



Asymmetric impacts of the asset-light and fee-oriented strategy: The business cycle matters!



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ABSTRACT

The hotel industry in the United States has witnessed the rapid spread of the strategy of pursuing fee-based business (management/franchise) while going asset light. The two main consequences of this strategy are protection by shaving off fixed assets, and growth without a huge capital investment by expanding fee-based business. We examined how the impacts of this strategy vary with the business cycle. During a contraction period, the stable income stream of fee-based revenue and low operating leverage protect the firms from unexpected negative shocks. However, the efficient management of core intangible assets and the fee income structure resembling option payoffs act as driving forces to growth during an expansion period, increasing the firm's sensitivity to economic recovery. Consistent with the hypotheses, the management/franchising firms' beta was lower during contraction periods but higher during expansion periods than non-management/franchising firms' beta, and the beta movement between the two periods was significant in both groups. However, the proposed effects of the strategy appeared to apply only to the firms substantially engaged in fee-based business. Firms employing the strategy at a low or moderate level had stable beta over the cycle.

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1. Introduction

In recent years, many hotel chains in the United States (U.S.) have gradually shifted their positions from owners and developers of properties to franchisors or management service providers with lighter assets on the balance sheet. Fee-based business mostly takes the form of either a management contract or franchising. From 2002 to 2010, the industry-wide fee income ratio, which is the ratio of the sum of fee-based revenue against sales revenue, has increased from 7.5% to 13.3%, more than a 75% increase. In the meantime, the average size of the fixed assets of public hotel firms has been reduced from \$2.3 billion to \$1.1 billion (Sohn et al., 2013). Sohn et al. (2013) referred to the strategy of reducing fixed assets and increasing fee-based revenues as “asset-light and fee-oriented (ALFO) strategy.”

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The implications of the ALFO strategy are twofold: reducing risk, and expanding the franchising/management business without huge capital investment. Fee income is less volatile than income earned from operating company-owned properties, suggesting that fee income brings stability to the bottom line (Roh, 2002). In addition, by whittling down properties, hotel firms not only reduce the risk associated with high operating leverage, but also obtain additional liquidity, which further decreases default risk (Denis, 2011). The resource-based view predicts that firms oriented toward fee-based business will grow more quickly with limited capital. Core competencies in the management/franchising business, such as established distribution channels and brand equity, are hard to imitate, but easy to replicate across properties (Barney, 1991; Dierickx and Cool, 1989). Hence, firms doing fee-based business are able to expand the business more efficiently than other conventional hotel firms by leveraging their intangible strategic assets. Considering that the two faces of the ALFO strategy focus on quite different goals from each other, protection and growth, it is expected that the implications of this strategy would not always be the same. Specifically, risk reduction, which is achieved mainly by disinvestment that subdues the susceptibility of hotel returns to the external economy, would be more pronounced during a contraction period. By contrast, during an expansion period, when the economy treats the whole lodging industry favorably, the effects of efficient growth through fee-based business to take advantage

of the economic recovery would be more significant than that of risk reduction.

Despite the different implications of the ALFO strategy, there has been little research on this phenomenon. Sohn et al. (2013) argued that the strategy is effective in improving profitability and mitigating earnings volatility, thereby increasing firm value. However, although they showed an overall picture of this strategy, they did not take the economy's role into consideration. Given the close ties of the hotel industry to the economy (Wheaton and Rossoff, 1998) and the mixed effects of the strategy across the economic cycle, evaluating the effectiveness of the strategy with no thought of economic conditions would seriously impede the understanding of the ALFO strategy.

To address that concern, the current study was designed to examine how the strategy's two pillars (decreasing fixed assets and expanding fee-generating business) interact with the business cycle. To that end, the beta from the capital asset pricing model (CAPM) was borrowed, which is a measure of the sensitivity of a firm's stock returns to the market. By estimating beta in boom and bust respectively, the authors investigated how the two sides of the strategy exert asymmetric impacts on the operator and franchisor's returns sensitivity during different economic stages.

The authors expect this study to deepen management's understanding of the strategy by introducing them to the varying effects of the strategy during economic expansion and contraction. In addition, this paper makes theoretical contributions as well. Despite its tremendous influence on academia and industry, the static CAPM has been criticized for its poor ability in explaining cross-sectional variation in stock returns (Fama and French, 1992). Jagannathan and Wang (1996) argued that beta changes to reflect timely varying information, rather than being still. Consistent with Jagannathan and Wang's argument, the authors observed that the analyzed hotel firms' beta exhibited significant change according to the state of the economy, rather than staying constant, providing supporting evidence for the instability of beta.

The remainder of the paper is organized as follows. Section 2 reviews relevant literature and proposes hypotheses. Section 3 introduces the methodology used in the study and Section 4 explains the main results. Section 5 discusses the implications of the findings and concludes.

2. Literature review and hypothesis development

2.1. Business cycle and the hotel industry

It is true that companies adjust their strategies dynamically and asymmetrically over the business cycle (Mascarenhas and Aaker, 1989), implying that the complexity of the economy twists the implications of a strategy so that even the same strategy is unlikely to be consistently effective throughout the business cycle. Therefore, analysis using pooled data that assumes homogeneity over the whole period would obscure the varying influences of a strategy and bias the results accordingly (Bishop et al., 1984).

In this study, the effectiveness of the ALFO strategy in different economic situations was investigated. Hence, it was important to examine the links between the hotel business and the economy first. Two representative links were carefully chosen, real estate and sales revenue. Since every firm makes use of real estate to operate a business, real estate has been argued as a source of systematic risk (He, 2002). The extant research lends empirical support to this idea. He (2002) showed that the real estate factor explains stock returns, even after accounting for five well-known risk factors, including market, size, book-to-market, and two bond-related factors. Similarly, Tuzel (2010) found that firms with more real estate holdings deliver higher industry-adjusted returns, and Hsieh and Peterson

(2000) extended Fama and French's 3-factor model by adding the real estate factor and observed that 10 out of 53 industries are systematically related to the real estate factor. Due to the nature of the hotel business, real estate is an essential asset. The average real estate holding ratio, which is the average real estate holdings scaled by total assets, of hotel firms is 63%, with casino and casino hotels at 65% (Lee and Jang, 2012). A myriad of research has argued that the returns of hotel firms are partially determined by the valuable real estate they own (Gyourko and Keim, 1993), and thus are significantly exposed to real estate risk (Lee and Jang, 2012; Newell and Seabrook, 2006; Ong and Yong, 2000). The cyclical nature of the hotel business is another source of exposure to the economy. Wheaton and Rossoff (1998) observed that hotel demand is closely related to the U.S. economy, and Choi et al. (1999) argued that the hotel industry cycle sometimes precedes the macroeconomic cycle. In the following section, the ways in which the ALFO strategy affects these connections are spelled out.

2.2. Implications of the asset-light and fee-oriented (ALFO) strategy

The ALFO strategy is implemented through two practices: decreasing fixed assets and increasing fee-based revenues. These two practices benefit the firm in two ways: risk reduction and expansion without substantial capital investments. The literature in the financial risk management field has shown that reducing cash flow volatility leads to savings in financial costs, thus improved firm value. For example, Smith and Stulz (1985) showed that lower cash flow volatility reduces financial distress costs. Bessembinder (1991) demonstrated that decreasing cash flow volatility enables the firm to capture valuable growth opportunities, thus reducing under-investment cost. Graham and Rogers (2002) argued that reduced earnings volatility enables the firm to increase debt capacity. Since interest expenses are tax deductible, increased debt capacity leads to additional tax benefits of debt. Graham and Rogers (2002) estimated this tax benefit to be 1.1 percent of firm value. By turning property ownership over to a third party, firms engaged in fee-generating business (fee firms) can reduce the risk that stems from high operating leverage (Mintel, 2007). The risks associated with high operating leverage have been noted by the business press as well:

A number of analysts express concerns about Hilton and Starwood in particular, because the two companies' real estate poses additional recession risks. ... Owning hotels is more risky than managing or franchising them because of the cost of carrying and maintaining property. ... Hilton in particular could be hard hit by the economic slowdown. Hilton owns many of its hotels, unlike Marriott, which mostly franchises and manages properties owned by others. (Binkley, 2001, as cited in Tuzel, 2010, p. 2271)

As discussed in the above paragraph, firms that are not engaged in fee-based business (non-fee firms) and generate revenue from owned/leased properties invest a substantial portion of their resources in fixed assets, and thus are more vulnerable to adverse external shocks than fee firms, since they are unable to adjust themselves to changing economic conditions as easily as fee firms. In contrast, firms that hold relatively fewer fixed assets have more room to accommodate adverse economic shocks, reducing their market risk exposure (Tuzel, 2010).

Zhang (2005) argued that the asymmetric adjustment costs of investment and the time-varying price of risk make assets-in-place riskier than growth options in bad times. Costly reversibility means that firms incur larger costs when they disinvest than when they expand. When the economic situation becomes gloomy, firms try to dispose of their idle assets, but the high cost of disinvestment

deprives them of adjustment flexibility, leaving them stuck with unproductive assets. Accordingly, the firms could be hit hard by economic meltdowns and investors demanding more compensation for bearing such risk. In the same vein, Garcia-Feijóo and Jorgensen (2010) showed that the market considers operating leverage to be a source of exposure to systematic risk. They showed that the market assigned a high *B/M* ratio to firms with high operating leverage (i.e. valuation discount) in order to achieve high expected returns for bearing the added risk.

Fee-based income, which is relatively more stable than operating profit earned from company-owned units, contributes to risk reduction as well. Of course, fee firms are not completely immune to the poor performance of managed/franchised units, but they are hit relatively less hard than when they operate company-owned properties. While the operating loss of company-owned properties is transferred directly to the owner's bottom line, operators can still realize profit since the base fee is positive, as long as the managed hotel earns revenue. Franchise fees also follow a nonlinear payment schedule, which has both fixed and variable portions. It is comprised of fixed initial royalty fees plus continuing fees, which are proportionately linked to the gross sales revenues or the number of available rooms per month in a franchised hotel (HVS, 2011; Mathewson and Winter, 1985).

The liquidity obtained through the proceeds from property disposal is another factor that reduces fee firms' risk. Capital freed up by disposing of properties can be used to reduce debt leverage or retained internally to capture unexpected profitable investment opportunities (Hovakimian and Titman, 2006; Whittaker, 2007). Firms with more financial slack are less prone to financial difficulties, lowering default risk. For these reasons, the authors expect that non-fee firms will be more vulnerable to economic shocks than fee firms in down markets.³

H1a. In periods of contraction, non-fee firms have a higher market risk exposure than fee firms.

ALFO strategy could also benefit the firm through fast expansion with limited resources. Historically, there were two ways for lodging firms to expand their business portfolios: building new properties, or acquiring existing hotels from other parties. Both entail huge capital outlay. However, fee-based business does not need such a large upfront investment. Though management firms tend to co-invest or provide financial support to property owners, such investment would cost less compared to the huge amount of money needed for construction or acquisition. A low capital requirement is one of the factors that allow management/franchising hotel firms to expand quickly.

According to the resource-based view literature, firms that leverage common core competencies (Rumelt, 1982) or share resources across businesses (Chatterjee and Wernerfelt, 1991) outperform other firms. By drawing on their core expertise in the management/franchising business, such as personnel, reservation systems, and brand value, all of which are easy to replicate across hotels but hard for followers to copy, fee firms are likely to grow more efficiently than non-fee firms. Moreover, as the global economy gains in strength, most big hotel chains have penetrated overseas markets aggressively (Mintel, 2011). For instance, Starwood Hotels and Resorts, the largest operator of high-end hotels in China, had a plan to open a hotel every other week in 2011 (Mintel, 2011).

The option-like payoffs of the fee income structure help fee firms to reduce exposure to economic contractions but still enable them to benefit from economic expansions. In the case of a management fee, while a base fee is a straightforward percentage of revenue from

a managed property, an incentive fee is tied to the hotel's profits and paid to the operator once the managed hotel's performance exceeds predetermined cash flow or gross operating profit margin requirements (Eyster and DeRoos, 2009; DeRoos, 2010). It is usually tiered according to the achieved gross operating profit margin of the property (DeRoos, 2010). This incentive fee introduces asymmetry into the fee income calculation. As the name implies, it is an incentive for good performance. When the hotel makes more profit than the required level, the management firm receives an additional incentive fee along with the base fee (DeRoos, 2010). In that sense, fee income allows fee firms to share the fruits of superior performance while partially shielding them from poor results. For these reasons, it is expected that fee firms will have higher sensitivity to economic recovery than non-fee firms in a sound economy.

H1b. In periods of expansion, fee firms have a higher market risk exposure than non-fee firms.

The discussions so far have focused on the implications of the ALFO strategy as a whole. However, the effects of the two components of the ALFO strategy (i.e., asset-light component and fee-oriented component) may neither be equal nor stable through economic cycles. To formulate the comparative effects of the two components, the scope of discussion has to be based on fee firms only.

Given that saving the firm from going bankrupt is the primary concern of management during bad times, protection by disinvestment will be more influential than growth through expansion when the economy is stagnant. However, in times of economic recovery, when the economy gains vitality and treats the whole hotel industry favorably with increasing average daily rates and occupancy rates, enjoying the wave of recovery would probably be the focus of management and investors. This implies that the growth of fee-based business would be relatively more pronounced than the somewhat passive protection of downsizing. Such different impacts of the strategy are reflected in the firm's returns sensitivity to the market. Protection by disinvestment loosens the relationship between the firm's returns and the market, whereas growth through fee-based business tightens it.

H2a. During economic contractions, the asset-light component has a stronger effect on fee firms' market risk exposure than the fee-oriented component has.

H2b. During economic expansions, the fee-oriented component has a stronger effect on fee firms' market risk exposure than the asset-light component has.

3. Methodology

3.1. Model and variables

The effectiveness of the ALFO strategy is measured in terms of beta from the CAPM. Why beta? One of the main goals of the ALFO strategy is mitigating risk by weakening the correlation of corporate financial performance and the economy while enjoying the economic recovery by tightening the correlation. The measure that quantifies the covariant relationship is beta (β). In this study, the market beta from the four-factor model is referenced, which incorporates three more factors into the CAPM (Carhart, 1997). Eq. (1) is the basic form of the four-factor model.

$$R_{i,t} = R_{f,t} + \beta_{1,i}MKT_t + \beta_{2,i}SMB_t + \beta_{3,i}HML_t + \beta_{4,i}MOM_t + \varepsilon_{i,t} \quad (1)$$

R_i : excess return of asset i and R_f : risk free-interest rate.

MKT is the market risk premium, SMB is the excess return of small caps over big caps, HML is the excess return of value stock

³ All hypotheses are stated in the alternative form.

over growth stock (Fama and French, 1993), and MOM (Jegadeesh and Titman, 1993) is the excess return of high prior return stock over low prior return stock. Those three variables are factor mimicking portfolios to control for certain kinds of anomalies observed in the stock market. SMB controls for the size effect, which states that small capitalization firms yield larger returns than big firms. HML accounts for the value effect, which states that firms with a high book-to-market equity ratio tend to deliver larger returns than firms with a low book-to-market ratio. MOM is controls for the momentum effect, which postulates that past winner stocks keep earning higher returns than past losers.

The four-factor models were run for non-fee and fee firms respectively. This approach concerns the structural difference between the two groups of firms. The Chow test statistics in Table 3, all of which are significant at $\alpha = 0.01$ except for one, warrant separate analysis. In addition, betas were separately estimated between different economic stages due to the instability of beta over the business cycle (Chen, 1991; Fama and French, 1989). Despite the appealing theoretical intuition behind the model, the general consensus is that the unconditional static CAPM does not satisfactorily explain cross-sectional variation in stock returns (Fama and French, 1992). Jagannathan and Wang (1996) proposed the conditional CAPM in response to the criticism of the static CAPM, and argued that betas and the market risk premium tend to vary based on the information set available at any given point in time rather than being constant over time. Even before Jagannathan and Wang (1996), estimating betas for smaller subdivided periods seemed to be a common practice to detect the instability of betas (Chen et al., 1986; Fama and MacBeth, 1973; Jensen et al., 1972). On the basis of the previous literature, the authors can reasonably predict that estimating betas during economic ups and downs would effectively capture the changing implications of the ALFO strategy in dissimilar economic stages.

As a single measure of the ALFO strategy, the fee income ratio was adopted, which is the sum of the management and franchise fee income over total net sales revenue. Based on the fee income ratio, fee firms were divided into two groups, high- and low-fee firms. If the average fee income ratio of a firm was greater (or lower) than the grand average, the firm was regarded as a high-fee (or low-fee) firm. In estimating the varying impacts of the ALFO strategy (H1a and H1b), the market beta between non-fee and fee firms was compared. To determine H2a and H2b, how the dynamic of the two sides of the ALFO strategy—expanding fee-based business and reducing fixed assets—changes during the business cycle was observed. Partial *F*-tests were conducted to verify the relative strengths they exert on the market beta. An unrestricted model was formed as follows.

$$\beta_{\text{MKT},t} = \gamma_0 + \gamma_1 \text{FEE}_{i,t} + \gamma_2 \text{PPE}_{i,t} + \gamma_3 \text{SIZE}_{i,t} + \gamma_4 \text{LEV}_{i,t} + \gamma_5 \text{PROF}_{i,t} + \varepsilon_{i,t} \quad (2)$$

β_{MKT} is the firm-quarter market beta estimated using four-factor model. FEE, the ratio of the sum of the franchise and management fee exclusive of cost reimbursements over net sales revenue, is used as the proxy for the extent of the fee-based business; and PPE, the ratio of the net property, plant, and equipment over total assets, for the extent of disinvestment. The last three components are control variables. SIZE is the natural log of net sales revenue; LEV is the long-term debt leverage; and PROF is the operating profit margin measured by the operating income after depreciation scaled by the net sales revenue. The values of the slope coefficients of FEE and PPE were restricted to zero one by one, and changes in the *F*-statistic were tested.

3.2. Data collection

Quarterly accounting data were obtained from the Compustat database under the Standard Industrial Classification Code 7011 (Hotels and Motels). Daily stock prices were retrieved from the Center for Research in Security Prices, and the dataset of excess market returns and three factors from Kenneth R. French's website (http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html). Regarding economic conditions, the business cycle published by the National Bureau of Economic Research (NBER) was referenced. The management and franchising fee income was manually collected from 10-K reports filed with the U.S. Securities and Exchange Commission. First, the authors read Item1. Business section to confirm that a sample firm was engaged in management or franchise business. Then they searched for fee-based income data using several keywords: management fee, franchise (franchising) fee, management contract, and franchise (franchising) contract. Three firms whose main business was not lodging were deleted at this stage: Elbit (Medical) Imaging Ltd., Elscint Ltd., and Santa Fe Financial Corp. The data collection period covered 2002 through 2011. Firm data with no stock price, revenue, or fee income (in the case of fee firms only) were removed. The list of firms is attached at the end of the paper.

4. Results

4.1. Descriptive analysis

Table 1 summarizes the descriptive data for no-, low-, and high-fee groups: size, growth, operating margin, financial leverage, fixed-asset ratio, current ratio, and *Q*. To avoid the influence of outliers, non-parametric tests based on Person's χ^2 were conducted to test the equality of medians of the three groups with different level of fees. These seven variables have been argued as

Table 1

Data description. Size: logarithmic transformation of quarterly sales revenue; growth: the first-order difference of size; operating margin: operating income after depreciation scaled by sales revenue; long-term leverage: long-term liabilities over total assets; fixed-asset ratio: net property, plant, and equipment over total assets; current ratio: current assets over current liabilities. *Q*: Tobin's *Q* based on Chung and Pruitt (1994).

	Non-fee firms (0)	Low-fee firms (1)	High-fee firms (2)	Equality of medians χ^2
Size				
Contraction	3.975	4.292	6.636	8.590**
Expansion	4.118	4.555	6.817	63.145***
Growth				
Contraction	−0.040	0.007	−0.047	2.590
Expansion	−0.001	0.008	0.025	1.940
Operating margin				
Contraction	0.026	0.014	0.094	9.580***
Expansion	0.041	0.071	0.107	37.278***
Long-term debt leverage				
Contraction	0.563	0.411	0.615	45.966***
Expansion	0.533	0.385	0.481	53.778***
PPE ratio				
Contraction	0.809	0.645	0.335	35.508***
Expansion	0.701	0.692	0.434	132.452***
Current ratio				
Contraction	0.829	0.992	1.166	0.855
Expansion	1.189	1.051	1.133	7.48**
Q				
Contraction	0.687	0.722	1.372	33.755***
Expansion	0.924	0.883	1.403	116.742***

** *p*-Value $\leq .05$.

*** *p*-Value $\leq .01$.

Table 2
Correlation table. Fee ratio: (management + franchise fee)/sales revenue; fee dummy: 1 (if fee income > 0), 0 (otherwise); PPE ratio: net property, plant, and equipment over total assets; size: logarithmic transformation of quarterly sales revenue; growth: the first-order difference of size; Op. margin: operating income after depreciation scaled by sales revenue; L-T leverage: long-term liabilities over total assets; current ratio: current assets over current liabilities; Q: approximate ratio of the book value of assets against its market value (Chung and Pruitt (1994)).

	Fee ratio	Fee dummy	PPE ratio	Size	Growth	Op. margin	L-T leverage	Current ratio	Q
Fee ratio	1.000	.399***	-.335***	.374***	-.070	.336***	.271**	-.117	.595***
Fee dummy	.386***	1.000	-.500***	.299***	.051	.407***	-.095	.142	.300***
PPE ratio	-.456***	-.362***	1.000	-.334***	.109	.048	-.333***	-.500***	-.581***
Size	.264***	.395***	-.337***	1.000	.033	.388***	-.026	-.289**	.412***
Growth	-.028	.031	-.018	.091**	1.000	.197*	-.114	.034	.026
Op. margin	.362***	.251***	-.082*	.330***	.377***	1.000	-.124	.0004	-.003
L-T leverage	-.177***	-.235***	.295***	-.106**	-.024	-.187***	1.000	.492***	.294***
Current ratio	.287***	.082*	-.421***	-.212***	.009	.074	-.234***	1.000	.184
Q	.356***	.213***	-.434***	.214***	.065	.122**	-.240***	.277**	1.000

Right top in italics presents the correlation coefficients in the contraction period. Left bottom expansion period.

* p -Value $\leq .10$.

** p -Value $\leq .05$.

*** p -Value $\leq .01$.

beta determinants by previous research. As large firms are more capable of handling the impact of economic, social, and political changes (Sullivan, 1978), size is known to decrease the beta. Here it is a logarithmic transformation of quarterly sales revenue. Growth, measured as the first difference of size, is posited to increase the firm's systematic risk because fast-growing firms would be likely to be up against intense competition and are more sensitive to economic ups and downs (Borde, 1998; Logue and Merville, 1972). Operating margin, the operating income after depreciation scaled by sales revenue, gauges the overall operating profitability and efficiency. Profitability is generally claimed to reduce systematic risk (Borde, 1998; Logue and Merville, 1972; Scherrer and Mathison, 1996). High profitability manifests the efficient management of operations and so decreases the risk of business failure, lowering beta. Long-term debt leverage is a financial leverage measure that is computed by dividing long-term liabilities with total assets. Fixed-asset ratio, the ratio of net property, plant, and equipment over total assets, is included as a proxy for operating leverage. Financial leverage and operating leverage are known to have a positive relationship with a firm's systematic risk (Amit and Livnat, 1988; Borde et al., 1994). Current ratio, a measure of liquidity, is estimated as current assets over current liabilities. There are mixed findings about the impact of liquidity on beta (Kim et al., 2002). Jensen (1984) argued that management holding large free cash flow at discretion is prone to build an empire not for investors but for themselves, raising the agency costs and systematic risk. However, recent evidence challenges this view, and suggests the opposite relationship between liquidity and systematic risk. Haushalter et al. (2007) found that when investment opportunities are contestable, firms tend to retain large cash holdings for hedging purposes. In a related context, Fresard (2010) observed that companies with larger cash reserves relative to their rivals will expand future market share at the sacrifice of the competitors. Lastly, Q, the ratio of the market value of assets to their replacement cost, is a proxy for the intangible value and growth potential of the firm. An approximate version of Q is used (Chung and Pruitt, 1994). To reduce the effect of extremely influential observations, median figures are reported.

$$Q = \frac{\text{MVE} + \text{PS} + \text{DEBT}}{\text{TA}} \quad (3)$$

where MVE = share price \times number of common stock outstanding, PS = liquidating value of the firm's preferred stock, DEBT = book value of long-term debt + short-term liability – short-term assets, and TA = book value of total assets.

Consistent with general knowledge, fee firms tend to be larger firms that are able to leverage their established brand value and accumulated expertise in the management/franchising business. In terms of growth, high-fee firms show a dramatic jump from a

contraction to an expansion period, whereas low-fee firms record rather stable growth. High-fee firms also show superior operating margins compared to the other two groups, as suggested by the resource-based view. As for financial leverage, low-fee firms seem to be the most cautious about using long-term debt. The fixed-asset ratio is highest in non-fee firms and lowest in high-fee firms, implying a negative correlation between the extent of the fee-based business and operating leverage. The current ratio, on average, is highest in high-fee firms. Finally, Q, a measure of the intangible value or growth potential, is also highest in the high-fee group. A non-parametric test based on Persons' χ^2 also showed that the medians were significantly different among the three fee groups. In sum, the descriptive analysis of the three groups of firms signals mixed impacts of the financial/operating characteristics on their betas. Large firm size, high profitability, and low operating leverage predict that high-fee firms would have the lowest betas, but the fast growth during the expansion period implies the opposite: a high beta for high-fee firms. Such mixed signals merit further examination and are discussed later.

4.2. Correlation analysis

Table 2 is the pairwise correlation table between variables. The left bottom area presents the correlation coefficients in expansion periods and the right top area highlighted in gray in contraction periods. Several variables exhibit the same signs over the cycle. First of all, the negative association between two fee-related measures and the PPE ratio is noticed, as the name “asset-light and fee-oriented” means. Size is positively related with the fee income ratio and fee dummy but negatively with the PPE ratio, implying that large hotel firms are more likely to apply the ALFO strategy than small firms. The operating margin has a positive association with the fee-related variables, as expected by the resource-based view. Q, the ratio of the market value of assets to their book value, is positively related to the fee-related variables but negatively to the PPE ratio, meaning that fee firms are granted higher premiums on their intangible growth potential than non-fee firms in the capital market.

What shows intriguing change between expansion and contraction is the long-term debt leverage. During contraction periods, the debt leverage increases as the fee income ratio increases, which means fee (or high-fee) firms keep higher financial leverage than non-fee (or low-fee) firms, while the opposite relationship is observed during expansion periods. According to Mandelker and Rhee (1984), operating and financial leverage jointly determine the systematic risk of a firm, and firms engage in trade-offs between the two leverages. When the economy goes soft, firms with higher

Table 3

Four-factor model results. MKT: market-excess return; SMB: the excess return of small caps over big caps; HML: the excess return of value portfolio over growth portfolio; MOM: the excess return of high prior return portfolio over low prior return portfolio. Data of the four variables were obtained from Kenneth R. French's website.

	Panel A (All)		Panel B (fee firms only)		Panel C (difference)		
	Non-fee (0)	Fee (1)	Low fee (2)	High fee (3)	1–0	2–0	3–2
Total							
MKT	1.07***	1.04***	1.06***	1.03***	–0.03	–0.01	–0.03
SMB	0.83***	0.66***	0.88***	0.40***			
HML	0.09	0.20***	0.32***	0.04			
MOM	–0.47***	–0.30***	–0.29***	–0.29***			
cons	0.009	0.049	–0.026	0.136*			
Adj-R ²	0.267	0.243	0.262	0.222			
Chow	5.105***		11.315***				
Obs	8617	18,839	9925	8914			
Contraction							
MKT	1.25***	0.91***	0.95***	0.86***	–0.34***	–0.30***	–0.09
SMB	1.37***	0.58***	0.74***	0.34***			
HML	0.14	–0.22**	–0.17	–0.30**			
MOM	–0.39***	–0.61***	–0.63***	–0.60***			
cons	–0.215	–0.355*	–0.486*	–0.160			
Adj-R ²	0.344	0.305	0.289	0.343			
Chow	8.822***		13.307***				
Obs	1885	3694	2185	1509			
Expansion							
MKT	0.97***	1.05***	1.00***	1.11***	0.08*	0.03	0.11**
SMB	0.54***	0.62***	0.93***	0.27***			
HML	0.04	0.39***	0.61***	0.13			
MOM	–0.20***	–0.15***	–0.07	–0.22***			
cons	0.072	0.108*	0.062	0.077			
Adj-R ²	0.175	0.195	0.237	0.158			
Chow	5.920***		2.112*				
Obs	6732	15,145	7740	7405			
$\beta_{con} - \beta_{exp}$	0.28***	–0.14***	–0.05	–0.25***			

* p -Value $\leq .10$.

** p -Value $\leq .05$.

*** p -Value $\leq .01$.

operating leverage would need to maintain the financial leverage lower to reduce default risk as well as systematic risk. However, once the economy shows signs of recovery, the increasing revenue and profitability would mitigate the impact of the operating leverage on risk, and the firms may have more room to hold high leverage.

4.3. Estimation of beta

The authors tested the hypotheses using CAPM and four-factor model, and the results were qualitatively the same. To conserve space, only the four-factor model outcomes are reported in Table 3. Panel A compares the coefficients of non-fee and fee firms and shows that over the whole period, the market risk exposures of the two groups are not statistically different at $\alpha = .05$ ($t = -0.90$). During periods of contraction, however, the non-fee firms' beta jumps to 1.25 ($t = 17.57$), whereas the fee firms' beta is as low as 0.91 ($t = 20.27$). The difference between the two groups (-0.337) is significant at $\alpha = .01$ ($t = -4.00$), which rejects the null of H1a. By contrast, during periods of expansion, the market beta of the fee firms is significantly larger at $\alpha = .10$ ($t = 1.87$); the null of H1b is rejected.

In order to look into fee firms more closely, the ALFO group was divided into two subgroups on the basis of average fee income ratio, and the beta was estimated in each subgroup (no-, low-, and high-fee). The results are presented in Table 3, Panel B. During contraction periods, the market beta is the lowest in the high-fee group and the highest in the non-fee group, but the difference in beta between the high- and low-fee firms is not significant; that is, the low-fee firms had a substantially lower beta than the non-fee

firms ($t = -3.15$) but not a higher beta than the high-fee firms ($t = -1.03$). One possible interpretation is that the protection effect of the ALFO strategy comes into action right away once the strategy is employed, but does not increase in line with the intensity of fee-based business. By contrast, the relationship is reversed during expansion periods: the non-fee group has the lowest and the high-fee group has the highest beta. The difference between the non-fee and low-fee firms is not significant ($t = 0.63$), but the difference between the low- and high-fee firms is significant at $\alpha = .01$ ($t = 2.08$), suggesting that fee firms are required to achieve a certain level of scale in fee-generating businesses in order to enjoy the upside potential promised by the strategy. In sum, the effects of the ALFO strategy are not always proportional to the extent to which the strategy is employed.

Another interesting finding is the asymmetric magnitudes of the difference in beta coefficients between economic ups and downs. While the difference in beta between non-fee and fee firms during contraction periods is -0.34 ($t = -4.00$), the same estimate during expansion periods is merely 0.08 ($t = 1.87$), suggesting that the positive effects of the ALFO strategy in a recovering economy are not as outstanding as the protection effects of the strategy in a declining economy. Or, an alternative explanation can be found in the high irreversibility of real estate investment. Compared to other lighter fixed assets (i.e., equipment and furniture), real estate takes a much longer time to be expended and is not easily liquidated. Hence, firms burdened with excess real estate capital may render themselves inflexible when trying to adjust to exogenous shocks and thus be more vulnerable to a liquidity crisis during economic downturns (Eisfeldt and Rampini, 2006). Following this reasoning, Tuzel (2010) observed that firms with a higher real estate holding

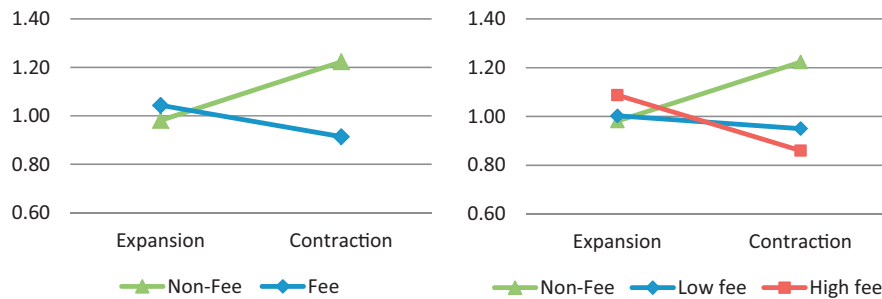


Fig. 1. Market beta in the four-factor model.

ratio have a higher beta than firms with a lower ratio, and the difference is countercyclical, as revealed in this study. The results are visually summarized in Fig. 1.

The market beta is also compared between boom and bust within each group. As expected, the non-fee firms have a significantly higher beta during contraction periods ($\Delta\beta = 0.28$, $t = 3.50$), whereas the fee firms have a higher beta during expansion periods ($\Delta\beta = -0.14$, $t = -2.71$). However, it turns out that the higher beta of the fee firms comes from the high-fee group only ($\Delta\beta = -0.25$, $t = -3.49$). The low-fee firms show no significant change in beta between economic peaks and troughs ($\Delta\beta = -0.05$, $t = -0.72$). These interesting results suggest that firms employing fee-based businesses at a low or moderate level may not benefit from the hypothesized effects of the strategy in an expanding economy. Instead, as fee firms expand their management/franchise business and accumulate relevant skills and resources, they will be able to leverage their greater operating efficiency and fast growth, as evidenced in Starwood's case (Mintel, 2011).

4.4. Actions of the two sides of the ALFO strategy during the business cycle

The authors examined the relative strength of fixed-asset reduction and fee-based business expansion during contraction and expansion periods (H2a and H2b). First, the four-factor model was run for every firm-quarter. Out of 644 firm-quarter market betas, 381 were significant at $\alpha = 0.10$: 270 for fee firms and 111 for non-fee firms. Additionally, 9 firm-quarter observations with extremely large or small (outside the range of mean ± 3 standard deviations) values were excluded. Accordingly, 261 observations for fee firms were used for the subsequent analysis that regressed estimated firm-quarter betas on the firms' financial and operating variables in Eq. (2).

For econometric purposes, the generalized least square (GLS) methods are preferred to the ordinary least square (OLS) methods, especially when correlation between the residuals and the regressors within an entity or the correlation of residuals across entities is suspected. However, the GLS approach was not suitable for the current analysis, because the number of companies was greater than that of the observations during the contraction periods. One way to tackle this problem is to group firms into a few categories, but this inevitably entails substantial information loss (Choi and Prasad, 1995). Thus, the authors chose to preserve the richness of the data by conducting OLS at the potential expense of statistical inefficiency. Several OLS assumption checks were conducted according to the economic cycle: normality, heteroskedasticity, and linearity. Ramsey's regression equation specification error test (RESET) test was applied to check linearity, and the null hypothesis of linearity was not rejected in both the contraction ($F_{(3,24)} = 0.18$, $p = .912$) and expansion periods ($F_{(3,211)} = 1.66$, $p = .176$). The Breusch–Pagan test results revealed that the constant variance assumption was rejected ($\chi^2_{(1)} = 5.99$, $p = .014$), but only for expansion periods. As for normality, the Jarque–Bera test checks whether the coefficients of skewness and excess kurtosis are jointly zero. Again, the normality assumption was rejected for the expansion periods (Adj. $\chi^2_{(2)} = 23.86$, $p < .000$). Concerned about potential problems with heteroskedasticity and non-normality, the authors conducted OLS using the Huber–White standard errors, also known as robust standard errors (Huber, 1967; White, 1982). The outcomes of the pooled regressions are presented in Table 4.

At first glance, a dramatic change in FEE and PPE is noticed. As hypothesized, the degree of fee-based business represented by FEE is not significant in the contraction periods but stands out in the expansion periods. FEE also has a highly significant positive coefficient in expansion, suggesting that the more firms are geared toward fee-based business, the more sensitive they become to the

Table 4
Pooled regression and partial F-tests.

Dependent variable: β_{MKT}	Economic contraction			Economic expansion		
	Unrestricted	Restricted		Unrestricted	Restricted	
		FEE	PPE		FEE	PPE
FEE	0.095		0.248	0.796***		0.667***
PPE	0.857*	0.872**		0.253	0.087	
SIZE	0.033	0.035	−0.048	0.002	−0.014	−0.018
LEV	0.889*	0.954**	0.549	0.343	0.383	0.395
PROF	−1.336**	−1.236**	−1.093	−1.480***	−0.778**	−1.422***
Cons	0.203	0.159	1.215***	0.962***	1.152***	1.194***
Obs	33	33	33	220	220	220
F-statistic	2.84**	3.27**	1.12	2.87**	1.47	3.26**
R ²	0.1804	0.1794	0.0904	0.0805	0.0425	0.0711
Δ F-statistic		0.033	2.962*		8.838***	2.186

* p-Value $\leq .10$.

** p-Value $\leq .05$.

*** p-Value $\leq .01$.

market. However, PPE has no significant impact upon beta. The partial *F*-test results also support the findings. When the coefficient of FEE is restricted to zero, the ΔF -statistic is as high as 8.838 ($p < 0.01$), whereas, when the coefficient of PPE is restricted, the same figure turns out to be insignificant (ΔF -statistic = 2.186, $p = 0.141$). Thus, H2b is soundly confirmed: the extent of fee-based business has a significant impact upon beta, whereas decreasing fixed assets does not. The opposite situation applies to PPE. PPE has a significant and positive coefficient in contraction periods only at $\alpha = 0.10$, implying that as fee firms shave off real estate from their balance sheet, their market beta goes down accordingly. By contrast, FEE does not show any meaningful results. A significant change in the *F*-statistic (2.962, $p = 0.097$) between the unrestricted and PPE-restricted model supports H2a, which posits that decreasing fixed assets has a significant impact upon beta whereas expanding fee-based business does not in contraction periods.

Beyond that, operating profitability turns out to decrease beta throughout the whole business cycle. Financial leverage has a positive association with beta when the economy goes soft. High debt ratio increases default risk.

5. Discussion and conclusion

The current study examines the implications of the ALFO strategy in the context of the business cycle. In a recession, fee firms are hit less hard than non-fee firms due to their low operating leverage and asymmetric and less volatile payment schedule of fee-based revenue, both of which alleviate the impact of the poor performance of managed/franchised units on fee firms' bottom lines. However, the efficient management of core intangible assets may act as a driving force for fee firms to expand in a booming market, rendering firms more sensitive to economic recovery. To address this idea, the authors examined the asymmetric impacts of the ALFO strategy using beta in dissimilar economic situations. The results partially confirmed the hypotheses. In contraction periods, fee firms had a substantially lower beta than non-fee firms. In expansion periods, however, firms earning fees had a significantly higher beta than non-fee firms. This suggests that fee firms enjoy the waves of economic prosperity more than non-fee firms, while avoiding negative shocks during economic downturns. In a word, the strategy retains "built-in cycle adjustments" (Mascarenhas and Aaker, 1989). Each of the strategy's two forces works in turn between the ups and downs, protecting the firm during the contraction, while helping them enjoy the revitalization of the economy during the expansion. Furthermore, the effects of the ALFO strategy are not always proportional to the extent that a firm conducts fee-based business. Instead, they were contingent on the business cycle.

The findings of this study provide several meaningful insights to practitioners. First of all, the varying implications of the ALFO strategy, which depend on the stages of the economy, manifest that a comprehensive understanding of analyzing the strategy from

multiple angles is required. The ALFO strategy does not simply work in one direction. Its impact on a firm's exposure to market risk differs according to the economic conditions and the firm's situation. Not every fee firm enjoys these dual advantages of the ALFO strategy during economic ups and downs. Only high-fee firms can do so. Low-fee firms in the beginning or middle stage of fee-based business may benefit from the risk-reduction (or protection) effect during economic meltdowns, but they do not share in the fruits of economic recovery as aggressively as high-fee firms do. Thus, fee firms should diligently cultivate the skills and manpower needed for the management/franchising business in order to reap the benefits of the ALFO strategy across the business cycle. Second, non-fee firms that have less room to accommodate exogenous shocks are much more vulnerable to economic downturns than fee firms. Hence, the management of non-fee firms should give more weight to crisis management and carefully formulate risk management strategies targeted for an economic recession. Enhancing asset turnover is particularly recommended. It has been claimed that firms can reduce their systematic risk by making the most efficient use of existing assets (Barber et al., 2008; Gu and Kim, 2002). Third, for investment purposes, non-fee firms and high-fee firms may be good complementary choices. According to the portfolio theory, diversification using assets that have dissimilar risk dynamics reduces the overall portfolio risk. Non-fee firms and high-fee firms exhibit opposite beta movement, and thus would smooth away the aggregate portfolio risk.

The ALFO strategy has injected more complexity into hotel operation by separating ownership, management, and licensing. Thus, it is very important for the next generation of owners and managers to understand the framework and implications of the strategy from the perspective of hotel firms as well as related parties, such as independent operators, and investors. On top of that, the current study adds one more layer of complexity, which is the interaction with the economic cycle. As discussed above, the strategy's impact actively interacts with the external environment. The authors believe that the development of the global economy will stimulate similar phenomena in the hospitality industry even more. The study provides just one example, which suggests that hospitality education should not be limited to the in-house operation of hospitality business or the accumulation of hands-on experience. It also needs to open the eyes of college students to the external environment of a business. Therefore, academia should prepare students so that they can read the external market correctly, locate the position of their business, and take proper actions based on a clear understanding of the predicted impact of their strategies.

From a theoretical standpoint, the current study lends empirical support to the instability of beta. There was no distinguishable difference in beta among the groups over the whole period, but apparent differences surfaced when the economic variable was factored in. The market betas dramatically changed between economic ups and downs rather than staying constant. Furthermore, the countercyclical difference of beta between non-fee and fee firms

Table 5
List of firms.

No fee	Low fee ^a	High fee
Gaylord Entertainment Co.	7 Days Group & Hldgs Ltd.	Fairmont Hotels Resorts Inc.
Intergroup Corp.	Great Wolf Resorts Inc.	Four Seasons Hotels
Lodgian Inc.	Hammons John Q Hotels	Hilton Hotels Corp.
Maui Land & Pineapple Co.	Home Inns & Hotels Mgmt	Hyatt Hotels Corp.
Summit Hotel Properties Inc.	Interstate Hotels & Resorts	Intercontinental Hotels Group
Wynn Resorts Ltd.	La Quinta Corp.	Marriott International Inc.
	Morgans Hotel Group Co.	Sonesta International Hotels
	Orient-Express Hotels	Starwood Hotels & Resorts Ltd.
	Red Lion Hotels Corp.	
	Wyndham International Inc.	

^a The grand average firm-year fee-income ratio: <0.0754: low-fee firm; ≥0.0754: high-fee firm.

was observed, suggesting that the effect of the ALFO strategy is not symmetrical. Taken together, all the evidence implies that pooled data would have concealed the underlying dynamic impacts of the ALFO strategy, which contain unique and rich information.

Before concluding, several limitations should be noted. This study used listed hotel firms only. Hence, the results may not appropriately reflect small hotel firms not found in major stock exchanges. The use of a binary concept for economic status may entail information loss. This was done to sharply contrast the varying implications of the strategy in opposite economic situations, but it may not capture all of the dynamics of the business cycle. Future researchers may find research opportunities here. For instance, they might incorporate a conditioning variable into the pricing model. In order to avoid arbitrary definition and obtain objectivity, the authors relied on the business cycle released by the NBER but wound up with a fairly unbalanced dataset. For the second stage regression, there were only 33 firm-quarter betas for the contraction periods, whereas there were 220 for the expansion periods (Table 5). Future study may develop an alternative business cycle customized for the hotel industry based on quantitative analysis as in Choi et al. (1999), or qualitative interviews with industry practitioners as in Mascarenhas and Aaker (1989).

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