The Competitive Conduct of Consumer Cooperatives

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Abstract

This paper tests empirically whether consumer cooperatives act as profit-maximizing agents. While consumer cooperatives are nominally operated in the interest of their members, and should pursue social goals, their governance structure may allow managers to pursue their own objectives. Using data and an equilibrium model of the supermarket industry, we investigate whether the hypothesis of profit maximization can be rejected for Italian consumer cooperatives. Preliminary results do not find significant deviations of cooperatives' conduct from profit maximization.

1 Introduction

Cooperatives are firms owned by their employees or customers. They represent a substantial share of the economy in many developed and developing economies.[1] Cooperative firms have often implemented market innovations and have corrected market frictions or imperfections, and are usually inspired by broader social goals.[2] However, it is not immediately clear that just by adopting a cooperative form a firm can credibly commit to a particular competitive conduct. Take the instance of consumer cooperatives, which are formally owned by their customers, and usually have the statutory goal of providing high quality products and low prices to consumers. When these cooperatives grow large, internal democracy may vanish, and managers may gain strong powers to pursue their own objectives (e.g., empire building). In this case, the statutory goal of keeping prices low for consumer-members is put aside, as managers pursue economic profit to invest in further expansion or non-core businesses.

While this is in principle an internal governance problem, it also raises public policy considerations. In fact, the favorable fiscal treatment that governments reserve to consumer cooperatives in most jurisdictions is often justified by their role in fostering consumer welfare through low prices. If consumer cooperatives are in fact profit-maximizing entities, this rationale is no longer valid and any favorable tax treatment represents a distortion of the competitive playing field.

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[1] For instance, around 30,000 cooperatives operate in the US, generating revenues for more than $600 billion. See Deller et al. (2009).

[2] The International Co-operative Alliance (ICA) employs broader terms in its definition of a cooperative as "an autonomous association of persons united voluntarily to meet their common economic, social, and cultural needs and aspirations through a jointly owned and democratically controlled enterprise."

In this paper we investigate empirically whether the pricing behavior of consumer cooperatives differs from the behavior of their for-profit competitors, analyzing as a case-study the Italian supermarket industry. In this industry large consumer cooperatives (all adopting the same Coop sign) operate along for-profit entities. Coop enjoys substantial tax advantages, but its large size and market power in some geographical markets makes some observer question the basis of this preferential treatment. This is an active area of policy debate, as well as the subject of an investigation by EU authorities.[3]

We propose a test of profit maximizing behavior based on a structural model of the supermarket industry. In our model, consumers choose where to shop for groceries and can purchase a continuous quantity of "grocery bundles." On the supply side, supermarket groups set prices in a Bertrand-Nash game.[4] While for-profit supermarket groups are assumed to be profit-maximizing, consumer cooperatives may price groceries in a way that takes into account consumer welfare, according to their statutory mission. This behavioral model results in a pricing rule for cooperatives that weights marginal costs and markups according to the preferences for profit and welfare.

Hence, the model reflects the intuition that different hypotheses on the cooperatives' conduct have distinct empirical implications on pricing behavior across markets. If Coop is profit maximizing, we expect the markups it chooses to fluctuate with demand elasticity, which in turn depends on market-level competitive conditions. If instead Coop prices with a fixed markup, all variation in prices across markets should be explained by variation in marginal costs.

We formalize this intuition for identification of conduct, and consider carefully what variation in the observables identifies the parameters that determine the behavior of cooperatives: in particular, we exploit variation in the intensity of Coop's historical political connections across markets. As shown in previous work, political connections do have a significant impact on market structure in this industry (Magnolfi and Roncoroni, 2016), and are unlikely to be correlated with unobservable determinants of demand elasticity (when controlling for political preferences) and marginal cost (as opposed to fixed cost).

We estimate the model using data on supermarket-level revenue shares and prices for seven yearly cross-sections between 2000 and 2013. Despite evidence of uniform pricing across stores by US retail chains (DellaVigna and Gentzkow, 2017), our data show rich variation in pricing both within and across supermarket chains.

Provisional estimates indicate that we cannot reject the hypothesis that Coop prices according in a profit-maximizing fashion, but we can reject the hypothesis that Coop prices to purely maximize consumer welfare. Interestingly, "placebo" results for Coop's competitors find strong support for the standard Bertrand-Nash oligopoly model; the estimated slope of prices with respect to the markup term predicted by the model is close to the one predicted by the theory. Overall, we interpret this as compelling evidence that Coop's behavior is essentially profit-maximizing.

Our estimates and model allow us to quantify the welfare gain that could be obtained if Coop's preferences were changed (possibly by regulating Coop's internal agency conflict) to give more weight to consumer's surplus. We also examine the consequences of several proposed mergers in the industry,

[3] See Case E1/2008 in the State Aid Register at the DG Competition.

[4] Other dimensions of competition, such as product availability, have been shown to be important for US supermarkets (Matsa, 2011). We focus on price as the main dimension of competition in the context we examine.

under both Coop's factual conduct and a more consumer-oriented conduct by Coop. We consider our results and counterfactuals as an important input on the policy discussion on Coop's governance and tax treatment.

2 Related Literature

Since the early literature on consumer cooperatives (Enke, 1945), the theoretical discussion on cooperatives conduct has focused on three alternative hypotheses. The first is the maximization of consumer welfare, whereby cooperatives focus on keeping prices as low as possible, with the constraint of not generating losses. The second is the maximization of a combination of profits and consumer welfare, according to which cooperatives balance low prices and profits, possibly to expand their business and finance capital expenditure. Finally, it may be that cooperatives are fully profit maximizing (all of the cash flows generated go to finance expansion/empire building). To the best of our knowledge, this is the first paper that takes seriously these three hypotheses on cooperative conduct, and tests them using data.

A large related literature investigates more broadly the behavior of nonprofits (e.g. Malani, Philipson and David, 2003). Particular attention has been devoted to researching whether nonprofits exploit market power (e.g. Philipson and Posner, 2009; Capps, Carlton and David, 2017). Related to this question, an early empirical literature focuses on hospital behavior: Lynk (1995) argues that nonprofit hospital mergers need not result in price increases, while for-profits hospital charge higher prices in concentrated markets. These findings have been refuted by subsequent studies (Dranove and Ludwick (1999), Keeler, Melnick and Zwanziger (1999)). The debate on hospital conduct highlights the fact that, since nonprofits could either be driven by boards strongly linked to local communities or by empire-building managers, nonprofit conduct is essentially an empirical question.

This paper is related to studies on the identification of firm conduct from market level data, pioneered by Bresnahan (1982) and Lau (1982). Early studies relied on a conduct parameter approach, which had its foundations in conjectural variation models. This approach has been found to be problematic both in terms of the underlying theory, and in terms of the econometric identification of the conduct parameter (see Corts, 1999). Berry and Haile (2014) expand on Bresnahan and Lau's insights, showing that in nonparametric models of markets for differentiated products there are testable restrictions on firm conduct. We follow their insight in constructing a test for the conduct of cooperatives based on the presence of rotators of residual demand.

Other empirical papers have investigated cooperatives in Italy. Bentivogli and Viviano (2012) compare descriptive statistics of (consumers' and producers') cooperative firms in the Emilia-Romagna region of Italy with those of their for-profit counterparts. They find that cooperatives have on average lower workers' productivity,[5] but employ strategies that are similar to those of for-profit competitors. In Magnolfi and Roncoroni (2016) we investigate the role of Coop's political connections in shaping the market structure in the grocery retail industry in Italy.

[5] This particular finding reflects the fact that many of the cooperatives that they consider are producers' cooperatives.

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