

RETAIL CONTRACTING AND ORGANIZATIONAL FORM: ALTERNATIVES TO CHAIN AFFILIATION IN THE MOTEL INDUSTRY

MICHAEL J. MAZZEO

*Kellogg School of Management
Northwestern University
Evanston, IL 60208
mazzeo@kellogg.northwestern.edu*

Most of the existing empirical literature on franchising investigates the share of company-owned versus franchised establishments within large retail firms. This literature typically has not considered the decision of a business owner to operate an independent business or to become a franchisee. This paper empirically analyzes what determines whether independent ownership or affiliation is observed, using data on the affiliation status of 2,293 motel establishments located throughout the United States. Heterogeneity in the underlying economic environment helps explain affiliation choices at the establishment level. The results also suggest that failure to consider independent establishments may explain the puzzling negative correlation between risk and vertical integration commonly found in the empirical franchising literature.

1. 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 focused largely on the behavior of large retailers—firms 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 to manage the distributed sales function internally or to reach customers through franchised outlets owned and operated by local entrepreneurs. Theories that help explain this decision examine how factors such as agency and monitoring costs, asset specificity, and risk affect the propensity to organize under the alternative retail distribution formats. The typical empirical study evaluates these

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theories by comparing the number of *company-owned* and *franchised* outlets in retail chains that differ in characteristics proxying for factors that affect the relative attractiveness of integration and disintegration.

With the exception of Williams (1998), the empirical literature on franchising largely has overlooked the other side of this decision, namely the decision of a business owner to become part of a large network under a common brand or to operate her or his business independently. In this paper, I will consider explicitly the inherent trade-offs that such an entrepreneur would evaluate: While there may be cost savings related to economies of scale and potential demand-enhancing reputation benefits that lead to higher returns for chain-affiliated outlets, as a franchisee the agent is required to share some returns with the upstream firm. Outlet characteristics, market conditions, incentive effects, and the relative uncertainty of the underlying economic environment may influence the terms of this trade-off.

Specifically, in this paper I examine the affiliation status of 2,293 motel establishments located in rural markets across 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 47% of the properties in the dataset are members of a national or regional chain. The results indicate that heterogeneity in the underlying economic environment is correlated with observed patterns of affiliation choices. For example, chain affiliation is more common for motels located adjacent to interstate highway exits. The likelihood that establishments observed at exits belong to chains is greater where the amount of traffic that passes by the exit is larger. Finally, I find that where there is greater uncertainty in the underlying economic environment, chain affiliation is more common than independent ownership. This may help explain why the empirical franchising literature has not found the expected evidence regarding the relationship between risk and vertical integration.

The remainder of the paper is organized as follows: Section 2 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 3, and estimation results follow in Section 4. Section 5 offers some concluding remarks.

2. BACKGROUND: ORGANIZATIONAL FORM AND THE MOTEL INDUSTRY

Motels are an excellent industry to examine the economic trade-offs between independent ownership and franchise chain affiliation.¹

1. Franchising in the motel industry has been studied by many authors, including Norton (1988), Michael (2000), and Conlin (2001). In addition, motels have been included

Franchising clearly has taken hold in the industry: between 1962 and 1987, the share of motel establishments affiliated with some chain increased from 2% to 64% of the country's total (Jakle et al., 1996). 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 to enter into affiliation arrangements. Importantly, even while overall chain participation continued to expand, many individual entrepreneurs have chosen to remain independent—even switching from other organizational forms to independent operations. Watkins (1991) reports that the number of lodging conversions from “independent to chain” was only 13% 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 that remain unaffiliated appear to have chosen explicitly to maintain their independent status.

The motel segment of the lodging industry aims to serve automobile travelers and represents nearly half of the estimated 48,000 properties in the United States.² Motels began to prosper during the first half of the twentieth 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 US network of roads, spurred 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 travelers quickly followed, even in remote areas where little demand for such services would exist otherwise.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 often were visiting a location for the first time, they lacked the information to assess the quality of the available 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 facade of quality in their accommodations but did not

in several other cross-industry studies, including Martin (1988), Lafontaine (1992), and Brickley and Dark (1987).

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.

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

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 familiar and operated in the same way. Wilson quickly assembled a network of franchised properties, 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 with other motels should increase demand for an individual establishment's services. This could allow the motel to charge higher prices, to 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 thus may achieve 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; Table I provides recent franchise fee information for selected chains in the dataset. As discussed by Bhattacharyya and Lafontaine (1995), the contract between franchisor and franchisee is typically linear, including an initial fee to join the organization (between \$20,000 and \$50,000) and a percentage of revenue meant to reimburse for advertising, marketing, and the use of centralized reservation systems (between 6 and 9.25%). 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 have considerable

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) and Brickley (1999). These motel examples follow original work on the role of brands in signaling quality that notably includes Nelson (1970), Klein (1980), and Milgrom and Roberts (1986).

TABLE I.
FEES FOR MEMBERSHIP IN SELECTED FRANCHISES^a

Franchise	Application Fee	Royalty Fee (%) ^b	Services Fee (%) ^{b,c}
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
Howard Johnson	\$35,000	4	2
Quality Inn	\$35,000	4	4
Ramada Inn	\$35,000	4	4.5
Rodeway Inn	\$25,000	3.5	2.5
Super 8	\$20,000	5	3
Sleep Inn	\$40,000	4.5	4
Travelodge	\$35,000	4.5	4

^aData from franchisor websites. Thanks to Mike Conlin for help in assembling this list.

^bPercentages are of shares of gross room revenue.

^c“Services” include fees for marketing and use of centralized reservation systems.

discretion over requiring that improvements be made as a condition of continued affiliation.⁵

This trade-off frames the empirical analysis in the remainder of this paper. As described following, my dataset contains a cross section of motel establishments and information indicating whether each property is independent or is chain affiliated. These motels are located in geographically dispersed markets throughout the United States that differ in their underlying economic environment. Variables are isolated to proxy for factors that influence the relative attractiveness of belonging to a chain. To the extent that such market conditions are associated with observed chain affiliation or independent motel status, this suggests that returns to affiliation are either greater or less under these circumstances. I describe this empirical strategy in greater detail in the following sections.

3. DATA

To examine the incentives for entrepreneurs either to become franchisees or to remain independent, I have collected information on 2,293 motels

5. Jones (1995) reports on chains' 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).

located in small, rural markets throughout the United States. The dataset consists of information from all the motel establishments operating in 492 rural motel markets. Selected markets are located in counties that contain fewer than 15 motels, that are outside census-defined metropolitan statistical areas (MSAs), and that are passed through by an interstate highway. Within these counties, an interstate exit at which at least one motel is located is designated as a market. This market also is defined to include motels that are close by the selected exit but are not immediately adjacent to the interstate—usually in an associated small town within a couple of miles of the exit. I was able to assemble an exhaustive list of establishments operating in each market by consulting *Tourbooks* (AAA, 1995), chain-affiliated motel directories, the American Hotel and Motel Association, and telephone listings for each town.

I collected detailed information about each motel, including its chain affiliation, capacity (number of rooms), and price. Table II lists the chains most often chosen by the franchisees in the dataset; properties

TABLE II.
AFFILIATION STATUS OF MOTELS IN THE DATASET

Chain Affiliation	Motels	Percent	Chain Affiliation	Motels	Percent
Best Western	184	8.0	National 9	6	0.3
Days Inn	153	6.7	Shoney's Inn	6	0.3
Super 8	150	6.5	Americinn Motel	5	0.2
Comfort Inn	106	4.6	Drury Inn	5	0.2
Holiday Inn	84	3.7	Park Inn	5	0.2
Econolodge	72	3.1	Sleep Inn	5	0.2
Budget Host	49	2.1	Family Inns of America	4	0.2
Ramada Inn	30	1.3	Passport Inn	4	0.2
Motel 6	27	1.2	Red Roof Inn	4	0.2
Hampton Inn	19	0.8	Rodeway Inn	4	0.2
Scottish Inn	17	0.7	Country Inn by Carlson	3	0.1
Howard Johnson	16	0.7	Lees Inn	2	0.1
Quality Inn	16	0.7	Masters Economy Inn	2	0.1
Holiday Inn Express	15	0.7	Select Inn	2	0.1
Knights Inn	15	0.7	Budgetel Inn	1	0.04
Hojo Inn	12	0.5	Embassy Suites	1	0.04
Red Carpet Inn	10	0.4	Heartland Inn	1	0.04
Friendship Inn	8	0.3	Jameson Inn	1	0.04
Travelodge	8	0.3	Red Lion Inn	1	0.04
Best Inns of America	6	0.3	Shiloh Inn	1	0.04
Fairfield Inn	6	0.3	Thrift Lodge	1	0.04
First Interstate Inn	6	0.3			
			Independents	1,220	53.2
			Totals	2,293	100.0

affiliated with Best Western, Super 8, and Days Inn make up 21% of the properties for which I have information. This table also reveals that over 53% of the properties in the dataset are not affiliated with any chain or franchise organization. Note that this number is larger than the share of independent motels in the nation as a whole (36% as of 1987).⁶ By focusing on rural markets, I have the opportunity to examine more instances of independent motels and to identify explanations for their existence.

As such, this particular sample allows me to focus on the margin between franchising and independent ownership. Of course, chain affiliation and franchising are different—in fact, the empirical franchising literature exploits the distinction to study vertical integration by measuring company ownership of chain-affiliated outlets. Almost all of the chains included in the dataset are exclusively or nearly exclusively franchisee owned.⁷ For chains with a substantial share of properties franchised [e.g., Michael (2000) reports that 94.3 of Super 8s are franchised], I rely on the findings of other studies (Brickley and Dark, 1987; Lafontaine, 1992) that traditionally have found that the share of company-owned chain-affiliated establishments is very small in rural areas. Thus, I treat all motels affiliated with these chains as franchised motels. However, the four chains in the dataset (Drury Inn, Motel 6, Red Lion Inn, and Red Roof Inn) that are entirely company owned can be separated for the empirical analysis.⁸ I also was able to identify a few chains (e.g., Best Western, Budget Host) that act more like cooperatives or referral networks. The empirical analyses that follow here also examine if affiliation decisions are different when the establishment is part of a referral network as opposed to a more typical chain.

To evaluate potential explanations for the choice of affiliation, I collected several demographic and geographic variables describing

6. In my dataset, chain-affiliated motels were defined by comparing common names on the list of existing establishments with industry sources identifying chains. Most common names were associated with chains; however, some (for example, six independent motels in the dataset selected the name "Hilltop Motel," but there is no Hilltop Motel chain) were not. The national independent motel statistics come from Jakle et al. (1996).

7. Information about franchise property share of particular chains comes from chain directories and websites and was confirmed by data in Michael (2000) and Kehoe (1996). Note that Kehoe (1996) also distinguishes an organizational form called "company management/investor ownership," which involves management by the franchisor and ownership by outside investor groups. Chains with a substantial share of properties in this category (e.g., Marriott, Hyatt, Omni) are not represented in the rural markets studied here.

8. A total of 37 establishments affiliated with these four chains are included in the dataset (see Table II). Interestingly, other chains that are 100 percent company owned (e.g., LaQuinta) have avoided locating any properties nearby rural interstate highway exits.

economic conditions at each of the 492 markets. The preferences of consumers at the various markets will help determine the relative value of chain affiliation and independent ownership to entrepreneurs. 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 multiday 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 first segment, per capita income (INCOME) of the residents in the county where each market is located was collected from the US Census.⁹ The relative importance of long-distance travelers is captured by a measure of the number of cars that pass on the interstate near the market (TRAFFIC). The Federal Highway Administration's (FHWA) Highway Performance Monitoring System (HPMS) counts the average annual daily traffic at mile markers associated with each interstate highway exit.¹⁰

A second category of variables include fixed motel characteristics that could affect an individual outlet's return to chain affiliation. The motel's capacity is important, particularly given the fixed component of the franchise fee. In addition, I classify properties into one of two possible categories based on their physical locations: the dummy variable INTOWN indicates whether the motel is located adjacent to the interstate highway (INTOWN = 0) or in the "business district" nearby the exit (INTOWN = 1). Table III lists the affiliation status of the motels by their physical location. Note that chain affiliation tends to cluster with the "adjacent-to-highway" location.

Finally, I evaluate how uncertainty affects the motel owner's decision to remain independent or to affiliate. To maintain consistency with the prior literature, risk is approximated by historical variability in industry activity. For example, Norton (1988) collects annual data on industry revenue for each state over the previous 10 years. Norton then runs a simple regression for each state: $\ln(\text{industry sales}_{s,t}) = a_{s,0} + a_{s,1} * \text{trend}$. The root mean-squared error from each state's regression is used by Norton (1988) as the proxy for risk for the establishments

9. There is typically only one market (as already defined) per county, and most motels in these rural counties are in that market. Therefore, county-level demographic data were the most appropriate to match with properties in each market. While significant in explaining the number of motels in a market, county-level population was not correlated with a motel establishment's affiliation status.

10. Unpublished data from the HPMS were assembled by FHWA staff for this project—the specific traffic data used in this paper are available from the author by request. More information about the HPMS and aggregate HPMS data are available at <http://www.fhwa.dot.gov/policy/ohpi/hpms/hpmspubs.html>.

TABLE III.
LOCATION AND ORGANIZATIONAL STRUCTURE
CATEGORIES

	Adjacent to Highway (INTOWN = 0)	Not Adjacent to Highway (INTOWN = 1)	Total
Chain Affiliated			
Franchisees	755	37	792
Corporate Owned	37	0	37
Referral Network	226	18	244
Total Chain Affiliated	1,018	55	1,073
Independent	793	422	1,220
Total	1,816	477	2,293

in that state. A small root mean-squared error would indicate that industry activity has followed the linear trend closely in the past and may be more predictable in the future, while a large root mean-squared error would suggest that entrepreneurs could expect to be exposed to additional risk. The measure I use (RISK_PROXY) employs an alternate measure of industry activity, namely industry payroll rather than sales, but otherwise is calculated identically.¹¹ One certainly could debate the validity of this proxy (see Lafontaine and Bhattacharyya, 1995); however, it is notable that the franchising literature has not developed a risk proxy yet that consistently generates a positive correlation with vertical integration. To ensure that my results are not driven solely by my choice of proxy, I also constructed an alternative proxy that measured variation from historical trend in highway traffic. Because the highway data are available for each exit, I can run separate regressions and can compute individual proxies for each market. Table IV presents summary statistics on the independent variables used in the empirical analysis.

4. ESTIMATION

In this section, I analyze the effects of the underlying economic environment on the motel entrepreneurs' decisions either to operate an independent motel or to become a franchisee of a chain organization. Table V presents the results of probit estimations, where the dependent

11. The data I use are annual statewide payroll data from *County Business Patterns* for the years 1986 to 1997, corresponding to standard industry classification (SIC) 70 (lodging services). As in Norton's (1988) paper, separate regressions are run for each state, and a year is the unit of observation in each regression. Martin (1988) and Lafontaine (1992) use similar proxies for risk but measure variability across industries (their datasets are for chains across a variety of industries) rather than across locations.

TABLE IV.
SUMMARY STATISTICS ON VARIABLES USED
IN THE ANALYSIS

Variable	Description	Mean	Std. Dev.	Min.	Max.
ROOMS	Number of Rooms in Property	52.01	39.23	3	435
TRAFFIC ('000s)	Average Annual Daily Traffic along Interstate Highway	16.82	9.43	2.04	68.10
INCOME ('000s)	Per-capita Income of the Market's County	20.55	4.16	8.78	35.53
SOLO	Dummy variable—equals 1 if the property is the only one in the market	0.041	0.199	0	1
RISK_PROXY	Difference between Historical Industry Growth and Trend	0.061	0.050	0.026	0.377
ALT_RISK	Difference between Historical Traffic Growth and Trend	0.058	0.029	0.013	0.186

variable indicates the affiliation status of the motel—it is a dummy variable that equals 1 if the motel is independently owned, or 0 if it is a chain-affiliated establishment.¹² Behaviorally, consider the problem of choosing between independent operations and affiliation by comparing the total certainty equivalent of the no-affiliation and chain-affiliation options. These are represented empirically as

$$CE_N = X\beta_N + \varepsilon_N \quad \text{and} \quad CE_C = X\beta_C + \varepsilon_C, \quad (1)$$

where N indicates operating as an independent and C as a franchisee of a motel chain. A firm chooses to be independent, therefore, if $CE_N > CE_C$, or if $X\beta_N + \varepsilon_N > X\beta_C + \varepsilon_C$. The X variables included are firm and market characteristics that may affect the affiliation options (i.e., a “chain bonus”) or that proxy for differences in the way that entrepreneurs value the expected returns (such as risk), and the ε terms are the factors the econometrician does not observe.

Estimation results are summarized in Table V. The strongest result in the first panel of Table V comes from INTOWN, the dummy variable whose value equals 1 if the motel is not 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 likely will return (for future

12. The 37 establishments from the four chains that are company owned exclusively are not included in the analysis in Table V, since there is no relevant organizational choice in such cases. The results are reported, therefore, for only 2,256 of the 2,293 total establishments in the dataset.

TABLE V.
WHEN DO OWNERS CHOOSE INDEPENDENCE: A PROBIT
ANALYSIS^a

Variable	(1)	(2)	(3)	(4)
INTERCEPT	1.146*** (0.261)	1.128*** (0.262)	1.039*** (0.136)	1.021*** (0.128)
INTOWN	1.061*** (0.114)	1.077*** (0.114)	2.100*** (0.477)	1.984*** (0.447)
ROOMS	-0.018*** (0.002)	-0.017*** (0.002)	-0.017*** (0.002)	-0.017*** (0.002)
TRAFFIC	-0.006 (0.004)	-0.006 (0.004)	—	—
TRAFFIC * EXIT	—	—	-0.010** (0.005)	-0.010** (0.005)
INCOME	-0.007 (0.011)	-0.007 (0.011)	—	—
INCOME * TOWN	—	—	-0.056*** (0.020)	-0.054*** (0.019)
SOLO	—	0.252* (0.142)	0.251* (0.142)	0.261* (0.134)
RISK_PROXY	-1.447** (0.643)	-1.413** (0.642)	-1.451** (0.614)	—
ALT_RISK	—	—	—	-0.714 (0.480)
Pseudo R ²	0.263	0.264	0.268	0.267
“Correct Predictions”	1,764 78.2%	1,776 78.7%	1,762 78.1%	1,761 78.1%

^aNumber of observations: 2,256 (company-owned establishments excluded). Dependent variable: INDEP = 1 if motel is independent (1,220 observations); INDEP = 0 if motel is chain-affiliated (1,036 observations). Robust standard errors are reported below the parameter estimates in parentheses.

*** estimated parameter significantly different from zero at the 1% level.

** estimated parameter significantly different from zero at the 5% level.

* estimated parameter significantly different from zero at the 10% level.

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 take advantage better 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 benefit to chain affiliation, making operating as an independent relatively less attractive for motels located adjacent to the highway.¹³

13. Note that treating INTOWN as an exogenous variable assumes that the affiliation decision is less fixed than the choice of where to locate the motel. This seems reasonable, particularly given the extent of affiliation switching cited by Watkins (1991). A similar argument could be made about the capacity variable discussed later in this paper.

The variable ROOMS, in contrast, has a negative and significant coefficient, indicating that larger motels are more likely to affiliate with chains. This result is not surprising, as larger capacity properties can recover the fixed component of the franchise fee more easily. Individual motels are more likely to remain independent if they are the only motel at a particular market, as indicated by the positive and significant coefficient on the dummy variable SOLO. This suggests a potential competitive benefit associated with chain affiliation, though a clear link is difficult to establish absent a structural model of market competition.¹⁴

Markets with larger values for the variable TRAFFIC likely have more highway travelers as potential customers. It is reasonable to expect that motels in high TRAFFIC markets would receive a greater return to chain affiliation—a larger share of their potential clientele will be attracted by brand names they have seen or have patronized at other locations. The negative coefficient on TRAFFIC supports this interpretation, indicating that motels at markets with higher traffic counts are less likely to remain independent. 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 away from independent establishments 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 correspondingly would be greater in markets where motel consumers strongly prefer quality accommodations.¹⁵ INCOME represents the annual per-capita income (in thousands) of residents in the motel's county. The negative coefficient indicates that the return to chain affiliation is larger in markets where individuals have higher incomes; this is not surprising if we assume that wealthier consumers place a greater value on an accurate quality signal. Note that the significance of the coefficients of INCOME and TRAFFIC increases when these variables are interacted with the motel's location where it is more relevant—on the interstate for the TRAFFIC variable and off the highway for the local INCOME measure (panel 3 of Table V).

The bottom rows in Table V contain the estimated parameters for the risk proxies described in the previous section: RISK_PROXY is

14. Conlin (2001) studies the effect of motel franchising on price competition but takes the affiliation choices of individual firms as exogenous. Mazzeo (2002) performs a structural analysis of motels' entry and product choice and finds that firms tend to differentiate based on quality, though there are both chain-affiliated and independent properties at all levels of the quality distribution.

15. Motels are a prototypical example of a vertically differentiated 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 than others for higher quality.

the measure closely related to the one used in previous studies, and ALT_RISK is the alternative based on variation in highway traffic. The negative and significant coefficient on RISK_PROXY indicates that chain affiliation is chosen rather than independent operation in this dataset where there has been greater variability in industry activity over time. The magnitude of the result can be derived by calculating derivatives based on the probit estimates—a one standard-deviation change in the risk proxy increases the probability of affiliating with a chain by over 3%, all else equal. Taken together, these results support the conjecture that there should be more franchisees in riskier environments because entrepreneurs avoid operating independent establishments under such conditions. The alternative risk measure also has a negative, but not significant, effect on affiliation choice.

I verified that my results are robust to the alternative definition of affiliation in several ways and summarize the results from these tests in Table VI. The first panel reproduces the results from the third panel of Table V, but now the 37 establishments from chains that are entirely company owned are included among the set of affiliated motels. In the next panel, I treat the referral network motels as independents rather than as chain affiliates (244 establishments are reclassified under this definition). Note that there is very little change in the parameter estimates with these alternative definitions of affiliation. The last panel of the table includes estimates from an ordered probit estimation, specifying differences among franchisees, referral network establishments, and independents. Since these categories can be interpreted as reflecting increasing degrees of independence, the effect of each explanatory variable should go in the same direction as the previous regressions. This is confirmed by the results of the ordered probit, in which the estimated coefficients are similar to the probit analyses.¹⁶

Interestingly, these empirical findings may help explain why studies like the ones cited by Lafontaine and Slade (1997) fail to find a positive correlation between risk and vertical integration among large chains. These papers—including Norton (1988), Martin (1988), and Lafontaine (1992)—typically make inferences based on the share of chain-affiliated establishments that are franchises, as opposed to the share that are “company owned.” As such, they do not consider the alternative of independent business ownership. To produce the expected empirical

16. Estimation using a dataset including a substantial number of establishments with company-owned chain properties would be a useful extension. Using only the 37 corporate-owned establishments and the traditional franchisees (i.e., none of the chains that act more like referral networks), RISK_PROXY was negatively correlated with chain ownership (as in much of the franchising literature) but was not statistically significant at the 10 percent level.

TABLE VI.
WHEN DO OWNERS CHOOSE INDEPENDENCE: ALTERNATIVE SAMPLE DEFINITIONS^a

Dependent Variable: Independent Variables	All Forms of Affiliation (Franchise, Referral & Company-Owned) = 0		Franchised Establishments = 0		Franchisees = 0 Referral Networks = 1 Independents = 2	
	Independent = 1		Referral & Independent = 1		Referral = 1	Independents = 2
INTERCEPT	1.046*** (0.138)	1.027*** (0.129)	1.418*** (0.122)	1.384*** (0.114)		
INTOWN	2.116*** (0.481)	2.000*** (0.453)	1.462*** (0.524)	1.372*** (0.493)	1.909*** (0.491)	1.808*** (0.453)
ROOMS	-0.018*** (0.002)	-0.018*** (0.002)	-0.014*** (0.002)	-0.014*** (0.002)	-0.016*** (0.002)	-0.016*** (0.002)
TRAFFIC * EXIT	-0.010** (0.005)	-0.010** (0.005)	-0.020*** (0.004)	-0.020*** (0.005)	-0.015*** (0.004)	-0.015*** (0.004)
INCOME * TOWN	-0.056*** (0.020)	-0.054*** (0.019)	-0.039* (0.022)	-0.037* (0.021)	-0.053*** (0.021)	-0.051*** (0.019)
SOLO	0.259** (0.141)	0.270** (0.134)	0.360** (0.142)	0.371** (0.149)	0.298** (0.129)	0.311** (0.125)
RISK_PROXY	-1.449** (0.634)	—	-1.351*** (0.386)	—	-1.404*** (0.495)	—
ALT_RISK	—	-0.719 (0.481)	—	-0.552 (0.443)	—	-0.602 (0.434)
Pseudo R ²	0.277	0.275	0.230	0.277	0.204	0.203
"Correct Predictions"	1,804 78.7%	1,804 78.7%	1,588 70.4%	1,580 70.0%	1,049 46.5%	1,046 46.4%
Number of Observations	2,293 Total: 1,073 = 0 1,220 = 1	2,256 Total: 792 = 0 1,464 = 1	2,256 Total: 792 = 0 1,464 = 1	2,256 Total: 792 = 0 1,464 = 1	2,256 Total: 792 = 0 1,220 = 2	2,256 Total: 792 = 0 1,220 = 2

^a Robust standard errors are reported below the parameter estimates in parentheses.
*** estimated parameter significantly different from zero at the 1% level.
** estimated parameter significantly different from zero at the 5% level.
* estimated parameter significantly different from zero at the 10% level.

finding on the mix of franchisees within particular chains, the effect of risk on the margin between franchising and company ownership must be *greater* than on the margin between independent ownership and franchising. The estimates here indicate that risk is associated with more chain affiliation than independent ownership. Explicitly considering the desire of franchisees to remain independent may explain the persistence of the positive relationship between risk and franchising in the empirical literature.¹⁷

5. CONCLUSIONS

Any franchising arrangement is inherently two-sided: a vertically disintegrated governance structure must be preferred over company ownership, and individual entrepreneurs must find it more attractive to become a franchisee than to operate an unaffiliated, independently owned business. While the bulk of the economics franchising literature focuses on the first issue, this paper investigates the affiliation choice made by actual and potential franchisees. The results imply that the propensity for establishments to remain independent from regional and national chains is correlated with firm characteristics and market conditions that affect the returns to chain affiliation. Motels located off the interstate highway remain independent more often, presumably because a greater share of their business likely comes from repeat customers who do not need brand names to infer quality. The returns to chain affiliation are also higher for larger properties and for those located on more traveled stretches of highway. In other words, entrepreneurs find it beneficial to identify their establishment with a chain when more of their customers have experience with similar outlets in other locations.

In addition, it is worth noting that examining the margin between chain affiliation and independent ownership demonstrates the limitations of an analytic framework that compares franchising and company ownership among chain-affiliated properties only. In particular, the negative correlation found in the empirical franchising literature between risk and vertical integration may not be so unexpected: the finding here that chain affiliation is more common than independent ownership in more uncertain economic environments suggests an explanation for why the share of franchisees within particular chains is higher. As diagrammed in Figure 1, elevated levels of uncertainty may result

17. Alternative approaches to explain this positive relationship based on local private knowledge and resulting incentives include Lafontaine and Bhattacharyya (1995), Prendergast (2002), and Baker and Jorgenson (2002). Akerberg and Botticini (2002) exploit differences in risk tolerance among individuals for an endogenous matching that is closer to the point made here.

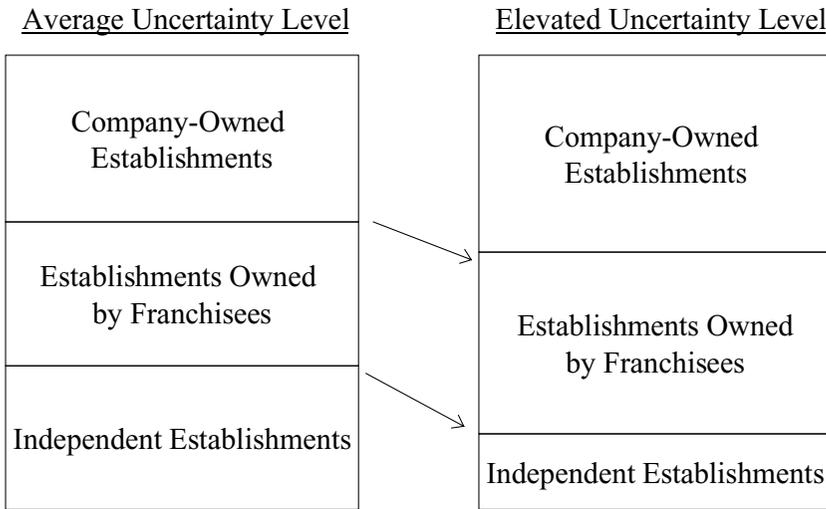


FIGURE 1. POTENTIAL ESTABLISHMENT OWNERSHIP WITH VARYING UNCERTAINTY

in both fewer independent establishments and more company-owned properties within a chain. As a result, the franchised share of total chain establishments could be higher in riskier environments because the effect of franchising being more attractive than independent ownership increases the total number of chain-affiliated properties (even while the number of company-owned establishments also increases). An extension that analyzes a dataset including substantial representation from all the possible ways of organizing production in this industry— independent establishments, franchisees, and company-owned chain properties—further could untangle the relationship between risk and vertical integration. In addition, a cross-industry study that incorporated independent establishments would be a useful complement to this study of motels, particularly to the extent that the feasibility of becoming a franchisee or remaining independent might vary across industries.

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