

**Market Saturation or Market Concentration:
Evidence on Competition among U.S. Limited Service Franchise Brands**

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Abstract

This study uses 1997 and 2002 U.S. Economic Census data for sales per establishment measures of performance and examines the effects of market structure and concentration in a cross-sectional analysis of 55 metropolitan areas. The findings contradict traditional perspectives on market concentration, with four and eight firm concentration ratios of outlets and revenue being negatively related to sales per establishment, and as such serving as indicators of higher market competition or market saturation. However, in line with retail theory on competition, more diverse markets in which many franchised and non-franchised restaurants compete without the dominance of a few brands actually show above average performance.

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1. Introduction

Business format franchising is the predominant mode of organization in the limited-service restaurant (LSR) sector of the U.S. food service industry. In 1997, establishments using the trade name of a franchisor accounted for over 78 percent of sales with just over 57 percent of the establishments¹, with the top 8 brands accounting for 49 percent of the total volume. In 2002, the last date for which U.S. Census data for limited service restaurants was available, the eight largest franchised brands increased their number and share of outlets, yet had a slightly declining portion of the sector's sales, dropping from 49 to 48 percent. Given the dependence of this industry on the strategies of a small number of franchisors, it is appropriate to consider the implications of this concentrated structure given the decline in its performance. The implications may be more severe within local markets, as across these market areas performance will vary while measures of concentration among different sets of competitors may be higher.

The period from 1997 to 2002 may mark an institutional shift away from franchising's dominance in this sector of restaurants. The early success of the franchised format in achieving a dominant share of the LSR sector would, by definition, have come at the expense of non-trade name independent establishments and smaller local chains. However, under current competition, increases in shares appear to come from other once successful franchise systems, such as Little Caesar's and Hardee's, two chains with 1800 fewer franchisee locations in 2002 than in 1997. Where in the past, the failure of an independent establishment may have been attributable to its

¹ Table 7. Establishment Using a Trade Name Authorized by Franchisor for the United States and States: 1997, Miscellaneous Subject Series, Accommodation and Food Services, 1997 Economic Census, December 15, 2000.

inadequacies in food preparation or profitability, today, a shift to smaller volume formats may drop volume at franchised establishments below levels necessary to remain viable.

Given the high concentration among franchised brands and the decline in sales performance, the purpose of this paper is to determine if a relationship exists between the structure of competition in markets and the impact on sales per establishment. This paper reviews the unique aspects of competition in restaurants and franchising with respect to the impact on sales per establishment. Then, an analysis of the effects of competitive structure on performance in the LSR sector using U.S. Economic Census measures of performance is provided, relating these to measures of market structure from on-line directory data on franchised restaurant brands. Implications for franchisors and new market entrants as well as for franchisees with respect to the conversion of outlets are discussed.

2. Restaurant Competition, Concentration, and Franchising

The nature of competition among restaurant types and brands is complicated in that competing units can be so highly differentiated in terms of menus and locations that defining a set of competitors in a market is challenging. From a broader perspective, the function of providing meals away from home places the restaurant into competition with many supermarkets which have started to offer take-out meals in recent years, as well as any nearby households in the market. Further complicating matters, establishments with complementary menus at a single location may increase total demand at that location such that neighboring establishments might be considered mutually beneficial, rather than as competitors. Ingene (1983) illustrated the complexity of restaurant competition in the U.S., examining the effects of the competitive structure in grocery retailing, as well as within the restaurant industry, on sales per restaurant

establishment. He showed that concentration in grocery retailing and competition in restaurant retailing *both* were positively related to sales per establishment in 1977, which would suggest that intertype competition may be more important than intratype competition.

As complicated as restaurant competition may be, if basic competition did not exist, there would be no explanation for how franchised formats have come to define the LSR sector in the U.S. Framed strictly in an anticompetitive perspective, franchising's popularity is attributable to the franchisee's belief that establishments bearing the unique trademarks of the franchisor will face limited intrabrand competition from better locations (e.g., Grünhagen & Dorsch, 2003) and will be assured superior revenue and profitability. Though belief in protection from intrabrand competition may be the promise of franchising, research illustrates the conflict arising from territorial encroachment from the franchisor or competing franchisees (c.f., Kalnins, 2004). In markets without franchisor establishments, increased intrabrand competition through an increased number of franchised locations may result in a drop in incremental sales per establishment for the franchisee, but benefit the franchisor with steadily increasing royalties (Stassen & Mittelstaedt, 1995).

Due to these aspects of intrabrand competition, the interpretation of a competitive market structure among franchised formats is more difficult than in markets where the competitors operate under uniform ownership. In the traditional industrial organizations framework (Bain, 1968), as in grocery stores for example, high market concentration would be associated with higher sales per store, and potentially higher retail prices, among the competing firms. In contrast, in franchised systems, higher shares of sales by brand may be the result of higher intrabrand competition and lower prices. Up to this time, there have been no published studies examining the effects of the competitive structure within franchised formats on performance,

despite the significance of franchising in the U.S. economy. This paper aims to fill this gap by providing recent evidence on the structure of competition within the limited-service restaurant sector.

3. Structural Changes in the Limited-Service Restaurant Industry

The major changes in the Limited-Service Restaurant sector in the U.S are illustrated in Table 1, whereas the changes in the firms, number of establishments, sales, and sales per establishment between the Economic Census years of 1997 and 2002 for this classification (NAICS 722211)² are shown. The table provides a combination of Economic Census data with information on sales for leading brands, from Technomic, Inc., for the same years. Overall, the Economic Census data show substantial increases in the number of firms and establishments, a mixed picture with regard to industry concentration, and, most importantly to this paper, a significant drop in the importance of franchising to this sector. Separately, the Technomic data show substantial growth in the number and concentration of franchised establishments, but with a slight decline in the share of the sector's dollar volume. Both sources are in agreement with regard to sales per establishment in that performance in franchised systems has shifted to average and below average with respect to competition.

3.1 Establishment and Firm Level Data from the Economic Censuses of 1997 and 2002

The number of firms in NAICS 722211 increased from 106,764 to 117,047, with an annualized growth rate of 1.5%, ahead of estimated growth rates for the U.S. population (1.1%). Given this situation, markets would expectedly become more saturated and more competitive.

² This U.S. industry comprises establishments primarily engaged in providing food services (except snack and nonalcoholic beverage bars) where patrons generally order or select items and *pay before eating*.

Breaking the 12,838 additional establishments down into single- versus multi-unit firms, single unit firms accounted for 11,176 firms/establishments of this growth.

In contrast to expansion in firms and single-unit establishments, the number of multi-unit firms declined from 10,416 to 9,523, with their corresponding growth in units accounting for a relatively modest portion (1,662) of the change. While there has been a corresponding growth in sales with the increased number of establishments, multi-unit firms account for a declining proportion of the industry's sales, falling from 66.9 to 64.2 percent in the sector. Sales per establishment increased over time, with larger chains having higher sales per establishment in 1997 and 2002, yet also exhibiting a lower percentage increase (associated with the larger denominator). Using the results of chains with ten or more establishments, these larger chains are operating more establishments which would indicate markets becoming less competitive, while their declining share of sales in a growing sector would suggest that competition among larger chain firms is increasing.

3.2 Concentration of Sales within Franchise Systems, 1997 and 2002

The evidence from 1997 to 2002 shows a declining concentration of sales within the largest firms. The 4, 8, 20 and 50 largest chains consist predominantly of franchisor-owned systems (i.e., McDonald's owning 2,102 establishments), wholly owned corporate chains, and systems with large multi-unit franchisees. The concentration ratio data show a declining number of establishments within each level of concentration. For example, within the 4 largest firms, there was a drop of 1,031 units, while simultaneously having the highest sales per unit and increases in sales per unit. The concentration data and the multi-unit data can be reconciled in that the largest chains may be retaining their highest performing establishments, and transferring

operation of their lower performing establishments to franchisees, as evidenced in the increase in sales per establishment of 12.4% being lower than that for the 50 largest, 13.5%.

The December 2005 Miscellaneous Subjects report for franchising in limited service restaurants (“*Establishments Using a Trade Name Authorized by Franchisor*”) shows the most significant change within the sector, with a net drop of 5,592 establishments between the years. According to the Economic Census, there has been a decline of 12,787 franchisor establishments. The significance of franchising in the limited-service restaurant sector has declined from 82.3% to 67.4%. of sales Further, the increases in sales per establishment in the Trade Name franchising portion of NAICS 722211, while positive, are the lowest of any within the Economic Census data.

3.3 Restaurant Brands Data from Technomic, Inc. Industry Reports

In contrast to the evidence of declining ownership concentration from the Economic Census, data on franchised *brands* provided by Technomic, Inc., shows that in terms of the largest brands, the top 4, 8, 20, and 50 account for increasing numbers and shares of establishments. Specifically, the top 4 firms have 10.7 percent of sales in 2002; but with the top 4 brands, this percentage is 36.4. Moreover, the number and share of establishments within the 4 largest brands increased by 10,329 and 5.5 percent, respectively, over this 5-year period. While the Economic Census shows a significant decline in the leading firms number (and percentage shares) of establishments, the report by brands shows the opposite with regard to establishments, but agree with respect to the declining importance in terms of sales. In sum, the brand level data shows that while the top 50 brands have added a net 9,486 establishments, the shares of total revenue at the top 4, 8, 25 and 50 brand breaks show declines at each level over the five-year span.

Table 2 provides detail regarding the largest limited-service restaurant systems, accounting for the majority of change occurring between 1997 and 2002. Notable in the table is the broad range in sales per establishment within the leading brands, with McDonald's adding roughly $\frac{1}{4}$ the number of units of Subway, but averaging over 4 times the sales per unit (\$1,500m versus \$360m). The addition of 3,356 franchised units by Subway in the five years moved them into the Top 4 brands, creating a subsequent drop of 11.4% in sales per store among the top brands. Further, the table shows those brands moving away from company-owned outlets, increasing their franchised outlets, and the difference in sales per establishment of both types. The far right column in the table provides the difference in sales per outlet of franchisee versus franchisor, and with the exception of Domino's, Sonic, and Hardee's, franchisor-owned establishments have higher sales per outlet than franchisee establishments. With respect to concentration, the major brands are relying on franchised outlets to maintain their share of the market, with a declining proportion, and in many cases, a declining number of their outlets being company-owned. As shown in the bottom line of the table, the Top 50 shows a net drop of 1,026 of these establishments, while franchisee outlet growth is at 11,244.

Summarizing, while franchise systems account for 60% of the outlets, and between two-thirds and three-fourths of the limited-service restaurant industry's sales, their performance is not indicative of the sector as a whole. The evidence presented between 1997 and 2002 on LSR shows an industry with vigorous growth in the number of firms, establishments, and, importantly, sales per establishment. In comparison, the evidence on franchising within the sector shows (1) increases in franchisee outlets and concentration of outlets by leading brands, (2) dramatic decreases in the number of typically higher-performing franchisor-owned outlets, and (3) a significant decline in the share of revenue by the franchising sector, its leading firms

and its leading brands. Collectively, given these changes in structure, performance in terms of sales per establishment would, by mathematical necessity, trail that of alternative chains operating under unified ownership. An appropriate question is then, are these changes in share or sales per store attributable to gains made in non-franchised format competition, or to the competition among franchised competitors themselves?

To examine the effects of the changes in structure on industry performance, a cross-sectional analysis of the central urban districts of metropolitan areas is presented. While the largest restaurant systems in the U.S. are national entities, they compete within metropolitan consumer markets, with each market providing a unique combination of structure and shares among the competitors. As such, an analysis of the correlations of these components can show the magnitude and significant associations, providing insight to the probable causes of franchising's changing importance in this sector.

4. Methodology

The measures used in the cross-market analysis are from two different sources. First, frequencies for the number of establishments and sales for each metropolitan market are from the Economic Censuses of 1997 and 2002, permitting calculation of restaurant density and sales per store. Second, an audit conducted on the leading restaurant brands in 2002 from on-line directories and store-locaters at the restaurant systems' web-pages provided the number of establishments for the markets, permitting measures of density, variety, and concentration.

4.1 Directory Data on Limited-Service Restaurant Chains

Fifty-five Metropolitan Statistical Areas (MSAs) including every U.S. state were selected on the basis that each could represent a market within its governmental boundaries. These MSAs

were selected to be those smaller in population, comprised a single county, and would not overlap state lines. The measures of density, variety, and concentration were calculated based on an audit conducted through an online directory (Yahoo Yellow Pages), where the counts of stores for top limited service restaurant chains (Technomic Reports, 2004) were compiled. The central city (place) of the MSA provided the starting point for the count for the stores by chain, with the stopping point being the outermost location of the chain with the most units (McDonald's or Subway) where a significant break in distance was found from that location to the next closest. The following measures for limited-service restaurants were calculated from the audit:

Restaurant Density: To measure the degree that the market was overstored, or saturated, the total number of limited service franchised restaurant locations from the directory was divided by the population within the market. Trade area software (Spectra) was used to determine the population within the circular trade area determined by distance from the market center for most frequently occurring chains. For markets where the trade area population was less than the population for the Census geographic area (trade area was within the geographic area), an average of the two measures was used.

Restaurant Variety: The number of national chains found within the market provided an indication of the variety of restaurant formats. Dividing this by the total number of national chain establishments (used in the density measure) created a standardized measure, more useful across varying sized markets, of the likelihood of encountering a different format in the metro area. The closer the ratio was to 1.0, the greater the probability that the next location encountered would be unique.

Restaurant Concentration: For each market, the proportion of total national chain establishments within that market's four and eight largest brands was used to measure market concentration within the category, with the brands within the top four (and eight) changing across markets. The average sales per unit for each chain reported by Technomic was multiplied by the respective number of outlets to form an estimate of revenue by brand, allowing for concentration measures based on share of locations and sales revenue for each market.

4.2 Economic Census and Census of Population Data

The measures for performance for this study are from the 1997 and 2002 U.S. Economic Census Geographic Area Series for Accommodation and Food Services, specifically, "Limited-Service Eating Places" (NAICS 7222) and "Limited-Service Restaurants" (NAICS 722211). These reports provide the number of establishments and revenue for the geographic area. When both 7222 and 722211 were provided for an area, reports for the more specific classification, i.e., 722211, were used.³ Similarly, in the majority of markets, data for central cities ("places") was used, rather than the MSA, as it provided a closer match to estimated revenue and geography of the online data collection for the chains. In cases where small numbers of firms and disclosure of performance made the data for the "place" unavailable for either 1997 or 2002, data for the MSA was used.

Sales per establishment provided the chief measure of performance. The difference over the five-year period (2002 -1997) provided a change in sales per establishment, or an indicator of

³ Geographic markets where data from both NAICS 7222 and 722211 were present showed that the number of firms and sales within NAICS 722211 averaged consistently over 80 percent of that within NAICS 7222. Further, correlations of sales per unit on the two classifications were .93 and .92 for Census years '97 and '02, respectively. Correlations using solely NAICS 7222 data for store performance for the 55 markets across measures of concentrations showed minimal differences in magnitude and no differences in level of significance.

the changing “health” of the market’s restaurants. Last, the change in number of establishments, and percent change were also calculated.

Table 3 provides descriptive statistics comparing the 55 selected markets with the broader group of 405 places. These 405 places provided complete data for 1997 and 2002 in a range of market populations comparable to the selected markets. The 55 selected markets have lower sales per unit for both periods, and lower increases in sales per unit attributable to cases where data for limited-service restaurants was not disclosed for both Census years, such that the “Limited Service Eating Places” category was used.⁴ Encouragingly, the mean average sale per establishment for the selected markets (\$637m) is closer to the national average (\$623m) than is the mean for the larger group (\$692m). The two groups are more similar in the number and changes in number of establishments over the period.

Since the markets used in the analysis were purposely selected to meet criteria for a definable geographic market, additional measures were included to assess the effects of other factors on this sample’s performance measures. In addition to the measures from the Economic Census, measures from the Census of Population and Housing on mobility and income, comparable to those used by Ingene (1983), were included. Given the importance of drive-through windows as a means of increasing sales at LSR restaurants, the proportion of those working outside the home *commuting by car, truck, or van (CTV)* would expectedly increase sales per establishment. Similarly, a short commute (less than 30 minutes) can be expected to increase sales in the market, and sales per establishment. Ingene showed income to be positively related to sales of restaurants, and as such, *per capita income* and *median household income* were included. The selected markets differed in that they had higher proportions with shorter

⁴ Punta Gorda, Florida was an MSA where data for limited service eating places was used for both years, and it also had substantially the lowest change in sales per store (\$-33.1), but removal of this outlier did not change the significance of any the results that follow.

commutes and lower mean levels of income than shown in the broader group of geographic places.

The table also includes the ranges for the measures taken from the on-line census of brands within the markets, and shows comparable counts to those in the Economic Census with a slight difference attributable to the differences in market areas. The concentration measures were based on the rank of firms in each market, and cannot be compared to the shares in the national market in Table 1 except that concentration within the selected markets far exceeds that found across markets.

5. Results

5.1 Analysis within Economic Census Measures

Table 4 provides the correlation coefficients of the measures from the Economic Census and the Census of Population and Housing. In the table, the coefficient for the broader group of places (*larger group*, N=405) is shown above the same correlation (*in italics*) for the selected subgroup of 55 markets (*selected group*). There are several points shown in the table where relationships in the two samples are consistent, and others with differing significance levels, primarily due to the sample size in the larger group where those of low magnitude are statistically different from zero.

The results provide a first indication of competition within the limited service restaurant sector, with the magnitude of the correlations providing little or no evidence of a highly competitive market structure. Specifically, correlations of the ratio measure *sales per establishment* (1997 and 2002) and *change in sales per establishment* would be expected to be more negatively correlated with its denominator, the *number of establishments* (in 2002). The

results show these correlations to be significant, but of low magnitude, accounting for, at best, only 3% of shared variance ($-.17^2$). In the *selected group* and the *larger group*, the *change in sales per establishment* is associated with the *sales per establishment* in 2002 (and independent of *sales per establishment* in 1997) supporting attention to an analysis of the conditions in 2002. Conversely, the *change in number of establishments*, and *percent change in establishments*, is more closely associated with sales per establishment in 1997. In terms of saturation effects, none are evident as the *number of establishments per person* shows no significant negative effect on (1) *sales per establishment*, (2) the *number of establishments* or (3) the *changes in number of establishments*. In short, the correlations are indicative of markets where increases in establishments follow above-average restaurant performance, with only modest effects on subsequent sales per establishment.

Three differences where a significant relationship is shown in the *selected group* and not shown in the *larger group* are likely attributable to the geographic criteria used for their selection as markets. First, the *selected group* shows a significant negative correlation ($-.37$) between the *percent change in the number of establishments* and the *change in sales per establishment*, consistent with what would be expected in definable restaurant markets, whereas in the *larger group*, the correlation is not significant ($-.08$). Second, the two mobility measures (*proportion commuting by CTV* and *commute under 30 minutes*) are positively correlated to *change in sales per establishment* (.35 and .34). In the *larger group* they are near zero, consistent with what might be expected in geographic markets with demand overlapping with adjacent areas. Third, the correlations between the *number of restaurants* and *population* is near unity in both groups (.95/.96), indicating both serve as measures of market size. In the *selected group*, both are negatively correlated with the *proportion with commutes under 30 minutes*, as would be

expected. In other words, smaller markets would be expected to be smaller in area, and should have a higher proportion of workers with shorter commutes.

Although near identical when interpreted as measures of size, the *number of restaurants* and *population* exhibit differences with respect to the measures of income (*median household income* and *per capita income*) in the correlations between the two groups, negative in the *larger group* and positive in the *selected group*. As noted in Table 3, the larger group includes a far broader range on both measures that is lost in aggregation within the geographic area of the selected markets. As shown in the *larger group*, above average income places apparently have below average numbers of limited service restaurants. Within the narrower range of the selected markets, those with above average, or higher, income do correspond to a higher number of establishments.

5.2 Analysis of Economic Census Measures with Franchised Format Audit

Table 5 provides the correlation coefficients between the market characteristics from the directory data on specific franchise systems with the performance and change statistics from the Economic Census. Two rows of coefficients in the table are provided to show the main group (n=55) and a sub-group with populations below 100,000 (n=29). Included in the table is the number of limited service restaurant establishments in 2002 to serve as an indicator of the size of the restaurant market.

The positive correlations for the national chain density measure (number of establishments of national chains to market population) shows that markets with higher densities have higher sales per establishment (for the years '97 and '02) and a higher change in sales per store, as a sharp contrast to what is shown in Table 4. The correlation for the 2002 Economic

Census data is higher in magnitude (.43 vs. .28) suggesting that recent performance in these markets supports the higher restaurant densities. It should also be noted that this density measure is not significantly correlated with the number of limited service restaurants of the overall sample (-.09), and tracks more closely (.52) with the smaller market sub-group.

The *variety* measure (the number of different national chains to the total number of national chain establishments) is not significantly correlated with either of the two years' sales per establishment, but does show a correlation of low significance (.23) with the change in sales per unit. The highly significant negative correlation of this measure with the *number of LSR establishments* for the entire sample versus the smaller market subgroup (-.59 versus -.27) illustrates the effect of multiple units on a market's variety. Stated differently, examining this phenomenon within only the smallest MSAs would not illustrate the counterintuitive effect market size on variety within limited-service restaurant chains.

The correlations of the largest magnitude in Table 5 are those between the concentration measures on revenue and the *sales per establishment* in 2002, with lower magnitude correlations for these measures from 1997, showing within-year correspondence between structure and performance not shown in Table 4, which is noteworthy since the measures were from the same source with identical geographic definitions. Similarly, the concentration measures based on the share of establishments have a higher correlation with the *number of establishments* in 2002. The significant negative correlation coefficients of all four measures of concentration with the *number of establishments*, viewed here as a measure of market size, and higher magnitude coefficients in the smaller market subgroup, show concentration to be higher in smaller markets. Referring back to Table 4, no relationship was shown between the *percent change in number of establishments* and the *number of establishments* in the selected group. The results show that

market size and concentration interact to negatively affect the *change* (and *percent change*) in *number of establishments*, such that smaller markets with higher brand concentration attracted significantly fewer new establishments.

6. Discussion

Business format franchising agreements provide the franchisee with the rights to use the trademarks of the franchisor and territorial exclusivity. Both rights are designed to provide protection from competition, and promise superior sales revenues as well as higher sales per store than could be realized from a non-franchised format. Recent U.S. Economic Census statistics for the franchise industry indicate increasing sales competition in the limited-service restaurant (LSR) sector. Since 1997, franchising has shown minimal growth in overall revenue, relatively low growth in sales per establishment, and a decline in share from 82 to 67 percent of overall limited-service restaurant revenues.

The analysis presented in this study shows that while franchising is lagging behind other competitive forms of LSR in growth in sales per store, it also shows it to be responsible for the dramatic increases in the number of franchised establishments between 1997 and 2002. This growth in the number of outlets among the leading brands has led to the differences in market concentration found in the markets selected for analysis in this paper.

The results of this study indicate the existence of an institutional submarket within a broader market of limited-service restaurant types, where evidence for competition exists among only the leading franchised formats, with non-franchised formats exhibiting little or no effects on the overall market's sales per establishment. Specifically, the results show that brand concentration in the franchised sector is an indicator of sales per establishment, where markets

with above average concentration have below average restaurant performance. What makes this finding even more interesting is that the *number of establishments per person*, a traditional indicator of restaurant saturation, exhibits a positive relationship with the market's sales per establishment, in contrast to an expected negative relationship for a mature market or the independence shown in the analysis conducted solely with Economic Census measures (Table 4). In short, a market with many franchised establishments "competing" has superior performance compared to a concentrated market where the top brands constitute a majority of sales and establishments.

The results are not a definitive indication of encroachment, as sales per establishment provided in the Economic Census constitute a market average of franchised and non-franchised competitors, not average sales per store of franchised establishments. However, the significant correlations between sales per establishment and the measures of concentrations provide compelling evidence that high brand concentration is not only indicative of competition, but also most likely indicative of the saturation of markets. In addition, the results show that 2002 concentration is more closely linked to 2002 performance than to 1997 performance. This can be contrasted to the evidence in Table 4, indicating performance in 1997 led to the change in establishments shown over the five years. Hence, summarizing across the two sets of results, markets with higher sales per establishment in 1997 had above average growth, but markets where growth resulted in above average concentration of franchised formats had below average performance in 2002. Clearly, potential entrants to a geographic market would benefit from evaluating the concentration of establishments among the leading formats, avoiding those with higher concentration, and be less discouraged by the number of restaurants, franchised or non-franchised, in the market.

In the franchise literature, the difference in franchisor versus franchisee sales performance has provided one explanation as to why more successful franchisee establishments may eventually be converted, or re-directed, into franchisor establishments (Oxenfeldt & Kelly, 1968; Dant, Kaufmann & Paswan, 1992). Conversely, this study's evidence that growth in sales per establishment at all trade name LSRs lags behind other restaurant classifications, may provide an explanation for the sharp drop in the proportion of franchisor-owned establishments from 1997 to 2002. If concentration effects are reducing sales per establishment, those markets with the highest concentration of brands may also be the ones with sharpest re-conversion of franchisor to franchisee establishments.

The results also show that the franchisor practice of increasing its share of outlets in a market may not only provide an increase in royalties, but serve as a deterrent to new entrants by reducing the anticipated sales per establishment. The practice can be effective if the franchisor is satisfied with the current number of franchisees and the franchisees can remain profitable at lower sales per establishment. Franchisors claiming to be experiencing a "shortage" of new franchisees need to examine the industry's practices that have created the fading differential advantages to becoming a franchisee.

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Table 1
Structural Changes in the Limited-Service Restaurant Industry
Economic Censuses of 1997 and 2002 with Technomic, Inc., Reports

	1997						2002					2002-1997		
	Firms	Establishments		Sales		\$/Est. (\$000)	Firms	Establishments		Sales		\$/Est. (\$000)	Number of ests.	\$/Est %
		N	%	(\$MM)	%			N	%	(\$MM)	%			
<i>NAICS 722211</i>	106,764	174,104	100.0	94,698.0	100.0	543.9	117,047	186,942	100.0	116,516.3	100.0	623.3	12,838	14.6
<i>Single unit</i>	96,348	96,348	55.3	31,331.6	33.1	325.2	107,524	107,524	57.5	41,672.6	35.8	387.6	11,176	19.2
<i>Multiunit</i>	10,416	77,756	44.7	63,366.5	66.9	814.9	9,523	79,418	42.5	74,843.8	64.2	942.4	1,662	15.6
<i>1 establishment</i>	1,574	1,574	0.9	949.5	1.0	603.2	1,509	1,509	0.8	1,164.0	1.0	771.4	(65)	27.9
<i>2 ests.</i>	3,371	6,742	3.9	4,863.6	5.1	721.4	2,568	5,136	2.7	4,656.5	4.0	906.6	(1,606)	25.7
<i>3 or 4 ests.</i>	2,730	9,204	5.3	7,030.3	7.4	763.8	2,478	8,361	4.5	7,508.6	6.4	898.0	(843)	17.6
<i>5 to 9 ests.</i>	1,700	10,727	6.2	8,438.7	8.9	786.7	1,732	11,120	5.9	10,576.2	9.1	951.1	393	20.9
<i>10+ ests.</i>	1,041	49,509	28.4	42,084.3	44.4	850.0	1,236	53,292	28.5	50,938.4	43.7	955.8	3,783	12.4
<i>Year round</i>		148,139	100.0	89,950.7	100.0	607.2		156,560	100.0	111,529.0	100.0	712.4	8,421	17.3
<i>Concentration</i>	<i>4 largest</i>	11,749	7.9	10,956.3	12.2	932.5		10,718	6.8	11,950.8	10.7	1,115.0	(1,031)	19.6
	<i>8 largest</i>	14,857	10.0	14,081.9	15.7	947.8		14,059	9.0	15,328.6	13.7	1,090.3	(798)	15.0
	<i>20 largest</i>	20,233	13.7	19,315.3	21.5	954.6		19,418	12.4	21,202.6	19.0	1,091.9	(815)	14.4
	<i>50 largest</i>	26,830	18.1	24,653.4	27.4	918.9		25,786	16.5	26,899.9	24.1	1,043.2	(1,044)	13.5
<i>Trade name (Economic Census)</i>	<i>Total</i>	99,560	67.2	74,069.6	82.3	744.0		93,968	60.0	75,198.9	67.4	800.3	(5,592)	7.6
	<i>Franchisor</i>	42,030	28.4	33,079.3	36.8	787.0		29,243	18.7	24,012.3	21.5	821.1	(12,787)	4.3
	<i>Franchisee</i>	57,520	38.8	40,990.3	45.6	712.6		64,725	41.3	51,186.6	45.9	790.8	7,205	11.0
<i>Franchise (Technomic)</i>	<i>4 largest</i>	31,262	21.1	34,485.2	38.3	1,103.1		41,591	26.6	40,631.1	36.4	976.9	10,329	-11.4
	<i>8 largest</i>	54,922	37.1	46,452.5	51.6	845.8		61,289	39.1	56,287.5	50.5	918.4	6,367	8.6
	<i>20 largest</i>	72,866	49.2	59,663.4	66.3	818.8		79,020	50.5	72,520.4	65.0	917.7	6,154	12.1
	<i>50 largest</i>	85,191	57.5	67,876.3	75.5	796.8		93,805	60.5	83,165.7	74.6	878.4	9,486	10.3

Economic Censuses 1997 and 2002, Accommodation and Food Services; Table 1: Sales Size of Establishment for the United States: 2002 (1997), Establishment and Firm Size; Table 3: Single Unit and Multiunit Firms for the United States: 2002 (1997), Establishment and Firm Size; Table 6: Concentration by Largest Firms for the United States: 2002 (1997), Establishment and Firm Size; Table 7: Establishments Using a Trade Name Authorized by Franchisor for the United States and States: 1997 & 2002, Miscellaneous Subject Series
Brand information from Technomic, Chicago IL: *Top 100* and *Second 100* Reports

Table 2
Changes in Structure for Leading Franchised Brands in the United States, 1997-2002
 Technomic, Inc.

	<i>Franchisor-owned establishments</i>					<i>Franchisee establishments</i>					
	<i>Number</i> 2002	'02-'97	<i>Sales</i> (\$MM)	<i>Sales/establishment</i>		<i>Number</i> 2002	'02-'97	<i>Sales</i> (\$MM)	<i>Sales/establishment</i>		<i>Vs. franchisor</i> (\$000s)
				(\$000s)	'02-'97				(\$000s)	'02-'97	
<i>McDonald's</i>	2,102	304	3,172.0	1,509.0	0.8%	11,389	807	17,133.7	1,504.4	10.3%	-4.6
<i>Burger King</i>	607	93	652.9	1,075.6	-0.2%	7,422	397	7,647.5	1,030.4	-0.9%	-45.2
<i>Wendy's</i>	1,183	110	1,550.0	1,310.2	12.0%	4,366	864	5,275.0	1,208.2	26.5%	-102.0
<i>Subway</i>	1	1				14,521	3,356	5,200.0	358.1	37.9%	
<i>Taco Bell</i>	1,284	-865	1,540.0	1,199.4	17.2%	4,881	262	3,640.0	745.7	32.5%	-453.6
<i>KFC</i>	1,284	-566	1,380.0	1,074.8	36.7%	4,188	918	3,486.0	832.4	6.9%	-242.4
<i>Domino's Pizza</i>	584	-182	340.0	582.2	14.3%	4,227	562	2,575.0	609.2	6.7%	27.0
<i>Arby's Restaurants</i>	0	0				3,250	325	2,695.4	829.4	18.3%	
<i>Top 8</i>	7,045	-1,105	8,634.9	1,225.7	16.9%	54,244	7,491	47,652.6	878.5	10.2%	-347.2
<i>Jack in the Box</i>	1,517	543	1,829.8	1,206.2	16.2%	358	13	423.9	1,184.2	18.8%	-22.0
<i>Sonic Drive-Ins</i>	460	192	340.6	740.3	23.7%	2,113	656	1,901.4	899.9	27.1%	159.5
<i>Papa John's</i>	585	184	430.0	735.0	17.4%	2,000	884	1,319.5	659.8	19.4%	-75.3
<i>Hardee's</i>	730	-133	562.0	769.9	3.9%	1,343	-738	1,136.5	846.3	-13.9%	76.4
<i>Chick-fil-A</i>	889	241	1,306.5	1,469.6	48.8%	185	72	66.3	358.4	29.1%	-1,111.3
<i>Popeyes Chicken</i>	146	27	180.0	1,232.9	51.2%	1,231	406	1,065.0	865.2	13.9%	-367.7
<i>Golden Corral</i>	118	-65	353.2	2,993.2	65.9%	352	83	803.3	2,282.2	40.1%	-710.9
<i>Little Caesars</i>	425	-675	215.0	505.9	-67.6%	2,275	-1,125	940.0	413.2	178.2%	-92.7
<i>Carl's Jr.</i>	440	-3	507.5	1,153.4	4.6%	502	259	530.0	1,055.8	31.1%	-97.6
<i>Ryan's Family Steak</i>	324	54	773.8	2,388.3	7.8%	22	-3	42.0	1,911.0	28.2%	-477.4
<i>Panera Bread</i>	132	75	212.6	1,610.6	33.1%	346	327	542.8	1,568.8	65.6%	-41.8
<i>Long John Silver's</i>	741	-168	490.5	662.0	7.5%	497	11	260.5	524.1	-5.5%	-137.9
<i>Top 20</i>	13,552	-833	15,836.4	1,168.6	11.3%	65,468	8,336	56,684	865.8	13.9%	-302.7
<i>Next 30</i>	4,119	-193	4,331.7	1,051.6	26.0%	10,666	2,908	6,314	591.9	9.7%	-459.7
<i>Top 50</i>	17,671	-1,026	20,168.1	1,141.3	14.1%	76,134	11,244	62,997.6	827.5	12.8%	-313.9

Technomic, Chicago IL: *Top 100* and *Second 100* Reports

Table 3
Comparison of Census Places on Limited-Service Restaurants to Selected Markets

	<i>N</i>	<i>Minimum</i>	<i>Maximum</i>	<i>Mean</i>	<i>Standard deviation</i>
<i>2002 Economic Census</i>					
<i>Sales per establishment 1997</i>	405	305.7	955.8	586.6	93.6
	55	237.2	761.9	546.8	107.1
<i>Sales per establishment 2002</i>	405	345.8	1089.9	691.8	115.4
	55	270.7	862.4	637.4	116.1
<i>Change in sales per establishment, '02-'97</i>	405	.1	376.1	105.2	71.1
	55	-33.1	237.8	90.5	58.4
<i>Number, limited-service restaurants 2002</i>	405	22	587	97.3	86.4
	55	20	564	101.3	107.6
<i>Change in number of establishments</i>	405	-44	114	5.2	15.2
	55	-50	52	4.8	15.9
<i>Percent change in number of establishments</i>	405	-25.8%	104.5%	6.8%	18.2%
	55	-23.1%	36.7%	5.0%	12.6%
<i>Population</i>	405	30,259	711,644	125,814	115,313
	55	30,706	735,503	122,249	144,264
<i>Density: establishments per thousand persons</i>	405	.39	2.28	.88	.27
	55	.36	1.80	.94	.26
<i>Proportion of population commuting by car, truck or van</i>	405	.20	.57	.42	.06
	55	.29	.50	.41	.05
<i>Proportion working outside home with commute under 30 minutes</i>	405	.38	.94	.70	.12
	55	.65	.94	.83	.07
<i>Median household income</i>	405	24,201	117,574	50,209	16,149
	55	24,409	55,546	35,701	7,098
<i>Per capita income</i>	405	9,762	63,015	22,055	6,853
	55	13,882	26,017	18,809	3,027
<i>2002 Online audit</i>					
<i>Number of establishments</i>	55	21	466	75.4	84.2
<i>Density: establishments per thousand persons</i>		.16	.85	.48	.15
<i>Number of brands as a share of establishments</i>		4.9%	26.5%	15.7%	4.8%
<i>Share of establishments in leading brands</i>	<i>Top 4</i>	33.3%	76.8%	46.2%	8.4%
	<i>Top 8</i>	52.4%	88.4%	68.8%	8.5%
<i>Estimated share of revenue in leading brands</i>	<i>Top 4</i>	30.2%	77.1%	47.0%	10.1%
	<i>Top 8</i>	42.8%	91.3%	65.9%	11.7%

Table 4
Comparison of Census Places (N=405) to Selected Markets (N=55)
Correlation Coefficients

		<i>Sales per establishment and change in sales per establishment</i>			<i>Number and change in number establishments</i>			<i>Commute to work</i>		<i>Personal income</i>		
		<i>1997</i>	<i>2002</i>	<i>'02-'97</i>	<i>N₂₀₀₂</i>	<i>'02-'97</i>	<i>%D</i>	<i>Population</i>	<i>p_{CTV}</i>	<i>p₃₀</i>	<i>Med. hh.</i>	<i>Per C.</i>
<i>Sales per establishment, 2002</i>	405	.79 ³	1.00									
	55	.87 ³										
<i>Change in sales per establishment, '02-'97</i>	405	-.04	.59 ³	1.00								
	55	-.11	.40 ³									
<i>Number of establishments 2002</i>	405	-.10 ²	-.17 ³	-.15 ³	1.00							
	55	.04	.03	.00								
<i>Change in number of establishments, '02-'97</i>	405	.18 ³	.07	-.12 ²	.37 ³	1.00						
	55	.10	.01	-.18	.23 ¹							
<i>Change in number of establishments (%)</i>	405	.27 ³	.17 ³	-.08	.04	.74 ³	1.00					
	55	.02	-.16	-.37 ³	.05	.68 ³						
<i>Population</i>	405	-.08 ¹	-.15 ³	-.13 ³	.95 ³	.31 ³	.02	1.00				
	55	.03	.00	-.05	.96 ³	.24 ¹	.08					
<i>Proportion commuting by car, truck or van (p_{CTV})</i>	405	.32 ³	.29 ³	.04	-.19 ³	.01	.08	-.26 ³	1.00			
	55	.19	.35 ³	.35 ³	.17	.04	.00	.14				
<i>Proportion with commute under 30 min. (p₃₀)</i>	405	-.13 ²	-.09 ¹	.03	.08	-.21 ³	-.31 ³	-.02	.01	1.00		
	55	.06	.22	.34 ²	-.48 ³	-.15	-.17	-.54 ³	.09			
<i>Median household income</i>	405	.21 ³	.16 ³	-.01	-.24 ³	.14 ³	.24 ³	-.25 ³	.51 ³	-.49 ³	1.00	
	55	-.01	.04	.09	.27 ²	.27 ²	.16	.34 ²	.65 ³	-.28 ²		
<i>Per capita income</i>	405	.03	-.03	-.08	-.12 ²	.04	.08	-.17 ³	.49 ³	-.27 ³	.84 ³	1.00
	55	-.03	.03	.12	.26 ¹	.18	.07	.22	.63 ³	-.15	.80 ³	
<i>Establishments per person</i>	405	-.05	-.08	-.05	-.02	.06	.09 ¹	-.25 ³	.20 ³	.30 ³	-.02	.11 ²
	55	.11	.10	.00	-.19	-.13	.00	-.38 ³	.01	.44 ³	-.35 ³	.06

¹ p<.10

² p<.05

³ p<.01

Table 5
Relationship of Economic Census Performance Measures to Structural Measures of Leading Limited-Service Restaurant Brands
 Correlation Coefficients from Complete Sample and Smaller Market Subsample

	<i>Measures from 2002 Online Directory Audit of Top Limited-Service National Restaurant Chains</i>						
	<i>N</i>	<i>Density: establishments per person</i>	<i>Variety Brands as a proportion of establishments</i>	<i>Proportion of establishments within</i>		<i>Estimated proportion of revenue within</i>	
				<i>Top 4 brands</i>	<i>Top 8 brands</i>	<i>Top 4 brands</i>	<i>Top 8 brands</i>
<i>Sales per establishment 1997</i>	55	.28 ²	-.04	-.15	-.15	-.40 ³	-.44 ³
	29	.09	-.30	-.08	-.11	-.33 ¹	-.36 ¹
<i>Sales per establishment 2002</i>	55	.43 ³	.08	-.25 ¹	-.25 ¹	-.53 ³	-.55 ³
	29	.23	-.18	-.21	-.22	-.50 ³	-.51 ³
<i>Change in sales per establishment, '02-'97</i>	55	.34 ²	.23 ¹	-.21 ²	-.22 ²	-.31 ²	-.29 ²
	29	.27	.21	-.24	-.21	-.32 ¹	-.28
<i>Number of establishments, 2002</i>	55	-.09	-.59 ³	-.28 ²	-.32 ²	-.30 ²	-.32 ²
	29	.52 ³	-.27	-.48 ²	-.56 ²	-.59 ³	-.60 ³
<i>Change in number of establishments</i>	55	-.11	-.12	-.22	-.26 ¹	-.19	-.23 ¹
	29	.14	.11	-.37 ²	-.36 ¹	-.22	-.29
<i>Change in number of establishments (%)</i>	55	-.03	.02	-.11	-.18	-.03	-.10
	29	.13	.13	-.32 ¹	-.33 ¹	-.16	-.25

¹ p<.10

² p<.05

³ p<.01