The Effect of Different Brokerage Modes on Closing Costs and House Prices

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Abstract. This study examines the effect of two different modes of real estate broker behavior on both the cash charges paid at closing and the price of houses. The mode of brokers representing only sellers is contrasted with one in which brokers represent buyers. Popular literature and formal studies are reviewed to illustrate the problems inherent in real estate brokers' representation of buyers and sellers. The role of the real estate broker is examined as a provider of information as well as that of a market maker. Two hypotheses are tested: there is no difference to the buyer in shifting cash charges at closing, and there is no difference in house prices attributable to the representational form of real estate brokerage. The study utilizes data on eighty single-family residential sales between January 1989 and August 1990 in north suburban Atlanta, Georgia to test these hypotheses.

Introduction

This study tests the effect of two different modes of residential real estate broker behavior on both the cash charges paid at closing and the price of houses. The behavioral modes to be tested are

- seller-only representation: the seller is represented in the transaction either by a listing broker only or by both a listing broker and a selling broker. The latter acts as the subagent of the listing broker; and
- buyer representation: the buyer is represented by a buyer's broker acting under a buyer's agency contract. The seller is either represented by a listing broker or unrepresented by a broker.

The relationships of real estate brokers to clients are governed by the law of agency under which the broker (agent) owes a strong duty of fiduciary loyalty to the client (principal). The relationship is usually first created when a prospective seller enters into a listing contract with a broker (the "listing broker"). Based on the existence of this contract, the listing broker becomes the seller's agent. The broker is usually compensated by a commission that is based on a percent of the sales price and is contingent upon the procurement of a ready, willing and able buyer for the property. The listing broker is then legally bound to act in a way that maximizes the welfare of the principal (seller) even if it conflicts with the broker's welfare (Rohan, Goldstein and Bobis, 1990).

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Until recently, a cooperative sale involving more than one broker was typically structured as a subagency relationship. This relationship was attributable to the fact that most cooperative sales originated through multiple listing services (MLSs) that frequently required brokers to use a standard form subagency contract provided by the MLS (Collette, 1988; FTC, 1983). Under subagency, a second broker (the "selling broker") procured a ready, willing and able buyer and split the commission with the listing broker. Given that the selling broker derived compensation and responsibilities from a previously negotiated contract between the seller and the listing broker, most states construed the selling broker to be a subagent of the seller (Collette, 1988). Under agency law, the selling broker owes loyalty to the seller on a derivative basis. The selling broker acts as the agent of the listing broker in discharging the listing broker's duty to procure a buyer. Despite the duty of loyalty to the seller, selling brokers often act as if they "represent" the buyer.

Buyers often operate under the false impression that they are represented by the selling broker and, accordingly, may reveal information intended as confidential, such as the highest price they are willing to pay or how much cash they have to cover the downpayment and cash charges at closing (FTC, 1983). If the selling broker adheres to the letter of agency law, he/she would be obligated to disclose the buyer’s confidences to the seller. In fact, in such situations, the buyer is not receiving any contractual representation from a real estate broker. Indeed, such lack of representation could result in the buyer either overpaying the cash charges at closing or overpaying for the house. Negotiating cash charges paid at closing is an important representation service provided by a bargaining agent. Any cash saved by a buyer in shifting closing charges to a seller can be leveraged into additional cash for a downpayment or post-sale renovation.

As with many other professions, real estate brokers are facing a growing number of lawsuits for improper conduct (Black and Nourse, 1993; Levi and Terflinger; Potter, Nelson and Nelson, 1991; Shadrar and Webb, 1989). Recent magazine and newspaper articles have exposed the nature of the subagency sale and discussed buyer’s brokerage. This and other factors have caused an increasing number of brokers to engage in buyer’s brokerage. When a buyer’s broker rather than a selling broker is involved in a transaction, the listing broker retains the duty of loyalty to the seller. In fact, the buyer's broker has a contractually created duty of loyalty to the buyer. Both buyer and seller both have bargaining agents who are bound to act on their behalves. Occasionally the buyer's broker representing the buyer is the only broker involved in the transaction. In such a case, the seller is unrepresented.

One function of a real estate broker is to provide information about the commodity. This information function raises agency issues. When the consumer has little knowledge of the commodity or the market in which it is sold, effective monitoring of the agent is unlikely unless the principal seeks independent advice. The result of ineffective monitoring could be a residual loss to the buyer in the form of overpaying for the house. The effect of better agent monitoring should show up, if at all, if greater control over the broker is exercised by the buyer. This could be accomplished either with increased buyer awareness of the broker’s function, or by a stronger legal duty owed by a broker to a buyer.

A second function of the residential broker is to act as a negotiating agent. The problem with effective negotiating is the same as with effective information. As long as the monitoring of the agent is ineffective, or the agent owes no substantial legal duty to
the buyer, there is no way for the buyer to know that he or she is receiving effective negotiation. The brokers control the flow of information in the transaction, and the flow of information frequently follows paths that are inconsistent with legal obligations and buyers’ perceptions. It may be that seller representation only, either by a single broker or under subagency, produces poor information and negotiation for the buyer. The negotiating process in residential transactions most frequently occurs in cooperative sales by a series of offers and counteroffers passed back and forth through the brokers. Buyers and sellers very seldom negotiate face to face. The chances for the buyer to receive poor information and negotiation representation are obvious. A subagency sale has both brokers legally representing the seller in a transaction involving a complex commodity with frequently unsophisticated principals who are confused about the nature of the representation. A single agency sale in which each party is separately represented could remedy some of the buyer’s disadvantages.

With the evolution of buyer’s brokerage, it is time to question whether this new form of brokerage benefits the buyer. There are several ways to investigate this question. For example, the level of consumer satisfaction, the degree of market exposure, or some measure of financial gain to the buyer all represent possible avenues of inquiry. This paper concentrates on the last by measuring the effect of broker representation on both the amount of cash charges paid by the buyer at closing and the sales price of the house. This paper does not consider other transaction costs such as the buyer’s search time or time on the market for the seller.

**Literature Review**

The relevant brokerage studies focus on the performance of real estate brokers under varying conditions and on the impact of brokers on sales transactions. A study by Jud found that houses sold by brokers did not sell for significantly more than FSBOs (houses “for sale by owner”) (Jud, 1983). A later study by Frew and Jud compared broker-sold houses with FSBOs (Frew and Jud, 1987), and revealed that approximately one-third to one-half of the brokerage commission was passed on to the buyer in FSBO sales.

In 1983 the Federal Trade Commission (FTC) published the results of an extensive survey showing that when a cooperating broker (subagent) was involved in a residential sale, 72% of the buyers believed that the selling broker was representing the buyer and not the seller. In transactions where only the listing broker was involved in making the sale, 31% of the buyers believed that the listing broker represented them. The FTC report likewise recognized the role of real estate brokers as providers of information in the residential real estate transaction, although it concluded that brokers are often not good sources of information. In practice, though, buyer reliance extends to more than price information. Almost 67% of the buyers in the FTC study relied heavily on the brokers’ advice when making decisions about purchasing their houses. Most buyers indicated that the broker’s ability to discover defects or other problems in the house was a highly important characteristic. Also, over 80% of the buyers in the study felt that the broker played a major role in negotiating with the seller (FTC, 1983).

Ball and Nourse surveyed Georgia real estate brokers and salespersons to determine if broker behavior conformed to the requirements of the traditional subagency relationship (Ball and Nourse, 1988). The authors found that brokers and salespersons frequently stepped outside the bounds of agency law and acted more as mediators in making a sale
than as advocates representing the best interests of their principals. The responses of the Georgia licensees reinforced the findings of the FTC study.

Waller and Waller analyzed the interests of homebuyers in cooperatively brokered sales and concluded that subagency in cooperatively brokered sales is inferior to buyer's brokerage (Waller and Waller, 1989). The authors suggested that agency is a consumer issue in which consumers should be informed of the nature of agency relationships and then choose the one that best meets their needs. Black (1994) examined the alternatives to traditional subagency, including recent legislation that helps make buyer's brokerage and other alternative agency forms more easily available to consumers.

Marsh and Zumpano dealt with agency theory in the context of real estate brokerage, suggesting that the role of real estate brokers has evolved from merely matching buyers and sellers to that of providing a significant source of consumer information about the real estate commodity (Marsh and Zumpano, 1988).

Articles by Rosenberg and Corgel (1990), Solt and Miller (1985), Zorn and Larsen (1986), and Geltner, Kluger and Miller (1991) examined agency issues in the context of agent incentives and financial performance. These studies found correlations between performance and contractual incentives, and thus indicate the importance of aligning the interests of principal and agent to minimize residual loss to the principal.

**Analysis of Data on Cash Charges Paid at Closing and on House Prices**

The effects of broker representation in residential transactions can be measured by analyzing cash charges at closing as well as houses prices for two categories of sales: one in which the buyers are represented by a broker and one in which the buyers are not represented by a broker.

The research hypotheses are

- there is no significant difference in the shifting of cash charges paid at closing from the buyer to the seller when the buyer is represented by a broker; and

- there is no significant difference in the price of a house when the buyer is represented by a broker.

The data set consists of information on eighty sales of residential property in the north suburban area of Atlanta, Georgia, over the period January 1989 to August 1990. During this period, the Atlanta residential market was characterized by sluggish sales, stabilized prices, and institutional lending rates in the 10% per annum range.2

Closing statements were collected from nine independent brokers who practice buyer's brokerage and operate from a nationally franchised real estate office in north suburban Atlanta. These brokers operate independently of firm control; they receive 100% of their commissions and pay only a desk fee to operate out of the office. The structure of this relationship minimizes any "firm effect" and permits the nine buyer's brokers to be treated as independent sources.

For the control group of traditional brokers operating under subagency, closing statements were collected from three real estate attorneys in north suburban Atlanta as well as from independent brokers operating in the same firm as the buyer's brokers. The sample includes thirty-nine different real estate brokers. To keep the control group entirely representative of traditional seller representation only or subagency represent-
ation, the traditional brokers’ closing statements were examined to screen out any transactions in which buyer’s brokers participated.

The size of the sample was limited due to the fact that few brokers in Atlanta practiced buyer’s brokerage at the time of data collection. Further, much of the data in the sample are proprietary and had to be obtained under the promise of secrecy with respect to individual transactions. The resulting sample is believed to be the largest that could be gathered under existing conditions and thereby represents a unique data set.

To develop a hedonic pricing model, sales were chosen in the most active market while minimizing exogenous influences. Accordingly, arm’s-length sales of freestanding, single-family houses in north metropolitan Atlanta were selected. Sales of different housing types such as condominiums or fee simple townhomes, or sales in rural areas would introduce noise into the data set, making it more difficult to isolate the brokerage effect. The north suburban side of Atlanta is generally affluent with no significant physical barriers to growth and no major industrial areas that interfere with established residential neighborhoods.

Given that cash charges at closing were to be analyzed, sales were chosen with third-party financing and lender-related closing charges. Copies of mortgage documents were obtained to ensure that financing represented prevailing market conditions at the time of sale. Any sale with institutional third-party financing was considered to represent conditions prevalent in the Atlanta area on terms acceptable to the borrower.

The resulting data set of eighty sales represents thirty-seven zip code areas in four counties. The model used all observations. The low sales price was $69,500; the high sales price was $320,000 with an average price of $146,140. Geographically, the sales are dispersed in an arc around the north side of Atlanta outside the central business district (CBD), with the closest house five miles from the CBD and the farthest thirty-three miles. Thirty-one sales in the data set involved buyer’s brokers either individually or as cooperating brokers with the listing broker. In forty-nine sales, listing brokers sold the house exclusively or cooperated with selling brokers in a subagency relationship. In all cases involving buyer’s brokers, the buyer’s brokers operated under a separate contract of agency with the buyer providing for exclusive buyer representation. In most cases the buyer’s broker split the commission with the listing broker, but in a few cases the buyer’s broker was the only broker involved in the transaction. In the sales involving a buyer’s broker only, the seller paid a reduced commission to the buyer’s broker (usually 3.0% to 3.5%) and the buyer’s broker represented the buyer under the exclusive agency contract. The relationship between buyer and buyer’s broker was disclosed to the seller in the sales contract.

Cash charges were determined by examining the closing statements for each transaction and classifying the charges as either charges incident to the closing imposed by a lender or a government authority or charges for benefits to be received in the future. The latter were excluded from the category “cash charges at closing” because they are prepayments for benefits to be received by the buyer in the future. Items included as cash charges at closing are:

- real estate commission;
- loan origination fees;
- loan discount;
- miscellaneous lender’s fees (document preparation, underwriting, tax service, warehousing, etc.);
- appraisal fee and credit report;
- lender's attorney fees or fees for independent attorneys representing the party charged;
- title insurance for the lender;
- document recording fees;
- State of Georgia real estate transfer tax;
- intangibles tax on the mortgage instrument;
- survey;
- pest inspection;
- courier fees;
- loan buydown fees.

Items not included as cash charges at closing are

- prepaid interest on the new mortgage loan, covering the gap period from the date of closing until the date accrual begins on the first monthly payment;
- mortgage insurance premiums;
- owner's title insurance, which is optional to the buyer in Georgia and not customarily paid by the seller;
- prorated items representing advance payment for future services, such as ad valorem taxes or utility bills;
- prepaid hazard insurance premiums;
- home warranty fees;
- VA funding fee;
- advance payment of homeowner's association fees;
- any other prepaid items.

Cash charges at closing were then standardized as a percent of the sales price. The percent of cash charges paid by the buyer for both the buyer's broker and traditional broker groups were compared for any apparent trends, and revealed that the seller paid more of the cash charges for the less expensive houses regardless of the mode of brokerage. The data set was then separated into two groups: one for houses sold for $101,000 or less and one for houses sold for more than $101,000. The $101,000 level was the point at which the buyers began to pay more than 1% of the sales price of the house in cash charges when subagency brokerage was involved. Mean cash charges for the two groups were calculated and the means within each subgroup were compared with t-tests. The results show no significant difference in the level of cash charges paid by the buyers using traditional subagency brokerage and the buyers using buyer's brokerage in the houses selling for under $101,000, whether they use a buyer's broker or a traditional broker. The confidence interval includes zero, implying that the difference in the means is not statistically different from zero. Also, the t-test for the means is \( t = .01 \), indicating that the means are not statistically different.

The houses of $101,000 or more show a higher payment of cash charges by buyers when traditional subagency brokerage is involved as compared to the sales by buyer's brokers. The mean cash charges paid by the buyer when only the seller was represented was 2.64% of the sales price compared to 1.46% for the buyer's broker group. The confidence interval does not include zero, implying that the means are statistically different. The \( t \)-test for the mean is \( t = 2.38 \), indicating that the means are statistically different.
Effect of Brokerage Modes on Closing Costs and House Prices

Exhibit 1
Two Sample T-Tests for Means of Cash Charges at Closing (in Percent of Sales Price) Paid by Buyers under Seller Representation Only (Non-Buyer’s Brokerage) and Buyer Representation (Buyer’s Brokerage)

A. Houses sold for $101,000 or less

<table>
<thead>
<tr>
<th>Sample Size</th>
<th>Sample Mean</th>
<th>Sample Standard Deviation</th>
<th>Standard Error of the Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buyer’s brokerage</td>
<td>10</td>
<td>1.12%</td>
<td>1.38</td>
</tr>
<tr>
<td>Non-buyer’s brokerage</td>
<td>13</td>
<td>1.12%</td>
<td>1.27</td>
</tr>
</tbody>
</table>

95% Confidence Interval for difference in population means: (-1.17, 1.18)

r-test for equality of population means: t = .01
18 degrees of freedom
p-value (probability that the means are the same) = .99

B. Houses sold for more than $101,000

<table>
<thead>
<tr>
<th>Sample Size</th>
<th>Sample Mean</th>
<th>Sample Standard Deviation</th>
<th>Standard Error of the Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buyer’s brokerage</td>
<td>21</td>
<td>1.46%</td>
<td>1.92</td>
</tr>
<tr>
<td>Non-buyer’s brokerage</td>
<td>36</td>
<td>2.64%</td>
<td>1.56</td>
</tr>
</tbody>
</table>

95% Confidence Interval for difference in population means: (.17, 2.18)

r-test for equality of population means: t = 2.38
35 degrees of freedom
p-value (probability that the means are the same) = .023

Thus, the purchasers who bought houses through a broker who was a subagent of the seller paid average cash charges amounting to over 1% of the purchase price of the house that was not paid by buyers represented by buyer’s brokers. For example, given the average house price of $146,140 in the data set, purchasers using traditional brokers would pay an average of more than $1,460 per house in cash charges that would have been otherwise contractually paid by the seller. The analysis of cash charges paid at closing is shown in Exhibit 1.

The difference in mean closing costs between the sales price groups may be attributable to the fact that the less expensive houses sell to first-time buyers and low-income individuals who do not have substantial amounts of cash and must conserve their cash for downpayments, prorations and prepaid items. The shifting of cash charges does not become significant until the house prices rise out of the low end of the houses sampled.

To test the effect of the brokerage mode on sales price, a hedonic pricing model was developed using sales price as the dependent variable and house characteristics as independent variables. First, an OLS regression was performed on the entire set of eighty observations by using the actual sales price as the dependent variable. The functional form of the equation is:
\[
\text{SALEPR} = f(\text{BATHS, BUYBROK, AIRDIST, BUYCC, MAINSQFT, BSMT, POR/DECK, GARAGE, ATTIC, SPRNGQTR, SUMRQTR, FALLQTR}),
\]

where

- \text{SALEPR} is the actual sales price of the house;
- \text{BATHS} is the number of bathrooms;
- \text{BUYBROK} is a dummy variable for the form of brokerage with 1 for a sale in which a buyer's broker participated, and 0 if otherwise;
- \text{AIRDIST} is the distance from the Atlanta CBD;
- \text{BUYCC} is the amount of cash charges paid at closing by the buyer;
- \text{MAINSQFT} is the number of square feet in the main dwelling area;
- \text{BSMT} is the number of square feet in the basement, if any;
- \text{POR/DECK} is the number of square feet in any porches and decks;
- \text{GARAGE} is the number of square feet in a garage, if any;
- \text{ATTIC} is the number of square feet in any finished attic space; and
- \text{SPRNGQTR, SUMRQTR, FALLQTR} are seasonal (1,0) variables for the quarter of the year in which the closing of sale occurred.

The expected sign for all coefficients is positive except for \text{BUYBROK}, which was expected to be 0, and for \text{AIRDIST} which was expected to be negative as the price of a house was projected to drop with increased distance from the CBD. Some seasonal variance and possible negative coefficients were also expected, with the highest seasonal coefficient in summer. As with most markets, spring is the most active season for residential sales in Atlanta. With a thirty- to ninety-day lag from contract to closing, premium value sales would occur mostly in the summer quarter. The largest negative seasonal coefficient was for the fall quarter. This is consistent with the fact that summer sales (and fall closings) occur outside the time frame necessary to enroll children in school and avoid a school transfer, creating a market premium for summer closings.

The model has an \( R \)-square of 88.1\%, an adjusted \( R \)-square of 86.0\%, and is significant overall at a \( p \)-value of .000. White's Test for homogeneity of variance is negative at a chi-square value of 73,0374 and a \( p \)-value of .6377. The broker coefficient is negative (which would indicate lower negotiated prices by buyer's brokers) but is insignificant at a \( p \)-value of .777. Further, the correlation matrix shows low correlations between the buyer broker variable and the other independent variables, ranging from \(-.375\) to \(.200\). Some evidence provided by other studies suggests that buyer's brokers do negotiate lower sales prices.\(^3\) Exhibit 2 shows the results of this regression.

The coefficient for buyer's cash charges at closing (BUYCC) is significant at an alpha level of .05, providing some indication that cash charges paid by the buyer may be included in the actual sales prices. To isolate this factor, a separate regression analysis was performed on the thirty-one sales involving buyer's brokers by using all the same independent variables except the dummy variable for buyer's broker. The dummy variable would be 1 in all cases and would be dropped from the model. In this regression, the coefficient for buyer's closing costs is both negative and highly insignificant at a \( p \)-value of .847, indicating that the closing costs were not added into the negotiated price in the buyer's broker sales.

Application of a series of univariate \( t \)-tests to a number of independent variables in a regression equation is subject to two deficiencies: experiment-wise error rate being greater
### Exhibit 2

**OLS Regression—Dependent Variable: Actual Sales Price of House (SALEPR)**

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Coefficient</th>
<th>( t )-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>19,303</td>
<td>.96</td>
</tr>
<tr>
<td>BATHS</td>
<td>26,923</td>
<td>3.53*</td>
</tr>
<tr>
<td>BUYBROK</td>
<td>-1,707</td>
<td>-.28</td>
</tr>
<tr>
<td>AIRDIST</td>
<td>-3,099.4</td>
<td>-5.44*</td>
</tr>
<tr>
<td>BUYYCC</td>
<td>2.4</td>
<td>2.15*</td>
</tr>
<tr>
<td>MAINSQFT</td>
<td>41.0</td>
<td>2.15*</td>
</tr>
<tr>
<td>BSMT</td>
<td>12.5</td>
<td>2.79*</td>
</tr>
<tr>
<td>POR/DECK</td>
<td>66.7</td>
<td>4.67*</td>
</tr>
<tr>
<td>GARAGE</td>
<td>13.9</td>
<td>.98</td>
</tr>
<tr>
<td>ATTIC</td>
<td>50.6</td>
<td>2.71*</td>
</tr>
<tr>
<td>SPRNGQTR</td>
<td>-13,167</td>
<td>-1.54</td>
</tr>
<tr>
<td>SUMRQTR</td>
<td>3,268</td>
<td>.39</td>
</tr>
<tr>
<td>FALLQTR</td>
<td>-25,519</td>
<td>-2.65*</td>
</tr>
</tbody>
</table>

**R-square**: 88.1%  
**R-square (adj.)**: 86.0%

The regression equation is: 

\[
\text{SALEPR} = 19,303 + 26,923 \times \text{BATHS} - 1717 \\
\text{BUYBROK} - 3,099.4 \times \text{AIRDIST} + 2.4 \times \text{BUYYCC} + 41.0 \times \text{MAINSQFT} + 12.5 \\
\text{BSMT} + 66.7 \times \text{POR/DECK} + 13.9 \times \text{GARAGE} + 50.6 \times \text{ATTIC} - 13,167 \\
\text{SPRINGQTR} + 3,268 \times \text{SUMRQTR} - 25,519 \times \text{FALLQTR}
\]

*significance at alpha level of .05

than the individual \( t \)-test critical level, and the effects of multicollinearity due to dependencies among variables (Hair et al., 1987). For a dichotomous variable, such as a 0 or 1 categorical variable, use of a multivariate test such as Hotelling’s \( T \)-square overcomes these problems by testing whether two dichotomous samples have equal centroids in \( n \)-space, where \( n \) represents the number of independent variables. That is, this statistic provides a statistical measure of how likely it is that two groupings of interdependent variables were drawn from the same parent population. In our case, we want to know if the parent populations of buyer-brokered and non-buyer-brokered sales have differing centroids with regard to purchase prices and interdependent physical characteristics.

Like all parametric tests, Hotelling’s \( T \)-square is based on all underlying assumptions concerning the distribution of the data. It assumes that the variables are distributed multivariate normal \((\mu, \Sigma)\) where \( \mu \) represents the population centroid and \( \Sigma \) represents the population covariance matrix. If the two groupings do not have equal covariance matrices, then Hotelling’s \( T \)-square test cannot be applied. SAS provides a test for homogeneity of within-group covariance matrices as part of the discriminant analysis procedure. For these data the \( p \)-value is .0001 so we strongly reject the null hypothesis that there is homogeneity of within-group covariance matrices. Therefore, we cannot rely on Hotelling’s \( T \)-square to test whether or not the buyer’s broker sales centroid differs from the non-buyer’s broker sales centroid.

In cases where within-group covariance matrices differ, SAS offers a quadratic form of discriminant analysis that classifies observations into two or more groups by
computation of generalized squared distances between groups and placement of the observation into the group whose centroid is closest to the observation. A classification matrix is used to determine the usefulness of this procedure. Classification accuracy is measured relative to chance. If the percentage of correct classifications is significantly larger than would be expected by chance, then the structural difference may be interpretable (Hair et al., 1987).

A proportional chance criterion is used when group size differs. The formula is

\[ C_{pro} = p^2 + (1-p)^2, \]

where \( C_{pro} \) is proportional chance and \( p \) is the proportion of observations in group 1. In this case, \( p = .3924 \) and \( C_{pro} = .5232 \). The proportion of correct classifications, using a “jackknife” holdout approach for validation of type of broker involvement in the sale, is .6835, or 1.31 times better than a chance outcome. A classification accuracy of 1.25 is considered significant.\(^5\)

Press’s \( Q \)-statistic is another measure of the model’s discriminatory power (Hair et al., 1987). The statistic is

\[ \text{Press's } Q = \frac{[N-(n \times k)]^2}{N(K-1)}, \]

where \( N \) is the total sample size, \( n \) is the number of correctly classified observations, and \( K \) is the number of groups. For these data Press’s \( Q = 9.23 \). The critical value is \( \chi^2_{0.01,1} = 6.63 \) so we can reject the null hypothesis that the predictions are not significantly better than chance.

**Conclusions**

Based on the data used in this study, a statistically significant shifting of cash charges from buyer to seller can occur. This shift is attributable to representation of the buyer by a buyer’s broker. The advocacy effect is most pronounced when house prices rise above a low level at which the seller absorbs most closing costs regardless of the mode of brokerage.

An OLS regression shows no significant effect on actual sales prices based on the form of brokerage used in the transaction. While the closing costs paid by the buyer represent a significant variable in the overall model, they are not significant in the sales involving buyer’s brokers.

The data provide evidence that the centroids of interdependent variables can discriminate between sales involving buyer’s brokers and sales involving non-buyer’s brokers at a rate significantly better than chance. No stronger multivariate statistical statement of significance of the broker variable is obtainable because of heterogeneity of covariance matrices for the two groups of data.

The use of a buyer’s broker in the sample produces a statistically significant shifting of cash charges at closing, although no significant evidence indicates that the cash charges are passed through to the buyer in the form of an increased sales price when a buyer’s broker is involved. The result of buyer’s brokerage is thus no significant movement of the contract sales price but rather a reduction in the buyer’s cash obligations at closing. The shifting of cash charges may represent a form of price concession available to buyers in a
soft sellers' market that, due to the anomaly of underrepresentation, is lost by buyers under the subagency form of brokerage.

Further study of the two main questions raised in this paper should be performed on larger data sets covering longer time periods. In addition, a theoretical model should be developed to bring the system of broker compensation into line with the interests of buyers and sellers and thereby reduce agency problems inherent in the broker-client relationship. A consumer satisfaction survey would provide insight into other functions performed by buyer's brokers.

The conclusions reached from this study and future studies may be limited by the difficulty of collecting proprietary data and the resulting relatively small sample sizes. In addition, given that buyer's brokerage is a new and rapidly evolving phenomenon, the business practices of the buyer's brokers used in this study may not be representative of buyer's broker practices in the future or nationwide. Clearly, more study is needed to document and understand that evolution.

Notes
2For home mortgage interest rates during this period, see the Sunday Homefinder section, Atlanta Journal/Constitution, January 1989 to August 1990.
3A study by U.S. Sprint found that 232 relocating employees who hired buyer’s brokers paid an average of 91% of the listing price of a house. Employees who used traditional agents paid about 96%. See, House Hunting? Save by Hiring Your Own Broker, Money, April 1993, 20. Black and Nourse conducted a four-state survey of brokers and salespersons in 1990. In the opinion of approximately 44% of the traditional brokers and 91% of the buyer's brokers surveyed, buyer's brokers negotiate lower sales prices for their buyers. See, The Effect of Buyer Brokerage on Residential Sales Practices, paper presented at the 1990 conference of the American Real Estate Society.
4The authors wish to thank Marvin Wolverton, doctoral student at Georgia State University, for his assistance with the data analysis.

References


