

Mazzeo, Michael J.

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THE CENTER FOR THE STUDY
OF INDUSTRIAL ORGANIZATION
AT NORTHWESTERN UNIVERSITY

Working Paper #0004

Demand, Competition, and the
Returns to Chain Affiliation

By

Michael Mazzeo
KGSM Department of Management and Strategy

Abstract

The empirical franchising literature currently examines governance structure from the point of view of the parent organization, who maximizes profits by either hiring employees and managing the sales function internally or by contracting with franchised sales agents. However, vertical disintegration also requires that an individual entrepreneur be willing to enter into a franchising arrangement. A potential franchisee might instead prefer to own an independent establishment, provided the costs of being part of the chain are greater than the benefits received from affiliation with the parent firm. This paper analyses the franchising relationship empirically — from the point of view of actual and potential franchisees — using data on the ownership status of nearly 2,300 motel establishments located throughout the United States. Cross-section differences in demand and competition are exploited to help explain the ownership and affiliation choices at the establishment level. The analysis reveals how the returns to chain affiliation differ for entrepreneurs under various market conditions.

I. Introduction

An extensive theoretical and empirical literature has examined the choice of organizational form and the extent of vertical integration in retail industries. These studies have largely focused on the decision process of large “manufacturers” of retail products — brands with national or international identities that nonetheless distribute their products locally, at small regionally dispersed outlets. A key strategic decision for such corporations is whether to hire employees and manage the distributed sales function internally or to reach customers through independent, usually franchised, sellers. Theories that help explain this decision through the objective function of the parent organization explore the roles that agency and monitoring costs, asset specificity, and risk play in determining the relative profitability under the alternative retail distribution formats. Empirical studies with evidence supporting or refuting the various theories typically compare the number of “company-owned” and “franchised” outlets in retail firms in different industries or with various other characteristics that proxy for the factors affecting the relative profitability of integration and disintegration.

The empirical literature has not yet shifted attention to another important decision-maker in this process: the entrepreneur. Any franchising relationship requires that an individual businessperson would earn higher profits by entering into a contract with the parent firm. Alternatively, this entrepreneur could remain in the industry by owning and operating an independent retail establishment that has no larger corporate affiliation. Just as with the decision of the corporation, the entrepreneur faces tradeoffs — there may be cost savings related to economies of scale and potential reputation benefits that increase demand would lead to higher profits for a chain-affiliated property, but franchisees must pay fees to the parent firm to be part of the retail network. Market conditions, including consumer preferences and the presence and behavior of competitors, may influence the terms of this tradeoff.

This paper analyses the franchising relationship empirically, from the point of view of actual and potential franchisees. I examine data on the ownership status of nearly 2,300 motel establishments located in 492 rural markets throughout the United States. While franchising is quite prevalent in the motel industry as a whole, unaffiliated motel establishments are relatively common in these rural markets. In fact, only 46 percent of the properties in the dataset are members of a national or regional chain. I then proceed to investigate explanations for the affiliation decisions made by establishments in the cross-section. For example, differences in demographic conditions across markets could potentially affect the returns to reputation for individual establishments located in different areas. The results indicate that chain-affiliation is more likely to be observed when the potential clientele of a motel is more mobile and when the local market has higher income. In addition, the propensity to remain independent may be affected by local competition — the number of other motels in the market and the quality of lodging services provided by competitors can influence the returns to chain affiliation. The motel establishments studied here are more likely to remain independent when they face no nearby competitors; in particular, low quality motels tend toward chain affiliation in more crowded markets.

The remainder of the paper is organized as follows: after this introduction, section II briefly reviews the franchising literature in economics and discusses the need for additional empirical work at the individual establishment level. Section III discusses the history of organizational form in the motel industry and why the industry makes a good setting for analyzing affiliation decisions empirically. The dataset is presented in section IV and estimation results follow in section V. Section VI offers some concluding remarks.

II. Franchising Literature

Considerable attention has been given to the issue of organizational form with respect to the optimal distribution of retail products. A recent paper by LaFontaine and Slade (1997) summarizes the empirical regularities identified in a large number of such studies and presents theoretical arguments that support the revealed stylized facts. The bulk of this literature assumes the point-of-view of a large “manufacturer” of retail products, who must sell its output through a series of geographically dispersed establishments. Such a firm has the option to either hire company employees to manage these retail outlets, or to have the sales function be carried out by independent franchisees. Empirical studies of this question typically use the share of a company's retail establishments that are franchised, as opposed to the share that are “company-owned,” as their dependent variable. Various explanations for vertical integration are tested by comparing the ownership share across companies with different characteristics — proxies representing particular theoretical arguments for integration.

LaFontaine and Slade identify agent effort, monitoring costs, and risk as important factors influencing the observed franchising/company operation outcomes. The studies they review largely support the theoretical predictions of standard agency models — in cases where the agent’s effort is more crucial to profitability, outlets are more likely to be franchised. Likewise, when it is more difficult for the principal to monitor the agent’s effort company ownership is less common.¹ Interestingly, the empirical results regarding risk are somewhat at odds with the theory. Although agency considerations would suggest that uncertainty in demand would result in more vertical integration, the empirical studies reviewed tend to find that the riskier retail outlets are more often owned by franchisees.

¹ For example, Norton (1988) finds that outlets are more likely to be franchised when sales per employee is high and Brickley and Dark (1987) report fewer company-owned outlets when the distance to the monitoring headquarters is greater. LaFontaine and Slade differentiate cases where monitoring effort is costly because output is difficult to measure. Here, the signal of agent’s effort is not only difficult to obtain, but it is also noisy once it has been obtained. As a result, firms tend to use vertical integration for their retail outlets more often in these cases.

By focusing exclusively on a parent firm's decision whether to own or franchise its retail outlets, this literature ignores the other important player in any franchising arrangement. There is a third alternative for retail ownership: individual outlets may be operated as sole proprietorships, unaffiliated with any other outlets or parent firm. While there has been a decided shift toward the standardized, multi-unit organization in many retail industries, there remain some circumstances under which an establishment would be better off operating as an “independent” than as an affiliate of a chain — franchised or company-owned. Any potential franchisee will compare the profits of owning an unaffiliated outlet with the deal offered by the franchisor. This paper compares the returns to chain affiliation and independent operation, by examining the propensity of individual establishments to remain independent and how it changes under different demand and competitive scenarios.

A recent study by Ingram and Baum (1997) tackles a similar question by looking at how chain affiliation affected the failure rates of hotels in Manhattan. The authors used data on 558 hotels operating in Manhattan between 1898 and 1980, and examined hypotheses relating to how chain affiliation, in particular the characteristics of the chain that franchisees affiliated with, affected the success and failure of individual hotels. My study looks in more detail at how the external economic environment enters this decision for each establishment, by looking at affiliation outcomes in a cross-section of markets. As I will demonstrate below, these markets differ in their demand characteristics and competitive landscape in ways that influence the relative returns of chain affiliation.

To the extent that independent retail establishments are observed, we can reasonably conclude that two related conditions hold. First, for the individual entrepreneur, owning an unaffiliated, independent outlet must be more profitable than operating as franchisee of a larger retail chain. That is, the royalties, fees and investments required to become a franchisee, offset any cost reductions or positive demand spillovers from affiliation. In addition, the profits from running the independent motel must be greater than what would accrue to the parent firm from

operating a company-owned outlet under the same circumstances. The empirical analysis in this paper, therefore, uses the revealed affiliation decision as an indicator of the relative profitability of the affiliation options. Cross-section differences in demand and competition are used to identify conditions that affect the relative value of these returns.

III. Background: Organizational Form and the Motel Industry

Motels are an excellent industry to examine the economic tradeoffs between independent ownership and franchise chain affiliation. Franchising has clearly taken hold in the industry — between 1962 and 1987, the share of motel establishments affiliated with some chain increased from 2 percent to 64 percent of the country’s total (Jakle, et al, 1993). Two sets of properties contributed to this overall transformation: newly constructed motels, built specifically to be part of chains and previously independent establishments whose owners chose to abandon their sole proprietorships and enter into affiliation arrangements. It is interesting to note that even though overall chain participation continued to expand, many individual entrepreneurs were returning to independent operations. Watkins (1991) reports that the number of lodging conversions from “independent to chain” was only 13 percent higher than the conversions from “chain to independent” between 1988 and 1990. This statistic underlines the importance of analyzing the behavior of potential franchisees, as motels remaining unaffiliated appear to have explicitly chosen to maintain their independent status. In the empirical section of the paper, therefore, I will investigate the factors influencing chain affiliation as a choice made by the owner of the establishment.

The motel segment of the lodging industry aims to serve automobile travelers along highways, and represents nearly half of the estimated 48,000 hotel properties in the United States.² Motels began to prosper during the first half of this century: as Americans purchased automobiles in larger numbers, it became popular to criss-cross the country on vacations and to travel from town to town for business. The expansion of the U.S. network of roads, highlighted by the creation of the National System of Interstate and Defense Highways in 1956, further encouraged Americans’ travel habits. Business establishments providing services for these

² These data are from Standard and Poor’s (1998), which estimates 1997 industry revenue at about \$80 billion. The 48,000 properties represent over 3.7 million rooms.

travelers quickly followed, even in remote areas where little demand for such services would otherwise exist.³

In the early years, most motel properties were independent — often a single family designed, built, managed and operated their motel. Travelers, however, soon became frustrated with the quality of services provided by independent motels. Since highway travelers were often visiting a location for the first time, they lacked the information to assess the quality of particular motels. Furthermore, most highway travelers stayed in a particular location for only one night, giving motel operators a strong incentive to misrepresent (overstate) the motel's quality. Lacking a "repeat business" incentive, motel owners could put up an outer façade of quality in their accommodations, but not follow through with services once the room was reserved. As a result, there was considerable dissatisfaction regarding motel quality among consumers.⁴

Kemmons Wilson built the Holiday Inn system of motel franchises as an attempt to solve this dilemma. According to franchising lore (e.g., Shook and Shook, 1993), Wilson returned from a family vacation so infuriated with the poor service at the motels he visited that he vowed to build a national chain of 400 roadside motels. Wilson recognized that properties in the chain needed to have consistent and identifiable quality. The information problem for consumers would be solved if they had had a positive experience in a motel that, while located elsewhere, looked the same and operated in the same way. Wilson's network was assembled quickly and competing chains followed, ultimately changing the standard organizational form for the industry.

From the point-of-view of an individual establishment, chain affiliation reduces the variance of consumers' assessment of the motel's quality. To the extent that consumers value quality — and tend to distrust the quality signal available prior to their stay — being identified

³ Belasco (1979) is an excellent history of the early motel industry in the U. S. Recent trends and the current state of the industry are chronicled by Jakle et al. (1996).

⁴ Ingram (1996) lays out this argument in greater detail, and provides an empirical analysis on the efficacy of a common naming strategy for hotel properties to provide information about quality to consumers. See also Ingram and Baum (1997).

with other motels should increase demand for an individual establishment's services.⁵ This could allow the motel to charge higher prices, increase its quantity of rooms rented, or both. Motels belonging to chains may also be able to lower costs by sharing advertising, purchasing or telephone reservation systems with fellow chain members and achieving economies-of-scale.

Of course, a potential franchisee must weigh these benefits against the costs of being part of the chain. Franchises typically require individual outlet owners to pay a menu of fees to belong to the chain, including an initial fee to join the organization, a royalty on rooms rented, and fees for advertising, marketing and the use of centralized reservation systems.⁶ Table B1 provides recent franchise fee information for some selected chains. In addition, it may be costly for motels to provide the services required to meet the quality standard for the organization. Chains monitor the services provided by member properties, and can demand that improvements be made as a condition of continued affiliation.⁷

This tradeoff frames the empirical analysis in the remainder of this paper. As described below, my dataset contains a cross-section of motel establishments and information indicating whether each property is independent or chain-affiliated. These motels are located in markets throughout the United States that differ both in their demographic characteristics and their competitive environment. Differences in these markets can be related to circumstances that influence the benefits and costs of belonging to a chain. To the extent that such market conditions are associated with chain affiliation or independent motel status, this suggests that

⁵ Meanwhile, travel organizations like AAA have established rating systems to provide consumers with accurate information about the quality of motel services. As discussed below, I use the AAA rating to classify the motels in my dataset into specific quality categories.

⁶ It is crucial to note that franchisors set these fees to maximize their own profits. LaFontaine (1993) finds evidence that the split between franchise fees and royalty rates may also act as a signaling device (higher royalty rate/lower franchise fee = better "quality" franchise) for new franchisors attempting to recruit potential franchisees.

⁷ Jones (1995) reports that chains have recently redoubled their efforts to maintain consistency in quality throughout their affiliates. For example, Holiday Inn directed its franchisees to spend \$1 billion to renovate their properties (Harris, 1997).

returns to affiliation are either greater or less under these circumstances. I describe this empirical strategy in greater detail in the sections below.

Table B1 — Fees for Membership in Selected Franchises⁸

Franchise	Application Fee	Royalty Fee	Services Fee
Comfort Inn	\$50,000	5.25 %	4 %
Econolodge	\$25,000	4 %	3.5%
Fairfield Inn	\$40,000	4.5 %	2.5 %
Hampton Inn	\$45,000	4 %	4 %
Holiday Inn	\$40,000	4.5 – 6 %	2.5 %
Holiday Inn Express	\$40,000	5 %	3.0 %
Motel 6	\$25,000	4%	3.5 %
Quality Inn	\$35,000	4 %	4 %
Rodeway Inn	\$25,000	3.5 %	2.5 %
Sleep Inn	\$40,000	4.5 %	4 %

IV. Data

To examine governance issues and the incentives for entrepreneurs to either become franchisees or remain independent, I have collected information on nearly 2,300 motels located in small, rural markets throughout the United States. The dataset consists of information from all the motel establishments operating in 492 oligopoly motel markets located nearby interstate highway exits. These markets all contain fewer than 15 motels, and are located in counties outside Census-defined Metropolitan Statistical Areas (MSAs). I was able to assemble an exhaustive list of establishments at each market by consulting Tourbooks published by the

⁸ Percentages are of shares of gross room revenue. “Services” include fees for marketing and use of centralized reservation systems. Data from franchisor websites.

American Automobile Association (AAA), chain-affiliated motel directories, the American Hotel and Motel Association, and telephone listings for each town.

Table D1 — Affiliation Status of Motels in the Dataset

Chain Affiliation	Motels Represented	Percent of Total
Budget Host	46	2.0 %
Best Western	183	8.0 %
Comfort Inn	101	4.4 %
Days Inn	150	6.5 %
Econolodge	72	3.1 %
Hampton Inn	19	0.8 %
Holiday Inn	94	4.3 %
Howard Johnson	27	1.2 %
Motel 6	27	1.2 %
Quality Inn	16	0.7 %
Ramada Inn	27	1.2 %
Scottish Inn	17	0.7 %
Super 8	150	6.5 %
Travelodge	8	0.3 %
Other Chains	113	4.9 %
Independents	1,242	54.1 %
Totals	2,295	100.0 %

I collected detailed information about each motel, including its chain affiliation, capacity (number of rooms) and price. Table D1 lists the chains most often chosen by the franchisees in the dataset — properties affiliated with Best Western, Super 8 and Days Inn make up 21 percent of the properties for which I have information. This table also reveals that over 54 percent of the properties in the dataset are not affiliated with any chain or franchise organization. Note that this number is much larger than the share of independent motels in the nation as a whole (36 percent,

as of 1987). By focusing on rural markets, I have the opportunity to examine more instances of independent motels, and to identify explanations for their existence. In addition, the chain-affiliated motels at these rural markets are very likely to be owned by franchisees rather than the parent organization. As described above, studies in the traditional empirical franchising literature have noted that the share of chain-affiliated establishments that are company-owned is much smaller in rural areas (Brickely and Dark, 1987; LaFontaine, 1992).

To help isolate demand explanations for the choice of ownership status, I collected several demographic and geographic variables describing conditions at each of the 492 markets. The preferences of consumers at the various markets will help determine the value of chain affiliation to potential franchisees. The nature of highway motel services suggests separate components of consumer demand: highway motels serve both visitors of residents and businesses in the nearby town and long-distance travelers, resting between legs of a multi-day road trip. These mobile consumers select their destination market among several along the stretch of highway they are traveling, as well as the particular motel they patronize. To look at the two separate demand segments, I have collected information about both the resident population at each market (from the U.S. Census) and the number of cars that pass on the interstate near each market (from the Federal Highway Administration). I also have obtained information about the per-capita income in each market. Finally to help control for intermarket competition among motels, I collected information about the neighboring markets — the next exits along the highway where motels could be found. I noted when the neighboring markets were located in more populated areas (MSAs) and calculated the distance along the interstate from each market in the dataset to its nearest neighbors. Table D2 presents summary statistics on the demographic information collected for the 492 markets in the dataset.

Table D2 — Summary Statistics on Market Demographic Variables

Variable	Description	Mean	Std. Dev.	Min.	Max.
MKTPOP	Population of the Market's Nearest City	5,802.28	6,408.80	100	38,705
TRAFFIC	Average Annual Daily Traffic along Interstate Highway	16,506.62	8,754.41	2,040	68,103
INCOME	Per-capita Income of the Market's County	19,373.14	6,113.29	8,872	35,532
MSANEIGH	Dummy variable — equals one if the Market Neighbors an MSA	0.4817	0.5002	0	1
SPACING	Number of Miles to Neighboring Markets Along the Interstate	53.14	29.89	10	224
WEST	Dummy variable — equals one for Markets in the West Region	0.1850	0.3886	0	1

The competitive environment encountered by the entrepreneur may also affect the returns to chain affiliation. To examine this in the context of the motels dataset, I have compiled additional detail on the competitive environment in each market. Note that the motels associated with any particular highway exit market may be differentiated in two distinct ways: their physical location within the market may differ, and they may offer various levels of “quality” in their lodging services. As such, a more complete description of the competitive environment at each market includes each establishment’s exact location and quality level, as well as the number of competing motel establishments. I classify properties into one of two categories based on their physical locations: the dummy variable OFFHIWAY indicates whether the motel is located adjacent to the interstate highway (OFFHIWAY = 0) or in the "business district" nearby the exit (OFFHIWAY = 1). Each establishment is also classified based on the quality of services it offers — either LOW or HIGH quality. This classification was made using the diamond rating provided for properties listed in AAA and chain-affiliation status for properties not listed.⁹ Table

⁹ For properties listed by AAA, those rated with two or more diamonds were classified as high quality and those with a one-diamond rating were labeled low quality. Chain-affiliated motels not listed in AAA were put into the category most populated by members of the same chain that are in AAA. Because AAA has minimum quality standards for inclusion in their Tourbooks, independents AAA does not list were placed in the low quality category.

D3 lists the number of motels in the dataset that are in each of the product differentiation categories.

Table D3 — Differentiation and Market Structure Categories

	Affiliated	Non-Affiliated	Total
<u>Quality</u>			
LOW Quality	125	1,071	1,196
HIGH Quality	923	176	1,099
<u>Location</u>			
Adjacent to Highway	998	818	1,816
Not Adjacent to Highway	50	429	479

V. Estimation

With this motels dataset in place, I am able to proceed in analyzing the effects of demand and competition on the motel entrepreneurs' decisions either to operate an independent motel or to become a franchisee of a chain organization. The tables below present the results of logistic regressions, where the dependent variable indicates the ownership status of the motel — a dummy variable that equals one if the motel is independently owned, or zero if it is a chain-affiliated establishment. Behaviorally, consider the motel entrepreneur acting as a profit-maximizer and choosing the ownership status based on comparing the profits of operating in the two ways. The returns can be described as:

$$\mathbf{p}_I = X\mathbf{b}_I + \mathbf{e}_I \quad \text{and} \quad \mathbf{p}_C = X\mathbf{b}_C + \mathbf{e}_C$$

where I indicates operating as an independent and C as part of a motel chain. A firm chooses to be independent, therefore, if $\pi_I > \pi_C$, or if $X\beta_I + \varepsilon_I > X\beta_C + \varepsilon_C$. If we assume that ε_I and ε_C are

drawn independently from a log Weibull distribution, we can compute the probability of choosing to be independent in closed form, as:

$$P(\text{independent}) = \frac{e^{x(b_I - b_C)}}{1 + e^{x(b_I - b_C)}}$$

Parameters of the profit function can now be estimated using a binary logit model. The β parameters in the expression for the probability of observing an independent motel also parameterize the returns to operating under each business format, as represented by the profit functions. The X variables are firm and market characteristics that affect returns to independent ownership and chain affiliation.

The coefficient estimates are presented in table E1 below. Note that for each variable, the estimate represents the difference between the two sets of parameters, β_I and β_C . So, a positive coefficient indicates that the independent variable contributes a greater amount to the profits of unaffiliated properties than to the profits of similarly situated chain-affiliated motels.

Table E1 — Logistic Regression of “Demand Explanations” for Affiliation Status

Dependent Variable: INDEP = 1 if motel is independent
 Number of Observations: 2,295 (entire dataset)

Variable	Estimate	Standard Error	Chi-squared	P-value
INTERCEPT	0.3837	0.2159	3.159	0.0755
OFFHIWAY	2.4327	0.1566	241.217	0.0001
TRAFFIC	-0.0243	0.0056	19.005	0.0001
INCOME	-0.0221	0.0091	5.949	0.0139
MSANEIGH	0.1642	0.0953	2.967	0.0694
WEST	0.7875	0.1244	40.072	0.0001

The strongest result in the table comes from OFFHIWAY, the dummy variable whose value equals one if the motel is not located adjacent to the interstate highway. Such properties likely receive a greater share of their demand from local-area visitors than from long-distance

travelers. To the extent that consumers visiting the specific location will return (for future business or to see family again), these off-highway establishments may have a greater opportunity to make their reputation through repeat business. On the other hand, motels located adjacent to the highway can better take advantage of positive spillovers gained from other properties with the same chain affiliation at other locations where long-distance travelers may have stayed. These factors would tend to increase the returns to belonging to a chain, making operating as an independent relatively less attractive for motels located adjacent to the highway.

The same logic applies for the variable TRAFFIC, which indicates the average annual daily traffic (in thousands) that passes on the interstate highway nearby the market exit. Markets with larger values for TRAFFIC can be expected to have more highway travelers as potential customers. It is reasonable to expect that motels at the high TRAFFIC markets would receive a greater return to chain affiliation — a greater share of their potential clientele will be attracted by brand names they have seen or patronized at other locations. The negative and significant coefficient on TRAFFIC supports this interpretation, indicating that motels at markets with higher traffic counts are less likely to remain independent.

The next three variables in Table E1 are included to capture potential differences across markets in the preference for quality among motel consumers. Chain affiliation helps motels deliver a clear signal to consumers about the establishment's quality — recall that the desire to communicate quality consistently is what precipitated the original trend toward franchising in the motel industry (Ingram, 1996). To the extent that chain affiliation does solve the information problem, it is reasonable to expect returns to chain affiliation would be correspondingly greater in markets where motel consumers strongly prefer quality accommodations.¹⁰ INCOME represents the annual per-capita income (in thousands) of residents in the motel's market. The negative

¹⁰ Motels are a prototypical example of a vertical differentiation good; we expect all consumers to prefer higher quality motels if all charge the same price. Consumers with a stronger preference for quality are those who would be willing to pay more for higher quality.

coefficient indicates that the return to chain affiliation is correspondingly larger in markets where individuals have higher incomes; this is not surprising if we assume that wealthier areas contain more quality-sensitive customers. The remaining dummy variables represent markets located nearby a metropolitan area (MSANEIGH) and in the WEST region of the United States. Consumers patronizing motels in MSANEIGH markets may be less interested in quality; they could have fairly easily switched to a neighboring urban location, which would typically contain higher quality travel amenities. Given the relative lack of commercial activity and more rustic environment, travelers in the WEST region may also have less preference for quality accommodations. The coefficients for these variables are positive and significant; lower returns to chain affiliation in these locations result in a greater propensity for motels to remain independent.

The next table focuses on how the competitive environment a motel faces affects incentives for chain affiliation. For this analysis, I analyze only the motels located adjacent to the interstate highways, and drop the observations for which the dummy variable OFF equals one. By defining a market for analysis as the cluster of motels located adjacent to an individual exit, I implicitly assume that competition among the motels at an exit is much stronger than between motels at the exit and in a town close to the exit (but away from the highway).

Table E2 — Logistic Regression Adding “Effects of Competitors” on Affiliation Status

Dependent Variable: INDEP = 1 if motel is independent
 Number of Observations: 1,816 (motels located adjacent to the interstate highway)

Variable	Estimate	Standard Error	Chi-squared	P-value
INTERCEPT	0.2546	0.2287	1.240	0.2656
SOLO	0.7006	0.1917	13.350	0.0003
TRAFFIC	-0.0278	0.0060	21.821	0.0001
INCOME	-0.0147	0.0096	2.353	0.1251
MSANEIGH	0.1403	0.1008	1.938	0.1639
WEST	0.7780	0.1287	36.557	0.0001

A value of one for the dummy variable SOLO indicates that the motel has no other competitors operating at its exit. The positive and significant estimated coefficient on SOLO indicates that firms facing no local competition choose to remain independent with much greater frequency. It appears that firms face additional pressure to affiliate with a national brand in more competitive environments — when there are other alternatives for consumers at any particular exit, the relative returns to operating an independent motel decrease and chain affiliation is much more likely. The remaining estimates are unchanged by the inclusion of the SOLO dummy variable.

Finally, I looked briefly at how the returns to chain affiliation versus independent status differs for firms in the low and high quality categories. Recalling from Table D3 that the high quality establishments are predominantly chain-affiliated and that most low quality firms are also independents, I define the variable UNEXPECT — a dummy variable whose value is one for low quality, chain-affiliated motels and high quality independents. The table below presents results from a logistic regression, with UNEXPECT as the dependent variable, that identifies competitive scenarios in which firms select the less common quality type/ownership combination.¹¹

Table E3 — Logistic Regression using Competition and Differentiation to Predict “Unexpected” Affiliation Status

Dependent Variable: UNEXPECT = 1 if motel is high-quality independent or low-quality chain affiliate
 Number of Observations: 1,816 (motels located adjacent to the interstate highway)

Variable	Estimate	Standard Error	Chi-squared	P-value
INTERCEPT	-1.1140	0.0429	673.486	0.0001
HIGHSOLO	0.6278	0.1655	14.3884	0.0001
LOWCROWD	0.2316	0.0848	7.4572	0.0063

These results suggest that a combination of competition and differentiation effects help explain why the unexpected affiliation alternative is chosen. For a high quality motel, there is less

incentive to be part of a chain when there are no competing firms — HIGHSOLO is a dummy variable is one for high quality motels located in markets with no other competitors. LOWCROWD indicates motels that have low quality and are located at exits with six or more motels. In such markets, some low quality motel operators may benefit from the additional differentiation provided by affiliating with a national brand. LOWCROWD also shows up positive and significant in the logit, demonstrating that low quality motels are more likely to choose to differentiate their product through chain affiliation in the most unconcentrated and competitive markets.

The empirical results demonstrate that demand, competition and differentiation — and how they influence the relative profitability of chain affiliation — affect the affiliation choices made by potential franchisees. Independent ownership is more common off the freeway and in lower traffic areas, where the positive spillovers from other affiliates are likely to be smaller. In addition, the quality signal obtained through chain affiliation is more valuable in markets whose customers have greater preference for motel quality. The competitive landscape also impacts the returns to chain affiliation. When motels have no local competitors, they are more likely to be independent, particularly for high quality motels. Finally, low quality motels appear to use chain affiliation to differentiate their products, especially when there are many competitors operating motels in their markets.

VI. Conclusion

Any franchising arrangement is inherently two-sided: the parent firm must decide upon a vertically disintegrated governance structure, and individual entrepreneurs must prefer chain affiliation to independent ownership. While the bulk of the empirical franchising literature focuses on the first issue, this paper investigates the choices made by actual and potential franchisees. I examine the revealed decisions of motel establishments whether or not to become

¹¹ UNEXPECT equals one for 275 of the 1,816 motels remaining in the dataset (ones along the highway)

affiliated with a chain. These outcomes provide information about the profitability of chain affiliation as a business strategy, and how returns differ under various market conditions an entrepreneur might face.

The empirical analysis uses a dataset of nearly 2,300 motel establishments located at a cross-section of 492 markets. The propensity for establishments to remain unaffiliated with a regional or national chain is connected with firm characteristics and conditions at each market. These characteristics proxy for underlying structural differences that affect returns to chain affiliation. For example, motels located off the interstate highway and in lower traffic areas get less benefit from chain affiliation, presumably because their typical customers have less experience with chain outlets in other locations. Competition also appears to have an effect on ownership status. When there is less competition at a market, the likelihood of observing an independent motel is greater. These differences suggest that the ownership structure decisions should be evaluated carefully by potential franchisees, as it may be more profitable to remain independent under certain conditions.

— 111 are low quality chain-affiliated motels and 164 are high quality independents.

References

- American Automobile Association, (1995), Tourbook, (Buffalo: Quebecor Publishing).
- Belasco, Warren James (1979), Americans on the Road: From Autocamp to Motel (Cambridge: MIT Press).
- Brickley, James A. and Frederick H. Dark (1987), "The Choice of Organizational Form: The Case of Franchising," Journal of Financial Economics, 18, p. 401-420.
- Harris, Nicole (1997), "Sleepless Nights at Holiday Inn," Business Week, November 3.
- Ingram, Paul (1996), "Organizational Form as a Solution to the Problem of Credible Commitment: The Evolution of Naming Strategies among U.S. Hotel Chains, 1896-1980," Strategic Management Journal, 17(S), p. 85-98.
- Ingram Paul and Joel A. C. Baum (1997), "Chain Affiliation and the Failure of Manhattan Hotels, 1898-1980," Administrative Science Quarterly, 42, p. 68-102.
- Jakle, John A., Keith A. Scule and Jefferson S. Rogers (1996), The Motel in America, (Baltimore: Johns Hopkins University Press).
- Jones, Del (1995), "Hotels Push Franchisees to Remodel," USA Today, February 9, B1.
- LaFontaine, Francine (1992), "Agency Theory and Franchising: Some Empirical Results," Rand Journal of Economics, 23(2), p. 263-283.
- LaFontaine, Francine (1993), "Contractual Arrangements as Signaling Devices: Evidence from Franchising," Journal of Law, Economics and Organization 9(2), p. 256-289.
- LaFontaine, Francine and Margaret E. Slade (1997), "Retail Contracting: Theory and Practice," Journal of Industrial Economics, 45(1), p. 1-25.
- Norton, Seth W. (1988), "An Empirical Look at Franchising as an Organizational Form," Journal of Business, 61(1), 197-217.
- Shook, Carrie and Robert L. Shook (1993), Franchising: The Business Strategy that Changed the World, Englewood Cliffs, NJ: Prentice Hall.
- Standard and Poor's (1998), "Lodging and Gaming," Industry Surveys, (New York: Standard & Poor's)
- Watkins, Edward (1991), "Do Conversions Make Sense?" Lodging Hospitality, 47.