Mitigating Agency Problems through Investment Decisions: Evidence from Franchising

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This paper studies whether up-front investments can be used to mitigate subsequent agency problems. This can occur in any contractual setting in which the principal can terminate the contract before its expiration date and the opportunistic agent makes up-front investments. This setting typically describes — although it is not limited to — most forms of business partnerships. I test this view using franchise contract data and a natural experiment. In practice, the franchisor determines how much a franchisee needs to invest up-front. The initial investment combined with the franchisors threat to terminate the contract generates a bonding mechanism that reduces franchisees' incentives to free-ride on the franchisor's brand name. I show that franchisors affected by the passing of a law that restrict their ability to terminate misbehaving franchisees ask their franchisees for higher up-front investments. Similarly, when direct monitoring is more costly, franchisors require larger up-front investments. The data suggest that contractual up-front investments are important tools to mitigate conflicts of interest.

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1. Introduction

A large body of work has studied how agency conflicts can distort the investment decisions of two contracting parties (see Bertrand and Mullainathan (2003), Becker and Stromberg (2011), etc.).[1] The current empirical literature, however, has overlooked settings in which the opportunistic agent makes up-front investments.[2] In those settings, it is possible that the causality goes in the opposite direction: The principal could influence the agent's up-front investments (capital expenditures) to mitigate subsequent agency problems. Exploring this possibility is important, as in many business contracts exposed to agency conflicts the party acting as the agent makes up-front investments (e.g: manufacturer-distributor contracts, franchisor-franchisee contracts, outsourcing contracts, etc.). In this paper, I empirically study franchise contracts and I find evidence consistent with the strategic use of up-front investments to mitigate agency conflicts.

Intuitively, if a principal and an agent engage in a project, the principal can overcome the non-contractibility of the agent's effort by using the perfect contractibility of up-front investments. If investments are partially sunk, and the principal can credibly threaten to terminate the contract before its expiration date, the agent will have more to lose the more he has invested in the project. In other words, the principal can modify the size of the project to discipline the agent's behavior.

Franchising provides an ideal laboratory to test this idea. The franchisor (i.e.: the principal) not only influences, but actually specifies how much the franchisee (i.e.: the agent) needs to invest in the opening of a new franchise unit, and she can terminate the contract before its expiration date. Moreover, franchising is economically relevant — franchise sales account for 12% of the U.S. G.D.P. — and there is good data availability on franchising contract terms from franchising directories. The average (median) up-front investment in a franchise unit is $520,000 ($120,000).

The agency problem in this context is that franchisees can free-ride on the franchisor's brand reputation. Franchisees benefit from operating under the franchisor's brand-name; however, they need to exert a certain level of sales effort to maintain its value. As sales effort is non-contractible, franchisees have a tendency to underprovide sales effort relative to the effort the franchisor would like them to exert.

When the franchisor's ability to monitor sales effort or terminate the contract — upon detecting

[1] See Stein (2003) for a literature review.

[2] There is substantial theoretical research on these settings (see Klein (1980), Klein and Leffler (1981) and Williamson (1983), among others).

low sales effort — is limited, the agency problem is more severe. Under those circumstances, the franchisor can ask for higher investment requirements to offset the franchisee's weak incentives to exert effort. In other words, the franchisor can overcome the low probability of detection and/or termination by increasing the size of the punishment. This logic generates two testable hypotheses. First, franchisors ask for higher investment requirements when it is hard for a franchisor to terminate a contract with a misbehaving franchisee (i.e.: when law enforcement is weak). Second, investment requirements are higher when directly monitoring franchisees is too costly.

Empirically, I test the impact of weak law enforcement on up-front investments using a natural experiment: the passing of state level good-cause termination/non-renewal laws for franchise contracts. These laws were passed in 14 states between 1971 and 1980 and in Iowa in 1992. Franchisors located in states where these laws were passed have a reduced ability to terminate/not-renew a contract with an underperforming franchisee.[3] I measure monitoring costs using the number of states in which a franchisor operates.

I use two panel datasets to test my predictions. One dataset covers a time period surrounding the passing of good-cause termination laws in some states. The other dataset covers a time period subsequent to the passing of the good-cause laws, but is larger and more detailed than the first dataset. The unit of observation in both datasets is a franchisor-year.

The first dataset is hand-collected and contains information on 278 franchisors that offered contracts to prospective franchisees both in 1979 and 1982 (556 franchisor-year observations). I hand-collected data for these years, as in 1980 California and Illinois passed good-cause laws. These two states are the states with biggest economic relevance, in terms of total income and number of franchisors headquartered in them, among the 15 states that passed these laws. The main finding from this database is that franchisors headquartered in California (39 franchisors) and Illinois (21 franchisors) incrementally increased the average investment requirements asked from prospective franchisees by 4.7% relative to franchisors located in states where there was no change in the law.

The second dataset is a large unbalanced panel for the period 1994-2009. This dataset contains yearly prospective contract information for 2,017 franchisors, totaling 10,047 franchisor-year observations. Using this dataset I analyze the long-run effect of good-cause laws according to the franchisors' state regulation. I find that franchisors located in the states where good-cause laws were passed require investments 4.5% higher than franchisors located in states without such laws.

Franchisors that operate units in multiple states can, under certain circumstances, contract

[3]When good-cause laws are passed, courts ask for more detailed evidence about the cause of the termination/nonrenewal of the franchise contracts. Arguments like "economic reasons" or that a franchisee is not on "good standing" are not usually considered good causes (Brickley et al. (1991)). These law changes have been used to study other dimensions of franchising (see Brickley et al. (1991), Brickley (2002) and Klick et al. (2007, 2010)).

around their in-state regulations. I conduct further tests to isolate the impact of good-cause laws on investments for franchisors that have no chances of contracting around them. I estimate the impact of good-cause laws on investment requirements, utilizing information only for franchisors that operate all their units in the *same* state where they are headquartered (909 franchisor-year observations). For this subsample, I find that franchisors located in states where good-cause laws were passed ask for investment requirements 38% higher than franchisors located in states without such laws. This number is 8 times higher than what I find using the whole sample. This is evidence that franchisors that operate units in multiple states find ways of contracting around their in-state regulation. More importantly, this result highlights that the franchisor's reduced ability to terminate the contract with misbehaving franchisees has a substantial impact on the up-front investments the franchisor asks franchisees to make.

In addition, I find evidence that franchisors that expand their geographic scope of operations ask for higher investment requirements as their average monitoring costs increase. For every additional state in which a franchisor operates, she increases the average investment requirements she asks prospective franchisees to make by 0.6-1%. This result is robust to the inclusion of control variables that account for the endogenous nature of the decision to expand operations, and to the inclusion of additional variables that control for alternative explanations other than the monitoring cost hypothesis.

I conduct further tests for the monitoring cost hypothesis using an alternative measure of monitoring costs, based on the distance franchisors need to travel to directly monitor their franchise units. The result that up-front investments increase when monitoring is costlier is confirmed using this alternative measure.

I also examine royalty rates. The royalty rate is the percentage of the franchisee's sales that is paid on a monthly basis to the franchisor.[4] I find that monitoring costs and weak law enforcement do not have a significant impact on royalty rates. Thus, in the present setting, the data suggests that the agency problem is not solved by increasing the share of the project the agent holds, but by increasing the size of the project itself.

This paper contributes to the literature on bonding mechanisms and agency problems. Previous papers have explored, from a theoretical perspective, the role of asset specificity in disciplining the investing party's behavior (e.g: Klein (1980), Klein and Leffler (1981), Williamson (1983)). These papers propose that the investing party should increase the specificity of his investments to generate a credible commitment to act on the best interest of the other contracting party. In the present paper, rather than studying how asset specificity can be modified to generate a credible

[4]The royalty rate is decided at the beginning of the contract and it is fixed for the full length of it.

commitment, I study how changes in the investment amounts (capital expenditures), for any given degree of asset specificity, can generate a similar mechanism.[5] The approach I propose generates predictions that can be tested straightforwardly, as they do not rely on measuring the degree of asset specificity of investments. This is the first paper to provide empirical evidence that up-front investments are used to mitigate subsequent agency problems.

My results contrast with the results from previous empirical papers that study the impact of *ex post* conflicts of interest on *ex ante* investments. While I find that *ex ante* investments increase when agency problems are expected to be more severe, previous papers find that *ex ante* investments decrease with the strength of *ex post* agency conflicts. Kale and Shahrur (2007) show that a firm's customers (downstream firms) and suppliers (upstream firms) reduce their investments in R&D when the leverage of the firm with which they are doing business is higher. Kale, Kedia and Williams (2010) find similar results using the CEO's risk-taking incentives instead of leverage. They interpret their results as evidence that a firm's customers and suppliers reduce relationship specific investments when they anticipate a severe conflict of interest with the firm due to the firm's strong incentives to take risk. In a similar vein, Allen and Phillips (2000) show that firms that do not form alliances/joint-ventures with their corporate block investors invest less than firms that do form this type of partnership. They argue that alliances and joint-ventures decrease *ex post* monitoring costs and hold-up problems. Thus, in the absence of strategic alliances, the conflict of interest between firms and their corporate block investors is expected to be more severe, and this is why lower investments are observed.

The differences in results, between those of previous articles and the ones I present here, are a consequence of differences in the settings that are being studied. Previous empirical papers analyze situations in which the residual rights over the physical assets (which compose the investments) do not belong to the opportunistic agent. In the setting I analyze, however, the residual owner of the physical assets is the party that can act opportunistically (the type of setting studied by the theoretical literature on bonding mechanisms). When ex ante investments are made by the opportunistic agent, they can be used to discipline his behavior. This is why overinvestment, and not underinvestment, is observed when agency problems are expected to be more severe. The setting I analyze describes a broad array of business contracts.

My paper also adds to the literature on franchising by being the first to study the determinants of franchise investment decisions.[6] My results on up-front investments, taken together with the results

[5] My approach differs from previous papers, such as Holmstrom and Tirole (1997), in that the mechanism I propose to solve the agency problem is distorting the amount to be invested in a project (size distortion), not the fraction of the investment the agent finances.

[6] Previous empirical literature in franchise contracts studies initial franchise fees and royalty rates (Lafontaine (1992), Lafontaine and Shaw (1999), Brickley (2002), among others), area development agreements, mandatory

on royalty rates, imply that the realignment of incentives in franchise contracts occurs through variations in the size of the project and not through variations in the share of the project the agent holds. These results add a new perspective on potential solutions to agency problems when changing the share of the project the agent holds is not desirable or possible (I explain why this is the case for franchising in section 2.3).

The rest of the paper is organized as follows. Section 2 gives background on franchising and introduces the hypotheses to be tested. Section 3 lays out the empirical strategy. Section 4 describes the data. Section 5 presents the main results, and Section 6 presents robustness checks. Section 7 discusses potential alternative hypotheses, such as potential hold-ups by the franchisor, and why they cannot explain the patterns observed in the data. Section 8 concludes.

2. Development of Hypotheses

In this Section, I develop the hypotheses of the paper.[7] In Section 2.1, I develop the hypotheses in a general principal-agent context. In section 2.2, I provide a brief background on franchising and explain why franchising is a good setting to test the hypotheses developed in section 2.1. In Section 2.3, I argue why up-front investment can mitigate subsequent agency problems in franchise contracts, while other pecuniary contract terms cannot.

2.1. Hypotheses

Consider the following setting. Two parties — a principal and an agent — want to engage in a project. The agent makes up-front investments and is the residual owner of the assets that compose the investment. The agent can take an action (e.g.: effort) which is not perfectly observable, and thus cannot be contracted on. The incentives of both parties are not aligned, as the agent's action has an externality on the principal's payoff. Thus, from the principal's perspective, the agent has a tendency to supply his action at a suboptimal level. The principal can influence the agent's up-front investment decision. Up-front investments are observable and verifiable, and thus can be contracted on. The principal has access to a monitoring technology which allows her to observe, with certain probability, the agent's action. If the principal detects that the agent's action is supplied at an improper level, she can terminate the contract before its expiration date. To the extent that investments are partially sunk, the agent suffers from the anticipated termination. The threat of

advertisement expenditures, franchisee's passive ownerships (Brickley (1999)) and contract length (Brickley et al. (2006)).

[7] The hypotheses I develop in this section are formally derived in Sertsios (2011).

contract termination generates a self-enforcing mechanism that disciplines the agent's behavior.

The setting described above is the setting studied by the theoretical literature on bonding mechanisms, and describes a broad array of situations, including supplier-buyer contracts (Williamson 1983); manufacturer-distributor contracts (Klein and Murphy 1988); producers and consumers interactions (Klein and Leffler 1981); franchise contracts (Klein 1980, 1995), etc. One mechanism proposed by the previous literature to improve contract self-enforcing conditions is to increase the specificity of the assets that compose the agent's investment. Although theoretically appealing, this mechanism is very hard to document as reliable measures of asset specificity are difficult to obtain.

I propose that a somewhat different mechanism can also be used to improve contract self-enforcing conditions. I propose that that the agent's up-front investments should be larger, for any given level of investment profitability and asset specificity. Putting it more broadly, I propose that the amount of ex ante investments can be used to mitigate the subsequent agency problem.[8] The mechanism I propose generates predictions that can be tested straightforwardly, as they do not rely on measuring the degree of asset specificity of investments.

To set the intuition, consider the following example. A principal and an agent engage in a project. The agent initially invests \$100,000 in the project. If the profitability of the assets in place is 30% and the salvage value of assets is 50%, the agent will fear losing a net value of \$100,000x(1.3-0.5)=\$80,000 if he is caught misbehaving and his contract is terminated. If, however, the agent invests \$120,000, he fears the loss of \$120,000x(1.3-0.5)= \$96,000. Therefore, the extra \$20,000 of up-front investment results in the agent losing \$16,000 more in case of an anticipated termination. Thus, an increase in ex ante investments generates additional ex post rents that help to discipline the agent's behavior.[9]

If the hypothesis that up-front investments are used to mitigate agency conflicts is correct, then higher up-front investments should be observed when other components of the self-enforcement mechanism are particularly weak. One of these scenarios is when there are legal constraints that make it harder for the principal to terminate a misbehaving agent (weak law enforcement). In that

[8] In theory, there is a simpler mechanism to increase what the agent has to lose in case of contract termination. The principal could ask the agent to post a bond with her, promising to return it if the agent behaves according to her specifications. In practice, however, this mechanism would generate incentives for the principal to act opportunistically (see Shapiro and Stiglitz 1984). The principal would have an incentive to terminate the contract with the agent and not returning the bond, even if the agent has behaved according to her specifications. As courts can anticipate the principal's incentives, they would ask for stronger evidence of the agent's misbehavior in order to allow the principal to terminate the contract. Thus, in practice, bond posting would reduce contract self-enforcement conditions, rather than enhance them, as the probability of contract termination will be reduced due to the introduction of opportunistic behavior from the principal.

[9] In the Appendix, I generalize the example and show that its implication holds when the profitability of investments decreases with additional investments. It also holds for different degrees of asset specificity and regardless of whether the agent has to borrow money to finance part of the investments.

scenario, the principal should ask the agent to invest more up-front in order to increase the size of the agent's punishment, in case of termination, to restore the self-enforcing conditions.[10] Thus, I test the following implication:

Hypothesis 1: up-front investments increase when law enforcement is weaker.

Another scenario that might weaken the contract self-enforcing conditions is when the principal's monitoring costs are high. If monitoring costs are high, the principal might respond by optimally reducing the monitoring frequency. A reduction in monitoring frequency, however, reduces the probability of detection, and thus of termination, of a misbehaving agent. Therefore, the principal should ask the agent to invest more up-front in order to realign the agent's incentives with her own. Thus, I test the following implication:

Hypothesis 2: up-front investments increase when monitoring costs are higher.

2.2. Background on Franchising

Franchising represents a large fraction (1/3) of retail sales in the United States. Franchises encompass a variety of business formats such as educational services, day-cares, car repair shops, fast food restaurants, clothing retailers and lodging, among others.

The relationship between a franchisor and a franchisee is governed by a contract. The terms of the contract are set by the franchisors, and most of them are non-negotiable. The contracts have a fairly long duration. The average (median) length of a contract is 11 (10) years and most of them are renewed after the initial period expires.[11]

In franchise contracts, the amount that a franchisor asks franchisees to invest in the opening of a new franchise unit is called investment requirements. Once the franchisor and the franchisee agree on the market to be served, the franchisor determines the size of the outlet the franchisee needs to lease and the investments to be made in the outlet. She specifies any leasehold improvements the franchisee needs to undertake (i.e., the architectural design) and the equipment and furniture the

[10] If investments and effort are complements, higher investments can increase sales effort in the absence of a contract termination threat. However, the hypotheses to be tested in this paper are related to the probability of detection of effort under-provision and contract termination. Thus, they hold regardless of the potential complementarity between sales effort and investments.

[11] Blair and Lafontaine (2005) using USDOC (1988) data, provide evidence that, in 1986, 3% of the 246,664 franchised outlets in operation in the United States were terminated before the specified terminal contract date (i.e., anticipated termination). Forty percent of the contracts terminated in anticipation were propitiated by franchisors. They also document that for the same year, 13,000 contracts were up for renewal. Only 7% of those contacts were not renewed. From the 7% not renewed, 20% (1.4% of the total) were not renewed because the franchisor did not want to continue in the relation with the franchisee.

franchisee needs to purchase.[12] Put together, these factors amount to what is known as investment requirements: an amount determined by the franchisor but fully paid by the franchisee.[13]

The incentives of the franchisor and their franchisees do not coincide. This is the case even if the franchisees are the residual claimants of the franchisor's business, because franchisees can free-ride on a common brand name. As a consequence, franchisees have a tendency to under-provide sales effort in several dimensions, such as ambiance, product assortment, maintaining a certain level of customer service and maintaining a standardized level of quality for the products sold. To control the franchisees' sales effort, the franchisor relies on field visits, and she can resort to contract termination if her assessment of the franchise unit is substandard.

All in all, franchising meets all the conditions to test the hypotheses developed in section 2.1: the franchisor (principal) not only influences, but actually specifies how much the franchisees (agents) need to invest up-front; the franchisees have an incentive to act opportunistically by under-providing sales effort, as they not fully internalize the impact of their sales effort on the franchisor's brand-name reputation; and the franchisor uses a self-enforcement mechanism to curb franchisees' incentives.

In practical terms, the franchisor can ask the franchisee to invest more by asking him to operate a bigger outlet. For example, in the case of a restaurant, the franchisor might ask the franchisee to lease a bigger outlet and to install additional tables, ovens, etc. to run the business. In this way, the capacity of the restaurant might be less binding, say, during the weekends. Thus, the selling capacity of the restaurant increases.

Although additional investments might help to discipline franchisees' behavior, they are costly to franchisees. From a franchisee's perspective, additional investments may have a negative net present value. A franchisee is forced to invest more than what he would have invested in the absence of a conflict of interest between him and the franchisor. The cost of this extra investment is ultimately borne by the franchisor, as the franchisor needs to modify other contract terms to make the contract equally attractive to the franchisee (i.e., the franchisee's individual rationality constraint is binding).[14]

The franchisor may be willing to bear the cost of over-investment if the additional investment helps reduce actions by the franchisee that could severely damage her reputation as a brand. In

[12] Investment requirements sometimes include working capital and money for the lease. The administrative costs that a franchisor incurs in setting up a new franchise unit are recovered through the initial franchise fee. They are not part of the investment requirements.

[13] There is very little additional investment in the course of the contracts.

[14] Alternatively, by increasing investment requirements the franchisor might lose some potential franchisees to competing franchisors if franchisees are heterogeneous in their type (i.e., in their propensity to under-provide sales effort).

other words, the franchisor is expected to ask for higher investment requirements only when the self-enforcement mechanism is particularly weak: when law enforcement is weak and monitoring costs are high.

2.3. Why Investment Requirements and Not Other Contract Terms?

In this paper I propose that *ex ante* investments can mitigate subsequent agency problems. However, in the context of franchising, one could argue that other pecuniary contract terms, such as initial franchise fees and royalty rates, can play a similar role. In what follows, I explain why initial franchise fees cannot mitigate agency problems and why the franchisor might optimally choose not to use the royalty rate as a tool to discipline the franchisees' behavior.

The initial franchise fee is a lump sum fee that the franchisee pays the franchisor at the beginning of the contract. Lafontaine and Shaw (1999) and Bond (1998) argue that the initial franchise fee is usually set to compensate the franchisor for the administrative expenses she incurs in setting up a new franchise unit. Weak law enforcement and monitoring costs are not expected to have an impact on initial franchise fees, as the initial franchise fees play no role in the self-enforcement mechanism. The initial franchise fee does not alter the franchisees' *ex post* cost-benefit analysis, as it does not play a productive role and it cannot be recovered in case of termination either.[15]

The royalty rate is a percentage of the franchisee's sales that is paid on a monthly basis to the franchisor. To understand why the franchisor might optimally choose not to modify the royalty rate in the presence of weak law enforcement and high monitoring costs, the existence of royalty rates needs to be explained. The relationship between a franchisor and her franchisees is characterized by a double moral hazard problem. So far, I have argued that the franchisees can refrain from exerting sales effort. However, the franchisor can also refrain from exerting effort along several dimensions, such as coordinating advertisement expenditures, giving ongoing support to franchisees and performing policing activities (see Lal (1990) and Battacharyya and Lafontaine (1995)). The intuition for the existence of a positive royalty rate is that the franchisor needs to have an interest in the franchisees' revenues in order to create the incentive for her to exert ongoing effort.

On the one hand, when law enforcement is weak and monitoring costs are high, the franchisor might want to decrease the royalty rate in order to give the franchisees a larger stream of profits that would be lost in case of contract termination. This would serve the objective of enhancing self-enforcement conditions. On the other hand, when monitoring costs are high and law enforcement is weak, the marginal cost of policing activity increases, and the franchisor needs higher compensation for her effort in order not to reduce it drastically (Brickley (2002)). Therefore, royalty rates might

[15] Initial franchise fees, however, can be affected indirectly through the franchisees' individual rationality constraint.

increase for this reason. Finally, regardless of the enforceability conditions, the franchisor has an incentive not to modify the royalty rate to avoid distorting her incentives to coordinate advertisement expenditures and provide ongoing support to franchisees.

In sum, the impact of weak law enforcement and high monitoring costs on royalty rates is ambiguous given that royalty rates serve multiple purposes to franchisors. In Section 5, I show that the determinants of investment requirements do not have a substantial impact on royalty rates.

3. Empirical Strategy

Investment requirement data, as well all contract data, are available solely at the franchisor level.[16] Franchisor level data come from private and government surveys where franchisors provide information on the contract terms they intend to ask prospective franchisees. For example, if a franchisor responds that the investment requirements are $120,000, this amount needs to be interpreted as the amount that a franchisee will, most likely, have to invest if he chooses to do business with that franchisor.

These franchisor level surveys also contain information on how many outlets a franchisor operates, in how many states, where the franchisor's headquarters is located as well as other franchisor characteristics. These surveys do not contain, however, the location of her franchise units or the identity of the states where they operate. Using this type of data, in Sections 3.1 and 3.2, I explain how I measure law enforcement and monitoring costs to empirically analyze their impact on investment requirements.

Before entering into the details of the empirical strategy, a brief clarification needs to be made. I do not attempt to empirically differentiate the use of investment requirements as a tool to improve the incentives of the franchisees that participate in the contract (i.e., moral hazard perspective) from its use as a device to improve the selection of franchisees that choose to participate in the contracts that franchisors offer (i.e., self-selection perspective). The hypotheses laid out in the previous sections were drawn in a moral hazard context, as the root of the incentive misalignment is a moral hazard issue: Franchisees have incentives to free-ride on the franchisor's brand name. However, the solution might also have a self-selection component as higher investment requirements can improve the quality of the pool of franchisees that enter into the contract in addition to improving the effort of those franchisees that choose to enter the contractual agreement.[17]

[16] with the exception of study cases such as Dnes (1993).

[17] Generally, franchisors have stringent selection processes in choosing their franchisees. Thus, I expect the self-selection effect to be of lower relevance. However, this is not something I can test empirically.

3.1. Law Enforcement

From 1971 to 1992, 15 states passed good-cause termination/nonrenewal laws.[18] Good-cause laws are laws that restrict the franchisor's ability to terminate and not renew a franchise agreement. These laws were passed because it was feared that franchisors could use their bargaining power to unfairly terminate, or threaten to terminate, a franchise agreement in order to get back a profitable outlet or renegotiate contract terms in their favor.

One consequence of these laws is that it is more difficult to control franchisees' sales efforts because these laws increase the costs of termination and non-renewal (Brickley et al. (1991)). Courts ask for more detailed evidence about the cause of the termination/nonrenewal of the franchise contracts. Arguments like "economic reasons" or that a franchisee is not on "good standing" are not usually considered good causes (Brickley et al. (1991)). Following the terminology I use in this paper, *law enforcement is weakened* with the passing of these laws.

Most of the franchising good-cause laws allow for a choice of law provision in the contracts franchisors sign with franchisees. That is, the franchisor can choose the state regulation that rules any particular contract. The choice of state regulation, however, is restricted only to the franchisors' headquarters state regulation and the regulation of the state where the franchisee is located. Legally speaking, there needs to be a *substantial relationship* between the parties and the chosen law. Consider, for example, a franchisor whose headquarters is located in Minnesota (a good-cause law state) that wants to sign a contract with a franchise unit located in Arkansas (a good-cause law state). This franchisor cannot simply incorporate herself in New York (a non-good-cause law state) and set all the litigation of the contract in that state. There is no substantial relationship between the location of the parties in the contract and the state where the litigation is attempted to be set.[19]

Under this setting, there are two scenarios under which, if the franchisor's headquarters is located in a good-cause law state, the good-cause law is likely to influence franchise contracts: when the franchise units are located in the same state as the franchisor's headquarters, and when the franchise units are located in other good-cause law states. I refer to these scenarios as A and B, respectively. Additionally, there is one scenario — scenario C — where the franchisor's headquarters state regulation is unlikely to influence contract terms: when the franchise units are located in states

[18] From the 15 states that passed these laws, only Virginia has good-cause restrictions for termination and does not have any restriction for nonrenewal. The other 14 states that passed a good-cause law are Arkansas, California, Connecticut, Delaware, Hawaii, Indiana, Illinois, Iowa, Michigan, Minnesota, Nebraska, New Jersey, Washington and Wisconsin. Additional states have passed milder termination restrictions, such us a 90- or 30-day notice upon termination.

[19] See Klick et al. (2010) for the specific details of when the firms can select the law and courts of non-regulating states.

without good-cause laws. Below, I explain in more detail each scenario. Understanding each scenario is important, as I use a dummy variable based on the franchisor's headquarters location to measure the impact of the passing of the laws (hereafter: *dummy law*). This dummy variable measures the impact of the passing of the law with error: It captures the impact of the passing of the law on scenarios A and B but not in scenario C. Further below, I propose two ways of addressing this mismeasurement.

Scenario A — where the franchisor and the franchisee are located in the same state — is particularly important, given that around 40% of the franchisors' units are located in the same state in which the franchisor's headquarters is located. In this scenario, if the franchisor and the franchisee are located in a good-cause law state, the law is going to have an impact on the contract the franchisor signs with the franchisee.

In scenario B — where the franchisee is located in a good-cause law state and the franchisor is headquartered in a different state — the franchisors' headquarters state law is also going to influence the contract the franchisor signs with the franchisee. A franchisor located in a state without good-cause laws can contract around the franchisee's state regulations by setting all the litigation to be in her headquarters' state. A franchisor located in a good-cause law state, however, cannot contract around the law, as good-cause laws also apply to the franchisee's headquarters states.

In scenario C — where the franchisee is located in a state without good-cause laws and the franchisor is headquartered in a different state — the franchisor's headquarters state regulations are not going to influence the contract the franchisor signs with the franchisee. It is in the best interest of the franchisor to be ruled by the franchisee's state regulations, given that good-cause laws do not apply there.[20]

I address the mismeasurement that scenario C causes on the *dummy law* in two ways. First, I include as an explanatory variable the interaction between the *dummy law* and the number of states in which a franchisor operates. The impact of good-cause laws on investment requirements should decrease with the number of states in which franchisors operate as their possibilities of contracting around their in-state regulations increase. The inclusion of the interaction term allows the parameter of the dummy law to capture the isolated effect of the good-cause laws on investment requirements. The interaction term, in turn, captures the extent to which the effect of good-cause laws on investment requirements is diluted for every additional state in which a franchisor operates.

Second, I perform additional tests using a sample in which the *dummy law* does not suffer

[20] In theory, franchisors could change their headquarters location to avoid any adverse in-state regulation. However, in practice, very few franchisors change their headquarters location. The most likely explanation is that franchisors operate a large fraction of their units in their headquarters state. Thus, changing their headquarters location to another state will decrease their ability to directly monitor many of their outlets.

from mismeasurement. In one of the datasets I use, it is possible to identify the state where the franchisees are located for franchisors that operate in a single state. I identify 909 franchisor-year observations for which the franchisor's headquarters state coincides with the state where all their units operate, and I estimate the impact of good-cause laws on investments using this subset of observations.

3.2. Monitoring Costs

Rubin (1978) and Brickley and Dark (1987), among others, have pointed out that the further away outlets are, the less frequently they will be monitored, because monitoring costs are higher. Put differently, a franchisor's monitoring costs increase when her outlets are geographically dispersed. Consistent with previous work in franchising, I measure monitoring costs using the number of states in which a franchisor operates (see Lafontaine (1992) and Lafontaine and Shaw (1999)). In the present setting, the number of states in which a franchisor operates is a valid measure for monitoring costs once one controls for the franchisor's brand-name, which can have a direct impact on investment requirements, and is likely to be positively correlated with the number of states. Therefore, in the regressions, I control for a franchisor's brand-name value, measured by the number of outlets a franchisor operates and by the franchisor's experience.

The number of states in which a franchisor operates is the measure of monitoring costs I use in the main result section — Section 5. To further assess its validity, in Section 6.1, I consider several robustness checks to ensure that the variable *states* is capturing monitoring costs and not other confounding factors. Additionally, in Section 6.2, I conduct further tests for the monitoring cost hypothesis using an alternative measure of monitoring costs, based on the distance a franchisor needs to travel to directly monitor her franchise units.

4. Data

I have two data sources: the Handbook of Franchise Opportunities (HFO) and Bond's Franchise Guide (BFG). They both contain information about contract terms that franchisors offer prospective franchisees.[21] The HFO data's main advantage is that it is older, so it allows me to study the within-franchisor effect of the passing of the good-cause laws on investment requirements at the time some of the laws were passed. The BFG data's main advantage is that it is much richer, allowing me to perform robustness tests. In what follows I describe in detail the data available from each data

[21] Both datasets contain information about business format franchises only. Traditional franchises (i.e., gas stations, soft drink bottlers and car dealers) are not present in the data.

source.

4.1. Bond's Franchise Guide

BFG is a private survey that started in 1993, issuing yearly editions, except for the year 2000, when there was no survey. Since 1994 the dataset has had a complete computerized version. I have access to the computerized version of the data for the period 1994-2009. As the good-cause laws were passed from 1971-1980 in 14 states, and in 1992 in Iowa, this dataset does not allow me to analyze the within-franchisor effect of the passing of the good-cause laws on investment requirements. However, it does allow me to study the long-run effect of the passing of the good-cause laws. That is, I am able to analyze whether a franchisor whose headquarters is located in a good-cause law state asks for investment requirements higher than a franchisor located in a state without such laws. Additionally, this dataset allows me to study the within-franchisor effect of monitoring costs on investment requirements. Moreover, given the richness of this dataset, I am able to perform several robustness tests using some variables reported in it.

The dataset consists of 10,047 franchisor-year observations. The number of franchisors in the sample is 2,017, and the average number of years a franchisor appears in the sample is five. The panel is highly unbalanced for two reasons: franchisors' entry and exit; and because franchisors do not always answer the survey.

Table I shows the summary statistics of the main variables I use in the empirical analysis. The main dependent variable is the investment requirement a franchisor asks prospective franchisees, net of the initial franchise fee. Additional contract terms shown in Table I are initial franchise fees and royalty rates. Investment requirements and initial franchise fees are expressed in nominal thousands of dollars, while royalty rate is expressed as a percentage of the franchisee's revenues. Whenever a franchisor asks for a range in any of these contract terms, I report the average between the two points of the range. This implies that these contract terms should be interpreted as the average contract terms a prospective franchisee would face if he chooses to do business with the franchisor.

−>Insert Table I here

Table I shows that while the mean investment requirement is $520,000, the mean initial franchise fee is only $31,700, highlighting that the economic magnitude of the investment requirements is quite large, relative to other contract terms. There are 9,648 franchisor-year observations for the royalty rate, 399 observations less than for the other contract terms, because some franchisors answered in the survey that their royalty rate varied or was a fixed monthly amount. Additional variables included in Table I are the number of outlets a franchisor operates, the number of states in which

they operate, the experience they have in franchising (measured as the number of years since they started franchising) and the *dummy law*, which takes a value of one if the franchisor is located in a state that has passed a good-cause termination/nonrenewal law and zero otherwise. Thirty-six percent of the franchisors are located in states that have passed good-cause laws.

Finally, the bottom three rows of Table I show the yearly within-franchisor variation of investment requirements, expressed in percentage change, and the yearly within-variation of the number of units and number of states, expressed in simple differences. Showing the yearly differences is helpful since, in some of the econometric analyses, I study within-franchisors' contract variations. I express the first difference of investment requirements in percentage rather than in simple differences to get a more accurate picture of the year-to-year change in investment. As the magnitude of investment requirements in different industries can be quite large, if measured in simple differences, the yearly change in investment would be driven mainly by industries with big investment requirements, distorting the real picture. A franchisor, conditional on staying in the sample, on average increases the investment requirement she asks prospective franchisees by 4.3% a year, opens 18 new units and expands her operations by "half" a state.

4.2. Handbook of Franchise Opportunities

The HFO data are a periodic survey that the Department of Commerce conducts. It was issued yearly from 1972 to 1987, and afterwards it has been issued irregularly. The main advantage of this database is that it goes back to the period where some of the good-cause laws were passed, allowing me to study the within-franchisor effect of the passing of the good-cause laws and number of states on investment requirements. Nevertheless, it has several shortcomings. First, there is no electronic version of this database, so it has to be hand-collected. Second, it does not have as many variables as the BFG database. It only contains information on the number of states in which a franchisor operates, the number of outlets a franchisor operates, the year the franchisor started his business — from which a proxy for experience can be constructed — and investment requirements. Third, the way they report investment requirements makes it a noisy measure of the real variable. Rather than having separate information about the investment requirements and the initial franchise fee, the HFO reports the sum of these two variables. In addition, it is not clear whether they report the equity needed or the total investment that is needed for opening a new franchise unit.

I hand-collected data for the years 1979 and 1982. I selected these two years because in 1980 California and Illinois passed good-cause laws. These two states are the states with biggest economic relevance, in terms of total income, among the 15 states that passed these laws. This allows me to have many observations from which to derive the results, as many franchisors are headquartered in

California or Illinois. I collected data for 1982, rather than 1981, to allow franchisors to adapt their contracts to the new economic environment, after the passing of the law.

I address the HFO data shortcomings in two ways. First, I take advantage of the richness of the BFG data. Using the BFG database I am able to show that the control variables that are not available in the HFO database play no significant role in the estimations. Also, using the BFG database, I show that when the dependent variable is defined as investment requirements, including franchise fees, rather than just investment requirements net of initial franchise fees, the parameters of the variables *states* and *dummy law* are biased downwards. Hence, using this aggregate measure of investment requirements understates the effect of the explanatory variables of interest on the true dependent variable rather than overstating it. This implies that the effect of monitoring costs and weaker law enforcement that it is found using the HFO database can be considered a lower bound of the true effect. Second, I carefully hand-collected the HFO data for franchisors that have consistent data descriptions for both 1979 and 1982. When it is not explicitly mentioned that the investment data represent total investment requirements, meaning that they could represent equity requirements, I only include the observations in which the financial terms remain unaltered in both periods. If it is the case that equity requirements are what is reported — and financial terms remain unaltered — the percentage change in equity requirements is, on average, equivalent to a percentage change in total investment requirements. This adds noise to the dependent variable but does not bias the parameters on the explanatory variables.

The sample consists of 278 franchisors that did not change their headquarters location for the years 1979 and 1982. Table II shows the summary statistics of the HFO database. Investment is measured in nominal thousands of dollars. The mean investment is \$49,800. A franchisor, conditional on staying in the sample, on average increases the investment requirement she asks of prospective franchisees by 33% in the three-year period, opens 60 new units and expands her operations in 1.2 states. Out of the 278 franchisors, 39 are located in California and 21 in Illinois, representing 21.5% of the franchisors in the sample.

–>Insert Table II here

4.3. Sample Industry Composition

In both datasets there is a description of the industry to which each franchisor belongs. The industry description is much richer in the BFG than in the HFO. BFG provides 45 industry classifications, while in the HFO database there are only 9. Table III, Panel A, shows the industry composition of the BFG data, and Panel B shows the industry composition of the HFO data.

–>Insert Table III here

5. Results

In this Section, I empirically examine the impact of monitoring costs and law enforcement on franchisors' investment requirements. First, using the HFO database, I analyze within-franchisor variations of investment requirements. Then, using the BFG database, I analyze within-industry variation of investment requirements.

5.1. Main Results: HFO Database Within-Franchisor Variation

The dependent variable is the logarithm of investment requirements. I use logarithms rather than levels to avoid obtaining results driven by a few changes in investment requirements from franchisors that ask for big amounts. The explanatory variables are the *dummy law*, the variable *states,* interaction between these last two terms and control variables. I include the interaction between the *dummy law* and *states* to control for the fact that franchisors that operate in more states have higher chances of contracting around their headquarters' good-cause law.[22] Under this logic, the expected sign of the interaction term is negative.

I include franchisor fixed effects to examine within-franchisor variation. The identification of the effect of the good-cause laws on investment requirement is given by the two states that adopted good-cause laws in 1980: California and Illinois. Equation (1) summarizes the specification described.

$$\ln(I_{fit}) = \alpha + \beta Law_{fit} + \gamma states_{fit} + \delta(Law_{fit} * states_{fit}) + \phi x_{fit} + \eta_f + \varphi_t + \varepsilon_{fit} \qquad (1)$$

In the above equation, I_{fit} represents the investment requirement that franchisor f in industry i at time t asks prospective franchisees; $states_{fit}$ represents the number of states in which franchisor f in industry i operates at time t; x_{fit} are control variables; η_f are franchisor fixed effects; and ε_{fit} is the error term. In this setting φ_t is a dummy variable that takes a value of 1 for 1982 and zero otherwise. This specification is equivalent to a difference-in-difference estimation. Standard errors are clustered by industry.

The control variables included are state controls, number of outlets, its quadratic term and experience squared. I do not include experience alone, as all franchisors gain the same 3 years of experience in the 1979-1982 period, making experience perfectly collinear with the constant. Experience and number of outlets are included to control for the franchisor's brand-name value. The state controls included are income per capita and population from the state in which the

[22] By 1980, besides California and Illinois, there were only 12 states that had passed good-cause laws and 36 states that did not. Therefore, a franchisor operating in more states, on average, has more chances of avoiding the in-state regulation.

franchisor's headquarters is located. These state-level variables are included to control for state-specific economic trends that might be related to changes in investment requirements.

–> **Insert Table IV here.**

Table IV, column I, shows the estimation of equation (1). The hypotheses laid out in Section 2 find support in the data. Weaker law enforcement and monitoring costs increase investment requirements. The parameters of the variables *dummy law* and *states* are 11.4% and 1.2%, respectively. Both parameters are statistically significant.

The interaction between *dummy law* and *states* is negative, implying that when franchisors operate in more states they are more likely to avoid their in-state regulations. The marginal effect of the passing of the law on investment requirements is obtained by deriving equation (1) by the *dummy law*: $(\partial ln(I))/(\partial Law) = \beta + \delta * states$.[23] Evaluated at the sample mean number of states (16.2), the marginal effect of good-cause laws on investment requirements is: $11.4\% - 0.4\% * 16.2 = 4.7\%$. Using a similar calculation, I find that the marginal impact of number of states on investment requirements is 1%.[24]

The results presented so far (Table IV, column I) show that good-cause laws have a positive impact on investment requirements. However, the impact of good-cause laws on investment requirements could be driven only by one of the states that passed the law and not because of both of them. If that were the case, the increase in investment requirements might not be due to changes in franchisees' incentives but to a specific phenomenon that occurred in one state, which is not captured by the state controls. To rule out this possibility, I modify equation (1) by including two dummy variables to account for the passing of the good-cause laws, rather than one. I include a dummy variable for the California change in the law and another for Illinois. I also include the interaction of these dummies with the number of states. The results of this specification are shown in Table IV, column II. The parameters that accompany both California and Illinois good-cause laws are positive (10.8% and 11%, respectively), statistically different from zero, and not statistically different from each other. Good-cause laws had a significant impact on investment requirements in both states. This result is in agreement with franchisors' modifying investments as a response to the passing of good-cause laws and not changes in conditions in a particular state.

[23] The change in the dummy law from 0 to 1 is not a *marginal* change. Thus, this derivative is only approximately correct. The exact value of the passing of the law is: $\left(e^{(\gamma+\delta*states)} - 1\right)$. The difference between these two approaches is negligible.

[24] When the number of clusters is small, standard errors can be biased downwards. My estimations could be affected by this problem, as there are only 9 industry classifications in the HFO database. I re-estimate the standard errors using the wild cluster bootstrap-t procedure proposed by Cameron et al (2008a). This estimation gives unbiased standard errors even when the number of clusters is small. The parameters of interest remain statistically significant after correcting the standard errors.

To sum up, I show that franchisors modify the amount they ask franchisees to invest up-front in response to variations in the expected severity of subsequent agency problem. Consistent with the hypotheses I presented in Section 2, franchisors ask for higher investment requirements when the franchisees' incentives to provide the appropriate level of self-effort are weak: when good-cause laws apply — weaker law enforcement — and when the franchisor operates in more states — higher monitoring costs.

5.2. Main Results: BFG Database Within-Industry Variation

The BFG database is much larger than the HFO database. It is also much richer in terms of variables that can be used for robustness checks. It covers a period of time subsequent to the passing of the good-cause laws, 1994-2009. Thus, I can analyze the long-run effects of the laws. I can study whether franchisors located in states where these laws apply ask for higher investments than franchisors located in states without such laws. The specification I use to estimate these effects is summarized in equation (2).

$$\ln(I_{fit}) = \alpha + \beta Law_{fit} + \gamma states_{fit} + \delta(Law_{fit} * states_{fit}) + \phi x_{fit} + \eta_i + \varphi_t + \varepsilon_{ijt} \qquad (2)$$

The main difference between equation (2) and equation (1) is that in equation (2) I replace franchisor's fixed effects for industry fixed effects. Additionally, now φ_t incorporates 14 time dummies rather than just one. Standard errors are clustered by industry, as franchisors are nested within industry classifications.[25]

The BFG database has the advantage of reporting investment requirements and initial franchise fees separately. This allows me to analyze the effect of good-cause laws and number of states on investment requirements net of franchise fees, on top of studying their effect on total investment requirements. While investment requirements net of franchise fees is the main variable of interest, analyzing the impact of the number of states and good-cause laws on total investments is useful for comparison reasons, as the results from Table IV were generated using total investments. Table V, column I, shows the estimation of equation (2) using investment net of franchise fees as the dependent variable, and column II shows the estimation of equation (2) using total investment as the dependent variable.

–> **Insert Table V here**

The results presented in Table V, column I, give support to the hypothesis that up-front investments are used to mitigate subsequent agency problems and are in agreement with the results found

[25] For references on multi-way clusters see Cameron et al. (2008b).

in Table IV. The number of states in which a franchisor operates, and operating in states where good-cause laws have been passed, increase investment requirements in a statistically significant way. The parameters of the variables *dummy law* and *states* are 10.7% and 0.88%, respectively. Also, consistent with the HFO database results, the interaction between *states* and *dummy law* is negative. Considering the interaction term evaluated at the sample means, the marginal effects are the following. Franchisors, within the same industry, that operate in states where good-cause termination/non-renewal laws have been passed ask for investment requirements 4.5% higher than franchisors operating in states without such laws. In addition, franchisors within the same industry ask for investment requirements 0.75% higher for every additional state in which they operate.[26] The parameters of the variables of interest and the marginal effects obtained here are very similar to the ones obtained using the HFO database, suggesting that the phenomenon that I am trying to document is robust to different time periods and the use of franchisor fixed effects.[27]

The results using total investment as dependent variable — column II — are similar to the results using investment net of franchise fee — column I. More importantly, the parameters of number of states and dummy law are slightly smaller when using when total investments, rather than net investments, as dependent variable. Therefore, when using the HFO data, the evidence in favor of the hypotheses I laid out in Section 2 is found in spite of measuring investments including franchise fees rather than because of it.

In Section 2.3, I argued that weak law enforcement and high monitoring costs were expected to have an ambiguous effect on royalty rates. Royalty rates might be adjusted downwards considering the franchisees' moral hazard problem, but they might be adjusted upwards from a franchisor's moral hazard perspective. I can examine these effects by estimating equation (2), replacing investment requirements with royalty rates. This result is presented in Table V, column III. The dummy law does not have a statistically significant impact on the franchisor's royalty rate. The impact of the number of states on royalty rates is positive, though economically small: For every additional state in which a franchisor operates she increases the royalty rate by 0.01%.[28] The results on royalty rates are important, as they show that the adjustment on self-enforcement conditions, which shape franchisees' behavior, occurs through investments and not through royalty rates. In other words, the size of the project is distorted, but the share of the project that the agent holds does not change.

[26] The marginal effect of the passing of the laws on investment requirements is $\frac{\partial \ln(I)}{\partial Law} = \beta + \delta * states$. Evaluated at the sample mean number of states (17.7), this effect is 4.5%. Similarly, the marginal effect of number of states on investment requirements is $\frac{\partial \ln(I)}{\partial states} = \gamma + \delta * Law$. Evaluated at the sample mean for the dummy law (0.36), this effect is 0.75%

[27] In BFG data, less than 8% of the franchisors changed their headquarters state during the sample period. When restricting the sample only to franchisors that did not change their headquarters location, similar results are found.

[28] In unreported regressions, I find that the statistical significance of number of states on royalty rates is lost when fixed effects are introduced.

5.2.1. BFG Database: Single vs Multiple-State Franchisors

In Tables IV and V, I show that the parameter of the interaction between *states* and *dummy law* is negative. The intuition behind this result is that franchisors have more chances of contracting around their in-state regulations when they operate in multiple states. The interaction term, however, imposes the condition that the impact of the good-cause laws on investment requirements decreases at a constant rate, δ, for every additional state in which the franchisor operates: $\frac{\partial \ln(I)}{\partial Law} = \beta + \delta * states$. According to this functional form, the impact of the law for a franchisor that operates in a single state is simply $\beta + \delta$. Using the parameters of Tables IV and V, $\beta + \delta$ is 10-11%.

An alternative way of estimating the effect that good-cause laws have on investment requirements when franchisors operate in a single state is estimating a separate regression for the subsample that satisfies this criterion. The advantage of this method is that a less stringent functional form can capture more accurately the impact of the law for franchisors that operate in a single state.

I divide the BFG data in two subsamples: a subsample that contains franchisors that operate units in a single state (1,032 franchisor-year observations) and a subsample that contains franchisors that operate in multiple states (9,015 franchisor-year observations).[29] I estimate separate regressions for each subsample. Column I of Table VI shows the impact of the passing of the laws for franchisors that operate in a single state, and column II shows the average impact of the passing of the law for franchisors that operate in multiple states. The impact of the passing of the law on the average investment requirements is 24% for franchisors that operate in a single state. Thus, the previous imposition of the interaction term was underestimating the effect of the passing of the law for franchisors that operate in a single state. For franchisors that operate in multiple states, however, the impact of the passing of the law on investment requirements is only 3%. This highlights that the possibility of contracting around the law is important.

–> **Insert Table VI here**

For some franchisors, BFG data provide information about the identity of the state in which they operate the majority of their units. Thus, considering franchisors that operate in a single state, I can identify whether the state where the units operate coincides with the franchisor's headquarters state. Among the 1,032 franchisor-year observations in which franchisors operate units in a single state, in 909 cases the franchisor's headquarters state and the state where she operates her units coincide.[30] Using those observations the results get even more striking. The impact of the passing

[29] The average multi-state franchisor operates in 20 states.

[30] From the remaining 123 observations, there is no information regarding the state in which the franchisor operates her units in 53 cases. In the other 70 cases, the franchisor's headquarters state and state of operation of the units

of the law on investment requirements goes up to 38%. This estimation is shown in Table VI, column III. This result highlights that when it is certain that a franchisor cannot contract around the good-cause law in her headquarters state, the investment requirements she asks of prospective franchisees increase substantially. More broadly, this result strongly supports the hypothesis that up-front investments are strategically used to mitigate subsequent agency problems.

Applying the same criteria that I used in column III (Table VI), I replicate the estimation using royalty rate as the dependent variable. This estimation is presented in Table VI, column IV. There are 888 franchisor-year observations for which there are data on royalty rates and the franchisor's headquarters state coincide with the state where she operates all her units. The parameter of the good-cause law dummy is now negative and statistically insignificant. This result reinforces the findings of Table V. Variations in the strength of the agency conflict do not have an impact on royalty rates. The adjustment of self-enforcing conditions comes solely from variations in the up-front investment.

6. Robustness Checks

In this Section, I address potential concerns regarding the empirical validation of *hypothesis 2* (i.e.: investment requirements are higher when monitoring costs are higher). In Section 6.1, I study the possibility that the variable *states* is not capturing monitoring costs but reflecting other mechanisms that might cause investments to increase. I show that after controlling for several other variables, related to alternative explanations, it is still the case that the variable *states* has a positive, and statistically significant, impact on investment requirements. In Section 6.2, I propose an alternative measure of monitoring costs by exploiting franchisors' headquarters location and expected expansion patterns. I find evidence consistent with *hypothesis 2* using this alternative measure as well.

6.1. Additional Controls

In Section 5, I showed that monitoring costs, measured by the number of states in which a franchisor operates, are positively related to investment requirements. This relation is unlikely to be driven by reverse causality, due to the nature of the data. The data used for the estimations come from surveys where franchisors are asked about the number of states in which they operate at the present date and the contract terms they will ask prospective franchisees. Thus, geographic considerations are incorporated in the election of contract terms and not the other way around.

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do not coincide.

The positive relation between the number of states and investment requirements, however, can potentially be spurious. This could be due to an omitted variable that affects simultaneously, and in the same direction, investment requirements and number of states. I propose four mechanisms that could generate such an effect. The variables that are going to be included as additional explanatory variables, to control for the alternative mechanisms, are franchisor's *projected new units*, franchisor's *financial assistance*, *contract length* and *advertisement fees/level*.[31]

The decision to operate in a broader geographical area is endogenous, and the underlying reason for the geographic expansion might be what really causes the increase in investment requirements. Thus, higher monitoring costs, which are a consequence of the expansion, might be unrelated to investment requirements once I control for the reason for the geographic expansion. The most likely reason for a franchisor to geographically expand is good investment opportunities. It can be argued that a franchisor with better investment opportunities might also be interested in franchising bigger outlets, which requires higher investment. Therefore, I need to control for franchisors' investment opportunities to discard the possibility that their omission is what drives the positive relation between number of states and investment requirements.

The ideal control for investment opportunities is Tobin's q. The usual proxy for Tobin's q is constructed by dividing firms' market value by firms' book asset value. This measure can be constructed only for publicly traded firms. This implies several shortcomings. First, only a handful of the franchisors in the data are publicly traded firms. Second, most franchisors that are publicly traded have nationwide operations, implying no variability in the number of states in which they operate. Third, many of the franchisors that are publicly traded belong to a parent company, so their investment opportunities cannot be told apart from the investment opportunities of all the firms that operate under the same parent company.

An alternative variable that proxies for investment opportunities and is available at the BFG database is the franchisor's projected new units. If a franchisor thinks her business is likely to have a big expansion, she projects that a large number of units are going to be opened in the upcoming year. I use projected new units to control variables for investment opportunities.

Variations in the financial assistance that franchisors offer to franchisees can also be thought as an important omitted variable. It can be the case that franchisors that expand to newer states concurrently start offering financial assistance. If this is the case, investment requirements are likely to increase, given that credit constraints are relaxed for franchisees. In the BFG database there is information regarding the offering of financial assistance by the franchisor. The answer

[31] While incorporating these variables is a good exercise to discard the possibility of omitted variable bias, their incorporation can add a new source of bias. Franchisor's financial assistance, contract length and advertisement fees are contract terms endogenously chosen by the franchisor. This is why these additional terms were not included in the previous estimations that use BFG data.

that franchisors give when asked if they give financial assistance is either Yes or No. I construct a dummy variable for financial assistance using this information and include it as an additional control.

Longer contract terms imply more protection for franchisees' investment; thus, more investment is expected, in equilibrium, when longer contract terms are offered. To the extent that longer contract terms are offered to franchisees in new markets, it can be the case that the positive relationship between investment requirements and number of states is driven by the omission of the contract length as an explanatory variable. Contract length can be found in the BFG database. It ranges from 1 to 40 years with a mean of 11.2. I include this variable as an additional control.

A franchisor that expands to newer markets might find it optimal to advertise more, given her broader scope of operations. This, in turn, can increase the optimal size of the outlets. I control for this phenomenon by including the advertisement fee that franchisors ask as a percentage of the franchisees' revenues. This variable can also be found in the BGF database. I also include the interaction term between advertisement fee and number of outlets to get a proxy for the level of advertisement. I call the interaction term *advertisement level*.

Besides including additional explanatory variables to shoot down a potential omitted variable bias, in the present setting I reincorporate franchisors' fixed effects to address the potential correlation between franchisor's characteristics with the explanatory variables. As I use BFG to perform this additional estimation, the cost of using franchisor's fixed effects is that the dummy law has to be dropped, as there is no within-franchisor variation in the passing of the laws. This is not a major drawback since in this Section I am interested in providing robustness to the positive relationship between number of states and investment requirements. Equation (3) is what I estimate. Standard errors are clustered by industry. The results are reported in Table VII.

$$\ln(I_{fit}) = \alpha + \gamma states_{fit} + \phi x_{fit} + \eta_f + \varphi_t + \varepsilon_{fit} \tag{3}$$

–>Insert Table VII

Column I shows the estimation of equation (3) without including the additional controls. It is shown that, even after including franchisor fixed effects, the variable number of states increases investment requirements in a statistically significant way when using BFG data. In column II, the additional controls are included. The number of observations is only 7,837, as the additional control has some missing values. Besides contract length and advertisement level, no other control variable has a statistically significant effect on investment requirements. More important, the number of states still has a positive and statistically significant impact on investment requirements after including these additional control variables. A franchisor that expands its operations to another

state increases the investment requirements she asks prospective franchisees to make by 0.62%.

6.2. An Alternative Measure of Monitoring Costs

To provide further robustness to the results found in previous sections, I propose an alternative measure for monitoring costs and explore whether the results hold when using this alternative variable. In particular, I construct a proxy for the average distance a franchisor travels to directly monitor her franchisees by exploiting the franchisor's headquarters location and expected expansion patterns. Franchisors' expansion patterns are usually regional. They expand first to the states near the state where they are headquartered and last to the states that are farther away from their headquarters location.

To construct the variable *distance*, I proceed as follows. First, I compute the distance between each state to all other possible states, and I sort each state according its distance to others, from closer to farther. I use this information to compute the average travel distance from each state to the "ith" closer state. For instance, the average distance from Alabama to its 10th nearest states is 296 miles, and the average distance to its 30th nearest states is 606 miles; while the average distance from Arizona to its 10th nearest states is 550 miles, and the average distance to its 30th nearest states is 986 miles. I merge the average distance between states to the main database. I use the franchisors' headquarters states as states of origin, and I assume that if franchisors operate in "i" states, those are the "ith" closest states to where they are headquartered. For example, the variable distance I construct assigns an average monitoring distance of 296 miles to a franchisor headquartered in Alabama that operates units in 10 states.

The variable *distance* has one advantage and one disadvantage relative to measuring monitoring costs using the variable states. The advantage is that it does not assign constant increments in monitoring costs for every additional state a franchisor operates in; the increments depend on the state where the franchisor is headquartered. The disadvantage is that it uses the assumption that the franchisor's expansion is perfectly ordered, expanding to the closer states first and later to the ones that are farther away.

I replicate the estimations of Table VII, columns I and II, replacing the variable *states* for the variable *distance* (measured in hundreds of miles). The results are shown in Table VII, columns III and IV. It is shown that, if a franchisor's average travel distance to monitor franchise units increases by 100 miles, investment requirements increase by 2%-3%. Both results are statistically significant at the 1% level. The main message that columns III and IV convey is that, regardless of how monitoring costs are measured, they have a positive impact on investment requirements.

7. Alternative Hypotheses

In this Section I consider two alternative hypotheses that could explain why investment requirements increase after the passing of good-cause laws, other than the franchisors using up-front investments to mitigate agency problems. However, I argue below that one of these hypotheses is at odds with additional evidence presented in previous studies, while the other hypothesis is implicitly accounted for in the empirical analysis. Therefore, the use of up-front investments to mitigate agency problems remains as the only valid explanation for the results of this paper. Moreover, this is the only hypothesis that can also explain why broader geographic dispersion of outlets results in franchisors asking for higher investment requirements.

The good-cause laws were lobbied by the service-station-dealer association and the National Franchisee Association Coalition (Brickley et al. (1991)). One of the arguments that was given to pass the bills was that without the law a franchisor could unfairly terminate a franchisee and reconvert the outlet into an owned unit. If franchisors were indeed unfairly terminating contracts, the passing of the law would have served franchisors as a commitment device that precludes them from taking such action. This, in turn, would generate the necessary conditions to protect the franchisees' investments (i.e., similar to alleviating a hold-up problem). Investment requirements could have increased for this reason. I call this argument the *commitment hypothesis*.

If the *commitment hypothesis* is correct, the passing of good-cause laws would have been beneficial for franchising activity. However, Brickley et al. (1991) and Klick et al. (2007) show that franchising activity actually decreased in the states where the laws were passed. Thus, the increase in investment that is observed after the passing of good-cause laws cannot be ascribed to an increase in the protection to franchisees as follows from the *commitment hypothesis*.[32] Brickley et al. (1991) and Klick et al. (2007) attribute the decrease in franchising activity to a reduction in the franchisors' ability to maintain a standard level of sales effort in their franchise units. That argument is consistent with investments increasing to improve franchisees' self-enforcing conditions as proposed in this paper.

An alternative hypothesis that explains an increase in investment requirements, after the laws were passed, can be constructed using the following argument. Klick et al. (2007) document that, after the passing of the laws, the total number of franchise units a franchisor operates decreased. They also show that franchisors, to compensate for their fewer franchise units, increased the number of company-owned units (good-cause laws affect franchise units, not company-owned units). Overall, they find a net decrease in total units: The reduction in franchise units was larger than the increase

[32] Besides, for the *commitment hypothesis* to even hold, the franchisor should place little value on her reputation, although it is well known that a franchisor's reputation is her most valuable asset.

in company-owned units. The reduction in the total number of outlets could imply that the optimal size of the outlet increased, and investment requirements could have increased for this reason. I call this the *fewer, but bigger outlets hypothesis*.

The *fewer, but bigger outlets hypothesis*, however, cannot explain the results presented in Section 5 either. I find that investment requirements increase even after controlling by the total number of units a franchisor operates. What can be argued is that the total number of units is not exogenous, as it is also determined by the passing of the laws, and that this endogeneity could bias the parameter of the dummy law on the regressions. Nevertheless, this bias works against the results I present. If the dummy law has a negative impact on the number of outlets, the parameter that accompanies the dummy law in the regressions not only captures the true effect of the passing of the law on investment requirements, but also the projection of the dummy law on the number of outlets, which is negative. Therefore, I find that the passing of the law has a positive impact on investment requirements in spite of potential endogeneity concerns.

8. Conclusion

I study whether up-front capital expenditures investments can be used to mitigate agency problems. Intuitively, if a principal and an agent engage in a project, the principal can overcome the non-contractibility of the agent's effort by using the perfect contractibility of up-front investments. If investments are partially sunk, and the principal can credibly threaten to terminate the contract before its expiration date, the agent will have more to lose the more he has invested in the project. In this setting, the principal should ask the agent to invest more up-front when the agency problem is expected to be more severe.

I test the above intuition using data from franchise contracts. In particular, I hypothesize that when a franchisee (i.e.: the agent) has weak incentives to exert sales effort (the agency problem is more severe), the franchisor (i.e.: the principal) asks him to invest more in the opening of a new franchise unit. I identify two scenarios under which a franchisee's incentives to exert sales effort are low: when the franchisor's ability to terminate a contract with a misbehaving franchisee is low (weak law enforcement) and when directly monitoring franchise units is too costly. Consistent with my hypothesis, I find that that franchisors increase investment requirements after the passing of good-cause termination/nonrenewal laws, as these laws weakened the franchisor's ability to terminate a contract with a misbehaving franchisee. I also show that franchisors increase investment requirements when they expand geographically, as their ability to directly monitor their franchise units is hindered.

Additionally, I find no evidence that when franchisees have weak incentives to exert sales effort,

royalty rates paid to the franchisor decrease. In other words, the share of the project the agent retains does not increase as a response to stronger conflict of interests between the principal and the agent. The realignment of incentives occurs exclusively through an increase in the size of the project. This result adds a new perspective on potential solutions to agency problems when changing the share of the project the agent holds is not desirable or possible.

The use of up-front investments to ameliorate subsequent agency conflicts could explain investment variations in other business partnerships, such as outsourcing or manufacturer-distributor contracts. In those settings it is often the case that one party invests and can act opportunistically, while the other party influences investments and has some discretion to terminate the contract upon misbehavior of the investing party.

Another setting in which contractible investment decisions could ameliorate subsequent conflict of interests is "top-down" capital budgeting decisions. Headquarters can provide credible information to the division manager about favorable prospects by overinvesting in that division as modeled by Almazan et al. (2011). Additionally, overinvestments in a division's projects could generate more effort from the division manager if the manager obtains benefits from managing more capital.

Providing evidence of whether up-front investments are used to mitigate agency problems in a variety of different contexts is something that I leave for future research.

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Appendix

In the example mentioned in Section 2.1, when the agent invests \$120,000 dollars rather than \$100,000 dollars, the self-enforcement conditions were enhanced, as the agent feared losing an additional \$16,000 in case of contract termination. There are several underlying assumptions in this calculation. Nevertheless, the intuition that the higher the agent's investment are the more he has to lose in case of contract termination holds even if those assumptions are relaxed.

One assumption used to compute the additional \$16,000 in ex post rents was that the profitability of the assets does not decrease with additional investments. This is not likely to be the case, as investments usually have diminishing returns to scale. Notice, however, that a lower profitability on the additional amount invested only alters the magnitude of the extra ex post rents that the additional investment generates. For example, if the profitability of the extra \$20,000 invested is 20% rather than 30%, the agent fears losing extra ex post rents for \$20,000x(1.2-0.5)= \$14,000. Thus, it is still the case that the more the agent invests, the more he has to lose in case of anticipated termination.

In the example it was assumed that the salvage value of assets was 50%. However, if asset specificity was greater or lower it would only alter the magnitude, but not the direction, of the effect of investments on ex post rents. The lower the salvage value of assets is, the higher the increase in disciplinary ex post rents that is generated when the franchisor asks for higher investments.

The manner in which the agent finances his investments also affects the magnitude of the effect the extra investments have on ex post rents but not the direction of the effect. An agent, protected with limited liability, who asks for a loan to finance part of the investment, will have less to lose in case of contract termination, as the profits to be lost are net of debt payments. However, it is still the case that the more he invests; the more he has to lose from anticipated termination.

Generalizing, higher investments generate higher *ex post* rents if the future earnings that the additional investments generate $(1+\pi^{extra-invest.})I^{extra}$ minus the salvage value of the assets (αI^{extra}) is positive: $(1+\pi^{extra-invest.}-\alpha)I^{extra}>0$. This condition is unlikely to be violated in a realistic setting.

Table I

BFG: Summary Statistics

This table reports sample statistics for Bond's Franchise Guide data. It presents the 10th percentile, mean, median, 90th percentile, standard deviation and number of observations for the variables shown in the left column. The data consists of an unbalanced panel of 2,017 franchisors for the period 1994-2009. Net Investments are the investment requirements asked by franchisors to franchisees, net of initial franchise fee. Franchise Fee is the initial lump sum amount the franchisee has to pay the franchisor in order to operate under her brand-name. Net Investments and Franchise Fees are measured in nominal thousands of dollars. Royalty Rate is the percentage of the franchisee's revenues that franchisors ask franchisees. Experience is the number of years the franchisor has been franchising. Total units are the number of units a franchisor operates. States is the number of states in which a franchisor operates. Dummy Law is a dummy that takes a value of one if the franchisor's headquarters are located in a good-cause termination/nonrenewal state and zero otherwise. %Δ Investment is the within franchisor yearly percentage change in Net Investments. ΔUnits is the within-franchisor yearly change in the number of units she operates. ΔStates is the within-franchisor yearly change in the number of states where she operates.

Variable	Pctile 10	Mean	Median	Pctile 90	sd	N
Net Investment (000's)	13.7	520.1	120	625	8236	10047
Franchise Fee (000's)	9.9	31.70	22	39	529.3	10047
Royalty Rate (%)	0.03	0.06	0.05	0.08	0.039	9648
Experience (years)	3	15.38	13	31	11.76	10047
Total Units (#)	7	341	60	530	1476	10047
States (#)	1	17.72	12	43	15.73	10047
Dummy Law	0	0.36	0	1	0.481	10047
%Δ Investment	0	0.043	0	0.184	0.211	8032
Δ Units (#)	-6	17.82	0	34	241.9	8032
Δ States (#)	0	0.532	0	2	3.18	8032

Table II

HFO: Summary Statistics

This table reports sample statistics for Handbook of Franchise Opportunities data. It presents the 10^{th} percentile, mean, median, 90^{th} percentile, standard deviation and number of observations for the variables shown in the left column. The data consists of a balanced panel of 278 franchisors that operated both in 1979 and 1982. Investments are the investment requirements asked by franchisors to franchisees, measured in nominal thousands of dollars. Experience is the number of years the franchisor has been in business. Total units are the number of units a franchisor operates. States is the number of states in which a franchisor operates. Dummy Law is a dummy that takes a value of one if the franchisor's headquarters are located in a good-cause termination/nonrenewal state and zero otherwise. %Δ Investment is the within-franchisor percentage change in Investments for the 1979-1982 period. ΔUnits is the within-franchisor change in the number of units she operates for the 1979-1982 period. ΔStates is the within franchisor change in the number states where she operates for the 1979-1982 period.

Variable	Pctile 10	Mean	Median	Pctile 90	sd	N
Investment (000's)	7.2	49.8	35	100	64.3	556
Experience (years)	6	19.40	16	35	13.95	556
Total Units (#)	5	330.6	51	490	1432	556
States (#)	1	16.2	11	43	15.4	556
Dummy Law	0	0.323	0	1	0.468	556
%Δ Investment	0	0.332	0.160	1	0.573	278
Δ Units (#)	-21	60.24	1.00	79	611.1	278
Δ States (#)	-2	1.189	0.000	7	4.93	278

Table III

Industry Composition per Sample

This table shows the industry composition for Bonds Franchise Guide data and Handbook of Franchise Opportunities data. The left column shows the industry classification, the center column shows the number of Franchisor-Year observations per industry classification and the right column shows the percentage of the total number of observations that each industry classification represents. There are 45 industry classifications in Bonds Franchise Guide data and 9 industry classifications in the Handbook of Franchise Opportunities dataset.

Panel A: BFG

Industry	Firm-Years	%
Auto/Truck Rental	51	0.5%
Car Repair	716	7.1%
Building & Remodeling	448	4.5%
Business: Advertising	80	0.8%
Business: Financial Services	255	2.5%
Business: Telecommunications	157	1.6%
Child Development	315	3.1%
Education / Personal Development	206	2.1%
Employment & Personnel	323	3.2%
Food: Coffee	133	1.3%
Food: Donuts / Cookies / Bagels	328	3.3%
Food: Ice Cream / Yogurt	241	2.4%
Food: Quick Service / Take-out	1641	16.3%
Food: Restaurant / Family-Style	618	6.2%
Food: Specialty Foods	366	3.6%
Hairstyling Salons	136	1.4%
Health / Fitness / Beauty	237	2.4%
Laundry & Dry Cleaning	183	1.8%
Lawn and Garden	109	1.1%
Lodging	217	2.2%
Maid Service & Home Cleaning	109	1.1%
Maintenance / Cleaning	578	5.8%
Medical / Dental Products	80	0.8%
Miscellaneous	229	2.3%
Packaging & Mailing	162	1.6%
Printing & Graphics	148	1.5%
Publications	50	0.5%
Real Estate Inspection Services	130	1.3%
Real Estate Services	160	1.6%
Recreation & Entertainment	105	1.0%
Rental Services	66	0.7%
Retail: Art Supplies	65	0.6%
Retail: Sporting Goods	129	1.3%
Retail: Clothing / Shoes	33	0.3%
Retail: Convenience Stores	92	0.9%
Retail: Home Furnishings	190	1.9%
Retail: Home Improvement	72	0.7%
Retail: Miscellaneous	47	0.5%
Retail: Pet Products	58	0.6%
Retail: Photographic Products	93	0.9%
Retail: Specialty	439	4.4%
Retail: Electronics	67	0.7%
Security & Safety Systems	36	0.4%
Signs	102	1.0%
Travel	47	0.5%
Total	**10,047**	

Panel B:HFO

Industry	Firm-Years	%
Auto Repair/Rental	62	11.2%
Business Services	60	10.8%
Construction	24	4.3%
Educational	18	3.2%
Employment	42	7.6%
Food	236	42.4%
Home Furnishing	34	6.1%
Real Estate	20	3.6%
Retail	60	10.8%
Total	**556**	

Table IV

Main Results: HFO Database Within-Franchisor Variation

This table reports two regressions estimated using HFO data. The dependent variable in both regressions is the logarithm of investment requirements. In column I the main explanatory variables are the number of states in which the franchisor operates and the Dummy Law, which takes a value of one if the franchisor's headquarters are located in a state that has passed a good-cause law by the time they were surveyed (1979 and 1982) and zero otherwise. The within variation in the passing of the laws is given by franchisors located in California and Illinois, given that the good-cause laws were passed in those states in 1980. Additional controls are experience squared, total units (thousands), total units (thousands) squared, the franchisors' headquarters state-level income per capita and population, year fixed effects and franchisor fixed effects. The explanatory variables in column II differ from the ones in column I in that there are two dummies measuring the passing of the laws: one that takes a value of one if the franchisor's headquarters is located in California in 1982 and zero otherwise; and another that takes a value of one if the franchisor's headquarter is located in Illinois in 1982 and zero otherwise. Robust standard errors adjusted by clustering at the industry level are reported in parentheses. The statistical significance are *10%, **5% and ***1%.

Variable	log(Investment)	log(Investment)
Dummy Law	0.1137***	
	(0.0316)	
States	0.0116**	0.0108**
	(0.0047)	(0.0038)
States*(Dummy Law)	-0.0041	
	(0.0028)	
Dummy Δ law California		0.1077**
		(0.0389)
Dummy Δ Law Illinois		0.1099**
		(0.0432)
States*(Dummy Δ law California)		-0.0049***
		(0.0009)
States*(Dummy Δ Law Illinois)		-0.0013
		(0.0042)
Experience squared	-0.0004*	-0.0004*
	(0.0002)	(0.0002)
Total Units	0.1987	0.1290
	(0.1439)	(0.1347)
Total Units squared	-0.0046	-0.0028
	(0.0038)	(0.0036)
N	556	556
Firm-Fixed Effects	Yes***	Yes***
Time-Fixed Effects	Yes	Yes
State Controls	Yes***	Yes***
Industry Cluster	Yes	Yes
R-squared	0.3193	0.3204

Table V

Main Results: BFG Database Within-Industry Variation

This table reports three regressions estimated using BFG data. The dependent variables of columns I, II and III are logarithm of net investments, logarithms of total investments and royalty rates, respectively. The main explanatory variables are the number of states in which the franchisor operates, the Dummy Law, which takes a value of one if the franchisor's headquarters are located in state that has passed a good-cause termination/nonrenewal laws and zero otherwise, and the interaction between these two variables. Additional controls are experience, total units (thousands), the squared values of these two variables, the franchisors' headquarters state-level income per capita and population, industry fixed effects and year fixed effects. Robust standard errors adjusted by clustering at the industry level are reported in parentheses. The statistical significance are *10%, **5% and ***1%.

Variable	log(Net Investment)	log(Investment)	Royalty
Dummy Law	0.1074*	0.0904*	0.0022
	(0.0652)	(0.0509)	(0.0021)
States	0.0088***	0.0074***	0.0001*
	(0.0017)	(0.0012)	(0.0000)
States*(Dummy Law)	-0.0035*	-0.0024	-0.0001
	(0.0021)	(0.0018)	(0.0001)
Experience	0.0003	-0.0031	-0.0003
	(0.0048)	(0.0046)	(0.0003)
Experience squared	0.0001	0.0001*	0.0000
	(0.0001)	(0.0001)	(0.0000)
Total Units	-0.0129	0.0017	0.0002
	(0.0423)	(0.0319)	(0.0006)
Total Units squared	0.0005	0.0002	0.0000
	(0.0009)	(0.0007)	(0.0000)
N	10,047	10,047	9,648
Industry-Fixed Effects	Yes***	Yes***	Yes***
Time-Fixed Effects	Yes***	Yes***	Yes***
State Controls	Yes	Yes	Yes
Industry-Cluster	Yes	Yes	Yes
R-squared Within	0.1757	0.2226	0.0028
R-squared Between	0.4085	0.4246	0.0609
R-squared Overall	0.4469	0.4666	0.0733

Table VI

Main Results: BFG Database Within-Industry Variation for Franchisors that Operate in One State and Multiple States

This table reports four regressions estimated using BFG data. The dependent variable of columns I, II and III is the logarithm of net investments. The dependent variable of column IV is royalty rate, measured as a percentage of the franchisees' sales. The results shown in column I are estimated using data from franchisors that operate in one state; the results shown in column II are estimated using data from franchisors that operate in multiple states; the results shown in columns III and IV are estimated using data from franchisors that operate in one state and whose headquarters state and state of operations coincide. The main explanatory variable in columns I, III and IV is the Dummy Law, which takes a value of one if the franchisor's headquarters are located in a state that has passed good-cause termination/nonrenewal laws and zero otherwise. In column II, the main explanatory variables are the Dummy Law and the number of states in which a franchisor operates. Additional controls are experience, experience squared, total units (thousands), total units (thousands) squared, the franchisors' headquarters state-level income per capita and population, industry fixed effects and year fixed effects. Robust standard errors adjusted by clustering at the industry level are reported in parentheses. The statistical significance are *10%, **5% and ***1%.

Variable	log(Net Investment)	log(Net Investment)	log(Net Investment)	Royalty
Dummy Law	0.2388***	0.0314	0.3771***	-0.0011
	(0.0857)	(0.0506)	(0.1440)	(0.0034)
States		0.0072***		
		(0.0020)		
Experience	-0.0169*	0.0028	-0.0187**	0.0008
	(0.0098)	(0.0049)	(0.0090)	(0.0009)
Experience squared	0.0001	0.0001	0.0001	-0.0000
	(0.0002)	(0.0001)	(0.0002)	(0.0000)
Total Units	5.9416*	-0.0185	11.4242	0.0402
	(3.3963)	(0.0403)	(8.0644)	(0.1802)
Total Units squared	-12.1006**	0.0007	-47.5455	0.6795
	(4.8902)	(0.0008)	(34.6690)	(1.0998)
N	1,032	9,015	909	888
Industry-Fixed Effects	Yes***	Yes***	Yes***	Yes***
Time-Fixed Effects	Yes***	Yes***	Yes***	Yes***
State Controls	Yes	Yes	Yes	Yes
Industry-Cluster	Yes	Yes	Yes	Yes
R-squared Within	0.0527	0.1859	0.085	0.0289
R-squared Between	0.3605	0.4392	0.4109	0.2554
R-squared Overall	0.3573	0.4639	0.4033	0.3338

Table VII

Robustness Checks: BFG Database Within-Franchisor Variation

This table reports two regressions estimated using BFG data. The dependent variable is the logarithm of net investments. The main explanatory variable in columns I and II is the number of states in which the franchisor operates. The main explanatory variable in columns III and IV is the average distance (in hundreds of miles) a franchisor travels to directly monitor her units on-site. Control variables are experience squared, total units (thousands), total unit (thousands) squared, the franchisors' headquarters state-level income per capita and population, and franchisor fixed effects. Additional control variables are the projected units a franchisor estimates to open in the present year; the dummy financial assistance, which takes a value of one if financial assistance is offered to prospective franchisees and zero otherwise; the average contract length offered to prospective franchisees measured in years; the advertisement fee that franchisors ask prospective franchisees measured as a percentage of the franchisees revenues; and advertisement level, which is the interaction between number of units (thousands) and advertisement fee. Robust standard errors adjusted by clustering at the industry level are reported in parentheses. The statistical significance are *10%, **5% and ***1%.

Variable	**log(Net Investment)**	**log(Net Investment)**	**log(Net Investment)**	**log(Net Investment)**
States	0.0078***	0.0062**		
	(0.0020)	(0.0024)		
Distance			0.0309***	0.0206***
			(0.0067)	(0.0076)
Experience squared	0.0001**	0.0001*	0.0001**	0.0001*
	(0.0000)	(0.0001)	(0.0000)	(0.0001)
Total Units	-0.0166	-0.0536*	-0.0038	-0.0456
	(0.0373)	(0.0312)	(0.0350)	(0.0291)
Total Units squared	0.0006	-0.0042***	0.0003	-0.0050***
	(0.0008)	(0.0014)	(0.0007)	(0.0016)
Projected new Units		-0.0001		-0.0001
		(0.0002)		(0.0002)
Financial Assistance		0.0178		0.0197
		(0.0344)		(0.0352)
Contract Length		0.0070*		0.0071*
		(0.0037)		(0.0036)
Advertisement Fee		-0.2668		-0.2596**
		(0.3881)		(0.1019)
Advertisement Level		3.3553***		3.7012***
		(0.8899)		(0.8349)
N	10,047	7,837	10047	7837
Firm-Fixed Effects	Yes***	Yes***	Yes***	Yes***
Time-Fixed Effects	Yes***	Yes***	Yes***	Yes***
State Controls	Yes	Yes	Yes	Yes
Industry Cluster	Yes	Yes	Yes	Yes
R-squared	0.1747	0.1681	0.1738	0.1702