Entrepreneurs, Contracts, and the Failure of Young Firms

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Although economic theory has emphasized that moral hazard and hold-up problems influence the design of contracts, very little is known about the process by which explicit contracts are established and the effect of contractual arrangements on firm performance. This paper attempts to demonstrate that firms are selected for survival on the basis of contracting efficiency. Based on a statistical analysis of 170 new franchise contracts and interviews with the founders of 16 of these new franchise systems, we show that new franchise chains that adopt exclusive territories are more likely to survive over time than chains that do not. Moreover, successful and failed entrepreneurs possess different information about how to design contracts. These entrepreneurs undertake "contractual experiments" based on the information they possess. Those whose experiments prove to be more consistent with economic theory are rewarded for their superior information with survival.
(*Franchising; Exclusive Territories; Firm Survival; Contract Design; Entrepreneurship*)

1. Introduction

Ever since Williamson's seminal contribution, social scientists have understood that most real-world contracts are incomplete (Williamson 1975, Tirole 1999). The main argument for incomplete contracts rests on the behavioral assumption of bounded rationality: Not all relevant future contingencies will be foreseen by exchange participants.

However, despite significant progress in explaining the structure of contracts, researchers have not accounted adequately for the contract-design process. In particular, they have tended to overlook the effect of bounded rationality on the ability of economic actors to design contracts, and the effect of these differences on the content of contracts.

We draw on evolutionary arguments to specify the mechanism by which explicit contracts are established. We propose that entrepreneurs design contracts of differing economic efficiency because they possess different information about contracting. The environment selects entrepreneurial ventures for survival on the basis of contracting efficiency, *holding entrepreneurial talent and ideas constant.*

The cost of acquiring knowledge about contracting is a major feature of the contract-design process. Not only are entrepreneurs highly heterogeneous with respect to management talent and the quality of ideas, they are also differentially endowed with specific information regarding contracting. While additional information can be acquired from lawyers, academics, or consultants, different initial endowments will entail search costs that differ greatly across entrepreneurs (Stigler 1961). This issue will be magnified if prior knowledge frames new information in ways that reduce the cost of recognizing its value (Cohen and Levinthal 1989).

We examine this issue in the context of business-format franchising in the United States. Drawing on

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a sample of 170 new franchise contracts from a wide variety of industries, we study franchisors' decision to adopt a policy granting a geographical exclusive territory around each franchised outlet. We find a strong negative relationship between the adoption of this policy and exit from franchising. The greater failure rate of nonadopters appears to be related to a mix of factors: slower growth that prevents chains from reaching minimum efficient scale, increased probability of conflicts between franchisees and franchisor because of encroachment-related problems, and, possibly, self-selection of high-quality franchisees into contracts that provide exclusivity. In the "pin factory" tradition, we complement econometric results with interviews with 16 of the franchise entrepreneurs in our sample. We find that adopters and nonadopters invoke very different rationales to justify their policy choices, and that these rationales are based on the information they possess about contracting.

In the absence of a source of exogenous variation in the adoption of exclusive territories, our finding that adoption lowers the failure rate of new franchise systems is confounded by endogeneity and heterogeneity bias. It also begs the question of why all entrepreneurs do not adopt a policy that seems to improve the odds of their success. Drawing on a mix of statistical and qualitative evidence, we systematically examine how the evolutionary view and a number of alternative explanations can account for our finding.

First, the decision to adopt exclusive territories could simply reflect a rational cost/benefit analysis performed by new franchisors. If this were the case, the propensity to provide exclusivity should respond to variations in the costs of adopting this policy. We measure several shifters of adoption costs, including variation in the legal environment for franchising across states, the preexisting density of the network of company-owned outlets, the characteristics of the production process, and the willingness to trade-off survival for current profits. None of these variables influence the decision to adopt exclusive territories.

Second, territorial exclusivity could be related to heterogeneous expectations about franchise system growth. Entrepreneurs holding more positive expectations about their untested capabilities might adopt exclusive territories and therefore commit to leave rents to franchisees, whereas less confident entrepreneurs might rationally refrain from adopting territorial exclusivity while they gather evidence about the unknown quality of their business concepts. However, the heterogenous expectations hypothesis seems hard to reconcile with the lack of any differences between adopters and nonadopters in the extent to which they overestimate their growth prospects.

Third, territorial exclusivity could be correlated with unobserved differences in franchise-system quality within our sample. We address this argument by examining whether two different dimensions of quality (reputational capital, and the degree of stringency with which franchisees are screened into the system) are related to adoption of exclusivity. We find little support for the hypothesis that the survival properties of exclusive contracts are an artefact of unobserved heterogeneity in these two dimensions of quality.

Overall, the results are more consistent with an evolutionary view of contract design whereby entrepreneurs undertake policy experiments on the basis of the information they possess. Those entrepreneurs whose experiments prove to be more consistent with economic theory are rewarded with survival for their superior information.

The rest of the paper proceeds as follows. In the next section, we propose an evolutionary view of the contract-design process. Sections 3 and 4 introduce relevant facts about franchising and territorial exclusivity, respectively. Section 5 describes the data and the econometric models, whose results are presented in §6. Section 7 offers a discussion in which the qualitative evidence is brought to bear on the econometric findings. Section 8 contains concluding remarks.

2. An Evolutionary View of Contract Design

Most social scientists would agree that contracts are an important fact of economic life, and that there are limits to what explicit contracts can achieve (Macaulay 1963). However, despite significant progress in the economics of contracting, researchers have not adequately explained the *process* by which contractual arrangements are established. Formal economic theories generally focus on the structure of equilibrium contracts, under the assumption that the agents

designing these contracts are rational. Although such an approach is useful to clarify the conditions under which economic efficiency can be improved through the distribution of property rights and corresponding incentives (Grossman and Hart 1986), it is not particularly helpful in deepening our understanding of the contract-design process. One reason is that the rationality assumption is inconsistent with evidence about limited human cognitive ability (Simon 1955). Limits on rationality mean that people cannot design contracts as formal models argue that they should.

Transaction cost economics has improved upon the behavioral realism of formal economic models by invoking bounded rationality to justify the idea that unforeseen contingencies would cause real-world contracts to be incomplete (Williamson 1975). However, this literature has tended to overlook the fact that bounded rationality may also lead economic actors to differ ex ante in their ability to design contracts.

In addition to Williamson's argument that bounded rationality influences the ability of entrepreneurs to foresee future contingencies, bounded rationality also influences the ability to design contracts in two other ways. First, bounded rationality influences the distribution of knowledge about means-ends relationships in decision making. Information specialization is a defining feature of the modern capitalist system (Hayek 1945). The division of labor provides people with an incentive to specialize in the acquisition of information because specialized information is more valuable to the performance of most activities than is general information (Becker and Murphy 1992). As a result, not all economic agents possess the same information about how to accomplish any given activity. In particular, entrepreneurs' primary function is the commercial exploitation of new ideas, not the design of contracts. The quality of new ventures varies, but the extent of entrepreneurs' idiosyncratic contracting knowledge is likely to vary as well. In the context of organizational design, this information specialization means that, in any cross-section of entrepreneurs seeking to design new contracts, knowledge about the effects of contract provisions on the relationship between the parties will vary widely.

Second, boundedly rational entrepreneurs often lack the information necessary to see complex interrelationships between different dimensions of activities they undertake. Real-world contracts contain a number of different clauses, and the incentive effects of a contractual arrangement may depend not only on each clause taken in isolation but also on the way different clauses relate to one another. Unlike formal models of organizational design, which suggest that individuals deliberately consider these complex relationships in the contracts they write, we argue that entrepreneurs select contract provisions on the basis of a small number of simple heuristics or "routines" they possess (Nelson and Winter 1982). The routines that entrepreneurs use to select contract provisions include such standard operating procedures as imitating industry norms or industry leaders, selecting policies that prior experience suggests are good, gathering information and making a decision, or following the recommendations of trusted advisors.

Of course, one could rationalize these differences in knowledge by invoking adjustments and/or search costs, such as the cost of hiring a better lawyer, or the cost of attending business school and registering in an entrepreneurship or contract theory class. But what type of costs must we invoke to explain the extent to which entrepreneurs vary in their awareness of the importance of contract design itself? Postulating the existence of such costs appears tautological. Moreover, ex ante differences in knowledge are equally relevant in contracts designed by third parties, such as lawyers and consultants. Bounded rationality applies to these individuals as well as to entrepreneurs, so there is no guarantee that third parties can draft optimal contracts. For instance, desirable contract provisions for new and mature franchise systems may be different. Alternatively, desirable contract provisions might vary across industries. Lawyers and consultants may lack a complete understanding of the relationship between contract provisions and industry or system maturity, and may inappropriately recommend the adoption of provisions that they see as effective in other industries or for mature systems.

Agency problems may exacerbate these difficulties. The main asset employed in the contract-design process is the technical knowledge embodied in the

agent/lawyer's human capital. The effort necessary for the entrepreneur/principal to acquire these specialized skills creates a sharper form of informational asymmetry than in traditional agency models: Not only is the agent's effort difficult to monitor, but his output—how well the contract provisions fit the specific circumstances of the venture—is hard for the entrepreneur to evaluate. Therefore, even if lawyers or consultants could learn, at some private cost, which provisions are optimal in each particular circumstance, the contracts they draft might not be optimal.

We argue instead that to understand contract design, one must assume that boundedly rational individuals differ in their ability to recognize the payoffs from different contract provisions. As a result, individuals develop routines to pursue the same goals in an intendedly rational manner, but they achieve different results because differences in their information lead them to develop different routines. These routines lead entrepreneurs to adopt particular contract provisions that may or may not be appropriate for their activities. As Williamson explained "*if economic organization is formidably complex, which it is, and if economic agents are subject to very real cognitive limits, which they are, then failures of alignment will occur routinely*" (Williamson 1991, p. 78).

Entrepreneurs will often persist with initially selected routines until they fail (Hannan and Freeman 1984). First, entrepreneurs cannot change their routines unless they first recognize that those routines are flawed. This recognition requires an understanding of the cause-effect relationship between organizational design and firm performance, which many entrepreneurs lack, up to and even after the time of their failure. Second, even if an entrepreneur recognizes that a routine is flawed, he or she may be unable to change it. The changing of contract provisions involves incurring significant transaction costs that make the provisions sticky to adjustment.

Because contract provisions are not readily changed over time, the process by which efficient contracts will be observed in equilibrium is one of at least partial environmental selection. In general, those contracts that are more consistent with economic theory will survive, while those that are less consistent will be selected out. This paper is explicitly concerned with this out-of-equilibrium process.

3. The Setting: Business-Format Franchising

We examine the effect of contract design on the survival of new firms in the context of business-format franchising. Business-format franchising is a contractual relationship under which one party (the franchisor) licenses to another party (the franchisee) the right to sell its products or services, using its brand name and operational format. Business-format franchising is a useful setting in which to explore the effect of contracting on firm survival, for several practical and methodological reasons (Shane forthcoming).

First, contracts are publicly available. Since 1979, the Federal Trade Commission has required business-format franchisors to provide potential franchisees with a Uniform Franchise Offering Circular (UFOC) that discloses the terms of the franchise arrangement.

Second, franchisors almost invariably offer contracts on a "take-it-or-leave-it" basis (Shane and Foo 1999). As a result, contract variation tends to occur between, rather than within, franchise chains, allowing researchers to study contract design at the franchise-system level of analysis without collecting information from individual franchisees (Shane forthcoming).

Third, one observes very little intertemporal variance in the contract terms reported in the main franchise guides—royalty rates and franchise fees. Bhattacharya and Lafontaine (1995) provide a double-sided moral hazard model showing that the benefits of contract customization and frequent changes are generally small. In addition, franchisors incur large transaction costs when changing their contracts because of mandatory registration and material change laws in several states. Lafontaine and Shaw (1999) present evidence of the stability of contract terms in a long-panel dataset collected from *Entrepreneur Magazine's* Franchise 500 yearly survey. Over a 13-year time span, roughly 75% of all franchisors *never* change their royalty rate or franchise fees. In the case of new franchisors, this figure is likely

to be even higher. Unfortunately, there is no evidence on the stickiness of other policies.

Finally, new business-format franchisors are highly vulnerable to failure. Researchers have documented that approximately three-fourths of all new business-format franchise systems fail within 10 years, and at least some have argued that the terms of franchise contracts influence the hazard of franchise-system failure (Shane forthcoming). This high failure rate makes the survival of the chain over time an important metric for gauging performance.

4. Franchising and Territorial Exclusivity

Many franchise contracts provide franchisees with an exclusive territory, a geographical area in which the franchisor agrees not to add any other outlet, either franchised or company owned. Researchers have gained only a limited understanding of the role played by exclusivity in the specific context of franchising. Mathewson and Winter (1994) present a simple model of territorial restraints where the adoption of exclusivity depends on the relative importance of the franchisor and franchisee efforts in the production process. Underlying their model is the insight that exclusive territories increase the importance of the franchisee to the success of the system by making it more difficult to use replacement of a given franchisee as a way to accomplish the franchisor's goals. Bercovitz (1996) offers evidence that the adoption of exclusive territories is positively related to the density of the chain, a proxy for franchisee free-riding hazards. To date, there has been no evidence linking territorial exclusivity to chain performance. Meanwhile, exclusivity has become a contentious issue for franchisors and franchisees alike, with encroachment-related legal disputes garnering headlines in specialized trade publications (Chun 1996).

The specific case of exclusive territories in franchise systems is unlike many aspects of relationships between independent organizations because hold-up through encroachment is not easily governed through relational contracts. U.S. courts have traditionally interpreted the "implied covenant of good faith and fair dealing" as not precluding franchisor encroachment. Therefore, an informal promise that franchisee-developed commercial territory will not be encroached upon has little standing in court (Vincent 1998). Although one could object that franchisors have a reputation-based incentive to refrain from behaving opportunistically, such a commitment mechanism is likely to be weak for the young systems we study. Franchisors can easily mitigate franchisee fears of territorial encroachment by providing them with a contractually guaranteed protected territory. Such a guarantee commits the franchisor to the protection of a stream of quasi-rents appropriated by the franchisee.

There are two reasons why one might think that territorial protection decreases the hazard of franchise chain failure, ceteris paribus. First, new firms are typically established below minimum efficient scale, and there is evidence that growth and exit rates are negatively correlated for young firms in general (Audretsch 1995), and for new franchise systems in particular (Martin 1988). Consequently, one important characteristic of successful new chains is the ability to quickly reach a size at which the firm can compete effectively with established competitors who operate at minimum efficient scale (Caves and Murphy 1976). Because potential franchisees worry about encroachment, they might not invest in systems that do not provide territorial exclusivity. Such systems might grow more slowly than their "exclusive" counterparts, which would increase their hazard of failure.

Second, a business structure that depends on a contractual relationship between two independent firms sharing common assets will face hold-up hazards. The division of activities between the franchisor and franchisee creates an incentive for the parties to renege on the terms of their agreement to take advantage of quasi-rents generated by each party's relationship-specific investments (Williamson 1985). Franchisors control the right to decide the terms of the franchise agreement, as well as the right to terminate (or not renew) franchisees. This right creates opportunities for franchisor hold-up when combined with divergent incentives for the level of outlet density in a geographic area. Franchisors earn their profits on the basis of royalties on systemwide sales, whereas franchisees earn income based on profits net of royalties

from outlets that they own. This difference means that franchisors have an incentive to establish a greater density of outlets in a geographic area than do franchisees (Zeller et al. 1980). As a result, the location of new units can be used by franchisors to extract rents from franchisees. Exclusive territory provisions potentially mitigate the hold-up hazards stemming from encroachment.

Reduced conflict between franchisees and franchisors should put "exclusive" chains at a lower risk of failure than nonexclusive ones. This argument is based on three interrelated points. First, new franchise systems must attract franchisees. Before purchasing outlets, new franchisees often contact existing franchisees through a process of due diligence on the franchise system. If existing franchisees are in conflict with the franchisor, they will likely provide negative information about the franchise system to the prospective franchisee. This negative feedback makes it harder and more costly for the franchisor to attract the franchisees that it needs to reach minimum efficient scale quickly, and hampers system survival. Second, new franchisors, like all new firms, often face severe cash flow constraints. Litigation is costly, and legal conflict between franchisors and franchisees imposes a financial burden that inhibits growth and survival. Third, conflict over encroachment is an important issue for both state franchise regulators and franchisee trade associations. Because franchisor-franchisee conflict over encroachment brings unwanted scrutiny from important stakeholders, it hinders the growth and survival of franchise systems.

One might argue that an alternative strategy to exclusive territories would be for franchisors to offer nonexclusive territories and choose a spatial distribution of outlets to maximize geographic coverage and systemwide sales. Under this alternative, a franchisor could experiment with locations and relocate outlets when conflicts with franchisees suggest that the damage to the system's reputation exceeds the benefits derived from flexibility. We argue that this alternative strategy is problematic for two reasons. First, franchise systems without exclusive territories cannot reach minimum efficient scale quickly enough. Second, significant transaction costs are incurred when relocating outlets, because location decisions are an integral part of franchise agreements. In particular, the location of outlets is agreed upon contractually for a period of several years, making the location of outlets sticky.

5. Data and Analysis

The data used in this article stem from three distinct sources: an original sample of 170 franchise contracts, matched data from two franchise guides (*Bond's Franchise Guide* and *Entrepreneur Magazine's* Franchise 500 annual survey), and telephone interviews with the founders of 16 franchise systems drawn from our sample. The "pin factory" methodology, which mixes econometric and qualitative evidence, provides detailed insights about the contract-design process.

Economists have long understood that the franchise relationship is rife with potential agency conflicts, including shirking, free-riding, adverse selection, hold-up, and inefficient risk bearing (Rubin 1978). However, empirical research has been hampered by an exclusive reliance on the three main franchise guides: *Entrepreneur Magazine's* annual survey, *Bond's Franchise Guide*, and the *Franchise Annual*. As a result, researchers have gained detailed knowledge of the determinants of royalty rates and franchise fees, the two policies recorded in all of these guides, but have had little to say on other franchise contract provisions (Lafontaine and Shaw 1999). This paper extends the contracting literature by using evidence stemming directly from the contracts, relying on the guides only as a subsidiary source. This allows us to consider a richer array of contract provisions that are important to both franchisors and franchisees. To our knowledge, there exist only two studies that share some of these features: Michael (1999) uses franchisor earnings claims to estimate the "franchising elasticity of demand," and Bercovitz (1996) uses UFOC data to examine whether termination conditions, territorial exclusivity, and contract duration are designed in a way to mitigate hold-up and free-riding hazards. Although novel, these studies suffer from one shortcoming: The tests proposed are cross-sectional. Our focus is also slightly different from Bercovitz (1996), since we attempt to relate contract provisions

to franchise-system performance. To address these issues, we offer some longitudinal evidence, using exit from franchising as a performance measure.

5.1. Data Sources

Sample. We sought to obtain Uniform Franchise Offering Circulars from a representative sample of new franchise systems established in the United States between 1992 and 1995. The time period for data collection was ad hoc. We focus on new franchise systems for several reasons. First, we want to examine the effects of contract design on exit from franchising. If selection is an important mechanism by which contract provisions are established, researchers will be more likely to observe these effects by studying franchise systems before inefficient systems are selected out. Second, we expect that mature systems will build reputational capital that will enable them to adopt *implicit* contracts, which we cannot observe but which will influence both the design of *explicit* contracts and the odds of system survival.

Lists of new franchise systems were compiled by examining the data at which franchise systems were first listed in the three major franchise directories (*Bond's Guide, Entrepreneur Magazine*, and *Franchise Annual*). After sending a letter requesting a copy of the initial UFOC and franchise agreement to firms that began franchising during this time period, we obtained data for 28.6% of these franchise systems. To ensure that the sample was representative of the population of new franchisors, the respondents were compared to the franchisors listed in the guides along the following dimensions: year of founding, year franchising began, franchise fee, royalty rate, number of franchised outlets, and number of company-owned outlets. In Table 1, we perform t tests for the equality of means between our sample and the data from the guides on these variables. Those tests reveal no significant differences between the two groups except for the royalty rate, which is slightly higher in our sample. From this analysis, we conclude that the sample is fairly representative of the population of new franchise systems established in the United States between 1992 and 1995.

By examining actual franchise agreements and UFOCs we are able to improve on prior empirical research in two major ways. First, we measure a wider variety of contract provisions and obtain finer grained proxies for constructs of interest than previous studies have. Second, by examining new firms and following them over time, we can examine the structure of contracts for organizations that later fail. This focus is important because it enables us to distinguish the set of contract provisions that exists as a result of environmental selection from the set that stems from strategic choice. Much of the cross-sectional work on contracting obscures these two processes.

Table 1 Comparison of Sample with Franchise Guides Data

	Sample		Guides		
	m	*n*	*m*	*n*	*t* statistic
Year franchising began	1993.51	170	1993.35	496	1.70
Year of founding	1987.34	170	1986.55	459	0.67
Franchise fee	$19,711	170	$21,708	494	−1.24
Royalty rate	6.40%	170	5.17%	455	2.58*
Number of franchisees	14.19	170	19.85	496	−1.00
Number of company-owned outlets	5.81	170	5.35	494	0.22

Note. *Significant at the 1% level of confidence.

The main limitation of the dataset is that we do not observe changes in contract provisions. Although prior research indicates that franchise contracts are relatively sticky (Bhattacharyya and Lafontaine 1995, Lafontaine and Shaw 1999), direct evidence of stability would be more persuasive. Formally, we will be studying the impact of "initial contracting conditions" on system failure.

Matched Data from Guides. We relied on *Bond's Franchise Guide* and the *Franchise 500* to collect additional variables on the franchise systems in our sample. The data collected consist of time-series evidence on outlet numbers, measures of formal screens used by franchisors to select franchisees, and minimum net worth requirements. Because these variables are available only for a subset of systems, they will be used primarily in subsidiary data analyses.

Interviews. In Table 2 we split the sample along two dimensions: success or failure of the franchise system, and adoption or nonadoption of exclusive territories. In each of the four cells, we select four systems and conduct telephone interviews with the

Table 2 Adoption of Exclusive Territories Among Failed and Successful Systems

	No Exclusivity	Exclusivity	Total
Number of failed systems (1997)	13	34	47
Number of successful systems (1997)	15	108	123
Total	28	142	170
Number of failed systems (1998)	19	43	62
Number of successful systems (1998)	9	99	108
Total	28	142	170

founders of these 16 franchise chains. This qualitative evidence sheds light on issues such as the locus of decision making in the contract-design process, the stickiness of contract terms, the rationales for adoption and nonadoption of territorial exclusivity, whether or not policies were jointly adopted, and, more generally, the routines used by franchisors to adopt contractual practices.

Summary descriptive statistics for all the variables in the sample are presented in Table 3, and the correlation matrix is presented in Table 4.

Table 3 Descriptive Statistics

	m	*SD*	Obs.	Min.	Max.
EXIT 97 (had stopped franchising by 1997)	.276	.449	170	0	1
EXIT 98 (had stopped franchising by 1998)	.365	.483	170	0	1
EXCLUSIVE (exclusive territory)	.835	.372	170	0	1
AREA (area development agreement)	.306	.462	170	0	1
COLLEGE (founder attended college)	.253	.436	170	0	1
EXPERIENCE (# of other franchise systems)	.406	1.416	170	0	9
BANKRUPTCY (# of noncleared bankruptcies)	.100	.719	170	0	9
ASSETS ($\times$ \$10,000,Year $t-1$)	153.348	585.481	153	.002	3,956.36
SIZE (# of company-owned outlets in Year 1)	5.806	27.701	170	0	323
YEARSINC (# of noncleared bankruptcies)	6.171	15.730	170	0	154
TERMINATION (lead state has termination law)	.400	.491	170	0	1
%*TERMINATE* (% of outlets in "termination states")	.305	.438	170	0	1
ENCROACHMENT (lead state has encroachment law)	.294	.457	170	0	1
%*ENCROACH* (% of outlets in "encroachment states")	.219	.383	170	0	1
#0STORE (*SIZE* = 0 in Year 1)	.312	.465	170	0	1
#1STORE (*SIZE* = 1 in Year 1)	.282	.451	170	0	1
EGINDEX (index of system density)	.672	.427	69	−.210	1.134
REPEAT (degree of importance of repeat customers)	−.041	.682	170	−1	1
FRFEE ($\times$\$10,000)	1.971	.993	170	0	6.000
MNW/CASH (minimum net worth requirement)	9.441	32.262	116	0	294.861
SCREEN (toughness of franchisee selection process)	18.709	4.058	117	6	30
BIAS (entrepreneur's overoptimism bias)	10.555	49.621	126	−246	372
Δ*OUTLET* (growth between Year 1 and Year 2)	7.510	14.685	143	−7	96
Industry sectors					
Business services	.094	.293	170	0	1
Restaurants	.335	.473	170	0	1
Retail	.159	.367	170	0	1
Services	.182	.387	170	0	1
Miscellaneous	.229	.422	170	0	1
Cohorts					
1992	.100	.301	170	0	1
1993	.406	.492	170	0	1
1994	.341	.475	170	0	1
1995	.153	.361	170	0	1

Table 4 Correlation Matrix

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)
(1) *EXIT97*	1.00																					
(2) *EXIT98*	.768	1.00																				
(3) *EXCLUSIVE*	−1.43	−.290	1.00																			
(4) *AREA*	.025	.001	−.050	1.00																		
(5) *COLLEGE*	−.090	−.047	−.034	.054	1.00																	
(6) *EXPERIENCE*	−.100	−.149	.060	.053	−.148	1.00																
(7) *BANKRUPTCY*	.108	.082	.040	.014	.127	.129	1.00															
(8) *ASSETS*	−.050	−.102	.087	.228	−.141	.717	.169	1.00														
(9) *SIZE*	.001	−.041	−.034	.003	−.063	−.047	−.023	−.032	1.00													
(10) *YEARSINC*	.052	−.011	−.122	−.014	−.109	−.001	−.031	−.031	.556	1.00												
(11) *TERMINATION*	.022	.030	.007	.136	−.144	.012	−.030	.164	.045	.124	1.00											
(12) *%TERMINATE*	.048	−.021	.026	.095	−.157	.019	−.041	.109	−.004	.023	.753	1.00										
(13) *ENCROACHMENT*	−.019	−.087	.043	.020	.011	.217	.162	.261	−.066	−.103	−.079	−.061	1.00									
(14) *%ENCROACH*	−.064	−.159	−.002	.085	.029	.064	.001	.165	.039	.059	.038	.103	.614	1.00								
(15) *#0STORE*	−.041	.044	−.044	−.089	−.100	.148	.137	.071	−.112	−.113	−.213	−.470	.067	−.385	1.00							
(16) *#1STORE*	−.034	−.014	.138	−.133	.116	−.079	−.069	−.057	−.113	−.075	.048	.190	.025	.188	−.422	1.00						
(17) *EGINDEX*	−.057	−.023	.093	.203	−.092	.118	.099	.164	−.270	−.290	.216	.152	.193	.028	–	–	1.00					
(18) *REPEAT*	−.084	−.098	.020	.115	.214	−.111	−.004	−.056	.111	.188	−.004	.078	−.075	.030	−.202	.172	−.118	1.00				
(19) *FRFEE*	−.021	−.109	.070	.268	.009	.038	.019	.004	.126	.102	−.101	.059	−.041	.057	−.150	.025	−.121	.090	1.00			
(20) *MNW/CASH*	−.090	−.023	−.054	.290	−.059	−.061	−.073	−.067	.262	.068	−.006	−.015	−.061	.032	−.052	−.095	−.194	.048	.222	1.00		
(21) *SCREEN*	.099	.050	−.007	.020	.145	.047	−.232	−.174	−.091	.031	.003	−.004	−.101	−.031	−.127	.053	−.154	.141	.035	−.205	1.00	
(22) *BIAS*	.283	.222	−.081	.202	−.062	.117	.037	.286	−.004	−.040	.124	−.050	.058	.045	.067	−.051	.035	−.129	−.103	−.015	−.026	1.00
(23) *ΔOUTLET*	−.028	−.106	.120	.070	−.072	.179	.495	.280	−.057	−.054	−.040	−.024	−.014	.001	.176	−.079	.070	.013	−.055	−.089	−.174	−.386

5.2. Estimation Issues

There are two potentially serious econometric issues involved in trying to assess the effect of contract design on the survival of franchise systems: the joint endogeneity of contractual choices and product market competition, and the heterogeneity bias generated by the adoption process of exclusive territories. The first problem arises when explicit contracts affect a chain's competitive position and its contract-design process takes this into account. The second problem stems from the fact that adopters and nonadopters may not be drawn from the same distribution; franchise systems may differ in their costs and return to adoption of exclusivity in ways that are observed by the entrepreneurs in our sample but unobserved to the econometrician (Heckman 1979).

We offer partial solutions to these problems. We have already noted that franchise contracts are quite sticky. For the young firms we study, this means that there are few changes in contract provisions during the first five years after entry. Because contract design, by law, always precedes entry into the institutional setting of franchising, the initial contracting conditions are likely to coincide with the final conditions. We used the interviews to shed light on the degree to which contracts are sticky in our sample. This enables us to get a feel for the amount and direction of the endogeneity bias generated by the "sticky contract" hypothesis that we maintain throughout the econometric work.

Heterogeneity-based arguments provide alternative explanations to our findings. We try to address this issue by estimating an adoption equation for exclusive territories, along with the survival equation. Because we do not obtain a definitive answer following this approach, we also use qualitative evidence to investigate whether or not unobserved heterogeneity provides an alternative reading of the evidence.

5.3. Survival Models

We do not observe the precise time the systems in our sample stopped franchising. Rather, for each spell, we observe only one of the following three outcomes: (1) the system stopped franchising between the year franchising began and June 1997, (2) the system stopped franchising between June 1997 and June 1998, and (3) the system was still franchising as of June 1998. To take advantage of the discrete character of this failure-time data, we follow Han and Hausman's (1990) flexible parametric approach.

Formally let i be the index franchise systems, and divide the time horizon into J intervals $I_j = [t_{j-1}; t_j]$, $t_0 = 0$, $t_j = 1998$. The length of spell i, T_i, can fall in any one of the I_j. Let $d_{ij} = 1$ if $T_i \in I_j$, and 0 otherwise ($j = 1, 2, \ldots, J$). Let X denote a set of covariates, and θ a vector of parameters to be estimated. We write the log-likelihood as:

$$\widehat{Q}_n(\theta) = \frac{1}{n}\sum_{i=1}^{n}\sum_{j=1}^{J} d_{ij} Ln\big[\text{Prob}(d_{ij} = 1|X, \theta)\big]. \qquad (5.1)$$

Let $S(.|X, \theta)$ denote the survivor function, $S(t|X, \theta) = \text{Prob}(T \geq t|X, \theta)$. Then one can write:

$$\begin{aligned}\text{Prob}(d_{ij} = 1|X, \theta) &= \text{Prob}(T_i \in I_j|X, \theta)\\ &= S(t_{j-1}|X, \theta) - S(t_j|X, \theta).\end{aligned}$$

We make the proportional hazards assumption by writing that $\lambda(t|X, \theta) = \lambda_0(t)e^{X'\theta}$, where $\lambda_0(\cdot)$, the instantaneous baseline hazard rate, is an unknown function of t. The relationship between the survivor function and the hazard rate can be written $S(t|X, \theta) = \exp(-\Lambda_0(t)e^{X'\theta})$, where $\Lambda_0(t) = \int_0^t \lambda_0(s)ds$, the baseline integrated hazard. As a result, the likelihood depends only on $\delta_j = Ln[\Lambda_0(t_j)]$, $j = 1, \ldots, J-1$, and not on any particular parametric shape for λ_0. The final likelihood function needs to be appropriately modified to take into account right-censoring:

$$\begin{aligned}\widehat{Q}_n(\theta, \delta_1, \ldots, \delta_{J-1}) = \frac{1}{n}\sum_{i=1}^{n}\sum_{j=1}^{J-1} d_{ij} Ln\big[&\exp(-e^{X_i'\theta+\delta_{j-1}})\\ &- \exp(-e^{X_i'\theta+\delta_j})\big] - \sum_{i=1}^{n}\left(1 - \prod_{j=1}^{J-1} d_{ij}\right)e^{X_i'\theta+\delta_{j-1}}.\end{aligned}$$

Measuring Exit from Franchising. To obtain information on the duration of franchising spells, we telephoned all of the franchise systems in June of 1997, and again in June of 1998, and asked them if they were still operating as a franchise system. Exit from franchising was recorded if an unambiguous negative answer could be elicited from the staff of the franchisor. In the few instances where the response was ambiguous, we considered failure to advertise in

any of the franchise guides evidence that franchising activities had stopped. Finally, we also recorded as exiters those systems for which phone service had been discontinued with no forwarding number. This allowed us to construct two variables that measure whether or not the system had ceased to franchise, *EXIT97* and *EXIT98*.[1]

Measuring Territorial Restrictions. The adoption of exclusive territories is measured as a binary dummy variable, *EXCLUSIVE*.[2] Although a direct measure of the area covered by these territories would have been preferred, the process by which boundaries are drawn prevents us from directly observing their commercial value. The area covered by the territories is individually negotiated by franchisors with each franchisee, and this bargaining process results in detailed maps that are appended to the standard contract at the time the franchise agreement is signed. Although crude, our binary definition is still meaningful because franchisees can assess the value of the territory (if one is provided) *before* signing the contract.

It is important to point out that what we measure is the exclusive territory granted around an individual outlet. Typically, it covers a few blocks in a city or a county in a rural area. They seldom correspond to entire MSAs or media markets. The truly valuable exclusive rights (e.g., the rights to Manhattan) are governed by another type of contract called area development agreements. We measure the latter with a variable, *AREA*, coded as a dummy variable of 1 if the franchisor provides area development agreements to franchisees.

Control Variables. Because young franchise systems might fail for many other reasons than flawed contract design, it is important to control for a number of alternative explanations for firm failure. First, there is a large body of evidence demonstrating that the survival prospects of firms vary across industries (Dunne et al. 1988). We use a set of dummy variables for different economic sectors to control for this between-contract source of variation in exit rates. The *Franchise 500* industry classification provided a starting point to assign the firms in our sample to particular industries. Because the dataset is small, and a few industries account for a high proportion of the 170 observations, we refined this classification into a smaller set of industries. Although results are robust to the choice of a finer-grained industry classification, this approach alleviates multicolinearity in the estimation of some models. Likewise, a set of cohort effects controls for the influence of macroeconomic fluctuations on the rate of firm failure in the economy as a whole.

Second, there is evidence showing that entrepreneurs' human capital inputs affect small business longevity (Bates 1990). In the analysis that follows, we proxy the human capital and experience of the system founder in three ways: *COLLEGE* is a binary dummy variable indicating whether or not the entrepreneur attended college; *EXPERIENCE* is the count of distinct franchise systems the founder has been or is involved in, either as a franchisee or a franchisor; and *BANKRUPTCY* is a count of the number of bankruptcies the founder has declared but have not subsequently been cleared by the courts. These three items are coded from Items 2 and 4 of the UFOCs.

Third, financial capital endogeneity notwithstanding, firm failure might also be related to undercapitalization (Zingales 1998). We use as a measure of financial position $ASSETS/(1 + SIZE)$ (the dollar value of franchisor assets) scaled by *SIZE* (the number of company-owned outlets.) These variables are measured as of Year 1.[3]

Finally, students of firm survival in sociology have proposed that firms face a "liability of smallness" (Hannan and Freeman 1984). We control for this

[1] We also used delisting from all three major franchise directories in a given year as a measure of exit from franchising in that year. This allowed us to retrospectively extend the event histories of these systems to the years 1995 and 1996. Because retrospective information is more prone to systematic measurement error than the contemporaneous evidence gathered on the phone, we restricted the use of the longer failure-time data to subsidiary analyses. The results are substantively unchanged for this richer specification of exit.

[2] This information is found in Item 12 of the UFOCs ("Territory").

[3] In all that follows, Year 1 will designate the year franchising began. We have missing values for the assets of 17 systems.

explanation of failure by including *SIZE* as a covariate. The same group of scholars has argued that the effect of age on firm survival is characterized by structural state dependence. We measure *YEARSINC*, the number of years elapsed between incorporation of the company and the beginning of franchising, to control for the "liability of newness" hypothesis.

Proxies of System Quality. A final set of variables was obtained from the *Franchise 500* and *Bond's* guides. These variables, available only for a limited number of observations, enable us to provide partial answers to the following question: *Is EXCLUSIVE capturing the structural effect of territorial exclusivity on exit from franchising, or is it merely reflecting the impact of some unobserved dimension of franchise system quality?* *MNW/CASH* is the minimum net worth requirement set by the franchisor for potential franchisees, normalized by the franchisee initial cash investment. This variable measures the wealth requirement franchisees must meet to join the franchise system.

SCREEN is the aggregate score of franchisors in a series of six questions asked to systems advertising in *Bond's*. Franchisors are asked to rank from 1 to 5 the following criteria used in the franchisee selection process: financial net worth, general business experience, specific industry experience, formal education, psychological profile, and personal interview. On a scale of 6 to 30, *SCREEN* provides evidence of the toughness of the franchisee selection process.[4]

Proxy of Franchisor Growth Expectations. Each contract also provides an estimate of the number of franchised outlets that will open in the 12 months following the date of publication of the contract. For a subsample of systems, it is possible to gather from the guides the actual number of outlets opened during this time period. From these two numbers, we construct *BIAS*, the difference between the expected and the actual number of new franchisees. Finally, we use the guides and the contracts in combination to generate $\Delta OUTLET$ and $\Delta Ln(OUTLET)$, the absolute growth rate of the systems between Year 1 and Year 2, in levels and in logarithms, respectively.[5]

5.4. Adoption of Exclusive Territories

To model adoption, we write $EXCLUSIVE_i = 1_{[\eta_i - W_i'\gamma > 0]}$, where W is a set of variables affecting the decision to adopt an exclusive territory provision in franchise contracts (such as industry and year dummies, density of the chain, etc.), η is a standard normal stochastic disturbance, $E[\eta|W] = 0$, and $1_{[.]}$ is an indicator function. An estimate of γ is obtained by running a simple probit in which *EXCLUSIVE* is the dependent variable and W is a vector of regressors that shift the costs incurred by firms who adopt exclusive territories.

Legal Environment. Because the legal environment governing franchising in general—and rules regarding termination and encroachment in particular—varies across states, we evaluate its effect on the adoption of exclusive territories. Termination laws make franchisee termination more difficult in 14 states (Brickley et al. 1991).[6] Thus, other things being equal, territorial exclusivity is more costly to franchisors in these states: If a franchisor selects a franchisee who turns out to be a "lemon," he will not be able to terminate the contract, nor will he be able to place another outlet in the area to stimulate intrabrand competition. Similarly, 7 states have laws on the books, or pending, against franchisor encroachment, and this makes adoption of exclusivity less costly to franchisors operating in these states (Vincent 1998).[7] We measure *TERMINATION*, a dummy variable indicating whether the state of headquarters has a law against termination, and *%TERMINATE*, the proportion of company-owned outlets located in "termination states" in Year 1. *ENCROACHMENT* and

[4] The Cronbach α of reliability between those measures is 0.67, which led us to aggregate the answers.

[5] The use of these variables entails a subtle form of selection on the dependent variable, since by definition the number of franchised outlets in Year 2 can only be observed for systems that survived at least until Year 2.

[6] Arkansas, California, Connecticut, Delaware, Hawaii, Illinois, Indiana, Michigan, Minnesota, Nebraska, New Jersey, Virginia, Washington, and Wisconsin.

[7] Iowa, Wisconsin, Florida, Indiana, Hawaii, Minnesota, Washington (law on the books), and Connecticut, Massachusetts, and Texas (law pending).

%*ENCROACH* are measured similarly for "encroachment states."

System Density. The denser the preexisting network of company-owned outlets is in a given franchise system, the more flexibility the franchisor gives up by granting an exclusive territory to franchisees. On the other hand, the benefits of exclusivity are increasing in density because free-riding hazards are more problematic when the density of outlets is high (Bercovitz 1996). We begin by noting that no meaningful measure of density can be constructed unless a system has at least *two* company-owned outlets in Year 1. As a result, we code the dummy variables *#0STORE* and *#1STORE* for the systems in the sample whose *SIZE* equals either 0 or 1. For the 69 other systems ($SIZE > 1$ for these observations), the measure of density is *EGINDEX*, a modified version of the Ellison-Glaeser concentration index, initially developed to study the geographic concentration of U.S. manufacturing industries (Ellison and Glaeser 1997). This measure alleviates two problems that plague simpler measures of density like the Herfindahl index (*HERF*).[8]

First, the systems in our dataset tend to have small numbers of outlets. This fact makes it hard to tell "true" concentration (as a locational choice of system owners) from lack of actual variation due to insufficient opportunity to observe enough choices of location. That is, systems with few outlets will tend to exhibit high values of *HERF*, but that is not necessarily indicative of genuine high concentration.

Second, we would like to assess the degree to which systems exhibit "excess" concentration relative to some baseline. In our case, the most relevant baseline is the cross-state distribution of retail establishments, available from the *Statistical Abstract of the United States.* A high value of *EGINDEX* will mean that the system is denser than would have been expected if the outlets had been located according to the distribution of overall retail outlets across states. In other words, a three-outlet system in Florida is denser than a three-outlet system in Iowa, because many more retail establishments of all kinds are located in Florida than in Iowa. *EGINDEX* appropriately adjusts *HERF* to reflect these state differences. Technical Appendix 1 provides more detail on the construction of this variable.

Production Process. Characteristics of the production process may also influence the decision to grant exclusive territorial rights. Industries with a high degree of repeat business might present a more auspicious setting for exclusive territories because repeat business provides additional incentives not to skimp on product quality. We follow Brickley (1999) in coding *REPEAT* to represent the extent to which franchisees are likely to rely on regular customers. However, we slightly modify Brickley's coding scheme: *REPEAT* can take on the value -1, 0, or 1. Examples of systems for which $REPEAT = 1$ are cleaning and lawn care services. Conversely, $REPEAT = -1$ for home inspection services. Technical Appendix 2 provides more details on the coding of this variable.

Franchise Fee. In most moral hazard models of franchising, franchisees are kept at their reservation utility level. If this is the case, franchisees will "pay" for exclusive rights through higher franchise fees. *FRFEE* is the dollar value of the upfront franchise fee charged to franchisees.

6. Results

We first report the results of the analysis of the duration models examining the impact of exclusivity on exit from franchising. We subsequently report the results from probit models that analyze the determinants of the decision to adopt exclusive territories.

Exit from Franchising. The estimates obtained from the duration models can be found in Table 5. The three intervals $[0; 1997]$, $[1997; 1998]$, and $[1998; \infty)$ entail the estimation of two coefficients, δ_{1997} and δ_{1998}.[9] Model 1 includes the impact of industry, cohort dummies, size, and age on exit from franchising. These variables explain little of the

[8] $HERF_i = \sum_{state\,j}(SIZE_{ij}/SIZE_i)^2$, where $SIZE_{ij}$ measures the number of company-owned outlets for system i in state j as of Year 1.

[9] The interval $[1998; \infty)$ corresponds to right-censored observations.

Table 5 Hazard Rate Models of Franchise System Failure $n = 153$

	(1)	(2)	(3)	(4)	(5)	(6)
EXCLUSIVE				−1.138**	−1.126**	−1.272**
				(−3.065)	(−3.068)	(−2.282)
Ln(1+*SIZE*)	−.173	−.153	−.055	−.063	−.945	.113
	(−1.141)	(−1.017)	(−.314)	(−.331)	(−.484)	(.420)
YEARSINC	.018*	.016	.018	.015	.157	−.028
	(1.721)	(1.604)	(1.630)	(1.212)	(1.250)	(−.652)
COLLEGE		−.639*	−.586	−.770*	−.788*	−.545
		(−1.641)	(−1.487)	(−1.841)	(−1.868)	(−1.063)
EXPERIENCE		−.363	−.459*	−.457	−.460	−.415
		(−1.319)	(−1.655)	(−1.429)	(−1.457)	(−.889)
BANKRUPTCY		.340	.314	.355	.358	.031
		(.623)	(.663)	(.713)	(.770)	(.026)
$LN(\frac{ASSETS}{1+SIZE})$			.102	.086	.762	.063
			(1.164)	(.952)	(.831)	(.571)
YEAR93	.440	.539	.573	.360	.397	.432
	(.897)	(1.099)	(1.184)	(.726)	(.800)	(.654)
YEAR94	.606	.734	.734	.450	.477	.294
	(1.226)	(1.490)	(1.473)	(.859)	(.901)	(.390)
YEAR95	−.810	−.663	−.676	−.980	−.951	−1.609
	(−1.093)	(−.897)	(−.918)	(−1.200)	(−1.160)	(−1.070)
AREA					.167	−.084
					(.461)	(−.139)
Δ*Ln*(*OUTLETS*)						−.222
						(−1.079)
δ_{1997}	−2.031**	−1.966**	−3.142**	−1.835	−1.779	−1.348
	(−3.809)	(−3.660)	(−2.790)	(−1.457)	(−1.390)	(−.834)
δ_{1998}	−1.553**	−1.470**	−2.641**	−1.309	−1.253	−.677
	(−2.996)	(−2.799)	(−2.440)	(−1.068)	(−1.007)	(−.429)
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes
Log likelihood	−126.243	−121.307	−120.335	−114.673	−114.159	−88.166
χ^2		9.873, $df = 3$	1.943, $df = 1$	11.326, $df = 1$	.226, $df = 1$	$n = 127$

Note. Two-tail *t* statistics are shown in parentheses. *Significant at the 10% level. **Significant at the 5% level.

variance in failure.[10] Model 2 adds the set of human capital proxies, *COLLEGE*, *EXPERIENCE*, and *BANKRUPTCY*. Their signs conform to our priors, although only *COLLEGE* is marginally significant in all models. Model 3 adds the impact of financial position in Year 1. The coefficient has the wrong sign, and is imprecisely estimated. Model 4 presents our main result: Exclusive territories have a strong and significantly negative impact on the failure rate of franchise systems. This result is substantively and numerically unchanged if we control for the provision of area development agreements. We did not find any other policy to be correlated with survival, either as a main effect or in interaction with *EXCLUSIVE*. Moreover, controlling for these other policies does not make the main effect of exclusive territories on exit go away. Therefore, we decided to present results omitting these other contractual variables.

We consider and rule out alternative explanations to our finding that providing exclusive territories to franchisees reduces the failure rate of new franchisors. The first objection is potentially the most

[10] The effect of *YEARSINC* merits a comment: Contrary to our initial intuition, it is positive and marginally significant. A possible interpretation is that traditional chains (those relying only on company-owned outlets to grow the system) may have developed a set of routines to motivate outlet managers. Because franchisees are owners and not employees, these routines may have adverse performance effects if applied in the context of franchising.

damaging: The adoption of territorial exclusivity may in fact proxy for some unobserved measure of franchise-system quality. Entrepreneurs are not randomly assigned to contracts, but they *self-select* into the adoption of particular clauses. If franchisors adopting exclusive territory provisions have higher unobserved returns to doing so, this will bias upwards the estimated effect of this policy on survival. Furthermore, traditional random effect methods of integrating out unobservables, which assume orthogonality to observed covariates, do not solve the problem. Formally, we write the hazard rate specification in regression form:

$$Ln[\Lambda(T_i)] = \alpha X_i + \beta' Z_i + \varepsilon_i + \eta_i X_i, \qquad (6.1)$$

where ε has a Type I extreme value distribution, $X_i = 1$ if system i provides a protected territory, and Z_i denotes the vector of other covariates entering the model. Whereas our specification assumes that $E[\varepsilon\eta] = 0$, the self-selection model asserts that $E[\varepsilon\eta] > 0$, where η represents costs and returns to adoption of exclusivity known by the entrepreneur, but unobserved by the researcher. A particular high or low value of η could arise because of differences in the growth expectations of entrepreneurs, differences in the level of their reputational capital, or differences in the quality of their franchisees. We consider each of these explanations in turn and try to evaluate how they may bias our results.[11]

Entrepreneurs holding more positive expectations about their untested capabilities—their costs or the quality of their business concept—may adopt exclusive territories and thereby commit to leave rents to franchisees. On the other hand, less confident franchise system owners might rationally refrain from adopting territorial exclusivity while they gather evidence on their unknown quality. A proxy for these heterogeneous expectations is the forecast error on the growth rate of their systems. In Table 7, we compare adopters and nonadopters along this dimension by computing $Ln(BIAS)$, the difference between the number of outlets they plan to open in Year 2, and the actual number of outlets opened this same year. We find no significant difference between the two groups. Moreover, the overoptimism bias of entrepreneurs has been well documented (Cooper et al. 1988). If all entrepreneurs in the sample overestimate the commercial value of their system, the decision to adopt an exclusive territory provision is unlikely to depend on the self-assessed quality of their ideas. This is true even if, ex post, some turn out to have had better ideas than others. In the sample, we find strong evidence of overoptimism: We cannot reject the hypothesis that $Ln(BIAS) > 0$ ($t = 7.098$, $n = 126$). We do not think that the heterogeneity induced by differences in expectations about growth—or differences in the quality of entrepreneurial opportunities—seriously undermines our finding.[12]

Franchisors might not adopt exclusivity because they know how to develop a set of implicit contracts with their franchisees that enables them to circumvent the problem of hold-up through encroachment. In other words, exclusive territories and "trust" could be considered substitutes. This view is hard to reconcile with the fact that nonadopters fail at a higher rate than adopters. In terms of the model above, more trustworthy franchisors should have lower unobserved return to adoption η, which would result in a downward bias of our estimates. In unreported regressions, we added an interaction term between *EXCLUSIVE* and *YEARSINC* to Model 4 in Table 5—using the age of the firm as a proxy for reputational capital. The interaction term is imprecisely estimated and does not change the coefficient on the main effect

[11] The quality of the business concept underlying a franchise system is unobserved to us, but it is likely to be one of the major explanations of franchise chain survival. If entrepreneurs with better ideas find it more advantageous to adopt exclusive territories, then our estimate of the impact of exclusivity will, at least in part, reflect the quality of the entrepreneur's venture as opposed to the true causal effect of exclusive territories. However, it is equally plausible that entrepreneurs with high-quality ideas find it less advantageous to provide exclusive territories, since a good idea may result in potential franchisees queueing to invest in the system, even without an exclusive territory.

[12] As an anonymous reviewer pointed out, one might worry that franchisors systematically overestimate planned growth in the hope of attracting franchisees to their system. If such is the case for all systems, then the *level* of *BIAS* will capture the sum of this "bandwagon" effect and the entrepreneurs' expectations, but *variation* in *BIAS* in the sample can still be used as a proxy for the entrepreneurs' expectations.

of exclusivity. Relational contracting does not provide a plausible alternative explanation to our findings.

Finally, franchise systems with exclusive territories may perform better than their nonexclusive counterparts because the quality of franchisees differs across the two groups. This will happen if franchisors who provide exclusivity screen potential franchisees more heavily. We can provide some evidence on the screening mechanisms used by the franchisors in our sample. In Table 7, we show that neither the overall toughness of the franchisee selection process (*SCREEN*) nor the minimum networth requirement (*MNW/CASH*) differs significantly between adopters and nonadopters. This rules out the screening hypothesis.

Adoption of Exclusive Territories. If exclusive territories do indeed enhance the odds of survival of young franchise chains, why do some systems fail to adopt them? We attempt to answer this question by estimating the adoption equation (Table 6). In Model 1, W includes the following set of predetermined variables: industry and cohort dummies, *SIZE, YEARSINC, EXPERIENCE, REPEAT, #0STORE, #1STORE, EGINDEX*, and measures of the friendliness of the legal environment regarding encroachment and termination. Model 2 adds our measure of financial position. *#1STORE* is the only variable significantly associated with the adoption of exclusive territories, a result whose interpretation is unclear. If there are costs to adopting exclusivity, none of the variables we measure seem to shift them. That observables explain so little of the variance in adoption of exclusive territories constitutes a puzzle that we attempt to elucidate in the discussion.

A subtle alternative explanation to the survival results is that franchisees may just pay for exclusivity. In this case, franchisors who do not provide exclusive territories may be rationally trading-off increased intertemporal variance in profits (and hence a higher probability of failure) against current profits in the form of higher franchise fees. Table 7 shows that franchise fees do not significantly differ between adopters and nonadopters, nor is *FRFEE* significantly correlated with adoption ($r = 0.07$). This result concurs with the extant empirical literature on franchising, which has *not* found any evidence that franchise fees are used to keep franchisees at their reservation utility level, as a standard one-sided or two-sided moral hazard model would predict (Lafontaine 1992).

Table 6 Probit Models for the Adoption of Exclusive Territories

	(1)	(2)
ENCROACHMENT	.247	.571
	(.662)	(1.373)
%*ENCROACH*	−.219	−.591
	(−.468)	(−1.150)
TERMINATION	.121	−.023
	(.312)	(−.057)
%*TERMINATE*	.041	.068
	(.083)	(.130)
#0STORE	.823**	.405
	(1.976)	(.762)
#1STORE	1.346**	1.122**
	(3.334)	(2.346)
EGINDEX	.699*	.517
	(1.799)	(1.126)
$Ln(1+SIZE)$	.195	.189
	(1.340)	(1.189)
YEARSINC	−.004	−.002
	(−.438)	(−.230)
EXPERIENCE	.121	.027
	(.900)	(.190)
REPEAT	.054	.050
	(.274)	(.229)
$Ln\left(\frac{ASSETS}{1+SIZE}\right)$		.087*
		(1.817)
Cohort dummies	Yes	Yes
Industry dummies	Yes	Yes
Log likelihood	−72.658	−63.339
Pseudo R^2	.040	.051
Observations	$n = 170$	$n = 153$

Note. Two-tail t statistics are shown in parentheses. *Significant at the 10% level of confidence. **Significant at the 5% level of confidence.

Table 7 Comparison Between Adopters and Nonadopters of Exclusive Territories

	Adopters		Nonadopters		
	m	n	m	n	t statistic
FRFEE	$20,017	142	$18,158	28	−.90
MNW/CASH	8.699	98	13.480	18	.58
SCREEN	18.697	99	18.778	18	.08
ΔLn(OUTLET)	1.063	121	.616	22	−1.93*
Ln(BIAS)	.756	107	1.178	19	.193

Note. *Significant at the 10% level of confidence.

7. Discussion

If neither observable system characteristics nor "usual suspects" (such as trust, growth expectations, or variance in the quality of business opportunities) can explain our result, then what can? The data collected during interviews with 16 founders of franchise systems in the sample provide a thick description of the contract-design process in general, and of the decision to adopt territorial restrictions in particular. We found that adopters and nonadopters presented very different rationales to motivate their choices regarding exclusivity, regardless of whether or not they failed. Adopters were highly cognizant of franchisees' fear of hold-up through franchisor encroachment. For instance, one of the adopter told us:

> We tried to put ourselves in the franchisees' shoes to see what we thought would create the best opportunity for a fair relationship. I think that it is a foregone conclusion that you would offer an exclusive territory. As a franchisee, I would want some protected territory because I know that encroachment is one of the most highly disputed issues in franchising. Franchisees sue when they feel like they have been given some promise of exclusivity and then the rules change as the company grows. Then they feel like they have been encroached on in their designated territories.

While nonadopters were no less articulate or informed about the importance of exclusive territories to franchisees, they considered franchisees' hostility to nonexclusivity unreasonable. Their main concern was that exclusivity would allow franchisees to hold them up through underdevelopment. In the words of such a franchisor (whose system had failed):

> We didn't offer exclusive territories because exclusive territories defeat our purpose. If I want to open more outlets to grow rapidly, and I give franchisees an exclusive territory around their stores, it is harder to grow. If they have a protected radius, I cannot put a store in there. That means that to add outlets, the existing franchisees have to have deep pockets so that they can afford to buy new stores and the operator has to do a good job. If they can't afford new stores and they don't operate well, they will slow down our growth if we can't put someone else in the area. While some of the franchisees mention the problem of exclusivity in buying outlets, it really comes down to whether or not they believe in our credibility. It is the trust factor. Do they trust who they are getting into business with? They have to trust that I am not going to put another outlet right next to them.

Clearly, these entrepreneurs possess different knowledge about the incentive effects of exclusive territories, and both rationales seem reasonable ex ante. Why does the adoption rationale have better survival properties? We can make some progress in understanding the mechanisms through which nonexclusivity leads to survival by focusing on the set of systems that did not provide exclusive territories, but nonetheless survived. Much to our surprise, among the four such franchisors we interviewed, three had later switched from not having exclusivity to providing franchisees with a protected territory. One of these "switchers" told us:

> Our franchise consultant was adamant that we should not have exclusive territories. He cited numerous examples of franchise systems that had been too generous with protected territories and had permitted competitors to achieve a dominant market share in markets where the franchisor was prohibited from expanding because of the outlets already given to franchisees. Having been a franchisee, I was not entirely comfortable with that. But initially we took the recommendations. However, in discussing the franchise concept with prospective franchisees, the issue of exclusive territories came up repeatedly. A lot of the franchisees were uncomfortable without an exclusive territory. They were obviously concerned that we were going to put an outlet right down the street, cut into their business and damage them financially. They brought up documented cases of franchisors who had not acted responsibly and put in too many franchises and caused damage to the franchisees. The problem was that it came down to "trust me." We know that we were not going to put someone right across the street from an existing franchisee. But we had to tell the franchisee that they had to trust us. That was tough from the point of view of the franchisee. I recall my reaction many times when I was a franchisee and the franchisor said "trust me" and I would think, "not with my money." So we adjusted the policy and developed a protected territory.

This supports the idea that exclusive territories do not slow down the growth of new chains, as nonadopters claim. Rather, it suggests the opposite: The absence of an exclusivity clause in the contract makes it very difficult to attract franchisees to a new system. The overall sample provides some direct evidence

in support of this proposition. In Table 7, we show that $\Delta Ln(OUTLET)$, the rate of growth of the system between Year 1 and Year 2, is significantly higher for adopters than for nonadopters. We also include this variable in our main survival model (see Table 5, Model 6). Although growth indeed negatively influences the odds of exiting franchising, the results are not statistically significant. We caution readers against putting too much weight on this result. First, growth is obviously endogenous. Second, including this variable shrinks the sample by 15% and therefore selects on the dependent variable.[13]

The interviews allow us to shed some light on other important issues. First, they provided information about the locus of decision making in the contract-design process. In the subsample of 16 entrepreneurs we interviewed, every founder claimed to have final decision-making authority. Nonetheless, third parties (franchise consultants and attorneys) were used to design the contracts. The division of labor between franchisors and lawyers was as follows: Franchisors generally began by selecting a few policies of particularly high salience, such as the royalty rate or franchise fee. Because it was too costly for most of the franchisors in the sample to pay a lawyer to write a fully customized contract, those policies were turned over to attorneys who filled in the remainder of the contract using boilerplate, with little attention to either consistency or context. In the case of the switchers, the importance of exclusive territories was initially overlooked, and adversity (the failure to attract new franchisees) triggered adaptation of the contract, despite the transactions costs incurred in doing so.

Second, adaptation in contract terms provides direct evidence on the "stickiness" of contracts in the sample. Among the 16 founders we interviewed, the set of 4 franchisors who did not fail and did not provide exclusive territories accounted for all of the changes regarding territorial protection, and three out of six changes regarding other policies we measure. Therefore, it is likely that the endogeneity bias mentioned earlier leads us to *understate* the importance of exclusive territories for survival.

Our results suggest that entrepreneurs select contract provisions on the basis of a small number of simple routines (Nelson and Winter 1982). These routines are sometimes developed through formal learning. For example, a new franchisor might take an organizational economics class in business school and learn a formal economic model for a new firm expansion strategy. Other times, routines are developed via imitation.

One new franchisor we interviewed claimed that he copied McDonald's policy of nonexclusivity. However, in his history of McDonald's, Love explains that:

> When Kroc started McDonald's, selling exclusive territories was the first rule of franchising.... While some early franchisees were granted territories for metropolitan areas, ... Kroc quickly began to cut down the area covered by a franchise to a one- or two-mile radius, and by 1969 to the street address the store (Love 1995, pp. 57–60).

Therefore, through imitation, this new franchisor adopted a policy appropriate for a mature franchise system, without understanding that McDonald's adopted a different arrangement in its early stage of development. Similarly, another franchisor in the sample declared it was following Subway's lead when denying exclusive territories to franchisees, even though Subway faces chronic litigation from franchisees because of encroachment-related disputes.

The degree of elaboration in the routines used by entrepreneurs to design their contracts reflects the amount of knowledge of contracting they possess. For instance, one franchisor claimed that he set the royalty rate at 5% "*because it had a nice ring to it*," whereas another franchisor considered the industry average and set his royalty rate below it "*so that our franchisees would make money and this would benefit us in the long run*."

Because the firms in our sample forego similar opportunities when deciding to grant protected territories to franchisees, their adoption decision is largely unaffected by variables shifting the cost of this provision. Rather, this decision is highly sensitive to the distribution of knowledge among entrepreneurs

[13] There exists another mechanism through which franchisors could be selected for survival if they adopt exclusive territories: the self-selection of high-quality franchisees into systems providing territorial restrictions. Unfortunately, we do not have any data on the franchisees belonging to the chains in our sample, and therefore cannot present evidence for or against the self-selection hypothesis.

regarding the adverse effects of hold-up. Moreover, the founders of these franchise chains often lack the information necessary to grasp complex interrelationships between different dimensions of activities they are undertaking, such as interrelationships between incentive effects of different contract provisions. A wide variety of evidence shows that individuals do not make decisions on the basis of a deep understanding of complex systems, but instead rely on simple heuristics in their decision making (Kahneman and Tversky 1974). Because routines are most often individual decision rules, contract provisions are not adopted as a system, but borrowed from different places. Thus, different routines may lead to the adoption of different contract provisions, even when these contract provisions may prove to be contradictory to one another.

Overall, our findings are consistent with an evolutionary view of contract design. Boundedly rational entrepreneurs differ in their ability to recognize the payoffs associated with different contract provisions. As a result, in any cross-section of new contractual arrangements, at least some will have been designed on the basis of an "erroneously imagined decision framework" (Kirzner 1997, p. 71). Entrepreneurs do not always exhaust opportunities to search for the additional information they need to improve this decision framework because they do not necessarily know what they are ignorant about. Since transactions costs incurred to alter initial designs are high, and entrepreneurs must learn that their previous decisions were erroneous to change them, flawed contracts may persist until the organization itself fails (Hannan and Freeman 1984). As a result, efficient organizational designs will be observed in equilibrium, not necessarily because entrepreneurs initially designed optimal contracts or readjusted them when new information arrived, but because the environment selected out organizations with problematic designs. In our sample, entrepreneurs whose contract-design experiments proved to be more consistent with economic theory were rewarded for their superior information with survival.

One limitation of this paper is the ad hoc nature of the data-collection period. The representativeness of the time period is important because it may explain which contract provisions franchisors tend to "get wrong." Population-level learning might focus on issues of highest salience to entrepreneurs at a particular point in time. Given the salience of exclusive territories to entrepreneurs at the time of our study, new franchisors in future cohorts might know that the provision of exclusive territories is important to franchise-system survival. Consequently, new franchise systems established in the future might not be selected on the adoption of this provision, and other contract provisions might be associated with survival. Similarly, new franchise systems established in prior periods might have adopted more inappropriate contract provisions than the new franchise systems in our sample, and selection might have occurred on the basis of contract provisions for which there was no selection in our sample. Overall, the ability of entrepreneurs and their agents to design optimal contracts might be improving over time, making the selection of new ventures on the basis of contract design less important in the future than it was in the past.

8. Conclusion

Williamson (1975) and his followers have presented a wealth of evidence supporting the idea that equilibrium organizational arrangements align transactions and incentives in a cost-minimizing way. Like Silverman et al. (1997), we turn this logic on its head, arguing that, *out of equilibrium*, entrepreneurs who fail to economize on agency and transactions costs are selected out. We identify an important factor explaining the survival of young franchise chains: the use of exclusive territories. We document that franchise systems that provide franchisees with protected geographic territories fail at a lower rate than those that do not provide such protection. This effect arises because the threat of franchisor encroachment makes it difficult to attract new franchisees, slowing down growth. Moreover, the lack of protected territories increases the probability of intrachain conflict and distorts the level of franchisees' investments in systemwide assets away from the optimum. Finally, it is possible that higher quality franchisees self-select into contracts providing exclusivity.

Despite the benefits of exclusive territories, some entrepreneurs fail to adopt this policy. The reason is not that they face higher costs of adoption. Rather, their limited knowledge of contracting leads them to overlook the importance of the franchisor encroachment problem when designing their contracts. Because franchise agreements are sticky, and bounded rationality prevents these entrepreneurs from identifying the payoffs associated with adoption, we often observe nonexclusive arrangements persisting until failure.

Hopefully, our detailed description of the contract-design process will convince theorists that, along with unforeseen contingencies, writing costs can usefully motivate incomplete contract models. This literature has strayed away from its behavioral origins, producing ever more sophisticated models often devoid of empirical content. We propose that bounded rationality should be restored as an essential ingredient of the incomplete contract paradigm.

The results of this study also suggest that it would be fruitful to adopt a more evolutionary approach to organizational economics than currently exists in the literature (Alchain 1950, Nelson and Winter 1982). Contract design is the result of experiments about the desirability of specific contract provisions, chosen on the basis of routines. Cross-sectional tests of transactions costs arguments may be conclusive because selection on the contract-design experiments of entrepreneurs leads to the survival of some and the failure of others.

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Technical Appendix 1: Ellison-Glaeser Index of Concentration

We have attempted to account for the idea that the decision to adopt exclusive territories at inception of a franchise system might depend on the preexisting density of the network of company-owned outlets in the system. An immediate issue is therefore to measure "system density."

It seems natural to begin with the widely used measure of concentration, the Herfindahl index: $HERF_i = \sum_j SHARE_{ij}^2$, where $SHARE_{ij}$ measures the share of System i company-owned outlets located in State j as of Year 1. Thus, systems whose network of outlets is geographically sparse will exhibit low values of $HERF$, whereas dense systems will exhibit values of $HERF$ close to 1 ($0 \leq HERF \leq 1$). While the Herfindahl provides an easily interpretable measure of concentration, three issues arise in the context of young franchise systems.

First, many systems in our sample have either zero or one outlet when they begin franchising. The first case ($n = 53$) occurs when an entrepreneur's only asset is an idea that she wants to commercially exploit. The second case ($n = 48$) corresponds to entrepreneurs who operate a single outlet and think that they could expand their business through franchising. Of course, the concept of density is ill-defined for such systems, and this creates a nonlinearity in the distribution of density that we capture through two dummy variables, *#0STORE* and *#1STORE*.

Second, for the remaining 69 systems in the sample, there are relatively few observed outlets per system. For example, nearly 65% of these systems own fewer than 5 stores, and relatively few (17%) have more than 10 stores. This fact makes it difficult to distinguish "true" density (as a feature of the locational choices of system owners) from lack of actual variation due to insufficient opportunity to observe locational choice over a large number of outlets. Systems that have only a few outlets will tend to exhibit high values of $HERF$, but that is not necessarily indicative of genuine high concentration.

Third, we would like to assess the degree to which a system exhibits "excess" density relative to the underlying distribution of retailing activity in the overall market. While the Herfindahl measures the absolute level of density, we need to correct for the state share of overall retail activity to assess whether a system exhibits "excess" density. Clearly, it would have been possible to use other baseline distributions, such as the distributions of population or land mass across states, but the distribution of retail establishments seemed the most relevant in our context.

To tackle the last two issues, we use an alternative index based upon the innovative work of Ellison and Glaeser (1997, hereafter E&G). E&G derive a geography-based index of industrial concentration from a discrete-choice model of location, taking into account the fact that industries vary in the size distribution of firms. E&G's framework can be mapped precisely into the evaluation of retail chain outlet location, allowing us to correct for "small numbers," and to measure the excess density of a chain (vs. the absolute level of concentration). Each outlet location decision is analogous to the plant location decision with the baseline probabilities being determined by the relative retail market shares in different states (E&G use the distribution of employment across states because it is more germane to the plant location decision). By observing the same system multiple times, we are able to estimate the density level for each system ("industry" in E&G's context). *EGINDEX* is constructed as follows:

$$EGINDEX_i = \frac{SIZE_i}{SIZE_i - 1} \cdot \left[\frac{\sum_j (SHARE_{ij} - x_j)^2}{1 - HERF_0} - \frac{1}{SIZE_i} \right],$$

where $SHARE_{ij}$ is defined as above, x_j measures the overall share of U.S. retail establishments located in state j (obtained from the *Statistical Abstract of the United States*, 1998 Edition, p. 772), and $HERF_0$ refers to the U.S.-wide retail Herfindahl: $HERF_0 = \sum_{state\ j} x_j^2$. Relative to the simple Herfindahl defined above, *EGINDEX* accomplishes two objectives. First, it accounts for the fact that systems differ in the sheer number of outlets (*SIZE*), and in particular, corrects for the fact that a small number of outlets confounds true concentration. Second, *EGINDEX* takes into account system density only insofar as it differs from the pattern of retail market density across states. That is, if a system is dense in states that represent a high share of overall retailing activity, then the corresponding *EGINDEX* will nevertheless be low, since the difference between $SHARE_{ij}$ and x_j will be small. For *EGINDEX* to be high, any density must be above that which could be expected by observing the distribution of retailing activity across states.

A caveat is that the state is probably a coarser geographic unit of analysis than one would like to conduct this analysis. However, a county-level density index would require more detailed data on outlet location than is available to us. Finally, since *EGINDEX* is an estimator of the underlying true index of concentration, it is subject to small-sample bias: Unlike the Herfindahl, $0 \leq EGINDEX \leq 1$ obtains only asymptotically, as $SIZE \to \infty$.

Technical Appendix 2: Degree of Repeat Business Across Industries

Maintenance Services $= +1$	*Business Services* $= +1$
Restaurants $= 0$	*Building Services* $= +1$
Beauty Services $= +1$	*Computer Services* $= 0$
Hotels $= +1$	*Children Services* $= +1$
Printing Services $= 1$	*Automobile Services* $= -1$
Home Services $= -1$	*Recreation* $= -1$

Retail outlets, (other) services, and business services were coded by carefully considering the type of business involved. For example, in the retail category, a street corner newspaper outlet was assigned a value $REPEAT = 1$, while flower shops were assigned a value of $REPEAT = 0$ and locksmith shops a value of $REPEAT = -1$.

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