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Franchising and firm risk among restaurants

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ABSTRACT

Franchising is a growth vehicle that helps firms scale their operations. Yet, the performance implications of franchising remain inconclusive. To solve this conundrum, we contend that firm-specific attributes lead to an optimal level of franchising and that the deviation from that optimal level has important firm-level consequences. Using a sample of 64 publicly listed restaurant firms that franchise in the United States, our study integrates the risk sharing perspective with resource scarcity and agency theories to show that a failure to adhere to these theoretical prescriptions can be a financially risky proposition. For restaurant firms that franchise, our results highlight the importance of maintaining an optimal mix of franchised and firm-owned outlets.

1. Introduction

Franchising is commonplace in the United States, where 782,573 franchising establishments generated 8,834,000 jobs and an economic output of $892 billion in 2015 (IHS Economics, 2016). Franchising businesses dominate service industries such as hotels, restaurants, and auto care. Among these, the restaurant industry is widely recognized as the torchbearer of franchising owing to the presence of prominent franchising icons such as McDonald's and Kentucky Fried Chicken (Combs and Ketchen, 1999a).

Franchising allows firms to grow their network of outlets without investing their own capital, while collecting royalties based on sales from franchised stores (Bradach, 1997). Thus, in the hospitality industry, franchising, along with other fee-based systems such as hotel management contracts, is generally viewed as a viable strategy to grow business and create firm value (Sohn et al., 2013). In the restaurant industry, among firms that franchise, the extent of franchising within the network varies between less than 1% and up to 100%. We define this continuum as franchising proportion (i.e., number of franchised outlets to total outlets). At this juncture, an important question to ask is: Since franchising is such a prevalent business form in numerous industries, what are its performance implications? That is, would franchising some or all outlets lead to identical firm performance? The answers to these questions are complex and require further investigation. This study sets out to shed some light into these questions.

Empirically, the questions above resemble the internationalization decision of firms where firms generate some, most or all of their sales from foreign countries. In international business, the effect of multinationality has been investigated in two different ways: a) efforts to identify a general effect of multinationality on performance and b) efforts to identify the effect of deviation from optimal multinationality on performance (Powell, 2014) by using the so-called "alignment-performance" perspective (Venkatraman, 1989) that will be discussed in more detail throughout this study. Effects of franchising on performance can be viewed similarly, as either direct or as the deviation from optimal franchising proportion. In franchising research, the general effect proposition suggests that either more franchising is better (Madanoglu et al., 2013) or that there is a curvilinear (inverted U-shape) relationship between franchising proportion and firm performance (Bordonaba Juste et al., 2009; El Akremi et al., 2015; Hsu and Jang, 2009).

Proponents of the alignment-performance perspective (Venkatraman, 1989) suggest that various factors drive a firm's franchising proportion (Cyrenne, 2016). Therefore, the performance differences among firms should not be viewed as a function of franchising proportion but rather be based on how close the firms are to their optimal franchising proportion which is determined by firm-specific attributes (Vázquez, 2007; Powell, 2014). This alignment-performance perspective focuses on firm's "alignment" (Venkatraman, 1989) or "fit as a matching" (Sande and Haugland, 2015) with its firm-specific attributes, and serves as the main pillar for our study. In this perspective, firm-specific attributes lead to a theoretically predicted (optimal) level of franchising proportion (Vázquez, 2007) and the deviations from that optimal level of franchising proportion has negative performance consequences. To date, this approach has received limited attention in

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franchising (except Vázquez, 2007), which is disconcerting given the importance of franchising in the U.S. economy and in the U.S. restaurant industry.

We add to this research stream by aiming to establish the link between optimal franchising and firm performance. Our central premise is that, to the extent that actual franchising proportion is above or below the predicted optimal level, firms will be misaligned and experience lower firm performance. This premise helps us form the key research question of this study: Do deviations from the optimal franchising proportion given a firm's specific attributes lead to lower firm performance?

To answer this question, we follow the well-established two-step analysis method that has been used in strategic management (Silverman et al., 1997), service industries (Vázquez, 2007), international business (Powell, 2014) and marketing (Sande and Haugland, 2015) where we first use several theories to identify antecedents that predict franchising proportion and then examine the consequences of deviating from the theoretical (i.e., optimal) franchising levels. By doing so we extend the study of Vázquez (2007) which reported that deviation from optimal franchising was related to discontinuation of outlets and lower sales growth per outlet. More specifically, we show that firms that deviate from the optimal franchising proportion experience greater levels of firm financial risk and realize lower risk-adjusted financial performance. These findings contribute to the alignment-performance literature (Powell, 2014; Silverman et al.,1997; Sande and Haugland, 2015; Vázquez, 2007) by providing evidence from a prominent representative of the franchising arena –the restaurant industry– and by documenting the effects of this organizational arrangement at the corporate level during the ups and downs in the economy.

On the theoretical front, we integrate the risk-sharing perspective with agency and resource scarcity theories to predict the franchising proportion and the subsequent influence of deviation from optimal franchising proportion on firm risk and performance. That is, we show that incongruence with the prescriptions of these theories through insufficient or excessive franchising is consequential at the firm level.

In the next section, we review the literature on the antecedent factors of optimal levels of franchising that makes up the foundation of this study. We then describe the methods and report results. Finally, we discuss the findings and offer our conclusions.

2. Antecedents and consequences of franchising

2.1. Determinants of franchising proportion

The large majority of franchising firms employ a plural form of franchising (Bradach, 1997), in which they have a mix of firm-owned and franchised outlets rather than use just one or the other (Hsu and Jang, 2009; Madanoglu et al., 2013). Over the past two decades, a large body of research has sought to explain franchising proportion levels within this mix (Barthélemy, 2011; Combs et al., 2009; Cyrenne, 2016; Gonzalez-Diaz and Solis-Rodriguez, 2012; Shane, 1998). A broad-based assumption in these studies is that the examined franchising firms tend to exhibit appropriate franchising proportion levels (Combs et al., 2004). This assumption hinges on the argument that the optimal mix of franchised and firm-owned outlets would not be a number based on an industry-wide target, such as 70% of outlets being franchised outlets (Botti et al., 2009), but would rather show some variation across firms based on firm-specific attributes (Vázquez, 2007). For example, while the optimal level of franchising proportion for one firm may be 20%, it could very well be 90% for another firm depending on the geographic dispersion of its outlets (Hsu and Jang, 2009; Sorenson and Sørensen, 2001) or other factors such as firm size (Combs and Ketchen, 2003; Hussain et al., 2018), firm age (Castrogiovanni et al., 2006), and franchise fees (Cyrenne, 2016). These firm-specific factors are rooted in two prominent theories in the franchising research: resource scarcity theory (Oxenfeldt and Kelly, 1968) and agency theory (Jensen and Meckling, 1976; Rubin, 1978). The next section reviews these theories as they pertain to franchising proportion.

2.1.1. Resource scarcity and agency theory

Resource scarcity theory (Oxenfeldt and Kelly, 1968) contends that in their early years of operation, firms need to franchise most of their outlets because franchising requires fewer capital resources compared to opening firm-owned outlets. By growing faster via franchising, firms overcome (capital) resource constraints and gain economies of scale and scope, which are important for advertising and procurement of supplies (Rubin, 1978). Thus, franchising becomes an important vehicle for young firms to reach a minimum efficient scale (MES) early in their lifecycles (Carney and Gedajlovic, 1991; Caves and Murphy, 1976; Martin, 1988; Shane, 1996). MES is a concept that focuses on the minimum number of outlets required to run a national or regional advertising campaign, which is the critical mass of outlets needed to receive discounts for the bulk purchasing of goods, and the clusters of outlets needed for the efficient distribution of food and other operating supplies. Attaining MES is important for the financial health of younger and smaller firms because firms that reach MES may be viewed as legitimate firms with long-term survival prospects by both the media and financial lenders (Shane and Foo, 1999).

Relying heavily on franchising in their later years may not be the most desirable option for some franchisors because franchisees are residual claimants (i.e., they retain outlet profits) (Dant and Kaufmann, 2003). Therefore, grounded in resource scarcity theory, Oxenfeldt and Kelly (1968) proposed an "ownership redirection" hypothesis, where franchising firms acquire some of their franchised outlets because resources such as financial and human capital cease to be a concern in maximizing firm-level profits. Hence, resource scarcity suggests that in their early years franchisors should franchise almost all their outlets (Castrogiovanni et al., 2006). In later years, however, the franchising proportion should decline because firms increase their resource endowments and prefer to own outlets to generate higher profits (Dant et al., 1996). In practice, though, franchising firms rarely, if ever, become 100% firm-owned chains (cf. Castrogiovanni et al., 2006). To sum up, resource scarcity theory contends that younger and smaller firms should franchise more, while established franchisors based on number of outlets and operating experience should have a lower franchising proportion.

Agency theory is employed to explain how franchising firms manage the trade-off between two types of agency costs: (Brickley and Dark, 1987): vertical and horizontal costs (Combs et al., 2004). One of the most common vertical agency problems is shirking, which is the avoidance of franchisees of certain duties and happens when the behaviours of agents are not directly observed (Alchian and Demsetz, 1972; Perryman and Combs, 2012). Free riding is the most common horizontal agency problem, which occurs when agents cut corners to enhance outlet profits, underinvest in local advertising, or fail to supervise employees (Bradach, 1997; Brickley and Dark, 1987; Caves and Murphy, 1976).

Franchising may help reduce shirking because franchisees are more motivated than employee managers to do whatever it takes to make their units successful as they receive the profits of their outlets (Rubin, 1978). Without that profit motive, employee managers are less likely to put forth maximum effort because they do not have the same incentives as franchisees do (Combs et al., 2004). A firm may be able to reduce potential shirking among employee-managers through various monitoring mechanisms, but such mechanisms can prove costly if agents are located far from firm headquarters, such as in foreign or remote locations (Kidwell et al., 2007; Roh, 2002). Based on this discussion, firms would franchise more when monitoring costs are high and would franchise less when the risk of free riding is high.

2.1.2. Risk-sharing perspective

Another aspect that can be integrated into resource scarcity and agency theory is the level of risk sharing between a franchisor and its franchisees (Hsu et al., 2010; Lafontaine and Bhattacharyya, 1995). Some studies contend that franchising is a risk management strategy where franchisors shed locations that are remote (Brickley and Dark, 1987), have lower sales and profit potential, or are not economically worthwhile (Dahlstrom and Nygaard, 1999). This claim is partly supported by studies that show that franchised outlets generate lower sales than firm-owned outlets (Brickley and Dark, 1987). Furthermore, franchisors derive upside benefits borne by increased outlets sales in good economic times, but franchisees tend to shoulder the downside risk of low outlet profits during bad economic times (Srinivasan, 2006). In conclusion, the risk-sharing perspective contends that firms would franchise more if their outlets are located in remote locations with low profit potential.

2.2. Consequences of optimal mix of franchised vs. firm-owned outlets

The extant literature contends that there is an optimal franchising level whose attainment should lead to better firm financial performance (Hsu and Jang, 2009; Sorenson and Sørensen, 2001; Vázquez, 2007). Taking the general franchising-performance approach, Sorenson and Sorensen (2001) concluded that restaurant chains operating in all 50 US states perform best when they franchise 70% of their outlets. In a similar vein, Hsu and Jang (2009) asked whether an optimal franchising proportion exists. These authors found that the relationship exhibited by the franchising proportion is curvilinear (inverted U-shape). They concluded that firms with high geographic dispersion should franchise 55% of their outlets to achieve higher return on assets (ROA). Whereas, firms with low geographic dispersion should franchise 35% of their outlets to attain high levels of ROA.

Indirect support for optimal franchising was provided by Srinivasan (2006), who identified four latent classes (i.e., profiles) of restaurant franchising firms where the linear effect of franchising on intangible value was positive and significant for profile 2 (i.e., large firms with high advertising expense). Franchising had a U-shaped effect on intangible value for profile 1 (mid-sized firms with high financial leverage).

While the above studies enriched our understanding of the general franchising-performance relationship, Vázquez (2007), cautions that, just like the degree of multinationality (Powell, 2014), the franchising proportion is not random and depends on several firm-specific attributes such as firm size, firm age and geographic dispersion. As such, performance differences among firms should not be directly attributed to this proportion, but rather to the deviations from the optimal level of franchising. These claims are rooted in the alignment-performance perspective (Venkatraman, 1989) which offers a better theoretical clarity how aligning transactions and governance choices such as multinationality, multibranding or franchising with firm-specific attributes influences firm performance (Powell, 2014).

Adopting the fit as matching perspective (Sande and Haugland, 2015), we suggest that deviating from firm-specific optimal franchising proportion that is prescribed by resource scarcity and agency theories would result in higher firm risk. For example, a young firm with 40 outlets (10 franchised and 30 firm-owned) that are dispersed over 20 US States should experience high firm risk, because the low franchising proportion (i.e., 25%) would lead to capital scarcity, high coordination costs, and high monitoring costs, which would result in misalignment. While misalignment can be viewed as a managerial mistake, Nickerson and Silverman (2003) warn that a movement toward alignment (i.e., optimal franchising) is costly and challenging. Therefore, Sande and Haugland (2015) assume that a considerable portion of given industry's population would be misaligned.

Thus, we contend that the goal for franchising firms should be a low deviation from their optimal franchising proportion rather than maintaining a perfect optimal level of franchising.

As noted before, the only study to establish a link between optimal franchising and firm performance was by Vázquez (2007), who reported that firms that deviate from optimal franchising levels (prescribed by agency theory) face a higher rate of discontinued outlets and lower sales growth per outlet. Building on the findings of Vázquez (2007), and constructing a parallel with Powell's (2014) misalignment hypothesis, we contend that a higher deviation from the optimal franchising proportion should lead to higher firm risk. Given the preceding arguments, we posit the following research question:

> Research Question: Does a deviation from optimal franchising proportion increase firm risk?

3. Methods

3.1. Sample and data

The examination period for this study was 1997 to 2012. Sample selection started with 118 publicly traded restaurant firms listed under Standard Industry Codes (SICs) 5810 and 5812. Restaurant firms that do not franchise (i.e., 100% of their outlets are firm owned) were excluded from the main analysis, which reduced the sample to 64 franchising restaurant firms. Because some firms entered and exited the dataset between 1997 and 2012, our data is an unbalanced panel with 722 firm-year observations. We used the full sample (N = 118) with 1158 firm-year observations to conduct some of our robustness checks. Financial data was obtained from CRSP/COMPUSTAT merged files. Other company-specific data such as number of franchised and company outlets, number of states, and number of countries were hand-collected by authors from firms' annual SEC filings. The proportion of franchised outlets to total outlets (i.e., franchising proportion) for the final sample ranged from 0.92% to 99.8%. Thus, some firms relied almost entirely on firm ownership and others relied almost entirely on franchising, while most were in between those two extremes.

3.2. Variables and data analysis

Our study follows the two-stage analysis approach of Silverman et al. (1997), which has been used in other fields such as international business (Powell, 2014) and marketing (Sande and Haugland, 2015). This procedure enables us to analyze the residuals in two sequential steps where the first stage involves regressing our firm-specific attributes onto the franchising proportion to estimating a value that captures the deviation from the predicted (optimal) franchising levels (Vázquez, 2007). The second stage consists of consecutive regression of franchising (mis)alignment onto performance variables, where misalignment is quantified as the absolute value of the residuals from the first-stage regressions. In other words, in the second-step, that deviation measure from the first step becomes the main predictor of the outcome variable (i.e., firm risk). By applying these notions to our methodological design, within the core of our paper, our main motivation to adjust and run two sequential process is that we estimate and test the governing effects of our firm-specific variables simultaneously and sequentially while also test for consequences of misalignment. Also, since this procedure provides one global measure of fit/misalignment (Sande and Haugland, 2015), there is a high chance for us to better capture the outcomes of firms' operational and financial characteristics than what the outcome is with our independent estimators. Parallel to this, another advantage/reason of employing the two-stage process is that we can clearly diagnose all the variations in our independent estimators (firm-specific variables) and develop a thorough benchmark of franchising (mis)misalignment rather than just interpreting multiple interaction terms along with their levels of significance. Ultimately, this gives us a solid foundation to analyze the antecedents of firm performance outcomes.

3.2.1. First-stage analysis: misalignment estimation

In the first stage of analysis, we predicted the deviation from optimal franchising, which we used as the key independent variable in the second stage of analysis. It is a residual that is based on a set of variables, which determine the franchising proportion. This residual demonstrates the difference (positive or negative) between the historical franchising mix and the theoretical (ideal) mix. The absolute value of the residual is the measure of the deviation from the theoretically ideal franchising proportion (hereafter misalignment).

It should be noted that the franchising proportion is the dependent variable in this first-stage analysis. The independent variables are described in the next paragraph. We employed an ordinary least squares (OLS) regression with robust standard errors to estimate the predictive power of agency and resource scarcity variables on the franchising proportion. We also considered the influence of institutional theory variables on the franchising proportion (Combs et al., 2009), along with other control variables that may be correlated with franchising.

We used several variables that capture resource scarcities due to firm maturity and financial considerations. Regarding maturity, previous studies that focused on resource scarcity explanations for franchising observed a negative effect from firm size and firm age on the franchising proportion (Carney and Gedajlovic, 1991; Combs and Ketchen, 2003; Vázquez, 2007). We thus examined firm size, measured by the log of total assets (Hsu and Jang, 2009). We also examined firm age, measured as the number of years since the company's founding (Alon, 2001).

It is expected that financial resources also influence the franchising proportion. Through similar measures pertaining to debt, previous studies hypothesize that having financial constraints (i.e., high debt ratio) is positively related to the franchising proportion (Combs and Ketchen, 1999a; Gonzalez-Diaz and Solis-Rodriguez, 2012). We used the debt to equity ratio (long-term debt to shareholder equity) as a proxy for financial constraints. Firms with a lower cost of capital may have greater access to alternative financial resources and thus, franchise less (Gonzalez-Diaz and Solis-Rodriguez, 2012). We measured access to financial resources through fixed asset intensity (gross property plant and equipment/total assets) (Gonzalez-Diaz and Solis-Rodriguez, 2012; Sorescu and Spanjol, 2008).

Agency costs were represented by variables that capture monitoring costs and risk of franchisee opportunism. We used two geographic dispersion variables to serve as surrogates for monitoring costs. In both instances, we expected a positive relationship between the difficulty of monitoring (i.e., higher dispersion) and franchising proportion (Combs and Ketchen, 2003; Cyrenne, 2016). Geographic dispersion also serves as a surrogate for the risk-sharing perspective, where we posit the same positive relationship between geographic dispersion and franchising proportion (Lafontaine and Bhattacharyya, 1995). The first geographic dispersion measure was the number of U.S. states where a firm has outlets (Combs and Ketchen, 1999b). The second dispersion variable was the number of countries in which a firm operates (Combs and Ketchen, 1999b). In a meta-analysis of franchising studies, Combs and Ketchen (2003) reported that risk of opportunism is negatively related to franchising. Opportunism risk is generally captured through the level of franchisor inputs. Extant literature contends that the more valuable the franchisor inputs are, the lower the reliance on franchising is (Vázquez, 2007). We measure franchisor inputs as the ratio of sales, general, and administrative expenses (SG&A) to total outlets. In line with previous studies, we posit a negative relationship between franchisor inputs and franchising proportion (Combs and Ketchen, 2003; Vázquez, 2007). We also included the squared term and the cubic term of firm age to accommodate both resource scarcity and agency considerations over a franchisor's life cycle (Castrogiovanni et al., 2006)

Based on the arguments of institutional theory, we included industry-adjusted franchising as an additional covariate of the franchising proportion. Because there are some subtle differences between full-service and limited-service restaurants, we used the categorization of Technomic Inc. to separate firms into these two restaurant segments. We calculated segment-adjusted franchising by subtracting the actual franchising proportion from firm *j* in year *i* from the average franchising proportion of all franchising restaurant firms in that segment (full-service or limited service) in year *i*.

It is plausible that a firm's franchising decisions can be influenced by environmental uncertainty (i.e., Alon, 2001; Madanoglu et al., 2018). Therefore, we estimated the cyclical component of the annual growth in restaurant industry sales as reported by the National Restaurant Association. The conditional variance of annual industry sales was obtained through the autoregressive conditional heteroskedasticity (ARCH) modeling (Bollerslev et al., 1994). The risk-sharing perspective suggests that a higher level of environmental uncertainty is positively related to the franchising proportion. In order to demonstrate the additional variance explained by resource scarcity and agency theory variables, we first ran a model with the control variables only (Model 1): segment-adjusted franchising and industry sales uncertainty. Then, we entered resource scarcity variables to form Model 2. Model 3 was estimated with all variables: controls, resource scarcity and agency theory. The full equation predicting the franchising proportion (Model 3) was computed as follows:

$$FranProp_{it} = a + \beta_1\text{Firm size}_{it} + \beta_2\text{Firm age}_{it} + \beta_3\text{Firm age squared}_{it} + \beta_4\text{Firm age cubic}_{it} + \beta_5\text{Debt-to-equity (leverage)}_{it} + \beta_6\text{Fixed asset intensity}_{it} + \beta_7\text{States}_{it} + \beta_8\text{Countries}_{it} + \beta_9\text{Franchisor inputs}_{it} + \beta_{10}\text{Segment-adjusted franchising}_{it} + \beta_{11}\text{Industry (sales) uncertainty}_{it} + \varepsilon$$

where FranProp is the franchising proportion; Firm size is log of total assets; Firm age is number of years since the founding of the firm; Firm age squared is the quadratic term of firm age; and Firm age cubic is the cubic term of firm age; Debt-to-equity is long-term debt to shareholder equity; Fixed asset intensity is gross property plant and equipment to total assets; States is the number of U.S. States where a firm has outlets; and Countries is the total number of countries where a firm has outlets. Franchisor inputs is the ratio of sales, general and administrative expenses to total assets; Segment-adjusted franchising is the franchising proportion of firm j in year t less the average franchising proportion of restaurant segment t in year t; Industry (sales) uncertainty is the conditional variance of annual industry sales; and ε denotes the upside or downside deviation from the predicted optimal franchising proportion.

As noted before, the regression residual (ε) for each firm-year observation provided the foundation for the calculation of misalignment (Silverman et al., 1997). Specifically, misalignment was measured as the absolute value of the residual, $|\varepsilon|$, where the residual represents upside or downside deviation from the predicted franchising proportion for firm *j* in year *i*. Misalignment is bounded between 0 and 1, where a value of 0 indicates that the franchising firm is at its optimal franchising proportion (i.e., perfect alignment) and the value of 1 denotes that the firm is in total misalignment based on the prescriptions of the resource scarcity and agency.

Because predictions in traditional OLS regression are based on static, historical data, we conducted additional diagnostic tests that consider the dynamic aspects of making adjustments toward an optimal mix (Gonzalez-Diaz and Solis-Rodriguez, 2012; Venkiteshwaran, 2011). In so doing, we ensured that our results for the expected optimal mix of franchising in Model 3 were not confounded by coefficients that were calculated based on historical parameters. We ran the generalized method of moments (GMM) estimator, which is usually used to correct for biases caused by endogenous explanatory variables (independent variables) in longitudinal panel data regression models (Baum, 2006; Hansen, 2010). The generalized method of moments in regressions turns the model predictions and the "known" values of independent variables into moment conditions and adjusts over time towards its long-run equilibrium. We picked GMM because it is a very useful heuristic tool for diagnostic tests that account for dynamics in the regression models and dynamic models that are designed to match target moments. Therefore, in our study, this was the most appropriate tool to measure expected the franchising proportion.

Since GMM is a class of estimators that include ordinary least squares (OLS) and 2-stage least squares (2SLS), we also ran 2SLS regressions, which is the structural estimator using exogenous instruments to best predict dependent variables. As in GMM estimation, regressions with 2SLS use instrumental variables that are both uncorrelated with the error term and uncorrelated with the independent variables (Baltagi, 2011). In addition, in our study, the associations among variables were bidirectional with dependent variables, such as the optimal franchising proportion. In 2SLS estimations, two structural stages were estimated simultaneously. The first stage regressed the dependent variables on the independent and instrumental variables. Then, the predicted values of the independent variables were used in the second stage as predictors of the dependent variables (Bun and Windmeijer, 2010). Therefore, we ran 2SLS to compute the estimated values of the regressors (i.e., independent variables) in the first stage, and then we used those values to estimate a linear regression model of our dependent variable (franchising proportion) in the second stage. Since the computed values were based on variables that were uncorrelated with the errors, as mentioned above, our two-stage model produced an optimal model for the expected franchising proportion. Simply put, this approach allowed us to better explain the expected proportion of our dependent variable with the explanatory power of our independent variables by controlling endogeneity problems. Taken together, the primary reason for implementing these two additional diagnostic tests was to rule out the possibility that our estimations and parameters were driven by the trailing historical data of our main analysis. Thus, our additional analysis proposed predictive modeling and an adjustment toward an optimal target structure emerging from past occurrences over time.

3.2.2. Second-stage analysis

The second-stage of our analysis investigates the effect of franchising misalignment on firm risk. As noted earlier, misalignment is the absolute value of the deviation from optimal franchising and it was estimated in the first-stage of the analysis. Franchising misalignment is employed as the key independent variable in the second-stage of our analysis. The justification for choosing the dependent variable of this study (firm risk) is provided below.

While accounting-based measures such as ROA are dominant performance measures in the extant literature, these measures may be prone to manipulation (Barker and Mone, 1994). For example, firms may improve their ROA by maintaining the same level of profitability, but by reducing their asset base (Trahms et al., 2013). Such an asset reduction is plausible in franchising because franchising firms can sell an outlet where they own the property and open a new location by leasing the new outlet's space. In such cases, the firm will have a lower level of assets, which should increase the ROA even though the occupancy expenditure may be identical (i.e., mortgage payments vs. lease payments). Thus, Richard et al. (2009) recommended the use of market-based measures of performance. Following this recommendation, we used a balanced approach by adopting both market based-measures (i.e., systematic risk) and accounting-based measures (downside ROA) to capture firm risk.

Systematic risk (β) is used as an outcome variable in the second stage, because systematic risk is well accepted by the investor community due to its empirical analogue – the Capital Asset Pricing Model (CAPM) (Fama and French, 1993; Lintner, 1965; Sharpe, 1964). The estimation details of firm betas is provided in the Appendix A. We used the lagged value (*t-1*) of beta to ensure that our results were not driven by endogeneity.

Our accounting-based measure of firm risk was downside ROA. To calculate it, we first obtained the annual firm ROA from Compustat for our sample. Then, we downloaded average restaurant industry ROA from Compustat. Next, we subtracted firm ROA for year *t* from the previous year's (*t-1*) average industry ROA (i.e., benchmark return) to determine whether a firm had exceeded, met or fell below the target ROA. Based on prospect theory, we took the absolute value of the downside ROA so that it can have the same meaning as beta. That is, firms that are further below the target ROA will have a higher downside ROA and thus higher risk, whereas firms whose ROA is higher than the annual industry ROA were coded as zero and will, therefore, have a lower firm risk. Similar to our analysis beta, here again we employed the lagged value of downside ROA (*t-1*) to address potential endogeneity and momentum effects.

We controlled for several variables that are common correlates of firm risk. We included some of the variables from our first-stage analysis (firm size, firm age, number of states, and number of countries) along with other control variables in finance (Ferreira and Laux, 2007). Firm size is one of the most common variables that tends to be negatively related to risk (Beaver et al., 1970). Firm age is another prominent covariate of firm risk and performance (Ferreira and Laux, 2007; Srinivasan, 2006). The extant finance literature shows that leverage (long-term debt to total assets) has a positive relationship with firm risk since the stream of profits becomes more volatile as debt increases (Beaver et al., 1970). Sorenson and Sorensen (2001) reported that the number of states has a negative effect on the log variance of revenues. We also controlled for the influence of diversification on firm risk (Ferreira and Laux, 2007), by using two diversification proxies as controls. The first was the number of countries that captured geographic scope. The second was the product diversification whose analogue is a categorical variable, i.e., a multi-branding dummy (1 = multi-branded firms, 0 = single-brand firms). Dividend policy is another common covariate of firm risk. We measured it as a categorical dummy (1 = dividend paying firm; 0 = non-dividend paying firm) (Ferreira and Laux, 2007). Since Beaver et al. (1970) documented that growth can influence firm risk, we computed firm growth as annual growth in total outlets. We also included capital intensity, which is measured as total assets to total sales (Capon et al., 1990). As mentioned previously, to offer a conservative test of our hypothesis and to control for momentum effects, we included the value of the dependent variable at time *t* (Combs et al., 2009; Deutsch et al., 2011). Finally, we controlled for the possible influence of the time trend and conditional heteroskedasticity by constructing a year dummy for each observation year (Deutsch et al., 2011).

Regression diagnostics showed that there is autocorrelation (Hoechle, 2007). This routine allows us to estimate fixed-effects models with Driscoll-Kraay standard errors (Driscoll and Kraay, 1995, 1998) which are robust to heteroskedasticity, autocorrelation, and cross-sectional dependence (Driscoll and Kraay, 1998). We used four models where Models 1 and 3 were the baseline models that include all control variables. Models 2 and 4 consisted of controls plus our focal variable, deviation from optimal franchising (misalignment), and can be stated as follows:

$$\textit{Firm risk}\ (t+1) = a + \beta_1 \text{Firm size}_{it} + \beta_2 \text{Firm age}_{it} + \beta_3 \text{Leverage}_{it} + \beta_4 \text{States}_{it} + \beta_5 \text{Countries}_{it} + \beta_6 \text{Multibranding}_{it} + \beta_7 \text{Dividend policy}_{it} + \beta_8 \text{Growth}_{it} + \beta_9 \text{Capital intensity}_{it} + \beta_{10} \text{Year dummies}_{it} + \beta_{11} \text{Firm risk}_{it} + \beta_{12} \text{Franchising misalignment}_{it}$$

Where, Firm risk is the forwarded value (t + 1) of systematic risk measured by beta or downside risk (downside ROA); Firm size is the log of total assets; Firm age is years since the firm's founding; Leverage is long-term debt to total assets; States is the number of U.S. States where a firm has outlets; Countries is the total number of countries where a firm has outlets; Multi-branding is a categorical variable (1 = multi-branded firms, 0 = single-brand firms); Dividend policy is a categorical variable (1 = Dividend paying firms; 0 = Non-dividend paying firms); and Growth is annual growth in total outlets; Capital intensity is total assets to sales; Year dummies is a dummy variable for each observation year; Firm risk (t) is the value of firm risk for time (t); and Franchising misalignment is the absolute value of the residual $|\varepsilon|$, where the residual represents upside or downside deviation from the predicted franchising proportion for firm *j* in year *i*.

3.2.3. Additional analysis and robustness checks

We ran an additional analysis by using an alternative specification for firm risk to ensure the robustness of our findings. We employed book equity to market equity (book-to-market ratio), which has been used, in earlier management studies, as a proxy for sensitivity to risk factors in returns (Deutsch et al., 2011) and has been recommended as an alternative measure to beta in finance. The book-to-market ratio was measured as the book value of equity to the market value of equity (Fama and French, 1995).

To further extend the robustness of our results, we employed a market-based measure —Jensen's alpha (Jensen, 1968)— which is one of the most common measures of risk-adjusted financial performance. Jensen's alpha extends beyond firm risk by representing the excess return a firm's stock has generated over the average market return and firm's beta, as predicted by the CAPM. In essence, alpha is a benchmark measure that shows whether a firm fell short, met or beat the returns expected by investors.

4. Results

4.1. Predicting franchising proportion

In Table 1, the descriptive statistics show that the mean firm age was about 32 years, and the mean value for the number of states was approximately 28. Our sample of restaurant firms averaged operations in 10 countries and had a franchising proportion of more than 44%. Correlations among independent variables ranged between -.235 and .738. We checked Variance Inflation Factors (VIFs) for all predictors to ensure that results were not due to multicollinearity. Our findings indicated that the VIFs ranged between 1.07 and 3.82, which is below the suggested threshold of 10 by Pedhazur (1997). Therefore, any concerns about possible multicollinearity were ruled out.

Results for the first-stage analysis reveal that the two control variables —segment-adjusted franchising proportion and industry-level environmental uncertainty— accounted for approximately 12% of the variance in franchising proportion (See Table 2). In this model, segment-adjusted franchising was positively and significantly related to franchising proportion. The inclusion of variables representing resource scarcity (Model 2) improved the explained variance to 37.5%. In this model, both control variables were positively and significantly related to franchising proportion. Among resource scarcity variables, size and fixed asset intensity had a significant negative relationship with franchising proportion. Firm age was positively and significantly related to franchising. The full model (Model 3) led to an increase in the R-squared value to 56%. Results showed that all variables were significantly related to franchising proportion. All variables, except debt-to-equity, had the expected directional relationship with franchising proportion. It is also worth noting that the significance of the linear term of age, along with its squared and cubic terms, supported the findings of Castrogiovanni et al. (2006).

Parallel to our main regressions for the full model, our additional diagnostic checks in both Models 3a and 3b produced very similar results allowing us to infer more strongly that independent variables are viable predictors of franchising proportion (i.e., an R-squared value of 53% in model 3b with 2SLS regressions). This allows us to draw a conclusion that our predictive variables are robust predictors of the optimal franchising proportion even when they are estimated simultaneously with 2-stage structural regressions that are free of endogeneity and unobserved heterogeneity concerns.

4.2. Main findings

As can be seen in Table 3, the average value of systematic risk was 0.646, which means that overall franchising firms have lower risk than the entire restaurant market portfolio. The mean for leverage was 0.280, which denotes that approximately one quarter of the firms' assets was financed with debt. The average deviation from the optimal franchising proportion for our sample was 0.178, which is slightly higher than franchising misalignment value of Vázquez (2007) of about 14%. That is, franchising firms were approximately either 18% above or below their optimal levels of franchising on average. This value denotes that the mean optimal level of franchising proportion for this sample was either 27% or 61%. Table 3 also shows correlations among all variables. In the second-stage analysis, there are some different predictors such as dividend policy and multibranding, which required the evaluation of VIFs for all predictors. For the second-stage model variables, the VIFs ranged between 1.07 and 4.56. Therefore, we concluded that our results were not affected by multicollinearity between predictor variables.

Table 4 presents of the results our regression analysis with systematic risk (β) as a dependent variable. We first tested a baseline model (Model 1) that included only the control variables. Findings showed that among control variables, firm age, the number of U.S. states, multi-branding and systematic risk (t) had a significant, positive influence on the lagged value (*t-1*) of β when $p < 0.05$. In Model 2, we examined the effect of franchising misalignment on systematic risk. Hypothesis 1 predicted that firms that deviate further from their optimal franchising proportion will have higher systematic risk. Results revealed that franchising misalignment is positively related with beta ($\beta = .965$, $p < .01$), which lends support to Hypothesis 1.

The relationship between control variables and downside risk is presented in Model 3. Results indicate that firm age and multi-branding had a negative relationship with downside risk ($p < .05$). On the other hand, leverage, number of states, number of countries, capital intensity, and growth are positively related with downside risk ($p < .05$). In Model 4, we investigated the influence of franchising misalignment on downside risk. We observed that franchising misalignment has a

Table 1
Descriptive Statistics and Correlations for Predictors of the Franchising Proportion.

Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10
Franchising proportion	.448	.324	1									
Segment franchising	.442	.111	.354*	1								
Industry uncertainty	.009	.001	.166*	.413*	1							
Firm size [a]	1218	3929	.042	.350*	.235*	1						
Firm age	31.942	19.109	.221*	.174*	.256*	.176*	1					
Debt to equity	.638	7.857	-.063	-.074*	-.027	-.004	-.061*	1				
Fixed asset intensity	.995	.394	-.501*	-.144*	.117*	-.105*	-.019	.006	1			
Number of states	28.386	16.897	.339*	.401*	.232*	.738*	.109*	-.018	-.234*	1		
Number of countries	10.685	24.073	.362*	.314*	.144*	.517*	.159*	-.012	-.154*	.480*	1	
Franchisor inputs	.173	.348	-.373	-.186	-.051	.081*	-.026	-.022	-.005	-.086*	-.131 − .131*	1

Notes: *$p < 0.05$, [a]Reported mean and standard deviation for firm size is not log-transformed.

Table 2
Predictors of the Franchising Proportion.

Variable	Model 1	Model 2	Model 3	Model 3a	Model 3b
Segment Franchising	1.000(.112)***	.693(.104)***	.435(.095)***	.898(.222)***	1.596(.420)***
Industry Uncertainty	−0.002(.014)	.003(.001)**	−.002(.000)**	.000(.000)***	.000(0.000)*
Firm Size		−.021(.005)***	−.091(.008)***	−.121(.014)***	.119(.010)***
Firm Age		.001(.000)*	.002(.000)**	.000(.000)***	.004(.000)***
Firm Age (*squared*)			.002(.000)**	.004(.001)*88	−.000(.000)*
Firm Age (*cubic*)			−.001(.000)***	.000(.000)	.0000(.000)
Debt to Equity (*leverage*)		−.002(.001)	−.002(.001)*	−.036(.025)	−.027(.027)
Fixed Asset Intensity		−.410(.027)***	−.307(.024)***	.000(.001)***	.000(.000)***
Number of States			.007(.001)***	.013(.001)***	.009(.001)***
Number of Countries			.004(.001)***	.003(.000)***	.003(.000)***
Franchisor Inputs			−.243(.037)***	−1.024(.136)***	−.994(.117)***
Constant	−.002(.047)	.599(.061)***	.381(.090)***	.000(.314)***	.000(.208)***
F	50.08***	66.49***	75.33***		
R^2	.125	.375	.564		.513
Adj. R^2	.123	.369	.557		
N	675	675	675	531	531

Notes: *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$; Standard errors are shown in parentheses. Model 3a is the generalized methods regression (GMM) model with 2-step robustness estimations based on the 2-moment regressions. GMM iterations 1 and 2: 0.0046 in the first step and iterations 1 and 2: 0.0545 in the second step. Instruments are Segment Franchising, Firm Size, Firm Age, Firm Age (*squared*), Firm Age (*cubic*), Debt to Equity (*leverage*), Fixed Asset Intensity, Number of States, Number of Countries, Franchisor Inputs, Growth, Dividend Policy, Multi-branding, Capital Intensity. Model 3b is the regression model with the 2-stage least squares regressions. *Wald chi2(10):* 702.54 while *Prob > chi2:* 0.000 with *Root MSE:* .223.

Table 3
Descriptive Statistics and Correlations for Predictors of Firm Risk.

Variable [a]	*Mean*	*S.D.*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*
1 Systematic Risk	.646	.474								
2 Downside Risk	.033	.075								
3 Firm Size [b]	5.487	1.837	1							
4 Leverage	.275	.333	.230*	1						
5 Firm Age	29.793	19.406	.205*	.185*	1					
6 Number of States	24.071	16.680	.831*	.163*	.111*	1				
7 Number of Countries	1.657	.759	−.226*	.066*	−.053	−.272*	1			
8 Capital Intensity	7.544	20.742	.645*	.251*	.164*	.467*	−.121*	1		
9 Growth	.149	1.600	.013	.006	−.027	−.047	−.046	−.022	1	
10 Misalignment	.178	.145	el.079*	−.059	−.040	.091*	−.177*	−.102*	−.009	1

Notes: *p < 0.05. [a] Correlation means and standard deviations for categorical variables (multi-branding and dividend policy) are not reported. [b]Reported mean and standard deviation for firm size is not transformed.

Table 4
Analysis with Systematic Risk and Downside Risk as Dependent Variables.

Variable	Systematic Risk		Downside Risk	
	Model 1	Model 2	Model 3	Model 4
Firm size	−.048(.043) [a]	−.039(.044)	.007(.006)	.005(.005)
Leverage	.054(.107)	.056(.108)	.028(.008)**	.012(.007)
Firm Age	.048(.090)*	.047(.012)**	−.004(.001)**	−.004(.001)**
Number of States	.017(.003)**	.009(.004)*	.001(.000)**	−.001(.000)
Number of Countries	−.002(.003)	.001(.004)	.001(.000)*	.001(.000)**
Capital Intensity	.004(.007)	.013(.076)	.025(.006)*	.020(.009)*
Growth	.146(.091)	.130(.086)	.012(.003)**	.012(.003)**
Dividend Policy	−.043(.018)	.039(.017)*	.005(.003)	.004(.003)
Multi-branding	348(.074)***	.253(.090)**	−.022(.009)*	−.022*(.010)*
Systematic Risk	.275(.036)***	.252(.034)***		
Downside Risk			.203(.123)	.232(.088)*
Misalignment		.965(.323)**		.089(.037)*
Year Dummies	Yes [a]	Yes	Yes	Yes
Constant	−.378(.171)*	−.529**	−.001(.002)	−.007(.024)
Within R^2	.409	.463	.232	.249
F	2104.02***	1483.63***	1323.36***	573.13***
N	437	437	561	561

Notes: [a]"Yes" denotes that dummy variables were included in the model estimation. *$p \leq .05$; **$p \leq .01$; ***$p \leq .001$; Standard errors are shown in parentheses.

positive significant effect on downside risk (β = .089, p < .05), which is consistent with Hypothesis 1.

4.3. Robustness tests and alternative analysis

Because approximately 30% of the firms in this sample have international operations, we considered the international heterogeneity of franchising restaurant firms. We measured international scope as number of countries because most restaurant firms do not report the number of outlets per country or international sales per country. To partially control for heterogeneity of international markets, we created a multi-nationality dummy where firms with international operations were coded as 1 and domestic (US) firms were coded as 0. Results showed that multi-nationality is not significantly related to franchising proportion. Therefore, it is less likely that inter-country heterogeneity explains an additional variance in franchising proportion.

It is plausible that the decisions of some non-franchising restaurant firms are also influenced by agency theory and resource scarcity considerations. In their early years, these non-franchising firms may also face resource constraints. In addition, non-franchising restaurants that operate across several US States may need to deal with monitoring costs. Therefore, we repeated our main analysis with all publicly listed restaurant firms (i.e., franchising and non-franchising). That is, we first calculated a new misalignment measure by predicting the franchising proportion for all restaurant firms. Then, we used this new misalignment measure as a predictor of firm risk. Results revealed that misalignment was positively related to both the systematic and downside risk of restaurant firms.

To ensure that our results are robust against alternative specifications of firm risk, we ran an additional test with book equity to market equity as an alternative outcome variable. Our results in Table 5 show that franchising misalignment is positively related to book equity to market equity, which increased confidence in our model. Next, we used Jensen's alpha as a measure of risk-adjusted financial performance. It was observed that franchising misalignment had a negative and significant influence on Jensen's alpha (-0.001, p < .05). This finding denotes that franchising firms, which further deviate from predicted franchising levels, realize a lower risk-adjusted financial performance.

We considered an alternative specification for firm size by using the total number of outlets. We also employed an alternative growth measure in lieu of outlet growth by calculating an annual sales growth. The findings indicated that the use of these alternative measures of firm size and (sales) growth did not change our results. That is, franchising misalignment remained a significant predictor of systematic and downside risk by retaining its hypothesized positive sign.

Table 5
Robustness Analysis with Alternative Dependent Variables.

Variable	Model 1 (Book-to-Market-Equity)	Model 2 (Jensen's Alpha)
Firm Size	−.509(.147)**	−.000(.000)
Leverage	.605(.417)	−.001(.000)*
Firm Age	.087(.024)**	−.000(.000)
Number of States	.005(.004)	−.001(.000)*
Number of Countries	−.010(.002)***	.001(.000)*
Capital Intensity	−.246(.097)*	.001(.000)*
Growth	.166(.060)**	−.000(.000)
Dividend Policy	.152(.077)	−.001(.000)*
Multi-branding	.175(.005)**	.003(.002)
Book-to-Market (t)	.482(.158)**	
Jensen's Alpha (t)		−.179(.046)***
Misalignment	.771(.313)*	−.001(.000)*
Year Dummies	Yes	Yes
Constant	1.565(1.117)	.002(.002)
Within R^2	.297	.256
F	145.31***	176.56***
N	459	438

Notes: *p < .05; **$p \leq$ .01; ***$p \leq$ .001; Standard errors are shown in parentheses.

Finally, we checked whether business cycles play a role in the relationship between franchising misalignment and firm risk. For this purpose, we estimated the cyclical component of the annual Gross Domestic Product (GDP) growth through ARCH modeling (Bollerslev et al., 1994). We used the variance in GDP growth as a moderator of the relationship between franchising misalignment and firm risk. Our results indicated that the interaction term of franchising misalignment and business cycles was not significant. This observation implies that franchising misalignment is positively related to firm risk irrespective of the state of the economy.

5. Discussion and implications

Our study contributes to the alignment-performance view, which found that misalignment is negatively related to firm performance (Silverman et al., 1997; Powell, 2014), by considering a prominent organizational arrangement in the restaurant industry – franchising. The findings of the present study lend support to hospitality management literature that pertains to franchising by extending previous studies. We further develop arguments of Hsu and Jang (2009) and Sorenson and Sørensen (2001) who proposed an optimal franchising proportion that focuses on geographic dispersion. More specifically, we included a full battery of variables based on several theories to first predict franchising proportion and then assess the effect of the deviation from optimal franchising on both firm risk and risk-adjusted financial performance. Notably, we used 16 years of data to capture the dynamic relationship between franchising misalignment and firm risk, as opposed to the cross-sectional design of previous studies on franchising misalignment (cf. Vázquez, 2007). Our model predicted approximately 57% of the variation in franchising proportion, which is higher than the variance explained (i.e., 48%) in the model by Vázquez (2007). These findings attest to the reliability and the validity of our model because of the longitudinal nature of data compared to a single year (i.e., 2000) in the Vázquez's (2007) study.

The primary contribution of this study is that it sheds light not only into the relationship between optimal franchising and firm risk, but also into studies that look at asset light strategies such as, management contracts and/or operational contracts for the brand management in various sub-sectors of the hospitality industry including the restaurant corporations (Sohn et al., 2014, 2013). By bringing misalignment logic (i.e., deviation from the optimal level) into asset light strategies, such as franchising, our results explain why Sohn et al. (2014) may have uncovered asymmetric results for asset-light and asset-heavy hotel firms during various business cycles. On the contrary, from the financial and investing activities points of view, we contend that neither an asset-light (an equivalent of a high franchising proportion) nor an asset-heavy (an equivalent of a low franchising proportion) strategy provides the answer to how to achieve lower firm risk, and thus, corresponding firms' performance consequences in the restaurant industry. Rather, an optimal level of assets (determined by firm-specific characteristics) should lead to lower levels of risk and higher returns.

Empirically, we particularly show that misalignment increases both the systematic risk and the downside risk of franchising restaurant firms. Moreover, our focus on firm risk addresses concerns raised by Richard et al. (2009) that risk is a key financial outcome that has often been ignored or overlooked in previous studies. By explicitly measuring franchising misalignment using restaurant firms' key accounting and financial practices, we are able to demonstrate its effect on more than one party (i.e., restaurant franchisors and shareholders). For restaurant franchisors, higher firm risk may lead to higher borrowing costs, and these companies may be more likely to experience higher bankruptcy and agency costs as well as greater costs of informational asymmetry due to a heavy and constant dependence on investing in capital projects and acquiring fixed assets (i.e.,Barreda and Kizildag, 2015; Kizildag, 2015; Ozdemir and Kizildag, 2017). That is, based on the logic of "the higher the risk, the higher the expected return," investors, who hold restaurant stocks in their portfolio, should be compensated for the risk they bear in investing a firm. This strategy might be very doable because the optimal mix of franchising can compensate the possible losses for these type of investors across the restaurant industry due to volatile earnings and other related factors. If a firm is not able to deliver returns that match or exceed undertaken risks, investors are likely to sell a firm's shares, which may lead to lower firm value. Our findings largely confirm this logic when we obverse the firm-specific variations across restaurant firms. Additionally, through some robustness analysis, we find that restaurant franchising misalignment not only leads to higher firm risk but also results in lower risk-adjusted financial performance (as measured by Jensen's alpha). Such a finding implies that higher firm risk does not necessarily lead to higher stock market returns for franchising firms with high levels of misalignment across restaurant companies. Specifically, we demonstrate that the shareholders of these highly misaligned franchising restaurant firms were not compensated for the risks they undertook. Taken together, most of our deductions are in line with a rich stream of literature on the topic, and our contribution extends agency and resource scarcity theories in ways that we put forth how incongruence with the prescriptions of these theories is consequential at the firm level due to cyclical effects of constantly changing investment environment in the restaurant industry.

This study both validates and clarifies much antecedent research on franchising. As we noted, tests of resource scarcity and agency propositions assumed that firms are rational and therefore tend to do what works best for them (cf. Combs et al., 2004). Thus, for example, agency arguments suggest that franchising is greater for geographically dispersed firms because the benefits of reduced shirking outweigh the costs of potential free-riding in such cases. Our results support that assumption by showing that the theoretically predicted optimum, based on antecedents of franchising proportion research, is a true optimum in that misaligned firms are worse off. Moreover, our findings clarify that misaligned firms are worse off in terms of firm risk and risk-adjusted returns.

Our results offer some other critical implications for researchers in the hospitality and financial management fields as well as the practitioners and policy makers in the restaurant industry. To the extent that restaurant firms are misaligned, they are in fact leveraging in one direction or another, mostly due to the complex and vulnerable financial nature and structure of restaurant firms. To mention a few: varying degrees of free cash flow, cash holdings, high levels of capital expenditure, and low levels of operating margins on their books leading to high volumes of financial and operational risks (Kizildag and Ozdemir, 2017; Madanoglu et al., 2012, 2018; Demirer et al., 2018). If restaurant companies positively deviate from the optimal franchising level, they are leveraged on franchising and the innovation and management effort benefits that franchising brings. If they deviate negatively, they are leveraged on restaurant firm ownership and the greater control that it yields. As is often the case with debt leverage, this "structural leverage" can enhance the magnitude of profits or losses, as conditions fluctuate in the short run, resulting in greater systematic risk. Thus, firms need to manage their agency and resource considerations in order to reduce risk (i.e., business risk of restaurant outlet franchising agreements).

An important implication for practitioners in the restaurant industry is that franchising misalignment increases firm risk. More specifically, a 10% increase in misalignment would increase beta (i.e., systematic risk) by about 0.1 (based on the coefficient of 0.965 for misalignment in Table 4) from 1.5 to 1.6. In practice, this means that in a market where the expected market-risk premium is 5% the firm with a beta of 1.6 needs to deliver a return of 8% (5% x 1.6) to its shareholders vs. a 7.5% return with a beta of 1.5. The difference of 0.5% in expected return is important both in statistical and practical terms. Further, franchising above or below the level of franchising optimally predicted by resource scarcity and agency theories not only magnifies firm risk but also reduces risk-adjusted financial performance. We found that an increase in agency costs may hurt firm profitability and increase firm risk. Thus, restaurant franchisors that aim to achieve low firm risk should carefully manage their resource and agency considerations when deciding whether to increase or decrease their franchising proportion. However, this might adversely aff ;ects restaurant firms' stock prices, and thus, equity returns and performance if they do not strike a balance between the upper bounds of franchising level and optimal franchising mix. To some extent, because such considerations are firm specific, different franchisors will have a different optimal mix and thus different franchising proportion targets in their restaurant investment portfolio. These targets should be learned over time and should be set based on historical results, rather than being calculated in advance.

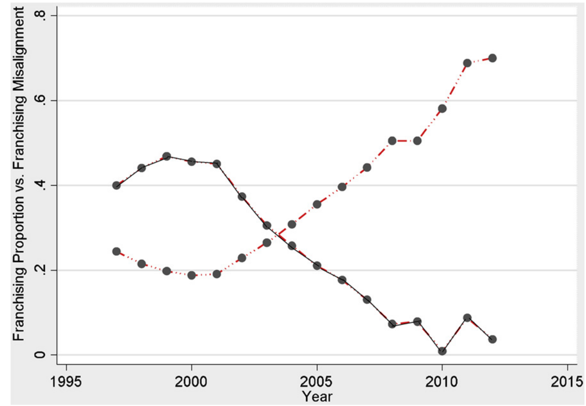

Fig. 1. Franchising Proportion vs. Franchising Misalignment of a Restaurant Firm.

Notes: Dashed lines indicate franchising proportion; Solid lines indicate franchising misalignment

To demonstrate how firms manage their franchising proportion over time, we have chosen a sample restaurant firm (Jack in the Box). As can be seen in Fig. 1, in 1997, Jack in the Box had a franchising proportion of about 25% and the deviation from the optimal level was about 40%. That is, the osptimal level for Jack in the Box in 1997 was a franchising proportion of 65%, and the actual level was only 25%. In 2005, the firm increased its franchising proportion to 35%, which brought down misalignment to 20%. In 2010, the firm had a franchising proportion that was close to 60% which was the optimal level for the firm as its misalignment was 0. We checked company news to better understand what led to these changes between 2004 and 2010. In 2005, the company had a new CEO (Linda Lang) who launched an expansion campaign until 2010 and served as a CEO until her retirement in 2013 (Allen, 2013).

It is conceivable that maintaining or increasing the speed at which a firm reaches its target franchising proportion is hampered by adjustment costs for contractual reasons (Combs et al., 2009). For example, converting franchised stores to firm-owned stores may be difficult if the franchisee has several years left on the franchising agreement. However, it is plausible that franchisors can take several actions to operate at a level that is sufficiently close to their optimal franchising mix. For example, on one hand, firms that have insufficient franchising proportion can try to attract new franchisees, allow current franchisees that own multiple outlets to open additional outlets or franchising firms can sell some of their firm-owned stores to franchisees. On the other hand, firms that have excessive franchising proportion can buy back some franchised outlets whose contract terms are set to expire by offering buyback incentives to franchisees, or franchisors can open additional firm-owned outlets.

6. Limitations and future directions

This study is not free of limitations, which we acknowledge. First, because our sample is structured as unbalanced panel data, it is possible that some other theories and industry specific-variables could affect the optimal franchising mix. While categorical data such as a restaurant segment (i.e., full service) is readily available, the service complexity or the nature of operational routines may also play a role in how much each firm franchises (Brookes, 2014). Future studies can conduct surveys with restaurant managers or a panel of experts to include variables such as advertising (Park and Jang, 2012), and the opportunistic behavior of franchisees (Brookes et al., 2015) to estimate optimal franchising levels.

Second, the use of archival data precludes us from measuring some of the benefits of plural forms of franchising, such as uniformity and system-wide adaptation (Bradach, 1997). Obtaining primary data about the benefits of plural forms may offer a more fine-grained explanation about how misalignment influences firm-level outcomes, such as firm risk.

Third, contractual growth such as area development in domestic markets and master franchising of international outlets may explain why some firms over-franchise. In both of these types of contracts, the franchisor may specify how many stores can be opened in a given period by the area developer or by the master franchisee. Thus, at a firm level, the franchisor may tolerate the fact that the chain is over-franchised so long as the firm captures the best locations (before its competitors) in regions or countries of growth.

In these agreements, some franchisees can open multiple outlets. However, when multiple outlets are founded by the same franchisee, he/she is no longer in charge of an individual stores. This situation creates mini-chains within a chain because the multi-outlet franchisee now needs to hire managers to run these outlets (Jindal, 2011). Yet, managers do not have any claims on residual income (i.e., profits), which may increase agency costs at a firm level. Future studies can further delve into the effects of multi-outlet ownership by a franchisee to help us understand how it increases agency costs and subsequently affects firm risk.

Fourth, by using historical data across franchisors to determine the optimal mix for each particular franchisor, we are assuming that franchisors usually know what they are doing (cf. Combs et al., 2004). In other words, we contend that franchising firms are making rational choices about franchising some of their outlets while owning others outright. Thus, historical tendencies observed for the whole sample indicate what is best in each case. Future research can test this assumption by using the tenets of rational choice theory.

7. Conclusion

This study looked at the performance implications of franchising to shed some light into the inconclusive findings of this research subject (Hsu and Jang, 2009). Our work demonstrated that the misalignment of franchising proportion with firm-specific attributes is consequential on firm performance, which is in line with the alignment-performance approach of Venkatraman (1989) that has been studied in several business disciplines. More importantly, this study can help explain why past studies reported that the general effect of franchising proportion led to a different influence of firm performance: a linear effect (Madanoglu et al., 2013) and a curvilinear effect (Hsu and Jang, 2009). The alignment-performance view offers an elegant depiction of how keeping franchising proportion close to a firm-specific optimal level boosts firm performance.

Specifically, we answered the question whether deviating from the optimal mix of franchised and firm-owned outlets influences restaurant firm risk and risk-adjusted performance. Our findings corroborate prior studies that took the franchising-performance approach or fit as a matching perspective to contend that there exists an optimal franchising proportion (Hsu and Jang, 2009; Sorenson and Sørensen, 2001; Vázquez, 2007). Thus, our work strengthened both the evidence and the confidence in the conclusions of previous studies in this area of inquiry.

We extend previous research by demonstrating that firms that franchise need to manage their agency and resource considerations effectively to reduce firm financial risk. We recommend future researchers employ other perspectives such as the resource-based view and property rights theory to explain franchising levels and thus further delve into the delicate relationship between franchising and important organizational outcomes such as firm survival, profitability, and firm risk. On the practical side, it is our hope that this study paves the way for future studies conduct surveys with firm executives to offer a fine-grained explanation of how firms manage their long-term targets of franchising proportion to achieve high firm performance.

Appendix A

Estimation of Systematic Risk

Firm systematic risk (or firm betas) were estimated by using daily observations of stock returns. For each firm year in our sample, we retrieved daily stock returns for the 252 trading days before the fiscal year end, using CRSP data (Rego et al., 2009).

Firm stock returns were regressed against the following four risk factors. The first factor is excess market return, which is the difference between the market rate (r_m) and the risk-free rate (r_f), and is based on the CAPM (Lintner, 1965; Sharpe, 1964). The next two factors, size and distress, were developed by Fama and French (1993). Size is the difference between the returns on portfolios of small and big company stocks. Distress is the difference between the returns on portfolios of high- and low-book equity/market equity (BE/ME) stocks (above and below the 0.7 and 0.3 fractiles of BE/ME). The last factor, momentum is based on buying past winners and selling past losers over the previous 3–12 months. Among these four risk factors, the obtained regression coefficient (β) for excess market return (r_m-r_f) for every firm year observation is our estimate of systematic risk or beta.

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