Dual Organizational Structures in Franchising

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Abstract

This paper extends the work of Mathewson and Winter (1985) in the field of franchising. Given the hypothesis that a franchise contract ensures quality compliance at a lower cost relative to alternative organizational structures, the existence of dual organizational structures within the same franchise chain is inadequately explained. This paper extends the basic model of Mathewson and Winter into a spatial framework, demonstrating that nonconvexities in monitoring costs will produce dual organizational structures within the same chain.

INTRODUCTION

Franchising is often viewed as a contractual arrangement between two independent firms. The extent to which this is a useful description of a franchise agreement depends on the type of good and the nature of the activity being governed by the franchise contract. The presence of vertical restraints blur the distinction between two firms and one vertically integrated organization. In the case of franchising, the amount of vertical control arising from the contract is observed to vary across industries.

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According to Sen[1], franchise operations can be divided into two types: "trade name franchising" and "business format franchising". The former includes sectors such as automobile dealerships, gasoline service stations, and soft-drink bottlers, while the latter format encompasses sectors resembling restaurants, hotels, real estate agents, business aids, and educational services. Typically, trade name franchising is a license to sell a wholesaler or parent company's product in a local market. Business format franchising involves licensing the use of a brand name for a locally produced product. With business format franchises, the local producer receives a business plan, specialized training and some form of ongoing support.

Each type of franchise operation poses several interesting issues that have been explored in the literature. While both types of franchises have similar terms and conditions within the standard contract, they differ by their focus. Trade name franchise issues tend to be found in the vertical restraint literature. They typically focus on issues of exclusive dealing, inventory controls and the problem of *double marginalization*[2]. Business format franchises, on the other hand, focus on the issue of moral hazard arising from informational asymmetries. These types of problems are found in the principle-agent literature, where the agent may shirk on a margin that is costly to measure (quality or effort). This paper is concerned only with the business format category of franchising.

There are two observations found in the empirical data on franchising that have

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[1]Sen, Kabir C. "The Use of Initial fees and Royalties in Business-Format Franchising" Managerial and Decision Economics, Vol. 14, No. 2, Special Issue: Transactions Costs Economics. (Mar. – Apr., 1993), pp. 175-190.

[2]"Double marginalization" refers to the problem of both a wholesaler and retailer using a price markup formula. The wholesaler sell his good to a retailer at the wholesaler's profit maximizing price. The retailer, in turn, treats the wholesale price as marginal cost and marks it up a second time. To address this type of problem the wholesaler can choose from a variety of remedies such as: retail price maintenance (RPM), minimum quantity order, or two-part tariff.

not been adequately addressed in the literature. The first is the existence of both corporate-owned (and managed) outlets and franchised outlets within the same organization. Business Analysts have attributed this to the different types of activities carried out by a firm's corporate stores and franchise outlets. However, many of the chains that have both types of structures have homogeneous operations[3]. Models that address the choice between corporate and franchise outlets have predicted that one form or the other would come to dominate the organization[4]. This is not surprising since, with a couple of exceptions, such models tend to focus on the contractual arrangement between the franchisor and a single franchisee; with the optimal franchise contract defined in terms of the optimal franchise fee structure and monitoring levels.

The second unaddressed aspect is the apparent rigidity in various organizations' franchise fee structure over both time and between individual franchisees. According to the models, since franchise fees and royalties are chosen to extract economic rents subject to some type of incentive compatibility constraint, it is expected that franchise fees will vary across markets with different demand and (therefore) profit opportunities. This is not born out by the empirical evidence[5].

Two of the more prominent explanations put forward for the coexistence of corporate and franchise outlets in the same organization are signaling and brand reputation[6]. In the former, the franchisor uses corporate stores to signal to potential

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[3]Lafontaine, Francine. "Agency Theory and Franchising: Some Empirical Results." Rand J. Econ. 23 (Summer 1992): 263-83. (a)

[4]Ozanne, U.B. and Hunt, S.D. The Economic Effects of Franchising (Washington, D.C.; U.S. Government printing office, 1971). Rubin, P. "The Theory of the Firm and the Structure of the Franchise Contract," Journal of Law and Economics , 21 (1978) 223-233.

[5]Lafontaine, Francine; and Shaw Kathryn L. "The Dynamics of Franchise Contracting: Evidence from Panel Data" The Journal of Political Economy, Vol. 107, No. 5. (Oct., 1999), pp. 1041-1080.

[6]*For signaling see* Gallini, N. T. and Lutz, N.A. "Dual Distribution in Franchising" J. Law, Econ., and Organization 8 (October 1992): 471-501; *and for brand reputation see:* Mathewson, F.

franchisees his commitment to the venture. In the latter, differences in brand reputation across markets determine the choice of arrangement (corporate or franchise). However, in both cases as the firm matures, the franchise fees would rise and a single structure would dominate. This paper offers an alternative explanation based on monitoring costs. It is the nature of the monitoring costs that determine both the decision to expand and to alter the choice of arrangement.

STRUCTURE OF THE FRANCHISE CONTRACT

In a franchise contract, a parent company contracts out the right to produce or market its product to an agent. Contractual stipulations specify rules governing the behavior of the agent, including pricing, mode of production, and territorial or market restrictions. A frequently observed feature of a franchised industry is that certain aspects of the parent company's product have limited scale economies that require production at the local market level.

A principle characteristic of franchise contracts is the agent's right to use a national brand name in exchange for a share of the profits. The brand name is a signal to consumers in a local market that the agent supplies a product of a certain quality. The effectiveness of the brand name as a quality signal will decide its value to consumers. Given the nature of brand names and the characteristics of certain industries that rely on them, franchise contracts, as a form of governance structure, may be the most efficient means of enhancing and protecting the value of the brand name.

Franchise contracts have certain common characteristics[7]. The franchisor sells or

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and Winter, R. "The Economics of Franchise Contracts," The Journal of Law and Economics, Oct. (1985) 503-526.

[7]See, for example, Rubin, P. "The Theory of the Firm and the Structure of the Franchise Contract," *Journal of Law and Economics*, 21 (1978) 223-233; or Caves, R.E. and Murphy, W.F. "Franchising: Firms, Markets and Intangible Assets," *Southern Economic Journal*, 42 (1976)

leases the right to produce or sell some product to a franchisee, and written into the contract are various obligations and commitments required by both parties. First, with the right to use the franchisor's brand name, the franchisor also agrees to supply various types of assistance. This includes orientation with the production process, managerial and accounting assistance, site selection and development, and any ongoing assistance or advice as required. The franchisor also takes responsibility for national marketing and advertising in addition to any research and development of the product.

Second, the franchisee agrees to operate the business in the manner stipulated by the franchisor, which includes hours of operation, pricing scheme, inventory levels, and adherence to the operating manual – if one is supplied. Third, the franchisee agrees to pay royalties to the franchisor. The royalties are usually in the form of a non-linear outlay schedule comprised of a fixed fee plus a share of the revenues.

Fourth, there will be a monitoring and auditing clause in the contract. This may be delineated explicitly, but will usually give the franchisor arbitrary and discretionary power. Fifth, the contract will have a termination clause that tends to favour the franchisor, who also has the ability to terminate the contract at will. However, the termination clause is less forgiving of the franchisee, who still has the ability to terminate the contract, but runs the risk of doing so at unfavourable terms and incurring heavy penalties. Finally, the contract will contain miscellaneous clauses dealing with the sale of the franchise, rights of heirs, territorial restrictions and any other conditions that may be specific to the particular product.

EXPLANATIONS OF FRANCHISING

Factors that have been put forth to explain the existence of franchise contracts include: risk pooling and capital-market imperfections, moral hazard on the part of the agent (franchisee), moral hazard on the part of the principal (franchisor), and

information asymmetries on either the agent's or the principal's side.

Franchising As a method of capital accumulation and risk pooling

It was believed that franchising first arose as a form of capital accumulation and rapid expansion[8]. This line of reasoning can be discredited on two accounts. First, if an individual is to buy a franchise, he bears all the risk of that one outlet, whereas the franchisor has his risk spread across all outlets. To bear this higher risk, a risk-averse franchisee will demand a higher risk premium. The franchisor could therefore design a package of shares from all the outlets and sell them to the individual store managers, effectively lowering the risk premium he must pay and still maintain full control of the outlets. This form of organization will dominate since it is less costly.[9].Martin (1988) used risk sharing to explain franchise contracts. According to Patricia Lafontaine, the main empirically testable result from this model is that if the franchisor is less risk averse than the franchisee, the optimal royalty rate will increase as the amount of risk increases. If the franchisor is risk neutral, this model implies that the chain should be wholly company-owned[10].

Second, evidence suggests that most franchisees have limited wealth[11], and therefore the funds they invest in a franchise must be acquired. With imperfect capital markets, it is unlikely that an individual would be more successful than a well-established firm at raising the needed capital[12]. Therefore, capital accumulation is not an adequate

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[8]See, for example: Hunt, S.D. "The Trend Toward Company-owned Units in Franchise Chains," *Journal of Retailing*, vol. 49, 2 Summer (1973), "Firms often choose the route of franchised units because they simply do not have access to the capital required . . ."; Caves and Murphy, *Supra note 7* , "For financing outlets the capital supplied by franchisees has no ready substitute...".

[9]Rubin *Supra note 7*

[10]Lafontaine and Shaw *Supra Note 5*

[11]Mathewson and Winter *Supra note 6*

[12]In an interview with George Tidball, founder of *the Keg* restaurant chain, it was reported that

explanation of franchising[13].

Franchising as a solution to moral-hazard (agency) problems

This type of model assumes that franchisors cannot observe the behavior of franchisees in terms of their provision of local input, service for quality level. They also cannot infer it from the observed level of sales if there is a stochastic element in local demand conditions. Franchise contracts are a solution to a monitoring problem when reputation is an important factor in the exchange of a good[14]. Franchise contracts allow an agent to earn a quasi-rent stream from producing and/or selling a parent company's product in a local market. The purpose of the quasi-rent is to ensure compliance on the part of the agent to the terms of the franchise contract.

Klein and Murphy[15] argue that franchise contracts allow an agent to earn a quasi-rent stream from producing and/or selling a parent company's product in a local market. The purpose of the quasi-rent is to ensure compliance on the part of the agent to the terms of the franchise contract. They further demonstrate that, in equilibrium, there must be a positive level of monitoring; the rent stream by itself is not sufficient to ensure compliance.

Franchising and reverse moral-hazard problems

A third explanation for franchise contracts relies on moral hazard problems for both parties. Here the franchise contract arises due to the mutual need for incentives. As

the Keg corporation usually financed the franchisee's purchase of the franchise rights. This was a loan agreement where the terms of repayment were independent of the annual royalties that the franchisee would pay to *the Keg.*

[13]Rubin, P. *Supra note 7.*

[14]Mathewson, F. and Winter R. *Supra note 6.*

[15]Klein, B. and Murphy, K. " Vertical Restraints as Contract Enforcement Mechanisms," *The Journal of Law and Economics,* Oct. (1988) 265-297

in the previous section, the franchisee may have an incentive to shirk on the supply of an input whereas may also have an incentive to renege on his part of the agreement. To solve the moral hazard problem on the part of the agent, the franchisor could require that the franchisee put up a forfeitable bond that would be lost with non-compliance[16]. However, this creates a reverse moral hazard problem. If the bond is sufficiently large, the franchisor may renege on his promise to maintain the brand name and therefore abscond with the bond.

In addition, if the franchisee had sufficient wealth to afford an adequately sized bond, he would invest in a more diversified and less risky asset that has fewer constraints on his managerial sovereignty than a franchise. This implies a wealth constraint on the franchisee, which is a necessary condition for a franchise contract[17].

GEOGRAPHIC ISSUES OF FRANCHISE CONTRACTS

The explanations for franchising described above typically focus on a single franchisor-franchisee contract. As a consequence, their results center on the terms of the optimal contract - the royalty rate and level of monitoring. None of these models can directly explain the coexistence of both franchises and corporate stores as it occurs in franchising. These models typically imply a different optimal royalty rate for each

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[16] For further dicussion on this form of constraint see: Klein, B. "Borderlines in Law and Economics: Transaction Cost Determinants of 'Unfair' Contractual Arrangements," *American Economic Review*, 70, 2 May (1980) 356-362.

[17] It is a lack of collateral that makes a franchise contract superior to any privately negotiated loan agreement a bank could offer the individual. A limited wealth condition is equivalent to a default option on loans to franchisees so that banks incapable of writing performance contracts superior to franchisors will rationally limit their loans to franchisees that ease the purchase of the local right to the brand name, knowing incentives in a franchise contract. The limited wealth constraint as a necessary condition for franchising is a well established result in the literature. See, for example Mathewson, F. and Winter, R. *Supra note 6*; or Rubin, P. *Supra note 7*.

franchisor-franchisee pair, even within a single chain. This would suggest that, in cases where market conditions differ across locations, there would be a high degree of heterogeneity in terms of franchise fees and royalty rates.

As previously mentioned, there are two observed facts in industries that use franchising to produce and distribute their product that have not been adequately explained[18]. The first is the breakdown between corporate owned and franchised outlets found within a given organization. It is repeatedly observed that an organization that engages in franchising will frequently buy back certain franchised outlets and operate them as corporate stores, but simultaneously issue franchises in new areas. Furthermore, there appears to be little correlation between the size of the economic rent that individual outlets are earning and the decision to buy them back.

The second unexplained observation is the fact that franchise fees remain relatively fixed, both across outlets and over time, while there is a wide variability in rent being earned across outlets[19]. This fact appears to be inconsistent with the proposition that franchise fees allow the parent company to capture some of the economic rent being earned by the agent[20].

Two alternative frameworks that allow for the coexistence of franchising and corporate outlets are Gallini and Lutz's signaling model[21] and Mathewson and Winter's brand reputation model[22]; however both imply that franchisors will want to reduce their royalty rates and increase their franchise fees over time. This occurs in the former because information about franchisor quality is revealed over time, and occurs in the latter because of the franchisor's increased brand equity.

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[18]See: Lafontaine, Francine.*Supra note 3; and* Simon, Carol J., "Franchising vs. Ownership: a contracting explanation", *University of Chicago working paper* (1991). This paper presents the results of an extensive survey of franchise contracts across the midwest United States.

[19]Lafontaine and Shaw *Supra Note 5*

[20]See Tirole, J.**The Theory of Industrial Organization,** chapter 4 (1988).

[21]Gallini and Lutz *Supra note 6*

[22]Mathewson and Winter *Supra Note 10*

Incentive compatibility constraints determine the extent to which a parent company can capture the economic rent being earned by the individual outlets. If one assumes that individual franchisees have similar opportunity costs, then one would expect the economic profit required to ensure compliance to be the same across franchises. Therefore, if economic rents vary across outlets, the residual would be captured by an adjustable franchise fee. One would expect the parent company to set each outlet's franchise fee based on local market conditions.

A common characteristic to franchise industries is that aspects production and distribution are carried out by many small, geographically displaced outlets. Therefore, when the parent company wishes to monitor its outlets, the monitor must incur considerable transportation costs[23]. In a large chain, this will require the monitor to cover a large area in the execution of his duties. One would therefore expect the remoteness of an outlet to have a bearing on the choice of contractual arrangement between the parent company and the local operator.

If the location of outlets and the distance between outlets were a function of market density, one would expect to see a clustering of outlets in more densely populated areas. This gives rise to an asymmetric distribution of stores, which will have a significant effect on the costs of monitoring. If the monitor has to travel a significant distance to inspect a particular outlet, then frequent monitoring will be quite costly. However, if there is a second outlet in close proximity to the first outlet, then the marginal transportation cost of monitoring the second store will be quite low.

This implies a *non-convexity* in the monitor's cost function and it is this non-convexity that will affect the choice of contract between the parent company and

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[23] The costs of procedure - or quality control - audits are nontrivial. For example, McDonald's will send a team of 2-3 auditors to a given outlet for up to a week each time they engage in a scheduled audit. For this type of audit every aspect of the operation is scrutinized. In addition, remote monitoring is carried out almost continuously and any anomalies can trigger a site audit.

the individual outlets. In the case of one outlet being geographically displaced from the monitor, it may be more profitable to give the local agent an economic rent rather than frequent monitoring to ensure compliance. However, if a second store is established in close proximity to the first, it may be more profitable for the parent company to switch to extensive monitoring and reclaim the rents.

While this point may seem straightforward with respect to the parent company's decision to franchise a new outlet, it also implies something more. The decision to expand the number of outlets and the decision to change the form of the contract between the parent company and the local operator are two aspects of one decision. This may explain why one form of contract has not come to dominate the other over time, which is something that has been predicted by analysts of these industries[24].

With respect to the observed rigidity of franchise fees, this too may be best explained in a geographic context. When a local market grows, so does the rent earned by the local franchisee. So why doesn't the parent company increase the franchise fee accordingly? One would expect that this would be a fairly straightforward clause to include at the outset of the franchise agreement.

Viewed as a principle-agent problem, it is assumed that, if the franchisee has better knowledge of local market conditions than the parent company, the franchisee would be in a better position to judge whether the local market could support expansion. In most franchise agreements the franchisee has the right of first refusal when a second outlet is being considered within his territory. However, a second outlet would be subject to the same structure of franchise fees and royalties regardless if it was operated by the incumbent or a new franchisee.

Furthermore, given diminishing returns to the ability of a single outlet to service a growing market, the parent company could better increase total royalty revenue from a given market by establishing a second outlet. The profitability of expansion will

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[24]The list includes: Caves and Murphy *Supra note 7;* Hunt, S.D. *Supra note 8*

be further enhanced because of the nature of the monitoring costs. The existence of the second store will lower the economic rent that was going to the first store before expansion. The lower profit will give the agent in the first store a greater incentive to shirk and therefore greater monitoring will be required. However, with the existence of the second store, a decrease in the *relative cost* of monitoring the first store may now make an increase in the frequency of monitoring worthwhile compared to the pre-expansion period.

THE MODEL

Initial conditions

A parent firm, or franchisor, sells his product in a set of geographically dispersed markets, or nodes. In each market there is an outlet where final production and sales are carried out by an agent, or franchisee. Demand conditions are assumed to vary across markets and each agent is assumed to have better information about local market conditions than the franchisor. In each market it is assumed that the agent faces a downward sloping demand function for the final product or service.

At any given outlet the agent may be a franchisee or simply an employee of the franchisor. If the latter is the case, then the outlet is referred to as a corporate store. Denote the location, or address, of a local market by x_0 ($x_0 > 0$). The location of the franchisor will be normalized to be zero. Therefore x_0 represents the distance between the franchisor and the local market.

The franchisor produces a good at a constant cost of v per unit. The good is distributed by the agent to the local market. The agent also contributes additional input into the final good in the form of services or some other quality enhancing attributes. Let s denote the level of service provided by the agent and let $c(s)$ be the agent's cost of s where $c'(s) > 0$ and $c''(s) > 0$. Finally, each outlet incurs fixed cost

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of K.

Demand in the local market is a function of both price, p, and the level of services, s.[25] Let q denote quantity demanded at location x_0 and the demand function is given by

$$q = D(s, p) \tag{1}$$

where

$$\partial D/\partial s > 0 \quad and \quad \partial D/\partial p < 0$$

The franchise contract specifies a payment schedule plus a level of s. The schedule for which the agent pays the franchisor royalties takes the form of a two-part tariff with a fixed and variable component:

$$f + \alpha(p - v)D(s, p) \qquad (where \ 0 \le \alpha \le 1) \tag{2}$$

f is the lump-sum franchise fee and α is the share of sales revenue that accrue to the franchisor.

The decision to shirk

Given the franchise contract, the agent may have an incentive to shirk on the level of services he is to supply. The decision to shirk will be a function of (i) the profits from shirking; (ii) the probability of detection by the franchisor; and, (iii) the penalty, or sanction from shirking. The probability of detection will, in turn, depend on the level of monitoring activity that the franchisor engages in and the degree by which the agent lowers the level of services below the contractually specified level.

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[25]Local demand is also a function of the strength of the national brand name. For our purposes, this is assumed exogeonous and is therefore supressed in the model.

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Define ϕ as the frequency of monitoring carried out by the franchisor, which is normalized to be between 0 and 1. Furthermore, define Δs as the difference between the contractual level of s (denoted s^*) and the actual level of s supplied by the agent (i.e. $\Delta s = s^* - s$). Therefore the lower the actual level of services relative to the level specified in the contract, the greater will be Δs ($\Delta s = 0$ implies no shirking). The probability of the agent being detected shirking will be a function of both the frequency of monitoring and the degree of shirking by the agent[26]. Let δ denote the probability of detection, which can be expressed as follows:

$$\delta = \delta(\Delta s; \phi) \tag{3}$$

where

$$\partial\delta/\partial\phi > 0 \quad and \quad \partial\delta/\partial\Delta s > 0$$

In most franchise contracts the penalty for shirking is termination of the franchise agreement[27]. Therefore the expected profit from supplying a low level of services can be expressed as

$$\pi_L = (1 - \delta(\Delta s; \phi))\pi(p, \Delta s) \tag{4}$$

where $\pi(p, \Delta s)$ is the agent's profits as he deviates from the contracted level of s.

Differentiating (4) with respect to Δs solves for Δs (and therefore s) that maximizes the agent's expected profits from shirking, or

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[26]It is also possible that $s > s^*$, in which case the franchisee is supplying a level of service greater than the level specified in the contract. This may lead to *intra franchise* competition which lowers the franchisor's rents. Most franchise contracts will also attempt to minimize this form of behavior. For a more formal treatment, see Winter, R. A. "Vertical Control and Price versus Non-price Competition", The Quarterly Journal of Economics Vol. 108, No. 1 (Feb., 1993), pp. 61-76.
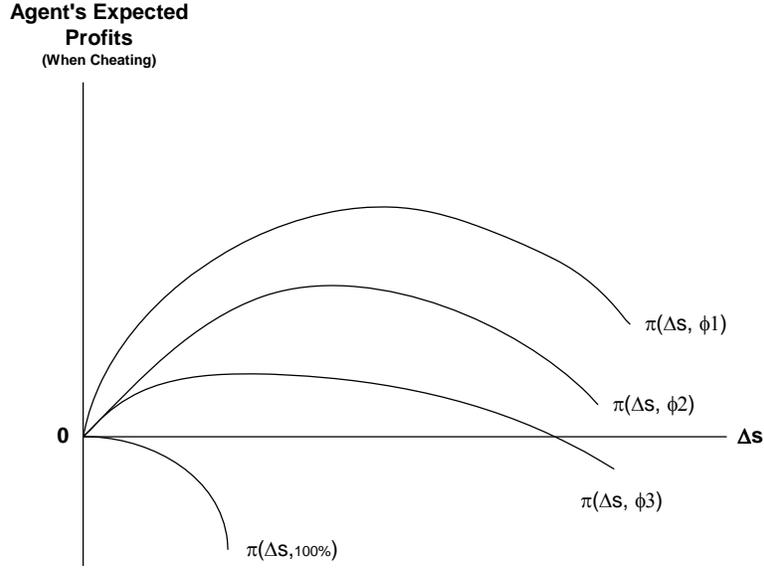
[27]See Klein, B. *Supra note 16*

Figure 1: The agent's expected profit as a function of the level of shirking, given some known frequency of monitoring (ϕ). Changes in the frequency of monitoring will shift the agent's expected profit function.

FIG. 1. Expected profits from shirking

$$(1 - \delta(\Delta s; \phi))\partial\pi/\partial\Delta s - \pi(p, \Delta s)\partial\delta/\partial\Delta s = 0 \qquad (5)$$

For any given level of ϕ the profit function of the agent (4) is at first increasing, then decreasing in Δs. Intuitively this results from the fact that as the level of service falls, the expected profits for the agent rises from the cost savings. However, as the level of services falls, the probability of detection rises, thus lowering expected profits. ϕ is a shift parameter in the expected profit function. Expected profits as a function of shirking on services (Δs) are illustrated in figure 1.

Therefore, if $\pi_H = \pi(p,0)$ is the profits of the agent when no shirking occurs, then the agent will choose to shirk if, at the s that maximizes (4),

$$\pi(p,0) < (1 - \delta(\Delta s; \phi))\pi(p, \Delta s) \tag{6}$$

Equation 10 represents the incentive compatibility constraint faced by the franchisor.

If the franchisor decides to monitor the agent he will incur monitoring costs which are denoted as M. The costs of monitoring will be an increasing function of both the frequency of monitoring and the remoteness of the agent. Therefore the costs of verifying performance are

$$M = M(\phi, x_0) \tag{7}$$

where

$$\partial M / \partial \phi > 0 \quad and \quad \partial M / \partial x_0 > 0.$$

The Franchisor's objective is to maximize

$$\Pi(s, p, \phi) = f + \alpha(p - v)D(s, p) - M(\phi, x) \tag{8}$$

by choice of p, s, α, ϕ, and f subject to

$$\pi(p, s) = (1 - \alpha)(p - v)D(s, p) - c(s) - f - K \geq 0 \tag{9}$$

and

$$\pi(p, 0) \geq (1 - \delta(\Delta s; \phi))\pi(p, \Delta s) \tag{10}$$

Equation 9 is a non-negativity constraint on the agents profits[28] and equation 10 is the incentive compatibility constraint. Let λ_1 and λ_2 denote the lagrange multipliers for equations (9) and (10) respectively. Applying Kuhn Tucker conditions and noting that (9) is non-binding in the presence of (10), we get the following results:

$$p(1 - 1/\epsilon_H) = v + k(1 - \delta)(p(1 - 1/\epsilon_L) - v) \tag{11}$$

$$\alpha(p - v)\partial D/\partial s = kc'(s) \tag{12}$$

$$\partial M(\phi, x_0)/\partial \phi = \lambda_2((\delta - 1)\partial \pi_L/\partial \phi + \pi_L \partial \delta/\partial \phi) > 0 \tag{13}$$

$$where \quad k = \frac{1}{\alpha/\lambda_2 + (1 - \alpha)} = \frac{\lambda_2}{\alpha + \lambda_2(1 - \alpha)} > 0$$

In equation (11), ϵ_H is the price elasticity of demand in the local market for a given s^* and ϵ_L is the price elasticity of demand when the agent chooses to shirk. Equation (11) implies that the price of the final product will be higher when the incentive to shirk is absent. Intuitively, the franchisor is forced by the incentive compatibility constraint to engage in a quality/quantity trade-off in order to reduce the marginal returns to shirking.

Equation (12) determines s^*. If $\alpha < k$ then the level of services will be set below the first best level. Equation (13) sets the level of monitoring and implicitly determines the rent stream accruing to the agent. Since λ_2 is the shadow price of compliance, it can be interpreted as the marginal benefit of increased local market demand (and profits) when the service level is maintained. Thus a growth in the local market would

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[28]For simplicity, it is assumed that the agent's opportunity cost is zero.

lead to a higher value of λ_2 and, from equation 13, imply an increase in monitoring. Also, from equation 12, an increase in λ_2 would increase the incentive for the franchisee to reduce s, therefore creating an incentive for the franchisor to implement an offsetting reduction in the royalty α (As cited earlier, this result is consistent with the findings of other models but is not supported by the data).

Since $\partial M / \partial x_0 > 0$, we can see from equation (13) that as the distance between the franchisor and the outlet increases, the level of monitoring will decrease and the rent stream to the agent will rise. This result is illustrated in figure 2. Figure 2 illustrates the marginal benefit to monitoring and the marginal costs with-and without- the effect of transportation costs. In this case, the graph shows an interior solution (point A) due to the transportation costs ($x = x_0$). When there are no transportation costs ($x = 0$), a corner solution arises with 100% monitoring. With perfect monitoring there is no need to an economic rent stream to create an incentive to maintain the service level specified by the franchisor. At this point there would be a change in the contract mix as the outlet becomes corporate. In this framework $\phi = 100\%$ implies complete vertical integration[29].

Expansion of the Market

Now at a certain point in the future the population allowed to grow. The increase in demand increases sales for the outlet. However, due to diminishing returns at the local level, the franchise is not able to fully supply the extra output at the given level of s. This will lead to an increase in the incentive to shirk. Therefore the franchisor will have to either increase the level of monitoring or allow the agent's rent stream to increase. The rent stream is implicitly increased whenever the fixed component of the franchise fee is held constant in the presence of growing demand.

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[29]Mathewson and Winter (*Supra note 6*) use the same definition of vertical integration.
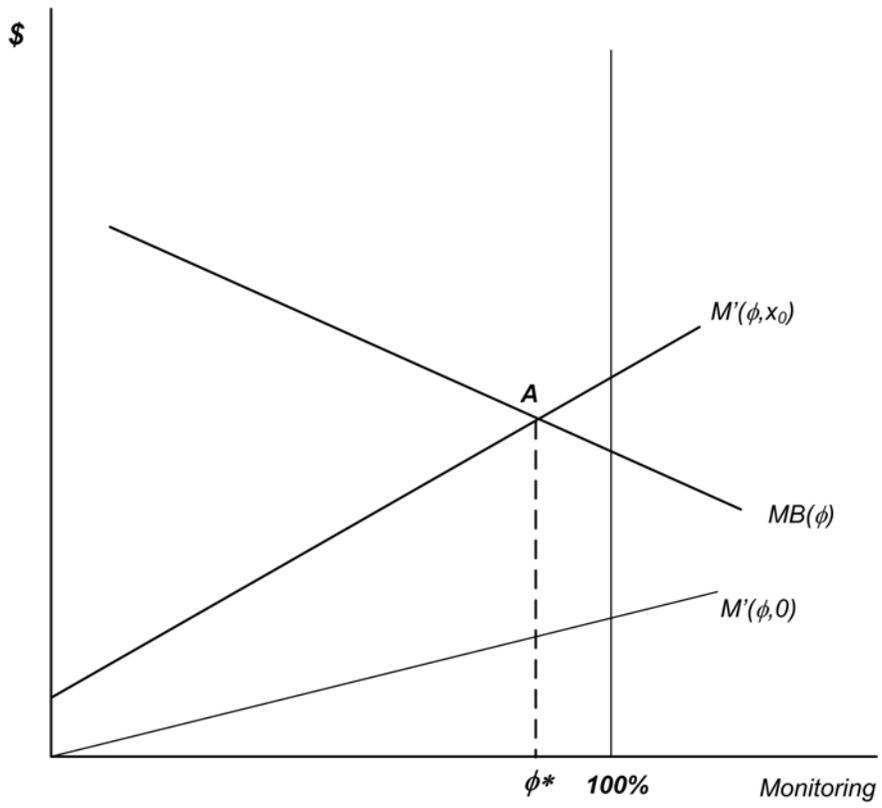
FIG. 2. Monitoring Equilibrium

The increase in demand may create an incentive for the franchisor to install a second outlet in close proximity to the first franchise. At this point the franchisor must decide whether it is more profitable to convert the franchises back to corporate owned and operated outlets or let them remain as franchise outlets. There are two factors that the franchisor must consider in making the decision to convert a franchise back to a corporate store. The first is the costs of monitoring two outlets which exist in close proximity to each other. The second is how the two outlets will interact while operating under a franchise arrangement.

The monitoring problem with two outlets

As before, the franchisor must incur transportation costs in order to engage in monitoring; therefore the cost of monitoring the first outlet is $M(\phi, x_0)$. Now suppose a second outlet is located in the same market. Since the transportation costs must be incurred to monitor a single outlet at location x_0, they become sunk costs, thus the cost of monitoring the second store is $M(\phi, 0)$ (where $M(\phi, 0) < M(\phi, x_0)$). The marginal cost of monitoring function for each of the stores is illustrated in figure 3.

In figure 3 $M'(\phi, x_0)$ intersects the original marginal benefit of monitoring schedule, MB_{old}, at point A. The increase in demand shifts the marginal benefit schedule up to MB_{new}. The marginal cost of 100% monitoring of the first store is given by point E. If a second store is also located at distance x_0, then the marginal cost of monitoring the second store is given by point H. The marginal benefit of 100% monitoring is given by point F. If the distance F to E is greater than the height to point H, then it will be worthwhile for the franchisor to convert the two stores to corporate outlets and engage in full monitoring. Regardless of the choice of contractual arrangement that the franchisor finally settles on, it is clear from figure 3 that the marginal cost of monitoring a second store is less than that of a single store in the same geographical area.
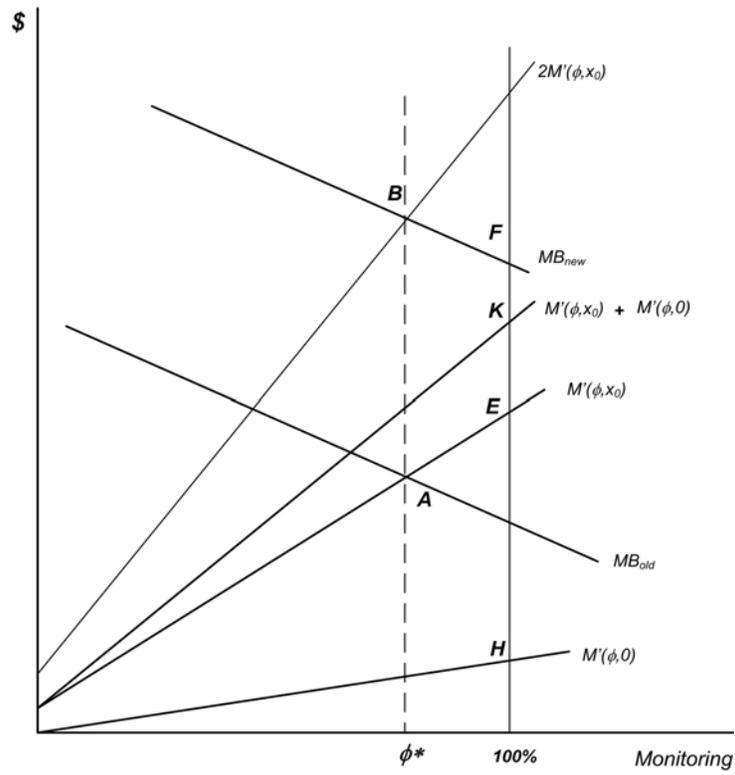
FIG. 3. Expansion of the Market

In addition to the *economies of scope* in monitoring costs described above, there exists a further potential reduction in monitoring when there is a second outlet. The franchisor can use information from one outlet to infer local demand conditions of the second outlet. For example if one store reports high sales in the same market that the other outlet reports low sales, the franchisor may be able to form a better prior about the likelihood that the second store is shirking on quality rather than suffering from a random drop in demand.

CONCLUSION

According to Francine Lafontaine (1992), "*Franchising offers a rare opportunity to assess theories concerning firms' contractual decisions*". Theoretic models that consider factors such as risk, moral hazard and capital accumulation offer explanations for the decision to enter into a franchise agreement, but say little regarding the specific terms of the contract. Most of these models focus on a single franchisor-franchisee pairings and magnitude of the franchise fee and royalty. The implication of these models is that differences in contracts should be a result of heterogeneous local markets. This would imply non-standardized franchisee fees and royalties - a result not supported by the empirical evidence.

Models that considered reverse moral hazard on the part of the franchisor address the coexistence of franchise and corporate outlets. Signaling, market saturation, and brand equity models offer explanations for contract-mixing; however, each of these three approaches have the franchisor adjusting the franchise fee with changes in the environment.

This paper has presented a simple model of a franchise contract. While capturing the essential elements of an incentive compatibility contract, the model is able to address some of the geographic issues inherent in franchise contracts. Specifically, the model focuses on the issue of the costs of monitoring to explain the contractual

choices observed in franchise industry.

Two implications arise from the analysis. First, that in the presence of positive monitoring costs and incentives to shirk, increases in rent due to market growth may accrue to the agent rather than the franchisor. Second, the firm's choice of contract-mix and the decision to expand are mutually exclusive. When geographical considerations are taken into account, non-convexities in monitoring costs may arise that affect both the decision to expand and the decision to convert a franchise outlet to a corporate owned-store. While other models suggest that a change in market conditions resulting in greater economic rent would lead to higher franchise fees, this model demonstrates the reasons as to why the franchisor may potentially choose to convert the franchise to a corporate outlet. The decision to convert to a corporate outlet would be concurrent with the decision to increase the number of outlets, thereby capturing a greater portion of the additional rent due to the reduction in the relative cost of monitoring.

The model in this paper is limited to the set of franchise contracts where some input on the part of the franchisee is a major component of the final product. The model does not apply to all forms of franchising observed in the economy, but particularly franchise arrangements that are classified as business concept relationships. Such industries that experience large economies of scale in centralized production of the final product may find franchising simply an efficient method of delegating the responsibility of distribution.

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