainment industry.

We argue that this phenomenon does not originate from a quantitative but a qualitative externality that is still present if the monopolist sells at capacity: In our model, the *demand quality*, i.e. the type structure of buyers, on one side of the market (e.g. spectators) is an important determinant of profit on the other side (e.g. sponsors). If this type structure responds to price variations, it might be optimal to lower prices below the maximum sellout price and to ration demand by a random mechanism in the first market in order to reach a type distribution more favorable for sales in the second market.[4] Moreover, in order to maintain the intended type structure in the first market, the monopolist might spend effort taking action against resale.

The application of this model to the case of the FIFA World Cup – or the (sports) entertainment industry in general – where the organizer of the event sells, on the one hand, tickets to spectators and, on the other hand, marketing contracts to sponsors, is based on two empirical findings from the literature on consumer and personality psychology.

First, successful marketing of sports events, which are widely broadcasted in the media, viably depends on the atmosphere in the stadium. As emphasized by consumer psychology, this is due to the fact that (perceived) emotions serve as significant mediators of consumer responses to advertising (Holbrook & Batra, 1987; Huang, 2001).

Second, the atmosphere in the stadium is influenced by the traits, i.e. the personality types, of individuals among the audience, in particular by their degree of extraversion, i.e. the intensity of emotional expression. As McNeil and Fleeson (2006) show by means of an experimental approach, extraversion has a causal effect on positive affect, i.e. the extent to which a person feels enthusiastic and active and, hence, is willing to cheer. At the same time, the literature on personality psychology predominantly reports a negative relation between the intensity of emotional expression on the one hand and income on the other hand (Basabe et al., 2000; Lynn & Martin, 1995; Wallbott & Scherer, 1988).

Consequently, given that tickets are a normal commodity, higher admission charges lower the (expected) willingness to cheer among spectators. Put differently, setting high ticket prices drives out high-quality fans, beclouds the atmosphere, and, hence, leads to a loss of revenue in markets that suffer from low emotions, e.g. the one for sponsorship contracts or merchandizing products. Moreover, the type structure among spectators intended by low ticket prices can only be maintained if the resale of tickets in the black market is credibly prevented.[5]

2. The model

We consider a partial equilibrium model of a two-product monopoly. The monopolist sells one commodity, called tickets t, to individuals in the t-market and another commodity, called sponsorship contracts x, to firms in the x-market.

2.1. Individuals' demand and demand quality

Individuals $i \in I := [0,1]$ differ with respect to two unobservable characteristics: their exogenous endowment with income y^i, which is independent and identically-distributed (i.i.d.) on $[\underline{y}, \bar{y}]$ with density f, and their willingness to show emotions or extraversion e^i, which is i.i.d. on $[\underline{e}, \bar{e}]$ with density g.

[1] The sale of tickets for the UEFA Euro 2008, the soccer European championship, was organized in a very similar way to the FIFA procedure (UEFA, 2007) provoking comparable excess demand (UEFA, 2008).

[2] There are numerous alternative explanations for the underpricing phenomenon that may occur independently of the one proposed in our paper, e.g. fairness (Kahnemann, Knetsch, & Thaler, 1992), loyalty (Salant, 1986), demand uncertainty (Swafford, 1999), or positive externalities between customers (Becker, 1991).

[3] An exception is the paper by Loertscher (2008) on platform competition in two-sided markets. There, as in oligopolistic models of one-sided markets (Kreps & Scheinkman, 1983), capacity constraints serve as a commitment device for competitors not to mutually undercut their prices.

[4] The idea that the reason for underpricing lies in the seller's intention to achieve a certain composition of customers in some market can also be found in the literature on initial public offerings of equity securities. There, underpricing of the issue may be used by insiders to ration excess demand in such a way as to diffuse ownership and retain control of the firm (Brennan & Franks, 1997). Similarly, Damiano and Li (2007) create a model of efficient matching, where pricing schemes are designed in order to sort demand on both sides of a marriage market thereby improving the respective matches.

[5] Courty (2003) offers an alternative explanation for resale deterrence by a profit maximizing organizer. Though his model is entirely different from ours, from an abstract point of view the formal reason for deterrence is pretty much the same: heterogeneity of customers' behavioral characteristics.