

## How many franchises in a market?

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Received 1 February 1998; received in revised form 1 April 1999; accepted 1 June 1999

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### Abstract

This paper studies how firms use their number of franchises as a strategic tool. Firms can commit to high output by creating many franchises. However, signing a single franchise contract with a low wholesale price is an equally effective way to generate output. The value of granting many franchises is undercut when firms can sign contracts afterwards, so firms place only a single franchise in a market. This finding reverses previous results which did not model contracts. The same issues arise in international competition policy, where countries use anti-trust policy to affect their number of exporters and use subsidies to affect the choices of exporters. © 2001 Elsevier Science B.V. All rights reserved.

*Keywords:* Vertical relationships; Franchising; Strategic trade; Competition policy

*JEL classification:* F12; L13

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### 1. Introduction

Economists have long been interested in how a firm contracts with its franchisees. But a firm chooses how many franchises with which to contract as well. Recognizing that firms pick their number of franchises in conjunction with franchise contracts has important implications both for market outcomes and for the design of observed contracts. This paper presents a simple model which

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explores how the choice over the number of franchises interacts with the contracting choice.

This paper analyzes a situation where two firms choose how many franchises to use in a Cournot game under perfect information. The firms use franchises to implement strategies which the firms could not commit to on their own. The paper considers the case in which firms can also set up two-part tariffs (a fixed fee and a per-unit wholesale price) in order to change the incentives of the franchisees. Choosing a high number of franchises or a low wholesale price are two ways for the firm to elicit high output. The central result is that the choice over the number of franchises and the choice of contract are interchangeable in the sense that each tool can be used to produce almost any quantity, including the optimal quantity. When one tool is set optimally, there is no gain to adjusting the other.

This result is important for solving for equilibrium. This paper studies a sequential game, where firms choose the number of franchises before the two-part tariff. The sequential game reflects the fact that it is easier to change a wholesale price than it is to develop a franchise location. When firms choose the number of franchises first, they recognize that their choice affects their opponent's choice of two-part tariff. Choosing a large number of franchises is no longer an effective way to capture market share because the opponent can respond with an aggressive contract. In fact, because any level of output which the firm can achieve through the choice of the number of franchises can also be achieved through the choice of the two-part tariff, the *only* effect of picking a large number of franchises is to commit the opponent to a low per-unit price – the opposite of what the firm wants to happen. In equilibrium, both firms choose to have one franchisee and use the two-part tariff to induce the franchisee to produce high output.

The result that firms choose to have one franchise is very different from results found by other researchers. Polasky (1992) considers a model in which firms choose the number of agents to play a Cournot game under a linear demand curve. Polasky's game is similar to the one in this paper but without the choice over a two-part tariff. Polasky interprets the set-up as a model of divisionalization, divestiture or franchising – any act which credibly creates independent business ventures. He shows that in order to commit to high output, the best response for each principal is to pick more agents than the opponent. When principals simultaneously play such a strategy, there is no equilibrium. Baye et al. (1996) generate an equilibrium in Polasky's model by introducing a per-agent fixed cost. Under this assumption, firms do not want to choose an arbitrarily high number of divisions or franchises. Baye et al. (1996) show that in the limit as the fixed cost goes to zero, the equilibrium number of agents goes to infinity.

Polasky (1992) and Baye et al. (1996) suggest that if fixed costs are low, we should expect to see firms choose a very large number of franchises. I show that in a richer contracting environment, the firm's optimal choice of the number of franchises is to choose as low as possible. This paper presents a strategic reason, as opposed to a market friction, why we might expect a low number of franchises

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