

The Earnings of REALTORS: Some Empirical Evidence

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Abstract. This paper explores the factors that influence the earnings of REALTORS. It presents estimates of a human capital earnings model estimated on the basis of a nationwide survey of REALTORS collected by the National Association of REALTORS in 1984. Estimates of this model are compared to previous studies that have been based on surveys of REALTORS in individual states.

Introduction

In 1984, there were more than two million licensed real estate agents in the United States.¹ The National Association of REALTORS, the dominant trade association within the real estate profession,² claimed a membership in 1984 of 683,000. This paper explores the factors that influence the earnings of REALTORS.

The methodology employed in this study is based on the human capital theory of earnings as developed by Becker [1], Mincer [7], and others. This approach has been widely used by labor economists to study the returns to schooling, experience, and training within the overall labor force. The empirical data for the study are taken from a 1984 survey undertaken by the National Association of REALTORS.

Two previous studies have examined the determinants of earnings in the real estate profession using cross-sectional samples derived from surveys of individual REALTORS in particular states. Glower and Hendershott [4] utilized a human capital model to study the earnings of REALTORS in Ohio in 1986, and they carefully outlined the theory of human capital as applied to the study of earnings. Follain, Lutes and Meier [2] also used the human capital approach in their study of the earnings of Illinois REALTORS in 1985.³

Methodology

The methodology utilized here to examine the determinants of earnings parallels that of Glower and Hendershott [4] and Follain, Lutes and Meier [2]. Following the human capital approach, we assume that earnings are determined as follows:

$$\log(\text{Earnings}_i) = f[\log(\text{Hours}_i), \text{Race}_i, \text{Sex}_i, \text{Age}_i, \text{Experience}_i, \text{Schooling}_i, \text{Firm/Ind}_i] \quad (1)$$

where:

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Exhibit 1 Variable Definitions

Variable	Definition
ln (Earnings)	Natural logarithm of 1983 earnings
ln (Hours)	Natural logarithm of average hours worked per week in 1983
Full-time	1 = Full-time (40 hours per week), zero otherwise
Black	1 = Black, zero otherwise
Female	1 = Female, zero otherwise
Age	Age in years
Gen. Exper.	Number of years as a REALTOR
Firm Exper.	Years with current firm
Schooling	Years of formal schooling completed
Bus. Degree	1 = Undergraduate business degree, zero otherwise
M.B.A.	1 = MBA degree, zero otherwise
Training	Number of in-service training courses completed
Broker	1 = Licensed broker, zero otherwise
Owner	1 = Ownership interest in the firm, zero otherwise
Selling	1 = Principally involved in selling, zero otherwise
Residential	1 = Principally involved in residential real estate, zero otherwise
Firm Size	Number of employees in the firm (in 1,000s)
Franchise Affil.	1 = Franchise affiliated, zero otherwise

$Earnings_i$	= annual earnings of the i th individual,
$Hours_i$	= average hours worked per week,
$Race_i$	= race,
Sex_i	= sex,
Age_i	= age,
$Experience_i$	= labor market experience (including firm- and industry-specific experience),
$Schooling_i$	= years of schooling, and other more specific types of training: Business M.B.A., number of training seminars),
$Firm/Ind_i$	= a vector of firm- and industry-specific variables like franchise affiliation, firm size, etc. ⁴

Because the dependent variable in equation (1) is the logarithm of earnings, the estimated regression coefficients on all of the independent variables except the log of hours worked may be interpreted as rates of return, that is, they represent the percentage change in earnings associated with a one-unit change in each of the independent variables.⁵

Data to estimate the model shown in equation (1) were taken from a nationwide random sample of real estate professionals gathered by the National Association of REALTORS in 1984. A complete description of the sample and the data are available from the National Association of REALTORS [8]. Once nonrespondents were eliminated, the survey yielded a total of 1,621 usable responses. Variable definitions and descriptive statistics for the sample are shown in Exhibits 1 and 2.

An examination of sample means reveals that 41% of the sample respondents were female and 4% were black. Most respondents (80%) reported they were employed full time. Eighty-eight percent were principally engaged in selling, and 62% worked primarily with residential real estate.

The average age of the respondents was 47 years. They had an average of 8 years of general

Exhibit 2
Statistics Associated with Variables
(N = 1,621)

Variable	Mean	Standard Deviation
ln (Earnings)	9.792	1.264
ln (Hours)	3.604	0.624
Full-time	0.809	0.393
Black	0.039	0.195
Female	0.406	0.491
Age	46.540	11.955
Gen. Exper.	8.442	9.650
Firm Exper.	6.551	7.095
Schooling	14.435	1.964
Bus. Degree	0.154	0.361
M.B.A.	0.028	0.166
Training	11.257	8.652
Broker	0.545	0.498
Owner	0.349	0.477
Selling	0.880	0.325
Residential	0.621	0.485
Firm Size	0.008	0.027
Franchise Affil.	0.251	0.434

experience as a REALTOR, and had been with their present firm for an average of 7 years. They had completed an average of 14 years of formal education. Fifteen percent had graduated from college with an undergraduate major in business administration, and 3% had an M.B.A. degree. Most of the respondents had received additional training after entering the real estate business by being enrolled in professional development courses and seminars. On average, they completed a total of 11 professional education courses sponsored by various universities, their state licensing board, the REALTOR organization, or differing franchise groups. This number was in addition to the courses required to meet the licensure requirements in their state.

Fifty-five percent of the respondents were licensed real estate brokers, and 35% reported that they had an ownership interest in the firm in which they were employed. The average firm had a total of 8 employees, and 25% of the firms were affiliated with a franchise.

The mean of the log of earnings of the 1,621 sample respondents was 9.792, which translates into a reported average earnings figure in 1983 of \$17,890. In responding to the sample questionnaire, those surveyed were asked to list "your personal income (after deducting business expenses but before personal expenses and income taxes) from your various *real estate work* for the year 1983." The mean of the log of hours worked was 3.604, indicating that the average respondent reportedly worked 36.7 hours per week.

Empirical Results

The results of estimating equation (1) using ordinary least squares regression with the entire sample of both licensed brokers and non-brokers are shown in Exhibit 3. The adjusted R^2 for the estimated earnings equation is 0.39.

The level of effort expended by the sample respondents, as measured by the natural

Exhibit 3
Regression Results for Full Sample
[Dependent Variable = Log (1983 Earnings)]

Independent Variables	Regression Coefficients	t-values
Constant	6.690*	22.47
ln (Hours)	0.634*	10.73
Full-time	0.393*	4.20
Black	-0.169	-1.32
Female	-0.189*	-3.40
Age	-0.003	-1.19
General Experience	0.020*	3.41
Firm Experience	0.012*	2.22
Schooling	0.025**	1.79
Bus. Degree	0.177*	2.34
M.B.A.	0.296**	1.93
Training	0.011*	3.66
Broker	0.226*	3.67
Owner	0.327*	4.90
Selling	-0.231*	-2.89
Residential	-0.130*	-2.39
Firm Size	0.230	2.47
Franchise Affiliated	-0.138*	-2.32
R^2 (adjusted)	0.39	
N	1,621	

*Indicates significance at the .05 level, two-tailed test

**Indicates significance at the .10 level, two-tailed test

logarithm of the number of hours worked per week and their commitment to full-time employment, are shown to be strongly related to the level of reported earnings.

The coefficient on the hours variable in Exhibit 3 represents the elasticity of earnings with respect to the number of hours worked per week. If the wage rate is constant, one would expect this elasticity to be equal to one, since a 1% increase in hours worked would result in a 1% increase in earnings. The coefficient on the hours variable in Exhibit 3 is only 0.63, which is significantly less than one.⁶ This suggests that the implicit average wage rate, or productivity, falls as the number of hours worked per week increases, and, thus, the marginal rewards to expanded effort decline.

The coefficient on the full-time "dummy" variable indicates that those employed full time earn on average 39% more than those who reported working only part time.⁷

Traditional human capital theory suggests that some portion of an individual's work experience can be viewed as on-the-job training and that investments in such training yield a positive rate of return. The coefficients on the experience variables in Exhibit 3 indicate that real estate professionals receive positive returns from both general- and firm-specific experience. An additional year of general experience in the industry is associated with an increase in earnings of 2%, while an additional year of firm-specific experience raises earnings by an extra 1%.⁸

These results suggest that it is important to recognize the distinction between general experience and firm-specific experience. The former provides individuals the opportunity to learn about industry-wide practices and procedures. The latter provides training that is useful

only to the specific firm in which the individual is employed. Both types of experience provide positive returns, but the results presented here suggest that the return patterns are different.

Individuals often expect positive returns from investments undertaken to enlarge their stocks of human capital through investments in formal schooling and professional training. The estimated coefficients on the schooling and training variables in Exhibit 3 indicate that positive returns are earned from human capital investment in the real estate industry. The coefficient on the schooling variable indicates that an additional year of formal schooling is associated with an increase in earnings of 2.5%. Also individuals with undergraduate degrees in business administration earn 18% more than others, and those with M.B.A. degrees earn 30% more.

Real estate professionals also earn positive returns from investments in professional training. The results shown in Exhibit 3 indicate that earnings rise an average of 1.1% for every professional training course that is completed.

As individuals grow older, it can be expected that their accumulated stocks of human capital may depreciate, and, therefore, earnings may decline with age, holding constant their education, experience, and training. The estimated coefficient on the age variable in Exhibit 3 is negative, indicating that earnings may fall with age, everything else equal; however, the coefficient is not statistically different from zero.

The coefficients on the race and sex variables also are negative, but only that for females is statistically significant.⁹ This coefficient suggests that women earn an average of 19% less, everything else equal.

Those individuals with brokers licenses appear to earn 23% more on average than others who are not licensed brokers. This result shows that brokers earn more than salespeople.

Real estate workers with ownership interests in the firms in which they are employed earn on average 33% more than non-owners. This substantial difference between owners and non-owners suggests that there are large returns to entrepreneurship in the real estate industry.

Substantial differences appear to exist between different sectors of the real estate industry. One might suspect that workers in the residential sector are less skilled in general than those in the commercial or industrial sectors of the industry, and as a result, may earn less. The estimates shown in Exhibit 3 indicate that individuals principally involved in the residential sector earn on average 13% less than those in other sectors. Also individuals who reported their primary responsibility was selling appear to earn 23% less than others. It seems likely that this difference reflects a differential return to supervisory or managerial activity.

The character of the firm in which the individual is employed also appears to significantly affect the earnings of the individual worker. The earnings of individuals appear to rise with firm size. On average, earnings are 0.02% (0.23×0.001)¹⁰ higher for every additional employee in the firm.

Earnings were found to be substantially affected by franchise affiliation. On average, those associated with franchise firms earned 13.8% less. Perhaps, franchise affiliated firms employ less stringent personnel selection policies or provide less valuable on-the-job training.

The effect of franchise affiliation reported here conforms to the findings reported in a 1985 study of brokerage firm income and expenses conducted by the National Association of REALTORS [9]. This study reported that franchise firms on average had lower profits and higher expenses than those not associated with a franchise. In contrast, previous work by Frew and Jud [3] reported incomes of franchise-affiliated agencies in North Carolina as substantially higher than those of non-affiliated firms. Their findings may have been specific

Exhibit 4
Regression Results for Brokers and Nonbrokers
[Dependent Variable = Log (1983 Earnings)]

Independent Variables	Non-Brokers		Brokers		Difference	
	Coef.	t-value	Coef.	t-value	Coef.	t-value
Constant	6.149*	14.16	7.323*	19.51	1.174**	1.93
ln (Hours)	0.659*	7.26	0.671*	8.80	0.012	0.10
Full-time	0.492*	3.64	0.119	0.92	-0.373*	-1.96
Black	0.045	0.23	-0.407*	-2.48	-0.452**	-1.78
Female	-0.052	-0.60	-0.381*	-5.50	-0.329*	-2.99
Age	-0.005	-1.47	-0.004	-1.14	-0.002	0.41
Gen Exper.	0.049*	3.83	0.011*	1.79	-0.038*	-2.85
Firm Exper.	0.029*	2.18	0.010*	1.91	-0.018	-1.39
Schooling	0.035	1.58	0.020	1.21	-0.014	-0.53
Bus. Degree	0.149	1.03	0.155*	1.89	0.007	0.04
M.B.A.	0.223	0.77	0.222	1.34	-0.001	-0.00
Training	0.016*	2.62	0.008*	2.46	-0.008	-1.17
Owner	0.323*	1.98	0.343*	5.13	0.019	0.12
Selling	-0.211	-1.02	-0.231*	-2.99	-0.010	-0.10
Residential	-0.087	-0.94	-0.171*	-2.73	-0.084	-0.77
Firm Size	0.085	0.72	0.693*	4.01	0.607*	2.73
Fran. Affil.	-0.180*	-1.97	-0.054	-0.71	0.126	1.07
R ² (adj.)	0.301		0.343		0.402	
N	738		883		1,621	

*Indicates significance at the .05 level, two-tailed test

**Indicates significance at the .10 level, two-tailed test

Note: Regressing earnings on the slope-dummy variables and the regular variables produced the slope-dummy coefficients reported in the "Difference" column and the associated *t*-values.

to North Carolina, or perhaps greater returns to franchise affiliation exist in rapid growth areas, such as North Carolina, where many buyers are unfamiliar with local market conditions and, therefore, seek national franchise trademarks as assurances of service quality.

Brokers Versus Non-Brokers

It seems reasonable to suppose that the factors that influence the earnings of brokers differ at least in degree from those that affect the earnings of non-brokers (mostly salespeople). To explore this possibility, we have estimated separate earnings regressions for brokers and non-brokers. The first two columns of Exhibit 4 show the separate regressions for brokers and non-brokers. The third column of Exhibit 4 presents the results of an additional regression: Using the entire sample, the log of earnings was regressed on each of the independent variables shown in Exhibit 4 plus an equal number of "slope dummy" variables, which were formed by multiplying the broker "dummy" variable times each of the independent variables. The estimated coefficients for the "slope dummies" that were obtained from this regression are shown in the third column. They represent the differences between the separate regression coefficients reported in the first two columns. The additional regression was performed in order to calculate the *t*-values associated with the "slope dummy" coefficients to test the hypothesis that the *difference* between the coefficient estimates for brokers and non-brokers is significantly different from zero.¹¹ The results of these statistical tests are indicated by the

presence of asterisks next to the estimated coefficients in the "Difference" column in Exhibit 4. This allows us to focus on those factors that were found to affect the earnings of brokers in significantly different ways from non-brokers.

Increased returns for full-time work were found to be substantially higher for non-brokers than for brokers. On average, a non-broker working full time earned 49% more than his or her part-time counterpart. The premium for full-time work earned by brokers was estimated to be 37% less than that received by non-brokers.

The effects of race and sex on earnings differed notably between brokers and non-brokers. Among brokers, the earnings of females and blacks were substantially lower than the earnings of white males. On the other hand, neither sex nor race significantly influenced the earnings of non-brokers. Apparently non-brokers, who are mostly salespersons, are able to function in the real estate market with relatively little racial or sexual discrimination. However, brokers whose incomes are affected by their abilities to attract and hold qualified personnel and obtain profitable listings seem to encounter disadvantages if they are black or female.

The returns to general labor market experience were found to be substantially higher for non-brokers than for brokers. Non-brokers had an average gain of 4.9% in earnings for every year of general experience; however, the returns to brokers averaged only 1.1%. This result probably reflects differences in the average experience levels between brokers and non-brokers. It seems likely that a "learning curve" phenomenon may result in a decline in the gains from additional investments in additional on-the-job training, and, therefore, the estimated returns to additional experience may fall as experience rises. It also is likely that older, more experienced workers invest less in on-the-job training with each year of work experience than do younger workers, so again the returns to experience may fall as experience increases.

The size of the firm was found to directly influence the earnings of brokers, but it had no significant effect on the earnings of non-brokers. Brokers earned approximately 0.07% (0.001×0.7) more for every additional employee in the firm. This result is not unexpected since brokers usually retain some portion of the revenues produced by their salespersons, so that more sales associates should increase broker earnings, other things equal.

As evidenced by the significant differences between constant terms in Exhibit 4, the possession of a brokerage license significantly increased the average effect of all factors that the earnings model was not able to quantify and hence hold constant in the regression analysis. This may be due in part to higher average returns to those with broker licenses which may reflect the licensure policies of various states, or it also may indicate positive returns to the management function performed by many brokers.

Comparison and Conclusion

Our findings on the determinants of REALTOR earnings that are based on a nationwide survey are consistent in most respects with the previously cited studies by Follain, Lutes and Meier (FLM) and Glower and Hendershott (G&H) which were based on smaller samples drawn from individual states. To facilitate comparison of our results with those of FLM (Illinois) and G&H (Ohio), a summary of the variables that were found to be statistically significant determinants of earnings in each of the studies is shown in Exhibit 5.

All three studies reported that REALTOR earnings were positively related to 1) the possession of a broker's license, 2) the number of hours worked per week, 3) the level of schooling, 4)

Exhibit 5
The Determinants of REALTOR Earnings

Variable:*	Authors and Area of Study:		
	Follain, Lutes & Meier (Illinois)	Glower & Hendershott (Ohio)	Crellin, Frew & Jud (National)
Broker's License	positive	positive	positive
Hours Worked	positive	positive	positive
Schooling	positive	positive	positive
Experience	positive	positive	positive
Professional Training	positive	—	positive
Race/Sex	n/s	negative	negative
Firm Size	positive	—	positive
Residential	—	negative	negative
Franchise Affiliation	—	—	negative
Owner	—	positive	positive
Manager	—	positive	positive
Metropolitan Resident	positive	positive	—

*Listed here are those variables that were reported as statistically significant by each of the three studies of REALTOR earnings. The table shows the sign of the estimated coefficient on each of the independent variables.

n/s denotes not statistically significant.

years of experience, and 5) professional training. Our study and that of G&H both reported that the elasticity of earnings with respect to hours worked was significantly less than one, indicating that the implicit wage rate for REALTORS falls as the number of hours worked per week rises above full-time levels.

All three of the studies found that the earnings of REALTORS were positively related to the level of formal schooling and the number of years of experience. In this respect, research on earnings in the real estate industry is consistent with numerous studies of the larger market for labor nationwide.¹²

Both FLM and G&H find that the returns to experience fall with increasing experience. While our study did not address this question directly, we did find a sharp difference between brokers and non-brokers in the returns to general labor market experience which is most likely attributable to the higher experience levels of brokers and the fact that the returns from experience fall as experience increases. Our study did not find any difference between brokers and nonbrokers in the returns from firm-specific experience.

Continuing professional education was found to be an important determinant of earnings levels in both our study and that of FLM. FLM reported that REALTORS who indicated that "they do not attend seminars regularly" earned on average 22% less than others. Our study estimated that the return from attending a single professional development course averaged 1.1%.

Neither FLM nor G&H tested for racial differences, and FLM reported no significant earnings differences based on sex. G&H found that female owners earned materially less than male owners. Our study, in contrast, found evidence of substantial differences based on both sex and race among brokers, but not among non-brokers. Within our broker subsample, women and blacks were found to earn considerably less than white males. We believe that race and

sex differences might stem from difficulties faced by black or female brokers in recruiting and holding sales personnel or in obtaining listings.

Firm size was found to be positively related to earnings in our study and in that of G&H. Our estimates suggested, however, that firm size was important only to the earnings of brokers; it had no effect on the earnings of non-brokers. Both FLM and G&H also reported that the size of the market area was positively related to earnings.

REALTORS involved primarily with residential sales were shown to earn substantially less than nonresidential REALTORS in our study and that of G&H. Our work also was consistent with G&H in that both studies uncovered substantial returns to ownership and management. While our study did not employ a management variable directly, we did find that respondents who reported that they were principally involved in sales activities, as opposed to more managerial functions, earned substantially less.

Neither FLM or G&H explored the effects of franchise affiliation on earnings. Our study suggested that franchise affiliation is negatively related to earnings, especially for non-brokers. For brokers, our results were insignificant.

Overall, our study and those of FLM and G&H were able to explain a sizable portion of the variation in the earnings of individual REALTORS, using human-capital variables together with various firm and industry characteristics. FLM and G&H reported R^2 s of 0.49 and 0.65 respectively, using samples of individuals in particular states. Our expanded model produced an adjusted R^2 of 0.40 (see Exhibit 4), based on a nationwide sample.

Despite the apparent success of the studies, a large portion of the variation in earnings remains unexplained. Future studies might attempt to reduce the level of unexplained variance with better measures of individual productivity, effort, or ability. Yet, if, as is likely, much of the variance in REALTOR earnings is the result of individual effort and plain good luck, it seems probable that the portion of variance remaining unexplained will continue to be large.

Notes

¹Many of these persons were marginally attached to the profession, working only seasonally or part time. Moreover, many others maintained their real estate licenses "on ice," that is, their licenses were retained for possible future use, but were currently inactive.

²Throughout the paper we refer to REALTORS as "professionals." Although not all REALTORS have substantial formal education, we believe that the licensing requirements imposed by most states make the term appropriate.

³Both of the papers estimated cross-sectional earnings models in which the natural logarithm of annual earnings was the dependent variable. To explain differences in the log of earnings, the authors employed measures of schooling, training, and experience along with various firm and market-area characteristics.

⁴Regional variables were not included in the model because of inadequacies in the sample data set.

⁵Kennedy [6] has shown that to be exactly correct in interpreting the coefficients in a semi-log model as rates of return requires the calculation of a small correction factor which translates the partial derivative with respect to the log percentage change involved. In our estimates of equation (1), the correction factors were smaller than the rounding errors we incurred when reporting our results. Accordingly, in discussions of equation (1), we refer to the unadjusted coefficient estimates as rates of return.

⁶A formal t -test on the hypothesis that the coefficient value equals one, rather than zero as assumed in Exhibit 3, yields a t -value of -6.2 , clearly significant at the $p = .05$ level.

⁷We can make this statement since the coefficient that relates a binary variable to a "logged" dependant variable shows approximately the percentage difference that moving between categories makes in the expected magnitude of the dependant variable.

⁸These estimates, like all regression coefficients, must be interpreted as the effect of a marginal change of one unit from the mean of the sample data. Moreover, since the coefficients are each partial derivatives, we must add the value of the two coefficients to calculate the effect of both means being one unit higher.

⁹As Exhibit 4 shows, when we disaggregate into brokers and salespeople, this result is only significant for brokers.

¹⁰Since we measured the data in 1,000s, we must correct for our units in the interpretation.

¹¹See, Damodar Gujarati [5].

¹²For a review and summary of many of these previous studies of the larger labor market, see Gary Becker [1], pages 1-8.

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