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When do switching costs make markets more or less competitive?

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ABSTRACT

In a two-period duopoly setting in which switching costs are the only reason why products may be perceived as differentiated, we provide necessary and sufficient conditions for switching costs to lead to higher prices in the first period as well as to higher overall profitability. We show that this happens if and only if switching costs are not too large. We present the only treatment up to date of how switching costs (and only switching costs) affect competition based on the assumption that switching costs differ across consumers, which allows us to illustrate the undesired byproduct of assuming that products exhibit substantial horizontal differentiation. Not only do we draw implications for the classical literature on competition with switching costs, but also for the more recent one that rests upon such an assumption too.

1. Introduction

It is by now very well documented that many consumption decisions involve making sunk investments that are product-specific (or, more generally, seller-specific). This relationship-specificity creates an inertia towards the continued use of the same product, even if there are sellers of substitute products with very similar functional features.

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Such costs of switching suppliers of a product arise in industries as diverse as computers, telecommunications, paid-TV, ketchup, credit cards, cigarettes, or retail banking, and their extent can range from being relatively small to being quite large, depending on the industry.[1] The most obvious effect of switching costs is that, once a consumer starts consuming a given product, its degree of substitutability with respect to competing products decreases, which has an impact on how firms compete for consumers. In fact, firms that foresee that consumers will get (partly) locked into their products in the future will also factor these elements into their current decision-making.

Given their widespread importance, it should come as no surprise that there has been a lot of theoretical work analyzing the impact of switching costs on competitive outcomes in oligopoly.[2] The most crucial insight from this literature stems from Klemperer's (1987a; 1987b) seminal work. In a two-period symmetric duopoly model, he finds that the second-period profit of a firm is increasing in its first-period market share. This leads to very aggressive competition before consumers are locked-in, but competition greatly relaxes afterwards, with the resulting temporal evolution for prices commonly known as the "bargains-then-ripoffs" pattern. This received wisdom has been very influential in forming the conceptual apparatus for full-fledged dynamic models that greatly extend the workhorse two-period models initially considered.

In the quest for a tractable framework, the switching cost literature has had to address significant technical challenges. Indeed, pure-strategy equilibria easily fail to exist in multiperiod models with switching costs owing to endogenously formed discontinuities and asymmetries in demand functions. This drawback has been amended by making products substantially differentiated from a horizontal point of view.[3] When a consumer is locked-in by a firm, it may be really hard for the competitor to steal it away from the firm (unless tastes are largely uncorrelated over time). As a result, fixing a technical problem creates a fundamental artifact in the economics of the situation to be analyzed: competition once consumers are locked-in ends up being *too* soft, so it should not be surprising that second-period profits are found to be monotone increasing in first-period market share.

The objective of this paper is to provide an analysis of the effects of switching costs, *and only switching costs*, on competitive outcomes. In our two-period symmetric duopoly setting based on Chen (1997), consumers are heterogeneous with respect to their switching costs: the only reason why demand from locked-in consumers is somewhat elastic is because they bear different switching costs. Even though this seems a natural feature of many real world markets in which switching costs are present, heterogeneity in such costs

[1] See Calem and Mester (1995); Dubé et al. (2010); Keane (1997); Larkin (2008); Shcherbakov (2016); Shum (2004); Shy (2002) and Viard (2007) for some relevant empirical studies.

[2] Excellent surveys of earlier literature can be found in Klemperer (1995) and Farrell and Klemperer (2007).

[3] See Klemperer (1987b) for the workhorse model widely used in the literature. A complementary way to deal with equilibrium non-existence is to further assume that that most consumers leave the market before they can possibly bear any switching cost, as also done in Klemperer (1987b).