The Earnings of Real Estate Salespersons and Others in the Financial Services Industry

By: G. DONALD JUD and DANIEL T. WINKLER

Jud, G. D. and D. T. Winkler. "The Earnings of Real Estate Salespersons and Others in the Financial Services Industry," Journal of Real Estate Finance and Economics, vol. 17, no. 3, 1998, pp. 279-291.

Abstract:
This study explores the determinants of earnings of salespersons in financial services using nationwide data from the 1990 U.S. Census. The study reveals that security and insurance salespersons earn substantially more than do persons in real estate sales. The returns to K through 12 schooling are highest in the insurance and securities areas, while the returns to college are highest in security sales. For males, the returns to graduate education are negative in real estate and insurance. For females in these same areas, returns are large and positive in insurance and negative in real estate. In all areas of financial services, earnings are higher in larger, more wealthy, homogenous cities.
Key Words: earnings, education, experience, gender, real estate, salespersons

Article:
1. Introduction
Some 6.8 million persons were employed in the financial services industry in 1995, and this number has increased about 2% a year since 1980. U.S. Bureau of Census estimates reveal that about 22% of persons employed in financial services work directly in sales. The largest numbers of salespersons are employed in real estate, insurance, and security sales.

Several papers (table 1) have examined the earnings of real estate salespersons, using the human capital approach (Follain, Lutes, and Meier, 1987; Crellin, Frew, and Jud, 1988; Glower and Hendershott, 1988; and Sirmans and Swicegood, 1996). Among these studies, only Crellin, Frew, and Jud (CFJ) used a nationwide database, which was developed from a survey conducted by the National Association of Realtors; the other studies were based on samples from single states. Most of the studies find that earnings in real estate sales increase with schooling, experience, and full-time work. Sirmans and Swicegood (S&S), however, conclude that schooling is an insignificant determinant of earnings for real estate agents in Florida. Glower and Hendershott (G&H) report that the earnings/experience profile is convex and reaches a maximum at from fifteen to twenty years of experience. The studies by CFJ, G&H, and S&S find that females earn less than males, holding all other factors constant.

Table 1. Studies of earnings in real estate sales.

Variable	Crellin, Frew, and Jud (1988) (National)	Follain, Lutes, and Meier (1987) (Illinois)	Glower and Hendershott (1988) (Ohio)	Sirmans and Swicegood (1996) (Florida)	Jud and Winkler (1998) (National)
Schooling	Positive	Positive	Positive	n.s.	Positive
College	Positive	—	Positive	—	Positive
Graduate School	Positive	—	Positive	—	Negative
Experience	Positive	Positive	Positive	Positive	Positive
Experience^2	—	—	Negative	Negative	Negative
Part-time	Negative	Negative	Negative	Negative	Negative
Female	Negative	n.s.	Negative	Negative	Negative

Note: n.s. denotes not statistically significant.

This article examines the earnings of salespersons in the major areas of financial services (real estate, insurance, and securities). This is the only study we have found that has examined the determinants of earnings in financial services using a nationwide random sample. It estimates human-capital earnings functions for salespersons engaged in each of the three sectors and identifies differences in the returns to schooling, experience, and other factors for males and females. The earnings models are estimated using detailed occupational tabulations of earnings derived from the 1990 U.S. Census.1 Section 2 of the article presents descriptive information on the number and average earnings of salespersons in the financial services industry. Section 3 outlines the human capital earnings model and the empirical data. Section 4 discusses the estimated earnings models and the factors that affect earnings. The final section provides a summary of findings and explores possible implications of the study.

2. Earnings of Salespersons in Financial Services

Table 2 provides some information on the number of sales personnel in financial services and their average incomes. The largest number of persons are employed in real estate sales. The number of full- and part-time sales workers in real estate totals 770,303, while 655,393 persons work in insurance sales, and 291,179 in security sales.

Real estate has the largest number of female salespersons, both in absolute number and in percentage terms. Some 385,715 female salespersons work in real estate. This is considerably more than the 229,974 females working in insurance and the 80,929 females working in security sales. Females represent 50.1% of all employees in real estate sales as compared to 35.1% in insurance and 27.8% in security sales.

Females working in real estate sales account for a larger fraction of both full- and part- time workers than in the other two fields. Females represent 43.4% of full-time workers in real estate, 33.3% in insurance, and 26.7% in security sales. They comprise an even larger

Table 2. Distribution of salespersons in financial services.

	Male	Female	Total
Real estate sales			
Full-time			
Number	266,609	204,017	470,626
Row %	56.6%	43.4%	100.0%
Column %	69.3%	52.9%	61.1%
Average income	$48,629	$32,158	$41,489
Part-time			
Number	117,979	181,698	299,677
Row %	39.4%	60.6%	100.0%
Column %	30.7%	47.1%	38.9%
Average income	$28,943	$16,900	$21,641
Total			
Number	384,588	385,715	770,303
Row %	49.9%	50.1%	100.0%
Column %	100.0%	100.0%	100.0%
Average income	$42,590	$24,971	$33,767
Security sales			
Full-time			
Number	163,110	59,382	222,492
Row %	73.3%	26.7%	100.0%
Column %	77.6%	73.4%	76.4%
Average income	$78,097	$37,695	$67,313
Part-time			
Number	47,140	21,547	68,687
Row %	68.6%	31.4%	100.0%
Column %	22.4%	26.6%	23.6%
Average income	$50,136	$20,696	$40,900
Total			
Number	210,250	80,929	291,179
Row %	72.2%	27.8%	100.0%
Column %	100.0%	100.0%	100.0%
Average income	$71,827	$33,169	$61,083
Insurance sales			
Full-time			
Number	332,693	166,230	498,923
Row %	66.7%	33.3%	100.0%
Column %	78.2%	72.3%	76.1%
Average income	$52,328	$25,979	$43,549
Part-time			
Number	92,726	63,744	156,470
Row %	59.3%	40.7%	100.0%
Column %	21.8%	27.7%	23.9%
Average income	$33,464	$15,464	$26,131

Table 2. (*continued*)

	Male	Female	Total
Insurance sales (*continued*)			
Total			
Number	425,419	229,974	655,393
Row %	64.9%	35.1%	100.0%
Column %	100.0%	100.0%	100.0%
Average income	$48,216	$23,064	$39,391

Source: U.S. Bureau of the Census (1994). Tabulations by the authors.

percentage of part-time labor. In particular, females constitute 60.6% of part-time sales personnel in real estate, 40.7% in insurance, and 31.4% in security sales.

Full-time real estate salespersons have the lowest average incomes. Real estate sales personnel working full time average $41,849, while full-time persons in insurance sales earn $43,549. Security salespersons on average earn the most at $67,313. Female workers, however, earn more in real estate ($32,158) than in insurance ($25,979) but not as much as female security sales workers ($37,695).

In all three sectors, part-time workers earn substantially less than those working full time. In the real estate field, part-time workers average only 52% of full-time worker earnings; in insurance and securities fields they earn 60% and 61% of full-time earnings, respectively.

Census surveys reveal that substantial inequality exists in the distribution of earnings among salespersons in financial services. Figure 1 shows the percentage of income received by the highest 20% and highest 5% of salespersons in each sector. In real estate, the highest 20% of workers earn 32.6% of all income, while they earn 32.4% of all income in insurance and 33.3% in security sales. The highest 5% of salespersons receive 10.5% of income in real estate, 8.5% in insurance, and 9.5% in security sales.

3. Determinants of Earnings

To explain the distribution of earnings, we draw on the human capital earnings model developed by Mincer and Polachek (1974). The general form of our model is as follows:

$$LnY = f(Ins, Sec, F/T, Female, Sch, Exp, Region), \quad (1)$$

where LnY is the natural log of annual earnings, Ins is a dummy variable equal 1 (0 otherwise) if employed in insurance, Sec is a dummy variable equal 1 (0 otherwise) if employed in security sales, F/T is a dummy variable equal 1 (0 otherwise) if employed full time, Female is a dummy variable equal 1 (0 otherwise) if female, Sch is the number of years of schooling, Exp is the number of years of general labor market experience, and Region is a vector of dummy variables representing the MSA of employment.

The estimated coefficient on the schooling variable traditionally is used to provide an

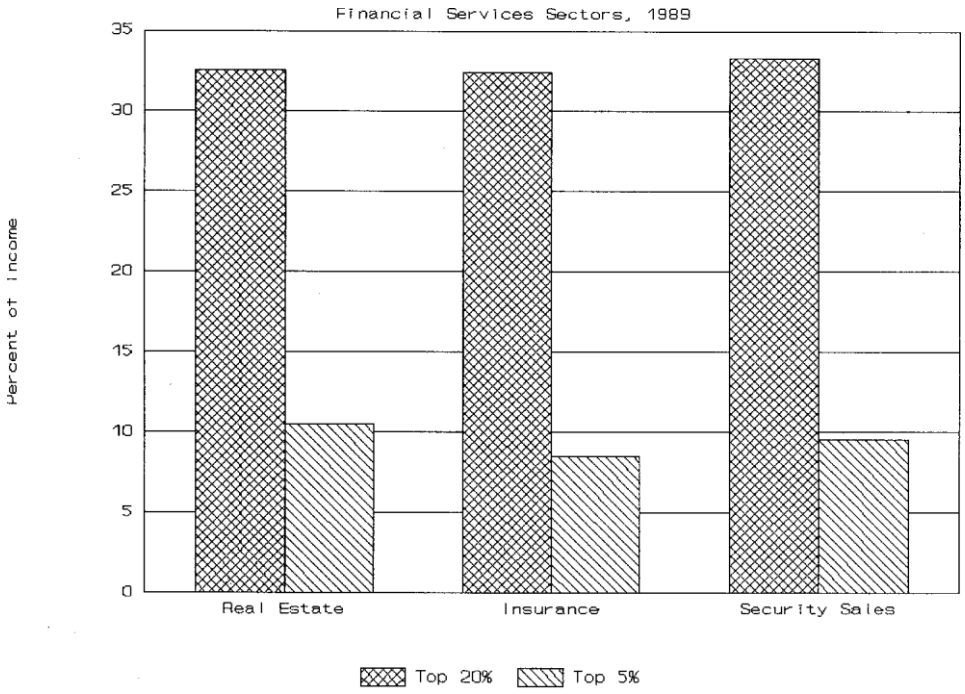

Figure 1. Source: Bureau of Census, Census of Population and Housing, 1990: Subject Summary Tape File (SSTF) 22, Earnings by Occupation and Education (1994). Tabulations by the authors.

estimate of the (assumed constant) rate of return to investment in additional formal schooling. However, in order to allow the rate of return to vary over different levels of schooling we employ a spline function (Greene, 1993, pp. 235-238). The spline function has the form

$$LnY = S_0 + S_1 Sch + b_1 d_1 (Sch - 12) + b_2 d_2 (Sch - 16), \qquad (2)$$

where d_1 is 1 if Sch > 12 years (0 otherwise), and d_2 is 1 if Sch > 16 years (0 otherwise).

The spline function allows the rates of return to schooling beyond high school and college to differ from the rate for elementary and secondary schooling. In the empirical section, we test the hypothesis that the slope of the schooling function is constant with a joint test of $d_1 = 0$ and $d_2 = 0$.

Following the traditional human-capital approach, we measure general labor market experience as Exp = Age — Sch — 5. To allow concavity in the earnings per experience profile, we introduce both Exp and Exp2 into the earnings equation. The coefficient on Exp is expected to be positive, and the coefficient on Exp^2 is expected to be negative.

Data to estimate equation (1) are obtained from the U.S. Bureau of the Census (1994). These data reflect the earnings of workers in 1989.

4. Estimation Results

Estimation of the model over the full sample (including real estate, insurance, and security sales) with 24,223 observations reveals substantial differences in the determinants of earnings among the three sectors (table 3, column 1). The dummy variable coefficients for the insurance (Ins) and

security sales (Sec) variables shown in the first column of table 3 are large and statistically significant at the 0.01 level or above. The coefficients indicate that the earnings of insurance and security salespersons exceed the earnings of salespersons in real estate by 23.5% and 27.9%, respectively.2 Because of these large differences, separate earnings models are estimated for each of the three areas of financial services.

Table 3 shows the estimated earnings models for the three sectors. The equations are estimated using the White procedure for heteroskedasticity-consistent standard errors.3 The adjusted R-squares for the three sectors are 0.38, 0.42, 0.42. Most of the estimated coefficients are statistically significant at the 0.01 level and have the expected signs.

Our study seeks to determine whether the earnings of females are different from males in the three financial services fields and, if so, to measure such differences. Because we are interested in examining gender differences, gender interaction terms are included for each variable in the model. The interaction terms provide a test of whether the marginal effects of particular variables are different for males and females.

Table 4 presents the marginal effects of the major determinants of earnings. Only those coefficients in table 3 that are statistically significant at the 0.10 level or above using a two-tailed test are reported in table 4.4

4.1. Gender-Related Differences

Studies of gender differences in earnings in industries other than financial services support the existence of gender-based differences in earnings. For example, a recent study of all workers (Rupert, Schweitzer, Severance-Lossin, et al., 1996) based on 1993 earnings reported that females earn 25.2% less than males, holding constant other factors. Nollen and Gaertner (1991) found that female office employees earn 11.4% less. Verdugo and Schneider (1994) reported that female teachers earn 5% less than male teachers. And Schaefer and Zimmer (1995) concluded that female accountants make from 4 to 41% less depending on the specific industry in which they are employed.

A consistent theme in human capital explanations of gender-based earnings differences is that females do the bulk of child rearing and so have more career interruptions. As a result, females have less incentive to invest in human capital by acquiring schooling and experience (Mincer and Polachek, 1974; and Becker, 1985). Dropping out of the labor force can further result in a depreciation of job skills and lower the rate of return on a given number of years of work experience. Less continuous labor force experience also serves to depress earnings on reentry to the labor force. The extent of earnings depression depends on the rate of skill atrophy and on the talents of an individual.

Some economists further claim that because employers have imperfect information

Table 3. Regression results of salesperson earnings in financial services.

Variable	Financial Services Salespersons	Real Estate Salespersons	Security Salespersons	Insurance Salespersons
Constant	7.49570	7.83600	7.52727	7.30743
	(62.086)	(35.523)	(19.983)	(28.165)
Female	−0.10976	−0.64363	0.11204	−0.06236
	(−0.666)	(−2.233)	(0.210)	(−0.190)
Insurance sales	0.21100	—	—	—
	(14.093)	—	—	—
Insurance sales X female	−0.19803	—	—	—
	(−9.081)	—	—	—
Security sales	0.24583	—	—	—
	(14.937)	—	—	—
Security sales X female	−0.17141	—	—	—
	(−6.957)	—	—	—
Full-time	0.68674	0.73534	0.70050	0.62741
	(53.026)	(30.489)	(23.093)	(29.432)
Full-time X female	0.07997	0.06371	0.04516	0.10083
	(4.220)	(2.077)	(1.068)	(3.253)
Schooling	0.08115	0.05769	0.09604	0.11210
	(8.732)	(3.320)	(3.133)	(5.453)
Schooling X female	0.01077	0.03764	−0.01292	−0.00072
	(0.0760)	(1.543)	(−0.285)	(−0.026)
College	0.04209	0.05454	0.06820	0.00080
	(3.548)	(2.503)	(1.925)	(0.034)
College X female	−0.04906	−0.06997	−0.04569	−0.03776
	(−2.757)	(−2.350)	(−0.889)	(−1.190)
Graduate school	−0.15223	−0.16897	−0.12613	−0.18158
	(−12.162)	(−7.262)	(−5.061)	(−8.890)
Graduate school X female	0.08581	0.03830	0.10719	0.18146
	(4.445)	(1.154)	(2.750)	(5.523)
Exp	0.07787	0.07143	0.08150	0.08162
	(47.447)	(23.039)	(24.425)	(31.013)
Exp X female	−0.03050	−0.01915	−0.02307	−0.03829
	(−12.655)	(−4.806)	(−4.538)	(−10.038)
Exp^2	−0.00132	−0.00128	−0.00136	−0.00133
	(−42.968)	(−21.312)	(−19.950)	(−25.446)
Exp^2 X female	0.00045	0.00038	0.00015	0.00049
	(9.803)	(4.908)	(1.334)	(6.054)
N	24.223	9.699	5.923	8.601
F-value (model)	142.03	54.35	40.08	56.62
F-value (group effects)	16.74	10.06	6.70	5.08
Adjusted R^2	0.40	0.38	0.42	0.42

Table 4. The marginal effects on earnings (in percentages).

	Real Estate Sales		Security Sales		Insurance Sales	
Variable	Male	Female	Male	Female	Male	Female
Female	—	−47.46%	—	—	—	—
Full-time	108.62%	115.20	101.48%	106.10%	87.28%	97.88%
Schooling	5.77	5.77	9.60	9.60	11.21	11.21
College	11.22	4.23	16.42	16.42	11.21	11.21
Graduate school	−5.67	−12.67	3.81	14.53	−6.95	11.20
Exp	7.14	5.23	8.15	5.84	8.16	4.33
Exp^2	−0.13	−0.09	−0.14	−0.12	−0.13	−0.08

about specific employees, they use gender as a variable to predict the degree of future commitment to work. As a result they are hesitant to hire or promote females to jobs that require long periods of training and the acquisition of firm-specific human capital (Lazear and Rosen, 1990).

Summary data in table 2, unadjusted for experience and schooling, reveal that females earn substantially less than their full-time male counterparts in all areas of financial services. In the real estate field, the gender disparity in earnings remains large even after adjustment for differences in experience, schooling, and full-time work (table 3). Females working in real estate sales are estimated to earn on average 47.5% less than male salespersons (table 4), after all adjustments.

Our estimate of gender-based differences in real estate sales is larger than that reported in other studies. For example, S&S using data from Florida estimated that females earn 32.4% less than males, CFJ reported that females make some 26.3% less, and G&H found that females earn just 7.9% less.

In contrast to the situation in the real estate field, the female dummy variable is not statistically significant in the earnings equations for the securities and insurance sectors (table 3). The source of the disparity between females in real estate sales and females in the insurance and security sectors is open to conjecture, but we suspect it reflects the substantial differences in the ease of entry into the three professions. The professional barriers to entry in the real estate field are low, and, thus, many women are able to enter the field with relatively little formal or professional training. In the insurance and security fields, the barriers to entry are higher and the on-the-job training periods are longer, which may combine to discourage less motivated individuals from attempting to enter these fields.

4.2. Full- and Part-Time Work

Table 4 shows that full-time salespersons earn substantially more than those who work only part time. The coefficients on the full-time dummy variables indicate that fulltime male salespersons in security sales make some 101.5% more than part-time male workers, while full-time males in insurance sales earn some 87.3% more. Full-time males in real estate sales earn some 108.6% more than male real estate salespersons who work part-time.

4.3. Returns to Schooling

Table 4 shows how the marginal returns per year of school vary with the level of schooling. The marginal effects of schooling shown in table 4 reflect the cumulative effects of the coefficients reported in table 3. In the real estate sector, for example, the return per year of elementary and secondary schooling for males is estimated at 5.77%. The total return per year of college rises to 11.22% per year. But schooling beyond four years of college is
estimated to yield — 5.67% per year.

Comparing returns across sectors suggests that schooling returns are lower in real estate than in the securities industry. This difference is especially apparent for graduate education, which has a negative return in real estate but is positive in the securities sector. The insurance sector appears to offer the highest return to primary and secondary schooling but no significant additional return for college.

Gender-based differences in schooling returns are substantial. In real estate, women earn significantly less per year of college and beyond than do men. This is not true, however, for females in the security and insurance fields. In these two sectors, there is no difference in the returns to college among males and females, and females earn substantially more than males per year of graduate education. Given this pattern of returns, it may be anticipated that more highly educated and motivated women are drawn to the insurance and security fields and away from real estate.

4.4. Returns to Experience

The estimated coefficients on the experience variables (Exp and Exp2) indicate, as expected, that earnings increase with experience but at a decreasing rate. The returns to experience for both women and men are lowest in real estate and highest in securities and insurance. Earnings in all three sectors rise more slowly for women than men per year of experience. In security sales, for example, earnings increase 8.15% per year for men but only 5.84% per year for women.

The related-gender differences in the returns to experience may arise because of skill atrophy. If the rate at which skills atrophy is substantial, then women who tend to enter and exit a field more often then men may be penalized with lower returns to experience.

Taking the partial derivative of earnings with respect to experience and setting it equal to zero allows us to calculate the maximum point on earnings-experience profile. Table 5 shows the peak earning years for males and females:

Table 5. Peak earning years in real estate; securities; and inousance.

	Real Estate	Securities	Insurance
Males	27.9	29.9	30.7
Females	29.1	24.0	26.0

Earnings peak earlier for males in real estate than in securities or insurance. However, for females in real estate, earnings peak later than for both males and females in securities and insurance.

4.5. Regional Differences

To estimate equation (1), an array of 98 MSA regional dummy variables (Region) were included to hold constant earnings differences among major areas of the country. Standard F-tests reveal that the metro-effects array (Region) is statistically significant in each of the three sectoral earnings equations reported in table 3. The calculated F-ratios for real estate, securities, and insurance are 10.06, 6.70, and 5.08, respectively.

The estimated regional earnings coefficients show the effects of location on earnings, holding constant schooling, experience, gender, and part-time work. Table 6 shows the ten highest- and lowest-paying regions for each of the three sectors. In the real estate field, for example, earnings tend to be highest in the large metro areas on the east and west coasts. Earnings are lowest in southern and midwestern areas.

To explain the magnitude of the estimated regional earnings coefficients, we related the size of the estimated coefficients to a series of demographic variables and the standard error of the regional earning coefficient. The standard error is a measure of the intraregional diversity in earnings levels. The following regression equations were estimated for the three sectors (t-values in parentheses) using the seemingly unrelated regression technique.5

Real estate

$$\begin{aligned}\text{Region}_i &= 7.5878 + 0.3015\text{E}-04^*\text{Inc} + 0.1478\text{E}-03^*\text{HH} \\ &\quad (12.603)\quad (6.216)\qquad\quad (4.197) \\ &+0.1060\text{E}-01^*\text{PCHH} - 1.2458\text{SERR} \\ &\quad (4.046)\qquad\quad (-0.486) \\ &\text{Adj. } R^2 = 0.49\qquad\quad n = 98\end{aligned}$$

Securities

$$\begin{aligned}\text{Region}_i &= 6.6761 + 0.2804\text{E}-04^*\text{Inc} + 0.8031\text{E}-04^*\text{HH} \\ &\quad (21.055)\quad (6.512)\qquad\quad (2.652) \\ &-0.2572\text{E}-02^*\text{PCHH} - 7.2516\text{SERR} \\ &(-1.132)\qquad\quad (-6.441) \\ &\text{Adj. } R^2 = 0.65\qquad\quad n = 98\end{aligned}$$

Table 6. Ten highest- and lowest-earning MSAs for salespersons in financial services.

Real Estate: Ten Highest-Earning MSAs		Insurance Sales: Ten Highest-Earning MSAs		Securities: Ten Highest-Earning MSAs	
FIPS	MSA	FIPS	MSA	FIPS	MSA
4480	Los Angeles–Long Beach, CA	5600	New York, NY	5640	Newark, NJ
7360	San Francisco, CA	5380	Nassau-Suffolk, NY	5600	New York, NY
6780	Riverside–San Bernardino, CA	875	Bergen-Passaic, NJ	5380	Nassau-Suffolk, NY
7400	San Jose, CA	5015	Middlesex-Somerset-Hunterdon, NJ	875	Bergen-Passaic, NJ
5775	Oakland, CA	5640	Newark, NJ	1600	Chicago, IL
5600	New Nork, NY	4480	Los Angeles–Long Beach, CA	5190	Monmouth-Ocean, NJ
3320	Honolulu, HI	5775	Oakland, CA	4480	Los Angeles–Long Beach, CA
8840	Washington, DC-MD-VA-WV	1123	Boston-Worcester-Lawrence-Lowell-Brockton, MA-NH	8480	Trenton, NJ
7320	San Diego, CA	7400	San Jose, CA	1123	Boston-Worcester-Lawrence-Lowell-Brockton, MA-NH
5380	Nassau-Suffolk, NY	7360	San Francisco, CA	5015	Middlesex-Somerset-Hunterdon, NJ
Real Estate: Ten Lowest-Earning MSAs		**Insurance Sales: Ten Lowest-Earning MSAs**		**Securities: Ten Lowest-Earning MSAs**	
FIPS	MSA	FIPS	MSA	FIPS	MSA
296	Gary, IN	1145	Brazoria, TX	8760	Vineland-Millville-Bridgeton, NJ
556	New Orleans, LA	2320	El Paso, TX	3800	Kenosha, WI
760	Baton Rouge, LA	3800	Kenosha, WI	1145	Brazoria, TX
5880	Oklahoma City, OK	8560	Tulsa, OK	440	Ann Arbor, MI
2920	Galveston-Texas City, TX	80	Akron, OH	8200	Tacoma, WA
8520	Tucson, AZ	3840	Knoxville, TN	7485	Santa Cruz–Watsonville, CA
3120	Greensboro–Winston-Salem–High Point, NC	4920	Memphis, TN-AR-MS	2920	Galveston-Texas City, TX
1145	Brazoria, TX	1440	Charleston–North Charleston, SC	8520	Tucson, AZ
4400	Little Rock–North Little Rock, AR	3120	Greensboro–Winston-Salem–High Point, NC	2000	Dayton-Springfield, OH
8560	Tulsa, OK	760	Baton Rouge, LA	5910	Olympia, WA

Insurance

$$\text{Region}_i = \underset{(15.442)}{7.9131} + \underset{(7.058)}{0.2359\text{E} - 04^{*}\text{Inc}} + \underset{(2.510)}{0.6283\text{E} - 04^{*}\text{HH}}$$

$$+\underset{(0.601)}{0.1076\text{E} - 02^{*}\text{PCHH}} \; \underset{(-1.814)}{-3.5146\text{SERR}}$$

Adj. $R^2 = 0.48$ $\qquad n = 98$

where Inc is personal income per capita (1992 dollars, in $1,000s); HH is number of households (1990, in 1,000,000s); PCHH is percent change in households, 1985-90; and SERR is standard error of the regional coefficients.

Earnings of salespersons in financial services are higher in larger, more wealthy metropolitan areas. In the real estate field, earnings also are higher in areas where the number of households is growing rapidly.

The standard error variable (SERB) is a measure of the intraregional variability of earnings levels. High intraregional variability may arise when metropolitan areas are highly segmented by race and socioeconomic class. Earnings levels appear to be higher in areas where there is less diversity in earnings levels. This variable is statistically significant at the 0.01 level or above in the securities and insurance equations, using a two- tailed test.

5. Summary and Evaluation

This study explores the determinants of earnings of salespersons in financial services using nationwide data from the 1990 U.S. Census. The study reveals that security and insurance salespersons earn substantially more than do persons in real estate sales. As suggested by the human capital theory of earnings, the study confirms that years of formal schooling, general labor market experience, and hours worked are strong determinants of earnings in the three fields examined. The returns to schooling vary across fields and by level of schooling. The returns to K through 12 schooling are highest in the insurance and securities areas, while the returns to college are highest in security sales. For males, the additional returns to graduate education are negative in real estate and insurance. For females, in these same areas, they are large and positive in insurance and negative in real estate.

Earnings levels are found to vary substantially across metropolitan areas. In all areas of financial services, earnings are higher in larger, more wealthy, homogenous cities. In the real estate area, earnings levels are directly related to the rate of growth in the number of households. Earnings levels in the insurance and securities areas appear negatively related to the intraregional diversity in earnings levels.

The most problematic finding of this study is the large gender differential in the real estate field, where holding constant other factors, females earn some 47% less than males. The returns to schooling for females also are lower in real estate than in the other two areas. The reasons for the existence of such large differences between male and female sales workers in real estate is a topic that merits substantial additional research.

Notes

1. U.S. Bureau of the Census (1994).
2. The estimated coefficients on the dummy variables (Di's) for all four regressions can be transformed by the equation Exp(Di) - 1, to estimate the percentage change in earnings associated with a change in the dummy variable.
3. The estimated coefficient vector for the regional MSA variables is not shown in table 3 in order to conserve space. Regional earnings effects are discussed in a subsequent section.

4. The effects of the dummy variables were calculated by applying the transformation shown above.
5. The use of SUR improves the efficiency of the regression models if the equations are related. The greater the correlation of the disturbances, the greater the efficiency gained using this generalized least squares technique (Greene, 1993). In this instance, it is possible that low earnings in one field may prompt salespersons to migrate to another financial services sector. When compared to OLS, we find some gain in efficiency, particularly for the securities sector.

References

Becker, Gary S. (1975). Human Capital (2nd ed.) New York: Columbia University Press.

Becker, Gary S. (1975). "Human Capital, Effort, and Sexual Division of Labor," Journal of Labor Economics 3 (January), S33-S58.

Crellin, Glenn E., James R. Frew, and G. Donald Jud. (1988). "The Earnings of REALTORS: Some Empirical Evidence," Journal of Real Estate Research 3 (Summer), 69-78.

Follain, James R., Terry Lutes, and David A. Meier. (1987). "Why Do Some Real Estate Salespeople Earn More Than Others?" Journal of Real Estate Research 2 (Fall), 73-81.

Glower, Michel, and Patric H. Hendershott. (1988). "The Determinants of REALTOR Income," Journal of Real Estate Research 3 (Summer), 53-68.

Greene, William H. (1993). Econometric Analysis (2nd ed.) New York: Macmillan.

Lazear, Edward P., and Sherwin Rosen. (1990). "Male-Female Wage Differentials in Job Ladders," Journal of Labor Economics 8 (January), S106-S123.

Mincer, Jacob. (1970). "The Distribution of Labor Incomes: A Survey with Special Reference to the Human Capital Approach," Journal of Economic Literature 8 (March), 1-26.

Mincer, Jacob, and Solomon Polachek. (1974). "Family Investments in Human Capital: Earnings of Women," Journal of Political Economy 82 (March-April), S76-S108.

Nolen, Stanley D., and Karen N. Gaertner. (1991). "Effects of Skill and Attitudes on Employee Performance and Earnings," Industrial Relations 30 (Fall), 435-455.

Rupert, Peter, Mark E. Schweitzer, Eric Severance-Lossin, et al. (1996). "Earnings, Education, and Experience," Economic Review Federal Reserve Bank of Cleveland 34 (Quarter) 4, 2-12.

Schaefer, James, and Michael Zimmer. (1995). "Gender and Earnings of Certain Accountants and Auditors: A Comparative Study of Industries and Regions," Journal of Accounting and Public Policy 14 (Winter), 265- 291.

Sirmans, G. Stacy, and Philip G. Swicegood. (1996). "Determinants of Real Estate Licensee Income," mimeo. U.S. Bureau of the Census. (1994). Census of Population and Housing,1990: Subject Summary Tape File (SSTF) 22, Earnings by Occupation and Education Washington, DC: U.S. Government Printing Office.