THE EFFECT OF FRANCHISING ON PERFORMANCE: AN EXAMINATION OF RESIDENTIAL REAL ESTATE BROKERAGES

Randy I. Anderson
Howard Phillips Eminent Scholar Chair
and Professor of Real Estate
Dr. P. Phillips School of Real Estate
College of Business Administration
University of Central Florida

Jeremy C. Ouchley
Attorney-at-Law
910 Louisiana Street
Houston, TX 77992

John L. Scott
Associate Professor of Economics
110 Newton Oakes Center
North Georgia College & State University
Department of Business Administration
Dahlonega, GA 30597

Marshall J. Horton
Chair, Department of Business Administration
Regions Bank Chair of Economics and Finance
Frank D. Hickingbotham School of Business
Ouachita Baptist University

Robert C. Eisenstadt
Associate Professor of Economics
University of Louisiana Monroe
700 University Avenue
Monroe, LA 71209

Abstract

Do real estate brokerages gain from franchising? Research thus far is sparse and the results are mixed. The significant, but limited, penetration into the real estate brokerage market of franchising suggests important costs and benefits.

Using microeconomic data from the National Association of Realtors, we find that franchising increases output as measured by the number of listings and sales that the firm transacts. However, we find that franchised firms are not able to translate the incremental output into additional revenues and/or economic profits. The results help to explain the inability of franchising to gain market share in real estate brokerage.

Introduction

Traditionally, the residential real estate brokerage market consisted of small, independently owned and locally operated firms. Franchising first appeared in residential brokerages in 1948. Franchising became commonplace in the 1970's, and peaked in terms of market share in 1981 at 19 percent. Since that time the share of the market made up of franchised affiliates has remained relatively constant. Currently, approximately 18-20 percent of all real estate firms are affiliated with franchise organizations that employ 30 percent of all the salespersons in the industry.

Despite the significance of franchising as a form of business organization within diverse industries, little research has focused on the reasons why firms choose to join franchise operations. Most of the work (Jensen and Meckling, 1976; Jensen and Smith, 1985; Rubin, 1978) comes from the corporate finance literature where the principal focus has been on the benefits of franchising from the perspective of the franchisor. The purpose of this study is to analyze the affect of franchising on a firm's transaction volume, revenues, and economic profits.

Until recently, national microeconomic data for individual residential real estate brokerage firms were generally unavailable. For this reason, few empirical studies have been performed that directly examine the operating performance of these firms. Moreover, even fewer direct studies have examined the affect of franchise affiliation on performance. However, several articles either address these issues or have implications for how franchising affects performance.

Using 1982 data from three North Carolina cities, Frew and Jud (1986) examined how franchise affiliation affects agent performance. They found that franchise affiliation increases the total volume of home sales for the average firm by $929,000 per year. Frew and Jud argued that affiliation provides service quality assurance to homebuyers and sellers, especially when the participants are unfamiliar with the local market. Colwell and Marshall (1986) also tested the affect of franchise affiliation. Using a sample of firms operating in a small MSA during 1980-81, they obtained mixed results. In particular, franchise affiliation was shown to increase output in 1980, but decrease output in 1981. Additionally, they found that franchising has no affect on market share. Richins, Black, and Sirmans (1987) also analyzed residential real estate data taken from a 1985 Baton Rouge, Louisiana, MLS database, and found that franchise affiliation increased sales. Sirmans and Swicegood (1997) used Florida data to find that franchise affiliation resulted in higher income. In their summary of the literature, Benjamin, Jud, and Sirmans (2000) cited an unpublished study by Sirmans and Swicegood using Texas data that found no relationship between franchising and income.

In an attempt to make obtain more general results, recent studies employ national data sets provided by the National Association of Realtors (NAR, hereafter). Anderson, Fok, Zumpano, and Elder (1998) and Lewis and Anderson (1999) examined the efficiency of franchising. The efficiency results were mixed as the first study finds franchise affiliation negatively related to efficiency, while the second study finds franchise affiliation positively related to performance.

Using NAR data, Jud, Rogers, and Crellin (1994) found that franchising increases all measures of output and revenue. Moreover, they stated that the present value of the "extra" revenue associated with franchising more than offsets the up-front transaction fees charged by franchise firms. However, taking a closer look at the industry Benjamin, Chinloy, Jud, and Winkler (2006) concluded that franchising brings in revenues that are wholly extracted from the franchisee in fees. In a similar vein, Anderson, Lewis, and Zumpano (2000) conclude that franchising is efficient in lowering costs, but it not efficient in raising profit. Finally, Johnson, Zumpano, and Anderson (2007), as well as Jud, Winkler, and Sirmans (2002) do not find that franchising significantly increases agent income. The above literature suggests the need for additional research into the franchising issue, as there is no consensus about the benefits of affiliation.

Following Jud, Rogers, and Crellin (1994), we directly examine the effect of franchising on output and revenues using 1994-1995 NAR data, which should reflect the aforementioned changes in the real estate markets. Additionally, we analyze the effect of franchising on the firm's ability to earn economic profits. While franchising may increase output, as shown in previous research, it remains to be seen if these firms can translate the increased output into profits. Franchise firms not only have to pay up-front franchise fees, but also must pay a percentage of commission revenue with the parent firm, essentially trading fixed for variable costs. Finally, we incorporate brokerage type variables into the revenue and economic profit models to determine if the brokerage type affects performance.

The next section examines the sample data. Section 3 provides the statistical analysis and results, while Section 4 concludes the study.

Data and Methodology

The data set used in the study is compiled from a survey taken by the National Association of Realtors (NAR) in 1994. The survey questionnaire that was sent to domestic real estate brokerage firms contains detailed questions about the firms' operations, including questions regarding the structure and operation of the firm. Additionally, the questionnaire asked for financial statement information such as income and expenses.   We use a census of all usable questionnaires, which consists of 186 firms.

To test hypotheses pertaining to transactions, revenues, and profits, we employ four dependent variables. These variables are the gross income received by the firm in one year, the economic profit margin of the firm, the number of residential properties sold, and the total number of residential transactions (including properties listed and sold by the office, listed by office and sold by co-broker, and listed by co-broker and sold by office).

The independent variables selected for the analysis include variables that should theoretically affect firm productivity and are as follows: the age of the firm, the number of full-time equivalent salespeople, the number of multiple listing services to which the firm subscribes, the number of offices that the firm operates, the size of the firm's market, the median house price in the firm's market, the percentage change in the population from 1980 through 1992, the estimated 1994 population[1], and agency relationship variables. Table 1A provides summary statistics for each of these variables for the whole sample, while

Tables 1B and 1C provide the summary statistics for the set of franchised firms and non-franchised firms, respectively.

Table 1A

Summary Statistics

Total Sample				
	Mean	**Std Dev.**	**Min**	**Max**
Number of Properties Sold	218	642	0	6087
Total Res. Transactions	309	916	0	8751
Commission Income	$1,430,103	$4,968,562	$3,000	$47,323,000
Gross Income	$1,470,552	$5,044,996	$3,000	$47,693,000
Gross Margin	$542,542	$1,952,966	$1,000	$17,830,000
Net Income	$39,525	$132,592	($609,133)	$1,193,000
Profit Margin	7%	0.34	-262%	80%
Economic Profit Margin	0%	0.34	-269%	74%
Franchise	0.290	0.455	0	1
Age	17.785	17.653	1	91
Full-Time Equiv. Salespeople	28.695	92.700	0	880.75
MLS	2.204	0.675	1	4
Number of Offices	3.516	16.764	0	200
City 1	0.113	0.317	0	1
City 2	0.188	0.392	0	1
City 3	0.177	0.383	0	1
City 4	0.145	0.353	0	1
City 5	0.129	0.336	0	1
City 6	0.177	0.383	0	1
Relationship 1	0.108	0.311	0	1
Relationship 2	0.183	0.388	0	1
Relationship 3	0.704	0.458	0	1
State Population – 1994	8695.898	8537.907	476	31431
Med. House Price	$94,355	$51,087	$45,200	$245,300
Percent Pop. Change 80-92	14.80	14.035	-7.2	66.9

Table 1B

Summary Statistics (continued)

Franchises				
	Mean	**Std Dev**	**Min**	**Max**
Number of Properties Sold	216	402	0	2209
Total Res. Transactions	302	554	0	3231
Commission Income	$1,171,621	$1,968,684	$12,450	$11,290,120
Gross Income	$1,223,634	$2,066,809	$12,450	$11,694,966
Gross Margin	$450,799	$833,705	$4,638	$5,052,383
Net Income	$27,568	$87,052	($117,721)	$532,280
Profit Margin	-1%	0.38	-262%	69%
Economic Profit Margin	-7%	0.38	-269%	62%
Age	17.778	17.519	1	91
Full-Time Equiv. Salespeople	27.101	53.304	0.75	342
MLS	2.185	0.729	1	4
Number of Offices	1.778	2.279	1	15
City 1	0.074	0.264	0	1
City 2	0.259	0.442	0	1
City 3	0.167	0.376	0	1
City 4	0.130	0.339	0	1
City 5	0.130	0.339	0	1
City 6	0.148	0.359	0	1
Relationship 1	0.074	0.264	0	1
Relationship 2	0.185	0.392	0	1
Relationship 3	0.722	0.452	0	1
State Population – 1994	8938.037	8073.140	580	31431
Med. House Price	$97,357	$51,746	$45,200	$245,300
Percent Pop. Change 80-92	13.054	12.909	-3.8	41.1

Summary Statistics (continued)

Non-Franchises				
	Mean	**Std Dev**	**Min**	**Max**
Number of Properties Sold	219	719	0	6087
Total Res. Transactions	312	1030	0	8751
Commission Income	$1,535,846	$5,766,794	$3,000	$47,323,000
Gross Income	$1,571,564	$5,846,365	$3,000	$47,693,000
Gross Margin	$580,074	$2,258,361	$1,000	$17,830,000
Net Income	$44,417	$147,237	($609,133)	$1,193,000
Profit Margin	10%	0.32	-135%	80%
Economic Profit Margin	3%	0.32	-141%	74%
Age	17.788	17.774	1	90
Full-Time Equiv. Salespeople	29.348	104.808	0	880.75
MLS	2.212	0.654	1	4
Number of Offices	4.227	19.825	0	200
City 1	0.129	0.336	0	1
City 2	0.159	0.367	0	1
City 3	0.182	0.387	0	1
City 4	0.152	0.360	0	1
City 5	0.129	0.336	0	1
City 6	0.189	0.393	0	1
Relationship 1	0.121	0.328	0	1
Relationship 2	0.182	0.387	0	1
Relationship 3	0.697	0.461	0	1
State Population – 1994	8596.841	8748.812	476	31431
Med. House Price	$93,127	$50,962	$45,600	$245,300
Percent Pop. Change 80-92	15.513	14.456	-7.2	66.9

Regression Analysis

<u>Output Models</u>

First, we examine the affect of franchising on firm output. Similar to Jud, Rogers, and Frew (1994), we estimate the following models:

$$\ln S_i = b_0 + b_1 FRANCHISE_i + b_2 AGE_i + b_3 FTSALES_i + b_4 MLS_i + b_5 0FFICE_i + b_6 CITY_{ik} + e_i, \qquad (1)$$

$$\ln T_i = b_0 + b_1 FRANCHISE_i + b_2 AGE_i + b_3 FTSALES_i + b_4 MLS_i + b_5 0FFICE_i + b_6 CITY_{ik} + e_i \qquad (2)$$

where $\ln S_i$ represents log of number of residential properties sold, $\ln T_i$ is the log of the total number of revenue transactions completed by the firms, FRANCHISE is a dummy variable taking on a value of 1 if the firm is affiliated and a value of 0 otherwise, AGE is the age of the firm in years, FTSALES is the number of full-time equivalent residential sales personnel that the firms employs, MLS represents the number of MLS affiliations to which a firm belongs, OFFICE represents the number of residential offices that the firm operates, CITY is a dummy variable that represents the population of the city in which the firm operates, [2] and e_i is the error term.

As in Jud, Rogers, and Crellin (1994), we estimate using White's (1980) technique to obtain consistent standard errors in the presence of unknown heteroscedasticity. This is appropriate in the current application since cross-sectional samples, such as the one employed here, are often associated with heteroscedasticity. The regression results are presented in Tables 2 and 3.

Table 2

Franchising and Sales

(Dependent Variable: LN of Sales)

Variable	Coefficient	T Statistic
(Constant)	2.351	4.618
AGE	0.02	3.66
CITY1	0.35	0.769
CITY2	0.705	1.686
CITY3	0.747	1.71
CITY4	0.724	1.528
CITY5	0.722	1.528
CITY6	0.503	1.13
FRANCHISE	1.062	5.942
FTSALES	0.009	4.515
MLS	-0.033	-0.202
OFFICE	0.006	3.093
Adjusted R Square	0.401	
F Statistic	12.24	

Table 3

Franchising and Total Revenue Transaction

(Dependent Variable: LN of Revenue Transactions)

Variable	Coefficient	T Statistic
(Constant)	2.333	4.108
AGE	0.021	3.683
CITY1	0.586	1.114
CITY2	1.028	2.129
CITY3	0.95	1.839
CITY4	1.051	1.95
CITY5	1.056	1.978
CITY6	0.977	1.947
FRANCHISE	1.093	5.986
FTSALES	0.009	4.423
MLS	-0.009	-0.056
OFFICE	0.007	3.29
Adjusted R Square	0.394	
F Statistic	11.93	

The explanatory variables in both equation (1) and equation (2) have a significant effect on the performance of the firm, as indicated by the F-statistics of 12.24 and 11.93. Additionally, each model has reasonably good explanatory power, since R-square in each indicates that approximately 40 percent of the variance in the dependent variable is explained by the model. In model (1), AGE, CITY2 ,CITY3, CITY4, CITY5, FRANCHISE, FTSALES, OFFICE, and the intercept were all significantly related to sales at the 10 percent level.

Of most interest in the current study is the franchise variable. In both equation (1) and equation (2) franchising is positively related to sales and total revenue transactions, which suggests that choosing to affiliate can increase output. In model (1), franchise affiliation is associated with an approximate 189 percent $[100 * (e^{1.062}-1)]$ increase in the number of residential properties sold. This is significantly higher than the 38 percent increase that Jud, Rogers, and Crellin reported in their previous research. In model (2) franchise affiliation is associated with an approximate 198 percent $[100 * (e^{1.093}-1)]$ more residential transactions than a non-franchised firm. This is consistent with the results of Model 1 and affirms the theory that franchising does increase transaction volume.

We also found that residential sales and total transactions are positively related to the brokerage's age, which suggests that firms can increase sales over time. This may result from positive word-of-mouth effects, repeat business, and issues pertaining to brand-name capital. Additionally, the number of offices and the number of full-time equivalent employees were positively related to sales. This was expected as adding an additional salesperson and/or opening another office should increase output.   Additionally, in model (1), CITY2 through CITY5 are significant and positively related to output. This may indicate that being in small markets hurts sales as the market is too thin, but if firms move to the largest of markets, sales may decline as competition increases. In model (2) CITY6 is also significant and positive indicating that operating in the largest market areas helps firms increase their total number of revenue transactions. The number of MLS affiliations was insignificant in both regressions. This is an

interesting result as researchers have conjectured that MLS affiliation acts as a cartel and allows firms to obtain excess economic profits. These results provide modest support against the conjectured MLS inefficiencies.

<u>Franchising and Revenues</u>

The preponderance of the evidence suggests that affiliation can enhance firm output; however, that does not necessarily translate into additional revenues for a brokerage firm. A firm that produces a large number of transactions may be selling and listing low priced homes and/or generating smaller commissions from the sales than their seemingly less productive counterparts. To examine how affiliation affects revenue, we estimate a revenue function. The dependent variable is gross revenues received by a real estate brokerage firm in one year. This revenue function encompasses all of the previously mentioned independent variables as well as several new ones. The model is shown below:

$$G_i = b_0 + b_1 FRANCHISE_i + b_2 AGE_i + b_3 FTSALES_i + b_4 MLS_i + b_5 0FFICE_i + \qquad (3)$$
$$b_6 CITY_{ik} + b_7 MEDHOUSEP_i + b_8 PERPOPCH_i + b_9 STATEPOP_i + b_{10} A_{im} + e_i.$$

G_i is the dollar amount of gross income received by firm in one year, $MEDHOUSP_i$ represents the median house price in 1990, $PERPOPCH_i$ is the percentage population change from 1980 through 1992, $STATEPOP_i$ is the estimated 1994 state population, and A_{im} represents the mth agency relationship of the ith firm, measured by three dummy variables: SELLERAG takes on a value of 1 if the firm is a seller agency exclusively, SINGLEAG takes on a value of 1 if the firm is a single agency exclusively, BUYSALAG takes on a value of 1 if the firm is a buyer and seller agency with disclosed dual agency for in-company transactions. The other independent variables are the same as in previous models.

The above-mentioned demographic variables are included to control for factors (such as regional differences in home prices) specific to the state that each firm is located in. Additionally, three new dummy variables are added to incorporate the firm's agency relationship into the model. Relationship 1 indicates that the firm is a seller agency exclusively. Relationship 2 indicates that the firm is a single agency exclusively, being either the buyer or seller but not both at one time. Relationship 3 indicates that the firm is a buyer and seller agency, participating in both types of transactions at the same time. The base for comparison is a buyer agency, of which there are relatively few. This model investigates whether agency type has any effect on gross firm revenues. We include these variables in the revenue estimation because the brokerage prefers higher prices when acting on the seller's behalf, but lower prices if acting on the buyer's behalf. So the agency type should affect revenues. However, both buyers' and sellers' agencies prefer to make more transactions, so we did not include the agency concepts in the transactions models. The results from the analysis are shown in Table 4.

The model is significant as indicated by the large F-statistic of 296. The R square statistic for this model is extremely high, indicating that 96.5% of the variation in gross revenues is explained in this model. The significant variables are FRANCHISE, FTSALES, and MLS.

In particular, the results indicate that franchise affiliation is associated with a $276,381 decrease in gross revenues. This seems to conflict with the results of models (1) and (2), which indicate that franchise affiliation is associated with extremely large increases in residential sales and transaction volume. However, it appears that affiliation actually decreases the gross revenues that a firm received when controlling for firm size and other market characteristics. This may be a function of franchise firms having to allocate a percentage of each residential transaction to the parent company. In addition, the

franchise firms are generally smaller firms in a given market. The large firms are generally more established and

Table 4

Effect of Agency Type on Gross Revenues

Variable	Coefficient	T Statistic
(Constant)	258664.7	0.249
CITY1	-45551.6	-0.131
CITY2	-27499.3	-0.087
CITY3	-69044.2	-0.212
CITY4	-359964	-1.097
CITY5	-155155	-0.451
CITY6	-374654	-1.127
FRANCHISE	-276381	-1.746
AGE	-1167.273	-0.269
FTSALES	53632.173	59.591
MLS	179505.7	1.486
OFFICE	-1283.21	-0.291
MEDHOUSP	-0.103	-0.061
PERPOPCH	-2992.669	-0.526
STATEPOP	6.944	0.692
SELLERAG	-639998	-0.637
SINGLEAG	-403746	-0.408
BUYSALAG	-453954	-0.463
Adjusted R Square	0.965	
F Statistic	296.84	

have better name recognition and brand-name capital. Thus, the smaller franchise firms may be obtaining the lower quality listings and sales (lower quality in terms of selling price), which is consistent with what Jud, Rogers, and Crellin suggested in their 1994 article.

The high T-statistic of the FTSALES coefficient indicates that it has a considerable effect on gross income. The coefficient of FTSALES suggests that for every additional salesperson in the firm, gross revenues will increase by $53,632, which is reasonable in this sector.   The coefficient of MLS suggests that for every additional MLS system that a firm joins, on average, gross revenues will increase by $179,505. Hence, while adding an additional MLS may not increase total volume, firms are able to realize additional revenues by joining another MLS. Perhaps MLS affiliation provides high quality listings to firms who would otherwise not have access to these properties. None of the agency variables is significant at the .10 level, indicating that agency status does not affect total firm revenues.

Franchising and Profitability

Ultimately, most mangers are concerned with whether or not franchising will allow them to obtain additional rents, or receive above-average economic profits. To develop a dependent variable to quantify economic profits, a measure of profitability that was relatively standardized across firms is chosen. A raw net income figure would not serve this purpose, so the profit margin of the firm is used. The profit margin is calculated by dividing the net income of the firm by the gross revenues of the firm. A definition

of economic profit that could be applied to the data is found in Thompson and Formby (1993). They defined normal profit as "a minimum acceptable return on owners' investment," and economic profit as "any return over and above a normal profit." (1993, p. 241)

To find the normal level of profit in the brokerage industry, the average of all of the firms' profit margins in the sample is taken. This figure is 6.52 percent. This figure is subtracted from each individual firm's profit margin to find their profit margin deviation from the average. We use this figure as an approximation of economic profits and estimate the following equation:

$$EPM_i = b_0 + b_1FRANCHISE_i + b_2AGE_i + b_3FTSALES_i + b_4MLS_i + \quad\quad (4)$$
$$\quad\quad b_5OFFICE_i + b_6CITY_{ik} + b_7MEDHOUSEP_i + b_8PERPOPCH_i +$$
$$\quad\quad b_9STATEPOP_i + b_{10}A_{im} + e_i$$

where EPM_i represents the economic profit margin of firm which is computed by taking the actual profit margin and subtracting the average of entire sample's profit margins, with the other independent variables the same as in the third equation. The results of the estimation are presented in Table 5.

Table 5

Economic Profits and Franchising
(Dependent Variable: Economic Profits Margin)

Variable	Coefficient	T-Statistic
(Constant)	0.113	0.307
CITY1	-0.008	-0.065
CITY2	-0.092	-0.815
CITY3	-0.062	0.533
CITY4	0	0.004
CITY5	-0.107	-0.877
CITY6	-0.049	-0.419
FRANCHISE	-0.096	-1.704
AGE	0	0.308
FTSALES	0	-0.321
MLS	-0.021	-0.495
OFFICE	0	0.046
MEDHOUSP	0	-0.384
PERPOPCH	0	0.32
STATEPOP	0	2.214
SELLERAG	0.004	0.011
SINGLEAG	-0.251	-0.714
BUYSALAG	-0.034	-0.1
Adjusted R Square	0.044	
F Statistic	1.502	

The R square for this model is low, indicating that there are other factors that contribute to the profit margin than are modeled here. The only two significant variables included in the estimation are FRANCHISE and STATEPOP. Consistent with the revenue equation, franchising is negatively related to the gross profit margin, indicating that franchising does not allow firms to obtain economic rents or

above-average economic profits. In fact, the decision to franchise actually reduces the firms' economic profit levels. The state population variable is significant and positively related to economic profits, indicating that firms operating in more heavily populated states are able to earn higher levels of economic profit.

Summary and Conclusions

We examine the affect of franchising on residential real estate brokerage firms' output, revenues, and economic profits. We extend prior research in several ways. First, prior studies focus primarily on output, as measured by the number of listings and/or sales the firm transacts. We examine output, but also examine whether franchising alters revenues and economic profits. Finally, we add agency-type variables into the model to determine if the agency relationship alters revenues and/or profitability.

The results are significant and provide support for prior studies that franchise affiliation is associated with an increase in output as measured by sales and revenue transactions. In particular, other things equal, franchisees had nearly 200% more residential transactions than non-franchised firms. However, we find that the franchise firms are not able to translate these additional transactions into gross revenue or excess economic profits. The revenue estimation indicated that franchisees earn hundreds of thousands of dollars less in revenues. The profit estimation was weak, compared to our other models, with franchising significantly negatively related to profits. This may be indicative of the type or quality of transactions that the franchise firms attract. Perhaps non-franchised firms obtain the higher priced homes and/or obtaining a larger commission per transaction. Additionally, the franchise firms have to remit a portion of the revenues from each sale to the parent firm, which may be driving the results. The inability of franchise firms to generate additional revenues or profits from affiliation may be responsible for franchising's limited market share. Franchising seems to be an alternative for small firms, who are able to generate volume at the cost franchise fees and a lower potential to generate larger sales and profit margins. Finally, we do not find any significant relationship between the type of agency and productivity.

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[1] Because the individual surveys did indicate which state the firm was located, these variables are state specific.

[2] $CITY_{ik}$ represents the kth population of the ith firm's market area, measured by six dummy variables:

CITY1 represents populations between 10,000 and 19,999, 0 otherwise,

CITY2 = 1 if population is between 20,000 and 49,999, 0 otherwise

CITY3 = 1 if population is between 50,000 and 99,999, 0 otherwise

CITY4 = 1, if population is between 100,000 and 249,999, 0 otherwise

CITY5 = 1, if population is between 250,000 and 499,999, 0 otherwise

CITY6 = 1, if population is 500,000 +, 0 otherwise.