Hassle Costs, Price-Matching Guarantees and Price Competition: An Experiment

SUBHASISH DUGAR* and TODD SORENSEN
Department of Economics, University of Arizona, Tucson, AZ 85721, USA

Abstract. We experimentally investigate whether the collusion-facilitating nature of price-matching guarantees survives the introduction of hassle costs incurred by buyers to enforce these guarantees. The presence of an arbitrarily small number of positive hassle costs buyers may completely undermine incentives for collusion. To evaluate this possibility, we develop four one-shot price competition models that test the hassle cost argument by varying proportions of positive and zero hassle cost buyers present in the market. Although the theory predicts that the competitive price should emerge in equilibrium in all four models, we experimentally find significant price differences.

Key words: Experiment, hassle costs, price-matching guarantees.

JEL Classifications: L11, L12, C91.

I. Introduction

An important question in oligopoly theory is whether firms can collude to reap monopoly profits. Under current antitrust laws, overt formal coordination among firms to fix prices is prohibited. However, firms may tacitly collude, recognizing their mutual interdependence, and consequently achieve the monopoly outcome. But without explicit agreements, it is usually difficult for firms mutually to agree upon a price and/or firms find it hard to resist the idea of profitable price undercuts. Nonetheless, tacit collusion among firms is a prominent possibility in the presence of some facilitating practices widely observed in retail markets, namely publicly announced price-matching guarantees (hereafter PMGs).

A PMG is a competitor-based low-price guarantee that typically states that a firm will match any lower prices offered by its rivals. Salop (1986) first argued that PMGs could facilitate tacit collusion that will support

* Author for correspondence. E-mail: dugar@email.arizona.edu.
1 This concept has been known as conscious parallelism, as in Posner (1976). This idea has its roots in Chamberlin’s (1962) discussion of oligopoly firms.
prices above marginal cost in equilibrium. The basic idea is the following: since in the presence of PMGs all firms automatically match any lower price through their matching policies, Bertrand undercutting does not increase a firm’s market share; rather it just leads to lower prices and profits for all firms. Hence, maintaining the collusive price is optimal for each firm, and the market price may rise well above the marginal cost in equilibrium and may even reach the monopoly price. Thus, PMGs might sustain monopoly prices in the market without any formal agreements among firms.

Since Salop, the anti-competitive effects of PMGs have been supported in a variety of settings. In particular, Doyle (1988) analyzed the collusive argument for \( n \) firms and showed that collusion exists if all firms adopt the PMGs. This effect has also been shown to be invariant to whether the guarantees and prices are chosen simultaneously or sequentially in Chen (1995) and whether the products are homogeneous or differentiated in Logan and Lutter (1989). Baye and Kovenock (1994) examined a model with three types of price-related advertisements (only prices, PMGs, or price-beating advertisements) and supported the anti-competitive predictions. Edlin and Emch (1999) examined the welfare effects of these guarantees and concluded that PMGs create greater welfare losses in markets with a low ratio of fixed to marginal cost. Textbooks on industrial organization\(^2\) recognize this adverse effect, and PMGs have received attention from antitrust authorities and legal scholars (see Sargent, 1993; Edlin, 1997\(^3\) for excellent discussions).

Most of these theoretical models implicitly assume that firms automatically match a rival’s low price, which implies that invoking these guarantees is almost a ‘no hassle’ task for a buyer.\(^4\) However, Hviid and Shaffer (1999) (HS, henceforth) maintain a different view (HS, p. 490): they argue that even an arbitrarily small level of positive hassle costs, borne by all buyers to invoke these guarantees, render PMGs much less effective than the dominant view in the literature would suggest and therefore firms will no longer find it optimal to set the market price above marginal cost in the presence of PMGs.

The central idea of HS is that, in the presence of strictly positive hassle costs, all the buyers strictly prefer to buy from the firm with the


\(^3\) Even though the dominant view in the literature is that PMGs are anti-competitive in nature, this may not be the sole purpose behind the adoption of matching guarantees. Other purposes may include price discrimination (e.g., Belton, 1987; Png and Hirschleifer, 1987; Corts, 1996; Chen et al., 2001; Lin, 1988), low cost signaling Moorthy and Winter (2006), and entry deterrence Arbatskaya (2001).

\(^4\) See Arbatskaya et al. (2004) for the incidence and variety of this type of low price guarantees.