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Revenue versus incentive: Theory and empirical analysis of franchise royalties

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ABSTRACT

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This paper analyzes royalty rates in franchise contracts, focusing on the two leading hypotheses. We consider whether royalty payments are simply the means for franchisors to acquire revenue from franchisees (*revenue hypothesis*), or are to preserve incentives for the franchisors to exert appropriate efforts (*incentive hypothesis*). We propose a new variant of the revenue hypothesis, which is derived from an elementary model of franchise contracts with input sales. We hypothesize that the royalty rate is higher when the total margin ratio of the franchise chain is higher (when the sales revenue ratio is lower). We use OLS to explore data on 118 Japanese franchise chains in 2001 and find evidence supporting this hypothesis, which provides an explanation for higher royalty rates for service-type franchises. *J. Japanese Int. Economies* **34** (2014) 154–161. Graduate School of Business Administration, Kobe University, 2-1 Rokkodai, Nada-ku, Kobe 657-8501, Japan; Faculty of Economics, Shiga University, 1-1-1 Banba, Hikone 522-8522, Japan.

1. Introduction

Royalty payments are common in franchise contracts, and they tend to be a higher percentage of franchisee revenue in service-type franchises than in others. For example, according to data from

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Shogyokai (2003), in 2001 in Japan the sales-based royalty rate averaged 8.8% for service franchises compared to 3.9% for other franchises. Lafontaine (1992) notes that in 1986 in the US, the sales-based royalty rate was 7.0% for service franchises compared to 5.8% for other franchises. As Rao and Srinivasan (1995) argue, it is worth exploring why royalty rates are higher for service-type franchises than for others. We need this type of research in Japan because, as the figures just cited show, it really is a remarkable feature of Japanese franchising.

This question is closely related to the underlying motivation for royalty payments, whether the royalty payments are simply a way for franchisors to acquire revenue from franchisees (*revenue hypothesis*), or are primarily for assuring that franchisors exert appropriate effort (*incentive hypothesis*). The revenue hypothesis is often endorsed by businesses, who argue that royalty rates are set higher for service franchises than for others because service franchisors, unlike non-service franchisors, cannot get revenue on an ongoing basis simply by selling inputs to franchisees (Japan Franchise Association (JFA), 2003). The incentive hypothesis is more evident in the academic literature on franchising. The original statement of the incentive hypothesis was by Rubin (1978), and its logic was further developed by Mathewson and Winter (1985), Lal (1990), Katz and Owen (1992), and Bhattacharyya and Lafontaine (1995). Empirical analyses supporting the incentive hypothesis include Lafontaine (1992), Vazquez (2005) and Maruyama and Yamashita (2010, 2012). According to the incentive hypothesis, if the services provided by the franchisees are important, we should expect relatively lower royalty rates in service franchises. Yet the reality is that service franchises have higher royalty rates.

In this paper, we resolve this puzzle by arguing that the total margin ratio, which equals the total gross margin of a franchise chain divided by the sales of the franchisees, is shared by the franchisor and franchisees according to the relative importance of the franchisor and the franchisee efforts. We derive these efforts and the implied shares in the total margin from an elementary model of franchise contracts with input sales. A natural result is that the share of the franchisor, the royalty rate, r, is higher when the total margin ratio is higher.[1]

We test this hypothesis: that there is a positive relationship between the total margin ratio and royalty rate. If business-format franchisors set their usual input prices to franchisees at marginal costs, then input sales revenue is equal to input sales at marginal cost. Then the total margin ratio is specified as one minus the input sales revenue ratio, where the input sales revenue ratio equals input payments to the franchisor divided by the sales of the franchisee.

From Shogyokai (2003), in 2001 the input sales revenue ratio averaged 0.278 for service franchises, compared to 0.557 for other franchises. We propose a new explanation why the royalty rate is higher in service franchises. It is because the total margin ratio of the franchise chain is higher, owing to the lower level of input sales revenue ratio for service franchises. Japanese data for 118 franchises in 2001 supports this revenue hypothesis.

2. Theoretical framework

2.1. Development of new revenue hypothesis

A franchisor's revenue comes from initial fees and royalties, and from sales of inputs. Practitioners widely argue that *the amount of input sales* are low in service-type franchises, and so royalty rates must be set higher for them to be assured of an adequate revenue stream. To put it another way, this is in line with the argument of the revenue hypothesis *as usually understood* that there is a negative relationship between input sales and the royalty rate. Lafontaine (1992), Sen (1993) and Rao and Srinivasan (1995) did show such a result in US data. However, this argument seems odd because it is not based on an economic model.

Using an elementary model in Appendix A, we propose a *new* revenue hypothesis for franchise royalties. The first-order condition of the profit maximization of a franchisor reveals determinants of the royalty rate as in Eq. (1). The relation is such that the total margin ratio, $(1 - c)$, which equals the total margin of the chain divided by the sales of the franchisee, is shared by the franchisor and the franchisee according to the relative importance of their incentives to expand sales. The upshot of this

[1] We express our thanks to the anonymous referee for suggesting this point.