Abstract

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We revisit the classic discussion of the comparison price and quantity competition, but in a mixed oligopoly in which one state-owned public firm compete against private firms. Comparison between price and quantity competition has been extensively discussed in the literature. Under plausible conditions, price competition yields tougher competition, resulting in a lower level of profits. Ghosh and Mitra (2010) revisited this classical discussion, but in a mixed duopoly in which welfare-maximizing public firm compete against a profit-maximizing private firm. They showed that, in contrast to a private duopoly, the competition is tougher under quantity competition, resulting in a lower profit of the private firm. They also showed that Bertrand yields higher level of welfare. Matsumura and Ogawa (2012) and Nakamura (2013) investigated endogenous price-quantity choice and network externality, respectively, and showed that their results are robust. In their analysis, however, it is assumed that one public firm competes against one private firm. In this paper, we allow more than one private firm and check the robustness of the results.

We adopt a standard differentiated oligopoly with a linear demand (Dixit, 1979). We find that regardless of the number of private firms, Bertrand always yields greater welfare. However, the profit ranking depends on the number of private firms. If the number of firm is less than or equal to four, Bertrand yields larger profit of each private firm. If the number of private firms is more than or equal to five, profit can be larger under Cournot competition than Bertrand competition, and Bertrand always yields smaller profits if the number of firms is sufficiently large.