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Heterogeneous switching costs☆

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ABSTRACT

We consider a two period model where consumers have different switching costs. Before the market opens an Incumbent sells to all consumers; after the market opens competitors appear. We identify the equilibrium both with Stackelberg and Bertrand competition and show how the presence of low switching cost consumers benefits the Incumbent, despite the fact that it never sells to any of them. Furthermore, we identify a free rider effect among consumers.

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1. Introduction

A firm which, in the past, has acquired a clientele composed of consumers with low switching costs will be forced, in the presence of entry, to charge low prices for fear of losing its consumers. By contrast, a firm which in the past has acquired a clientele composed of high switching cost consumers will be able to charge a high price. Foreseeing this, high switching costs consumers will have incentives to "follow" low switching costs consumers – *i.e.*, to purchase from the same firms as they do. This implies that heterogeneity of switching costs has complex strategic consequences which have largely been ignored in the literature. It will influence the strategies of firms, the equilibrium distribution of clients, and the value of incumbency. In this paper we explore these links.

In order to do so, we build a simple two period model. There is a continuum of consumers who need to buy one unit of a good in each of two periods. Consumers who, contrary to the assumption in much of the literature, are forward looking, have heterogenous switching costs. They try to minimize the total discounted sum of the prices which they pay and the switching costs that they incur. There are also two types of firms: at the beginning of period 1, there is an Incumbent firm which has sold to all consumers in the past and both in periods 1 and 2 there are at least two potential entrants.

If consumers all had the same switching costs, they could make their purchasing decisions without taking into account the choices of other consumers. We showed in Biglaiser et al. (2013) (see also Section 3) that in this case the discounted profit of the Incumbent over any finite number of periods is equal to its profit in a one period model: in any period the entrants compete away any future rent.

On the other hand, when switching costs differ, a firm's price depends on the types of its past customers. Therefore, when making their purchasing decisions rational consumers take into account not only the price that firms charge, but also the types of their other clients. This makes the strategies of the consumers interdependent; as we will see, for a large range of parameters, some high switching cost consumers, expecting a lower price in period 2, choose in period 1 to purchase from an entrant who has attracted a sufficient number of low switching cost consumers despite the fact that by doing so they incur a higher current total cost.

This interdependence has a significant effect on the pricing decisions and on the profits of the firms as well as on the equilibrium market shares. We show this, first, in a model where consumers are of two different types: they either have a low switching cost, σ_L or a high switching costs, σ_H. If σ_L/σ_H is small enough the Incumbent firm will price so that it will *always* lose some of the high switching cost consumers in equilibrium. Furthermore, while the Incumbent does not sell to any low switching cost consumer their presence affects its profits which increase as their number increases and as their switching cost decreases. We are even able to identify circumstances where, for intermediate values of σ_L/σ_H, the profits of the Incumbent are smaller in the two period model than in the one period model (see Corollary 4).

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