STRATEGIC DEBT IN VERTICAL RELATIONS: EVIDENCE FROM FRANCHISING

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Abstract

In this paper, we examine the strategic use of debt as a reason for organizations to choose a franchising structure. We focus on the franchisee's and the franchisor's capital structures. The primary goal of this study is to examine whether franchisors impose limits on franchisees' debt levels in order to obtain tax advantages. We find that the franchisor's leverage is negatively related to the maximum leverage allowed for the franchisee. Thus, as the franchisor sets an upper limit on the franchisee's debt ratio, the franchisor can raise more debt and therefore seizes tax benefits, since interest payments are tax deductible. We find that this effect is stronger in chains with larger fractions of franchised outlets.

Keywords: Franchising, Capital Structure, Strategic debt

Introduction

Why do firms franchise? Although this fundamental question has been the subject of considerable theoretical and empirical investigation, little consensus has been reached (Dant, 1995; Combs and Ketchen, 2003; Combs, Michael and Castrogiovanni, 2004)). In general, the reasons for franchising are grounded in either agency theory or in a resource scarcity argument. Agency theory argues that franchising is used to improve the alignment between firm and outlet-level incentives. The resource scarcity argument suggests that firms use franchising to relieve financial and managerial constraints in order to enhance growth. Oxenfeldt and Kelly (1968) argue that financial constraints induce franchising, since the partial financing by franchisees limits the financing needs of franchisors. However, this view has been refuted by Rubin (1978) and Norton (1995). These authors suggest that franchisee capital is not less expensive than capital from passive sources such as lenders and stockholders, and therefore conclude that financial capital acquirement from franchisees cannot explain why organizations choose franchising. In this paper, we introduce a new specific argument related to the resource scarcity theory: firms use franchising to be able to increase their debt ratio.

A common practice in the franchising industry is that franchisors impose a lower boundary on the franchisees' personal capital required in the initial total investment. For example, McDonald's requires a minimum of 100,000 dollars of equity investment, which is about 20 percent of the initial total investment, and Subway Restaurants requires franchisees to fund about 43 percent of the total initial investment with their personal capital. Clearly, the equity required by franchisors is an important variable in the contract offered to franchisees. Because of the vertical relation between the franchisor and the franchisee, opportunities for the franchisor may arise to strategically use the debt structures to enhance firm value.

Fraja and Piga (2004) model financing decisions in vertical relations and argue that the upstream party imposes a limit on the downstream party's debt level in order to avoid bankruptcy risk and to secure profits. In this paper, we follow their reasoning. We suggest that organizations use a franchising structure to benefit from the opportunity of setting the franchisees' capital structure in such a way that the franchisor can bear more

debt. The higher debt ratio of the franchisor increases value because of the tax deductibility of interest payments (Modigliani and Miller, 1963). Based on the model of Fraja and Piga (2004), we predict that lower maximum leverage for franchisees induces more leverage for franchisors. In addition, we predict that this effect is stronger when more outlets are franchised. In other words, we propose that the strategic use of the franchisee's maximum debt level may affect the franchisor's capital structure, which will ultimately affect firm value.

We empirically test our propositions with data from the Bond's Franchise Guide and COMPUSTAT. We construct a model in which we first estimate the determinants of the maximum debt ratio that is allowed for franchisees. We find that the maximum debt ratio depends on the size of the outlets, on the age of the franchise firm, on arrangements between the franchisor and the franchisee (such as cooperative advertising), and on the type of industry. We then compare the predicted expected maximum debt ratio, based on firm and industry determinants, with the actual maximum debt ratio. We use the deviation as an explanatory variable in the leverage regression for the franchisor, because this variable measures the constraints on franchisee debt that cannot be explained by firm and industry characteristics.

We find evidence supporting our primary prediction that the franchisor's capital structure is interrelated with the franchisee's capital structure. More specifically, we find that the franchisor's leverage is positively related to the deviation of the franchisee's leverage. That is, as the franchisor sets a higher requirement for the franchisee's equity component than expected (lower maximum leverage), the franchisor is able to raise more debt. Since the interest payments on debt are tax deductible, this results in higher tax benefits. This evidence is in line with our proposition that the strategic use of the franchisee's capital structure affects the franchisor's decision of financing. Furthermore, we also find that the effect becomes stronger when the fraction of franchised units versus wholly-owned units in a franchising chain increases.

Our analysis contributes to the franchising literature, because our findings indicate that the financing decision may subtly affect the franchisor's franchising propensity, as the franchisor can increase firm value by obtaining a certain fraction of franchised outlets. This result demonstrates important consequences of debt financing in

franchising that previous research has not examined. Particularly, our work complements the earlier work of Oxenfeldt and Kelly (1968), Rubin (1978) and Norton (1995), whereas these authors specifically emphasize the costs and constraints in financing, ignoring the strategic use of debt financing.

Literature review and hypotheses

Resource scarcity is one of the main theories explaining why organizations franchise. It suggests that franchising is used by franchisors to access scarce financial and managerial resources to relieve constraints on growth (Oxenfeldt and Kelly, 1968). Much of the debate on the resource scarcity explanation has focused on capital provided by franchisees to franchisors. Several researchers have questioned whether franchisee capital is less expensive than the capital from passive investors such as stockholders and debtholders (Norton, 1995; Rubin, 1978). More specifically, Rubin (1978) argues that the capital scarcity argument for franchising cannot be relevant because franchisees will face greater undiversified investment risks as they place substantial personal wealth in a limited number of outlets, and therefore they will demand a risk premium to compensate for this risk. Passive investors do not have this problem, which leads to lower financing costs.

Our paper differs from Rubin (1978) in arguing that franchisee capital can provide strategic opportunities for the franchisor to raise its leverage and seize tax benefits. In the remainder of this section, we will first investigate the relation between the franchisee's and the franchisor's capital structure and then illustrate how the franchisee's maximum debt ratio is related to the reasons for the franchisor to choose a franchising structure. Following this, we will describe which factors determine a franchisee's optimal capital structure. Finally, the franchisor's capital structure will be discussed based on various capital structure theories.

The strategic link between the franchisor's and the franchisee's leverage

A stylized fact in franchising is that franchisors usually require their franchisees to put up a specific amount of personal wealth in the total initial investment, and in turn leave the

franchisees limited space for debt financing. This phenomenon was explained by Williamson (1989) from the perspective of one-sided moral hazard: equity financing is used as a device against quality cheating by franchisees. He argues that the franchisee can damage the brand image by not maintaining the agreed quality level when quality is non-contractable. As a result, franchisors will require the franchisee to finance a specific investment through their personal resources. The franchisor can punish a cheating franchisee by an early termination of the contract. If the franchisee is allowed to borrow too much debt, this cost of termination goes to the debt lender instead of to the franchisee. Fraja and Piga (2004) explicitly illustrate this phenomenon by arguing that debt financing can increase a downstream party's bankruptcy risks and therefore reduces the upstream party's expected value. Consequently, the upstream party has to impose a limit on the downstream party's use of debt financing.[1]

The above-mentioned studies merely focus on how and why a franchisee's leverage should be limited to an upper boundary, whereas the studies do not account for the phenomenon that a franchisor's leverage can also be influenced by the limitations imposed on the franchisee's debt level. We here suggest that the franchisor's capital structure can be interactively related to the franchisee's capital structure. According to the arguments of Fraja and Piga (2004) and Williamson (1989), the franchisee's debt ratio should be restricted, such that franchisors can reduce their business risk. When the franchisee's maximum leverage is set below economically optimal levels from the perspective of the franchisee, the franchisor may raise their own leverage in order to take tax deduction benefits. Thus, we predict that the more the franchisee's maximum leverage is below the optimal level, the higher the franchisor's leverage will be. We here use the deviation from the expected maximum leverage, i.e. the difference between the estimated or predicted franchisee optimal leverage and the observed maximum franchisee leverage.

[1] An implicit assumption in our analysis is that the franchisor has the power to impose a maximum debt level upon the franchisee, which is sub-optimal for the franchisee from an economic perspective. We thus assume that an inefficiency is present in the market for franchise opportunities, from which the franchisors may benefit. In this respect, our analysis allows interesting parallels with the public policy issues in the ownership redirection literature in franchising, as mentioned in Dant, Paswan and Kaufman (1996).

Hypothesis 1: The franchisor's leverage is positively related to the deviation between the franchisee's predicted maximum leverage and the observed maximum leverage.

Furthermore, we expect that the relation in Hypothesis 1 is more pronounced in a franchise chain with relatively more franchisees, vis-à-vis wholly-owned units. The reason is that a franchisor in a chain with more franchisees benefits more from the reduction in financial distress by forcing franchisees to have below-optimal debt levels, compared to chains with fewer franchised units.

Hypothesis 2: The percentage of franchised outlets versus wholly-owned outlets strengthens the positive relation between the franchisor's leverage and the deviation from predicted leverage of franchisees.

The determinants of the franchisee's capital structure

In order to construct a model for the optimal leverage level of a franchisee, we describe several factors which determine leverage in the absence of a vertical relation with the franchisor.

Outlet size

Smaller outlets generally require smaller initial equity investments in absolute terms. Since the franchisor still wants the franchisee to be committed, the franchisor is likely to increase the equity component (i.e. in relative terms) for smaller outlet sizes. Therefore, a lower initial investment will lead to a higher equity component and to lower maximum franchisee leverage.

Also, according to traditional capital structure theory, larger firms are less likely to face financial distress (McConnell and Pettit, 1984). Since a franchise outlet can also be regarded as a firm, a larger outlet size may entail a lower failure rate, which results in the possibility to borrow at more favourable rates. Therefore, a higher initial investment or a larger outlet size will lead to higher optimal franchisee leverage.

Franchise experience

The number of years a franchisor is active in the franchise business reflects their experience. The franchisor has accumulated a great deal of operating knowledge, capabilities and reinforced brand name value, and therefore faces fewer problems of resource scarcity. Therefore, franchisors with more franchising experience are less likely to fail compared to franchisors with less experience, which provides business security to the franchisees in the chain. We therefore expect that franchisees in a more experienced franchise network will have comparatively higher optimal leverage.

Franchise fee and yearly fee

Franchisors charge a one-time lump sum franchise fee and an ongoing yearly fee, which are the main sources of revenues for the franchisors. The yearly fee gives franchisors the incentive to devote themselves to actions that may improve the franchisees' sales, because the franchisor's revenues are tied to the franchisee's performance (Sen, 1993). High royalty rates make the franchisor's performance more highly tied to the franchisee's performance, which may decrease the possibility of chain failure and reduces franchisees' operating risks. Therefore, we expect that franchisees belonging to a franchise chain with a high royalty rate may be allowed to have higher leverage. The franchise fee is a payment to the franchisor for compensating for their firm-specific knowledge transferred to the franchisee. A higher franchisor's brand value may lead to higher franchise fees due to the higher rents generated by their firm-specific know-how. A franchisor may recover their specific investment through the initial franchise fee; the franchise fee is therefore expected to be positively related to the level of franchisor-specific investment (Bercovitz, 1999; Dnes, 1992; Lafontaine, 1992). As the franchisor's specific investments increase, franchise fees increase, and accordingly the franchisee's firm-specific investment increases. Since high asset specificity deters debt financing (Williamson, 1988), we expect a negative relation between the franchise fee and a franchisee's optimal leverage.

The IFA

The International Franchise Association (IFA) was established to build and maintain a favourable economic and regulatory climate for franchising. IFA members need to abide

by the IFA's code of ethics. Being a member of IFA may entail better performance, credibility and reliability; therefore the franchise network may face fewer business risks compared with non-IFA members. A franchisee's optimal leverage is expected to be higher if the franchisor is a member of the IFA.

Cooperative advertising

In franchising practice, franchisors can compensate or pay for a fraction of their franchisees' local advertising and promotion expenses, which is called cooperative advertising. Dant and Berger (1996) claim that some franchisors are not very interested in cooperative advertising since local advertising is most likely to benefit the local franchisees. Therefore, we suggest that in a franchise chain where cooperative advertising is allowed, the franchisor may face the risk of losing standardization and control over the local franchisees. In order to counterbalance such risk, franchisors may require franchisees to put up more personal wealth (equity), reducing the incentives for franchisees to cheat or shirk. Hence, franchise chains allowing cooperative advertising are expected to have a higher equity ratio and a lower leverage.

Financial assistance and lease assistance

Furthermore, franchisors can offer financial and lease assistance to franchisees. Although we have no strong predictions regarding these variables, we do include them as control variables.

The determinants of the franchisor's capital structure

Factors affecting the franchisor's leverage are discussed in this section. The franchisor's leverage is discussed in terms of the standard capital structure considerations in the franchising setting.

Firm size

Large firms tend to be more diversified than small firms, which decreases the chances of financial distress. Large firms also have relatively lower direct costs of bankruptcy.

Consequently, large firms can more easily access capital, and are offered capital at more favourable rates. Therefore, firm size is expected to be positively related to a franchisor's leverage.

Tangibility

The tangibility of assets is an important factor affecting debt financing. Tangible assets can be used to collateralize the debt, which leads to more favourable interest rates. Therefore, it is expected that firms with a higher proportion of tangible assets will have a higher level of leverage.

Market-to-book ratio

The market-to-book ratio is often taken as an indicator of future growth (see, for example, Rajan and Zingales, 1995). According to agency theory, the relation between growth opportunities and leverage is negative because of moral hazard problems. Myers (1977) argues that the firm's investment in assets with high growth opportunities is less likely to be financed with debt due to the severe problems of underinvestment.

Profitability

Myers' (1984) pecking order theory hypothesizes a negative relation between firm profitability and capital structure. The pecking order theory predicts that firms prefer to finance investments by internal financing first, then debt, and will only issue equity as a last resort. Since more profitable firms have a higher amount of retained earnings, it can be expected that internal financing is more common among these firms compared to less profitable firms. Thus profitability is expected to be negatively related to franchisor leverage. Although from a tax and bankruptcy point of view, a positive relation between profitability and debt is expected (especially profitable firms benefit from the deductibility of interest payments), it is generally found that the negative relation between profitability and leverage is stronger (see, e.g., Rajan and Zingales, 1995).

Dividend paying

Dividend-paying firms are usually less financially constrained than non-dividend-paying firms. According to the pecking order theory, unconstrained firms are expected to be less dependent on debt. Consequently, dividend paying is negatively related with franchisor leverage (Fama and French, 2002).

Non-debt tax shields

Modigliani and Miller (1963) suggest that a firm should be financed with debt in order to benefit from the tax deductibility of interest payments. However, interest payments are not the only source of tax deduction for firms. DeAngelo and Masulis (1980) argue that non-debt tax shields such as investment credits and depreciation are substitutes for debt tax shields. As a consequence, the presence of non-debt tax shields reduces the advantages of debt and thus, ceteris paribus, has a negative effect on the optimal leverage in firms.

Percentage of franchised outlets

According to the arguments of capital scarcity, firms franchise to access scarce (financial and managerial) resources and to expand rapidly (Oxenfeldt and Kelly, 1968). Franchisees are deemed to be a cheap financing resource: they supply capital through the franchise fee and their investment in individual outlets. Combs and Ketchen (1999) argue that franchisee capital can be even cheaper than the capital from financial markets due to the problem of adverse selection, which generates agency costs. If the above argument is true, franchisors with more franchised outlets apparently had higher capital costs in the financial market, which indicates that they are likely to have relatively low debt ratios. Thus, the percentage of franchised outlets is expected to be negatively related with franchisor leverage.[2]

[2] The notion that franchisee-owned outlets reduce the bankruptcy risks for franchisors underlies the theoretical model of Bürkle and Posselt (2008). It is interesting to notice that the authors model the allocation of risk in a franchising setting, but do not mention the financial structures of the franchisors and franchisees. Our analysis suggests that an interesting expansion of their model is to endogenize the capital structure choice of the franchisor and the franchisee.

Data

Our paper uses two data sources. The first consists of information about the profiles of franchising firms operating in North America. This is obtained from the Bond's Franchise Guide using issues of the years 2001-2006. The guide gives detailed franchisor profiles for over a thousand franchise chains operating in North-America. The second data source is COMPUSTAT, which contains the financial statements of listed franchising firms. Due to the unavailability of financial information of non-listed firms, our paper covers listed franchising firms. Our dataset initially comprised 97 franchising formulas. Each formula consists of franchise characteristics and financing requirements. We refer to this data as the franchisee sample. Because we gather data over the six-year period 2001-2006, we start with 493 annual observations; due to observations with missing values, our final sample consists of 394 franchisee observations. Franchisor firms may have multiple formulas. For this reason, our sample contains 56 different franchisors, resulting over the six-year period in 290 annual observations. We refer to this sample as our franchisor sample.

Variables

Although we cannot observe the franchisee's actual leverage ratios, we can observe the maximum leverage the franchisee is allowed to use. We define the maximum leverage as an outlet's total investment minus the required franchisee's equity, and divide this by the outlet's total investment. The other variables regarding the franchisee are defined as follows: *Outlet Size* is the natural logarithm of outlet's total investment; *Franchise Age* is the number of years the company has been in franchising; *Entry Fee* is the amount of the upfront fee that the franchisee must pay to the franchisor to hold the franchise outlet; and *Yearly Fee* is the percentage of sales (including advertising fee) that franchisees pay to the franchisor. The control variables *IFA Membership, Cooperative Advertising, Financial Assistance,* and *Lease Assistance* are dummy variables. We also control for industry effects by defining seven categories: non-food retailing, regular restaurant, take-out restaurant, specialty food, business service, consumer service, and "other industries".

The franchisor's capital structure is defined as total debt over the market value of total assets. The variables that determine franchisor's capital structure are defined as follows: *Firm Size* is the natural logarithm of the book value of total assets; *Tangibility* is the ratio of fixed assets to total assets; *Market to book ratio (MTB)* is the market to book assets value; *Profitability* is the ratio of pre-depreciation operating income to total assets; *Dividend Paying* is a dummy equaling one when the firm pays a dividend and zero otherwise; *Non-debt tax shields (NDTS*) is the ratio of depreciation to total assets; *Percentage Franchised* is the ratio of franchised outlets to total number of outlets; and *Deviation* is the maximum franchisee leverage minus the estimated franchisee maximum leverage.

Summary statistics

Tables 1 and 2 provide the summary statistics and correlation matrices of the variables in our study. Table 1 provides summary statistics for the franchisees, and Table 2 relates to the franchisors.

[please insert Table 1 here]

[please insert Table 2 here]

It can be seen from Table 1 that the average maximum franchisee leverage is 0.610, which means that on average 61% of the initial total investments is allowed to be financed by debt. The franchisors' average experience in franchising is 26 years. A franchisee needs to pay a franchisor on average $26,837 in order to be granted authorization to hold the franchise. The franchisee also needs to pay on average 7.1% of the annual sales (including advertising fees) to the franchisor. Table 2 shows that the franchisors have an average debt ratio of 0.236. The median of the firm's total assets is 400 million dollars. On average, 71.5% of the outlets are franchised.

Empirical results: Determinants of the franchisee's maximum debt ratio

We first investigate the role of the outlet's characteristics in determining the franchisee's leverage. We estimate the following pooled ordinary least squares regression:

$$Max\ Leverage = \beta_0 + \beta_1 Outlet\ Size + \beta_2 Franchise\ Age + \beta_3 Entry\ Fee + \beta_4 Yearly\ Fee + \beta_5 IFA\ Member + \beta_6 Cooperative\ Advertising + \beta_7 Financial\ Assistance + \beta_8 Lease\ Assistance + \sum \beta\ Industry + \varepsilon$$

Table 3 contains the results.

[please insert Table 3 here]

Outlet Size shows a strong and positive effect (t = 2.963) on the franchisee's leverage. Thus, our result supports the conventional argument that debt increases with firm size. We also find a statistically significant result for the variable Franchise Age, which has a positive effect (t = 3.320). This means that the franchise chain's experience does offer franchisees more security or more access to the financial markets, and accordingly leads franchisees to be able to obtain higher leverage. Entry Fee and Yearly Fee do not show any significant impact on franchisee's leverage. A firm's industry has a strong effect on the franchisee's leverage level. Among the six industries included, four industries show significant influence. Specialty Food (t = 6.432), Non-Food Retailing (t = 2.177) and Regular Restaurant (t = 1.935) have a positive impact on franchisee leverage, whereas leverage is lower in the Business Service industry (t = -3.340). A reason for these findings could be that the first three industries need a large amount of investment in fixed assets, while a purely service industry requires less. Fixed assets can be used as collateral, resulting in lower agency and bankruptcy costs, leading in turn to higher debt ratios.

In model (2), we include the four dummy variables IFA Membership, Cooperative Advertising, Financial Assistance, and Lease Assistance. These four variables have very significant results. In line with our expectations, franchisors require franchisees to invest more equity in case of cooperative advertising: the coefficient for Cooperative

Advertising is significantly negative (t = -2.199). IFA Membership has a positive impact (t = 3.947) on franchisee's leverage. This is in line with IFA members being able to raise more debt. We further find that Financial Assistance reduces the maximum leverage (t = -4.153), while Lease Assistance has a significantly positive effect on the maximum franchisee's debt level (t = 3.800). Given the significance of the additional four variables, we will use model (2) for our analysis on the expected franchisee's maximum leverage.

Empirical results: Determinants of the franchisor's capital structure

In this section we analyse the franchisor's capital structure. We use the following regression model:

$$Franchisor\ Leverage = \beta_0 + \beta_1 FirmSize + \beta_2 Tangibility + \beta_3 MTB + \beta_4 Profitability + \beta_5 Non\text{-}debt\ tax\ shields + \beta_6 Dividend + \beta_7 Percentage\ Franchised + \beta_8 Deviation + \varepsilon$$

The number of observations will be lower in the franchisor regression than in the franchisee regression since in some cases multiple franchisee chains belong to one franchisor. For a franchisor with multiple franchisees in a given year, we take the average value for the Deviation variable. Table 4 contains the regression results.

[please insert Table 4 here]

In model (1) we relate the franchisor's leverage to variables based on classical capital structure theories and add the variable "Deviation". We find that the variable Deviation has a positive impact on the franchisor's leverage. This effect is significant at the 1% level. These findings are in line with our first hypothesis: the franchisor's total debt level is positively related to the franchisee's debt level. The franchisor imposes a higher percentage of debt for the franchisee so that the franchisor can raise more debt. The coefficient of Tangibility is statistically significant (t = 2.658) and consistent with our prediction: tangible assets can be used as collateral and lead to higher debt ratios. Firm

Size, MTB, and Profitability have the expected signs, but the influence is not statistically significant.

In model (2), we add the variables "Dividend Paying" and "NDTS". Dividend paying firms have significantly lower leverage than non-dividend paying firms. NDTS has no significant impact on franchisor leverage. The Deviation variable remains highly significant in model (2). The impact of size, which is not significant in model (1), is statistically significant when we control for dividends and non-debt tax shields.

In model (3), we include the variable "Percentage Franchised". We predict that franchisors with more franchised outlets have a lower debt ratio because these firms were likely to face higher interest rates in the capital market. We indeed find a negative relation between Percentage Franchised and the franchisor's leverage.

Model (4) takes into account the possible endogeneity of the Percentage Franchised variable.[3] Various firm characteristics, like the firm's size, could influence both the leverage of the franchisor and the percentage of franchised outlets (Windsperger and Dant, 2006). In addition, there could be endogeneity beyond the impact of observable characteristics. We therefore test whether the relation between the percentage of franchised outlets and the franchisor leverage remains negative in a two stage self-selection model. This model will control for selection bias. The first stage of the model consists of a probit model in which we regress an above-median percentage of franchised outlets ("Chainhigh") on the variables Firm size, Tangibility, Profitability, and industry dummies. We then calculate the inverse Mills ratio, based on Heckman (1979). This ratio is added to the second stage regression as an additional variable to correct for possible selection bias.

It can be seen from Model (4) in Table 4 that the inverse Mills ratio is statistically significant, which indicates that self-selection is an important factor. However, endogeneity did not drive our results: the effect of the percentage of franchised outlets on franchisor leverage remains significantly negative in our two-stage model: the coefficient is -0.233 and the *t*-statistic -2.071. It is interesting to note that tangibility loses its statistical significance in the two-stage model.

[3] We thank Josef Windsperger for this idea.

Model (5) is an extension of model (3) in that it includes the interaction terms of Deviation with the dummies Chainlow and Chainhigh. Chainhigh equals one when the firm's percentage of franchised outlets is above the overall median (and is zero otherwise), while Chainlow equals one when this percentage is below-median. These terms are included in order to test the different effects of Deviation for firms with high and low percentages of franchised units. Compared to chains with less franchised units, the franchisor in a chain with more franchisees is especially likely to use these chains to increase its own leverage, and seize tax benefits. The results in model (5) are in line with this prediction. The interaction term Deviation*Chainhigh is found to have a significantly positive (t = 2.575) impact on franchisor's leverage, whereas Deviation*Chainlow has no influence. Model (6) estimates a regression specification in which we interact the deviation with the actual percentage of franchised outlets (instead of using dummy variables). Our results are qualitatively similar. The results in model (5) and (6) are in line with our second hypothesis: the percentage of franchised outlets versus wholly-owned outlets strengthens the negative relation between the franchisee's maximum leverage and the franchisor's leverage.

Conclusion

A strong advantage of debt over equity is that interest payments are tax deductible, while dividend payments are not. The debt that a firm can take on is however limited. Generally, the lower the probability of bankruptcy, the more debt the firm can take on. In this paper, we examine whether the tax benefits of debt are related to leverage in franchise chains. More specifically, we investigate the determinants of the franchisee's and the franchisor's capital structures. We hypothesize that the strategic use of the franchisee's capital structure affects the franchisor's debt ratio, and also relates to the decision to franchise. The primary goal of this study is to examine whether franchisors impose a limit on the franchisee's debt level in order to take tax benefits. Secondly, the paper also investigates the factors that affect the franchisee's and the franchisor's capital structures.

We find evidence supporting our primary prediction that the franchisor's capital structure is interrelated with the franchisee's capital structure. We find that the

franchisor's leverage is positively related to the deviation between the franchisee's predicted maximum leverage and the observed maximum leverage. This confirms our prediction that as the franchisor sets a higher level of the franchisee's equity requirement, the franchisor does intend to raise more debt and seize tax benefits. Hence, the results of this study provide empirical support for the model in Fraja and Piga (2004): in a vertical relationship the upstream party strategically uses the downstream party's debt level. This may also provide a subtle motive for franchisors to franchise. Furthermore, we find that this effect is stronger when the franchisor has more franchised units.

Our results supply a preliminary understanding of the determinants of franchisee's capital structure. We find that the outlet-specific factors like outlet size and franchise age significantly affect the franchisee's debt ratio. Larger outlets and longer franchise experience can lead to a higher debt level. Furthermore, we find that the industry plays a very important role in the franchisee's capital structure. Industries like Specialty Food, Non-Food Retailing and Regular Restaurant require less equity financing, whereas the Business Service industry requires more.

As for the franchisor's leverage, our study corroborates the predictions of standard capital structure theories. We find that the impact of the firm-specific factors size, tangibility, dividend paying and percentage of franchised outlets are consistent with the predictions of conventional capital structure theories. Our study adds a new but subtle way of studying the franchising propensity in addition to the previous propositions based on agency theory and the resource based view. Different from the resource scarcity argument, we do not propose that acquiring franchisee capital is a major motive for franchisors to franchise. However, our results do suggest that the strategic decision related to the franchisee's capital structure could be used by franchisors to increase firm value, which may subtly affect their franchising propensity.

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Table 1: Summary statistics for franchisees

Panel A: Summary statistics for the franchisee (394 observations)

Variable name	Variable description	Mean	Median	St. Dev.
Maximum leverage	Initial total investment minus franchisee's equity divided by the initial total investment	0.610	0.664	0.212
Outlet size	Outlet's initial total investment (in 1000s of dollars)	15.775	11.741	12.477
Franchise age	The number of years the company has been in franchising	25.609	21.000	16.529
Entry fee	The amount of the upfront fee that the franchisee must pay to the franchisor to buy the franchise outlet	26.837	25.000	11.008
Yearly fee	Ongoing percentage of sales (including advertising fees) that franchisees pay to the franchisor	0.071	0.075	0.036
IFA member	Dummy equaling one if IFA member	0.518	1.000	0.500
Cooperative advertising	Dummy equaling one if cooperative advertising is allowed	0.706	1.000	0.456
Financial assistance	Dummy equaling one if financial assistance present	0.401	0.000	0.491
Lease assistance	Dummy equaling one if lease assistance present	0.589	1.000	0.493

Panel B: Correlation matrix (394 observations)

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1)	Maximum leverage	1								
(2)	Outlet size	0.248	1							
(3)	Franchise age	0.108	0.023	1						
(4)	Entry fee	0.249	0.572	-0.074	1					
(5)	Yearly fee	0.072	0.081	0.131	0.310	1				
(6)	IFA member	0.185	0.017	0.006	0.004	0.022	1			
(7)	Cooperative advertising	-0.056	0.106	0.265	0.207	0.293	-0.022	1		
(8)	Financial assistance	-0.249	-0.099	-0.054	-0.190	0.095	0.043	0.165	1	
(9)	Lease assistance	0.136	-0.045	-0.180	0.055	0.011	0.019	0.230	0.273	1

Table 2: Summary statistics for franchisors

Panel A: Summary statistics for the franchisor (290 observations)

Variable name	Variable description	Mean	Median	St. Dev.
Market leverage	Total debt over the market value of total assets	0.236	0.161	0.239
Firm size	Book value of total assets (in millions of dollars)	5,899	400	26,342
Tangibility	Ratio of fixed assets to total assets	0.369	0.326	0.264
MTB	Market value to book value	2.119	1.692	1.424
Profitability	Pre-depreciation operating income to total assets	0.175	0.165	0.137
Dividend paying	Dummy equaling one if dividend paid	0.348	0.000	0.477
NDTS	Ratio of depreciation to total assets	0.064	0.053	0.063
Percentage franchised	Ratio franchised outlets to total number of outlets	0.715	0.801	0.271

Panel B: Correlation matrix (290 observations)

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1)	Market leverage	1							
(2)	Firm size	-0.075	1						
(3)	Tangibility	0.271	-0.138	1					
(4)	MTB	-0.255	-0.078	-0.043	1				
(5)	Profitability	-0.155	-0.105	0.300	0.590	1			
(6)	Dividend paying	-0.216	0.007	-0.173	0.121	0.147	1		
(7)	NDTS	0.153	-0.149	0.491	-0.069	0.460	-0.049	1	
(8)	Percentage franchised	-0.288	0.160	-0.513	0.079	-0.106	0.095	-0.241	1

Table 3: Determinants of the franchisee's maximum debt ratio

	Prediction	Maximum Leverage	
		(1)	(2)
Constant		0.225***	0.156
		(2.700)	(1.896)
Outlet size	+	0.073***	0.076***
		(2.963)	(3.484)
Franchise age	+	0.046***	0.064***
		(3.320)	(4.060)
Entry fee	-	0.207	0.120
		(1.487)	(0.895)
Yearly fee	+	-0.129	0.230
		(-0.393)	(0.691)
IFA member	+		0.074***
			(3.974)
Cooperative advertising	-		-0.056**
			(-2.199)
Financial assistance			-0.090***
			(-4.153)
Lease assistance			0.084***
			(3.800)
Specialty food		0.142***	0.132***
		(6.432)	(4.620)
Retailing (non-food)		0.089**	0.056
		(2.177)	(1.574)
Restaurant (regular)		0.038*	0.041**
		(1.935)	(2.037)
Restaurant (take-out)		0.013	-0.008
		(0.425)	(-0.261)
Service industry (business)		-0.170***	-0.130**
		(-3.340)	(-2.417)
Service industry (consumer)		-0.010	-0.023
		(-0.284)	(-0.564)
R^2		0.258	0.340
Observations		394	394

t-statistics are reported in parentheses and are based on Newey-West standard errors. ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively.

Table 4: Determinants of the franchisor's market debt ratio

	Pred.	Leverage					
		(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Constant		0.222***	0.180***	0.311***	0.410***	0.311***	0.309***
		(4.506)	(3.476)	(3.883)	(-2.422)	(3.911)	(3.946)
Firm size	+	0.001	0.011**	0.011*	0.008	0.012*	0.012**
		(0.187)	(1.988)	(1.904)	(1.048)	(1.862)	(2.051)
Tangibility	+	0.286***	0.225***	0.146**	-0.048	0.142*	0.141*
		(4.010)	(2.782)	(1.973)	(-0.341)	(1.812)	(1.943)
MTB	-	-0.022	-0.013	-0.012	-0.015	-0.012	-0.012
		(-1.641)	(-0.752)	(-0.704)	(-1.132)	(-0.750)	(-0.757)
Profitability	-	-0.277	-0.353	-0.350	-0.284*	-0.346	-0.348
		(-1.450)	(-1.429)	(-1.466)	(-1.753)	(-1.467)	(-1.489)
Deviation	+	0.218***	0.196***	0.173**	0.184**		
		(2.972)	(2.696)	(2.163)	(2.422)		
Dividend paying	-		-0.087***	-0.087***	-0.084***	-0.084***	-0.083***
			(-3.302)	(-3.405)	(-2.611)	(-3.478)	(-3.181)
NDTS	-		0.384	0.399	0.387	0.408	0.417
			(0.839)	(0.856)	(1.352)	(0.871)	(0.917)
Percentage franchised	-			-0.146**		-0.148**	-0.149**
				(-2.251)		(-2.310)	(-2.354)
Chainhigh	-				-0.233**		
					(-2.071)		
Inverse Mills Ratio					0.117*		
					(1.801)		
Deviation* Chainlow						0.129	
						(0.950)	
Deviation* Chainhigh	-					0.233**	
						(2.575)	
Deviation* Percentage franchised	-						0.286***
							(3.179)
R^2		0.170	0.195	0.215	n.a.	0.216	0.222
Observations		290	290	290	290	290	290

t-statistics are reported in parentheses and are based on Newey-West standard errors. ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively.