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Abstract

[Excerpt] Traditionally, commission rates were set by local boards of realtors. However, shortly after the inception of the Multiple Listing Service ("MLS"), the Federal Trade Commission began requiring brokers to disclose that commissions were "not set by any governing body and [were] negotiable between the Seller and the Listing Broker." 1 Despite this disclosure requirement, the tradition of charging a standard commission percentage and equally splitting this commission between brokers continued. While a chorus of voices alleged collusion, the standard commission rate appears to have resulted from competitive market forces pushing rates to their lowest level.2 However, in the 1990s, as Limited Service Discount Brokers ("LSDB") started taking market share from traditional brokers, the traditional brokers began to lower their commission rates to compete with these LSDB. The market driven commission rates dropped from the standard six percent to a range between four to five percent. Although most LSDB proved to be unprofitable and unsustainable, the lower commission rates have prevailed.

Keywords

brokerage, commission, compensation, structure, transactions, premium, density, broker fee, Limited Service Discount broker, LSDB, Cornell, real estate

Compensation Structure of Buyer Brokers and Residential Real Estate Transactions

by Peng Liu and Richard A. Weidel III

Introduction

Traditionally, commission rates were set by local boards of realtors. However, shortly after the inception of the Multiple Listing Service ("MLS"), the Federal Trade Commission began requiring brokers to disclose that commissions were "not set by any governing body and [were] negotiable between the Seller and the Listing Broker." [1] Despite this disclosure requirement, the tradition of charging a standard commission percentage and equally splitting this commission between brokers continued. While a chorus of voices alleged collusion, the standard commission rate appears to have resulted from competitive market forces pushing rates to their lowest level.[2] However, in the 1990s, as Limited Service Discount Brokers ("LSDB") started taking market share from traditional brokers, the traditional brokers began to lower their commission rates to compete with these LSDB. The market driven commission rates dropped from the standard six percent to a range between four to five percent. Although most LSDB proved to be unprofitable and unsustainable, the lower commission rates have prevailed.

Brokers' primary form of price competition is through lower commission rates, which pushes rates down over time, and creates various commission rate levels at a given time. By analyzing 16,112 residential real estate transactions occurring in three New Jersey counties during the 2001 to 2003 time period, this paper studies the effects that different buyer broker commissions offered through the MLS had on market transaction performance to determine if lower commission rates vis-à-vis higher commission rates have hurt consumers *ceteris paribus*. In effect, if a listing agent offered a lower buyer broker commission, did the performance of the transaction diminish? Because the buyer broker commission is the compensation that the buyer broker is paid for his effort, one would expect a listing offering a lower commission to result in both less effort and less interest from buyer brokers (known as "steering" [3]), resulting in weaker market performance of the transaction. However, a statistical analysis of the above-mentioned New Jersey transaction data demonstrated that there is not a statistically significant association between buyer broker commission rates and the days on market of residential real estate transaction. Our study does demonstrate a statistically significant association between the buyer broker commission rate and the likelihood a property will sell at a discount. Though contrary to common wisdom, a one percent increase in the buyer broker commission rate is associated with a sales price discount of .5% from the listing price.

The lack of statistical significance between buyer broker commission and days on market may be caused by low barriers to entry to becoming a real estate agent. The low barriers to entry likely create a surplus of agents resulting in fierce competition. The fierce competition does not allow the buyer broker the luxury of choosing which commission

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[1] Federal Trade Commission, The Residential Real Estate and Brokerage Industry: Los Angeles Regional Office Staff Report Volumes I and II and the Butters Report 9 (1983), available at http://www.ftc.gov/bc/realestate/workshop/index.htm. From here after "Federal Trade Commission".

[2] Corgel, Ling, Smith. Real Estate Perspectives, McGraw Hill/ Irwin, New York, NY 2001, Pages 524.

[3] Steering refers to any action taken by a broker or agent to avoid cooperating with a particular competitor.

rate he will work for. Instead the buyer broker has to take what he can get, be it 2.0% or 3.0% commission, because if he does not take it someone else will. The buyer broker knows that if he does a good job on this transaction, the buyer will likely use him to sell his home in the future. The buyer broker probably will work just as hard on the transaction regardless of the commission rate. Additionally, the difference in commission amount is quite small. For the average priced home, the difference between a 3.0% and a 2.5% buyer broker commission is $945. This amount is likely not enough to affect the transaction through altered buyer broker behavior. Furthermore, it is possible that the discount is the result of listing agents offering a higher buyer broker commission for properties that they deem more difficult to sell, and hence those properties sell for a discount. Additionally, the internet has allowed consumers to find listings on the internet, diminishing buyer broker's ability to 'steer' consumers.

The Residential Real Estate Market

According to the National Association of REALTORS®, the housing sector accounts for fifteen percent of U.S. gross domestic product. Seventy-four percent of U.S. households own their homes. In total, these homeowners have over $4 trillion of equity in their homes! This home equity is essential to the economy and has fueled much of America's consumer spending during the past decade.[4]

Unfortunately, this equity accumulation is quickly evaporating. In the first quarter of 2009, existing home prices and new home prices fell 15% and 13.5%, respectively. In 2008, the existing U.S. home average sales price fell to $216,000 from $268,200 in 2006, a decrease of 20%! Existing home sales volume fell 22% during the time period between December 2007 and December 2008.[5] The decreases in home value and transaction volume negatively impact the brokerage industry. As home prices fall and transaction volume decreases, the performance of each transaction becomes increasingly more important to the brokers involved. This trend also impacts homeowners. Homeowners are having a more difficult time selling their homes and are receiving less money than they previously would have received. Real estate agents are confronted with fewer transactions, falling home prices (which equates to lower real pay to the agent because the agent's earnings (i.e. commission) are a function sale price), and tough competition. Buyers are having a difficult time obtaining financing, and are being required to put more equity into the houses that they do purchase. This increases the risk to the buyer and elevates the importance of the buyer broker providing sound advice and diligent work to the buyer.

Real Estate Brokerage

The residential real estate market is characterized by complex, confidential and infrequent market transactions, with heterogeneous product and high information and transaction costs.[6] Purchasing a home is often the single largest financial decision made by a buyer in his lifetime, and represents, on average, over 30% of a family's net worth. A National Association of Realtors 2008 survey reports that, in 2007, 84% of sellers were assisted by a real estate agent when selling their home and 81% of buyers used a real estate agent to purchase their home.[7] Only 13% of homeowners chose to forego paying a commission and attempt to sell their home as a For-Sale-By-Owner ("FSBO").

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[4] National Association of REALTORS®, "Structure, Conduct, and Performance of the Real Estate Brokerage Industry," November 2005, http://www.realtor.org/research.nsf/pages/competitioninrealestateresearch, Available February 12, 2009.

[5] National Association of Realtors: NAR Forecast, December 2008, http://www.realtor.org/research Available February 16, 2009.

[6] Elder, Zumpano, Baryla. Buyer Search Intensity and the Role of the Residential Real Estate Broker, *Journal of Real Estate Finance and Economics*, 18:3, 351-168, 1999.

[7] National Association of Realtors 2008 Survey of Home Buyers and Sellers, Available February 16, 2009.

A seller hires a real estate agent for several reasons, including, but not limited to, the following:

- to handle the complicated forms,
- to decrease the seller's liability
- to guide the seller on pricing and timing,
- to aid in obtaining financing, and
- to negotiate with the buyer.

In addition to hiring an agent for the aforementioned benefits, many sellers believe a real estate agent will help them obtain the highest price for their home. However, empirical evidence on this subject proves inconclusive. Buyers often enlist the services of an agent to improve the efficiency of their search. They hire this professional to direct them to homes that are better suited to their preferences and circumstances, making it more likely that they will find a satisfactory home.[8]

The real estate brokerage industry is extremely competitive. There are approximately 2.5 million real estate professionals licensed in the U.S., including 200,000 brokers. The industry has low barriers to entry, constraining broker commissions. Ninety percent of licensed real estate agents are self-employed independent contractors that work on commission, measured as a percentage of a home's sale price. Real estate brokerages operate using numerous different business models ranging from discount limited service brokerages to non-discount full service providers. The real estate brokerage industry is also constrained in its pricing because homeowners have the option to sell their home as a for-sale-by-owner ("FSBO") if they think that the costs of using a real estate professional exceed the value of doing so.

A firm must be licensed in the state in which it plans to operate as a brokerage firm. Sales agents must also be licensed in their state of operation and are required to work for a broker. Brokerage firms and agents earn their revenue through commissions generated by selling homes. A typical commission amounts to 4% to 6% of the home sales price. This amount gets split between the seller's broker and buyer's broker. Brokers and agents then split the commission again, such that a 6% commission gets split 4 ways. The brokerage firm's expenses, which include rent and occupancy, office, advertising, licensing, insurance, recruiting, training, and local real estate board fees, are paid with these commissions.[9] Given the competitiveness of the market, broker profits are low. In 1996, the average real estate brokerage firm earned profits of just 2.3% of the firm's gross revenue. Although market wide commission rates are not available, an estimate of the average current commission rates being charged in the U.S. can be derived by dividing the total market revenues of the real estate brokerage industry by existing home sales volume. Assuming that real estate brokerage represents a $60 to $70 billion industry, and an existing home sales volume of $1.3 to $1.4 trillion (excluding FSBOs), the average commission rates range from 4.3% to 5.4%.[10] According to a 2004 National Association of REALTORS® study, the typical agent worked 45 hours a week and had an income of $49,300, a 5% decline from 2002 income of $52,000. During the same time period, the number of licensed real estate agents grew by 26 percent. This increase in the number of agents and the decrease in commission rates account for the decline in brokerage income despite the booming housing market.[11]

[8] Elder et al, *supra* note 7.

[9] Baron, J and Tayan, B, *Keller Williams Realty*, Stanford Graduate School of Business, 4/12/07.

[10] National Association of REALTORS®, supra note 5. These commission rates represent the brokerage industry revenues as a percentage of existing home sales.

[11] Ibid.

When home owners use real estate agents to list and sell their property, the agent enters the home information into a Multiple Listing Service ("MLS") Database. Through more than 800 MLS databases, brokers share information on properties they have listed and invite other brokers to cooperate in their sale in exchange for compensation if they bring a buyer. Participation in the MLS is limited to licensed real estate brokers, but not open to the general public.[12]

A real estate salesperson can work with a consumer as a buyer's agent, a listing agent, or as a dual agent. An agency relationship is created between a seller and a broker when both parties agree to a listing contract; similarly, an agency relationship is created between a buyer and a broker by a contract usually called a buyer agency agreement. In both cases, the broker must act as the consumer's fiduciary. The broker must be open and honest with his principal and may not disclose confidential information about his principal, the principal's financial status, or the principal's motivations. Although the recent trend has favored use of a single agency agreement, in the past, use of a dual agency was common. Under dual agency, the broker acts as an agent of both the seller and the buyer. The broker owes equal, but not undivided, loyalty to both principals. This inherently conflicting arrangement has the potential to lead to conflicts of interest.

In 2008, the number of existing home sales was down to a low of 4,740,000 from 6,478,000 in 2006. Despite this decrease in transaction volume (and home prices), as of December 2008, the number of real estate agents was greater than ever. The real estate brokerage industry remains highly competitive.[13]

The Evolution of Realtor Compensation

Commission rates are typically standard across a market for a given time period, which has incited investigations into collusion by the FTC. These investigations resulted in a regulation by the FTC that forced brokers to disclose that commissions were "not set by any governing body and [were] negotiable between the Seller and the Listing Broker."[14] As a result, the Boards of Realtors, who once mandated commission rates charged by MLS members, could no longer do so. Despite the disclosure requirement, the tradition of charging a standard commission percentage with equal splits between brokers had become institutionalized.

The practice of equally splitting the commission between the buyer broker and the listing broker discontinued as technological advancement brought about the arrival of the "dot.com" real estate business model known as the Limited Service Discount broker ("LSDB"). By way of the internet, and through exploitation of the MLS, the LSDB attempted to create a perception that they were able to offer the consumer all of the traditional marketing services of a full-service broker at a discounted commission. The internet gave consumers direct access to property information; in turn, real estate agents lost proprietary control over this information. These issues, along with the relative homogeneity of broker services, regardless of brand, led traditional full-service brokers to reduce their commission rates as a means to remain competitive.

The LSDB model ultimately proved to be unprofitable. To enhance their profit margin, LSDBs retained a greater portion of the brokerage fee as the listing broker, while offering a reduced fee to act as the buyer broker. The LSDB model did have a lasting effect on the industry. Traditional brokers followed the path of the LSDBs and began to offer lower

12 National Association of REALTORS®, Talking Points: Multiple Listing Service, http://www.realtor.org/press_room/public_affairs/tpmls, Available February 16, 2009.

13 National Association of REALTORS®, Existing Home Sales and Prices Overview, http://www.realtor.org/research/research/ehsdata, Available April 22, 2009.

14 Federal Trade Commission, supra note 1.

commission to the buyer broker. This allowed the listing broker to continue to earn the same commission for themselves despite an overall lower commission. This trend, while beneficial to the listing broker, may prove detrimental to the seller and buyer.

Conceptually, the commission constitutes a reward for service provided. In theory, a reduced commission would only serve to discourage an agent's performance. Interestingly, commission rates have been falling over time, although the median home prices have been rising such that the average commission fee has risen over time as Table 1 illustrates.

Table 1[15]

Year	Total Commission rate	Median Home Prices 2006 Dollars	Median Home Prices % Change	Commission Fees 2006 Dollars	Commission Fees % Change
1991	6.10%	$153,925		$9,389	
1992	6.04%	$153,235	-0.45%	$9,255	-1.43%
1993	5.94%	$153,632	0.26%	$9,126	-1.40%
1994	5.88%	$155,145	0.98%	$9,123	-0.04%
1995	5.83%	$155,365	0.14%	$9,058	-0.71%
1996	5.75%	$158,029	1.71%	$9,087	0.32%
1997	5.64%	$162,168	2.62%	$9,146	0.66%
1998	5.48%	$167,881	3.52%	$9,200	0.59%
1999	5.44%	$171,031	1.88%	$9,304	1.13%
2000	5.42%	$172,427	0.82%	$9,346	0.45%
2001	**5.12%**	**$177,931**	**3.19%**	**$9,110**	**-2.52%**
2002	**5.14%**	**$188,634**	**6.02%**	**$9,696**	**6.43%**
2003	**5.12%**	**$198,557**	**5.26%**	**$10,166**	**4.85%**
2004	5.08%	$212,655	7.10%	$10,803	6.26%
2005	5.02%	$230,059	8.18%	$11,549	6.91%

Table 2

Year	Buyer Broker Commission	Median Home Prices 2003 Dollars	Median Home Prices % Change	Commission Fees 2003 Dollars	Commission Fees % Change
2001	2.66%	$267,013		$7,103	
2002	2.65%	$268,994	0.74%	$7,128	0.36%
2003	2.61%	$289,900	7.77%	$7,566	6.15%

Table 2 is constructed using our data and is inflation adjusted for the year 2003.

The annual percent changes in real housing prices and commission fees tend to move in tandem. For example, Weicher calculates that although the average commission rate as reported by REAL Trends (Table 1) fell by 16% (6.1% to 5.1%), because the average price of existing housing increased during this period ($128,400 to $236,000), the average inflation-adjusted commission per transaction increased by 11% in dollar terms between 1991 and 2004.[16] Table 2 shows a less pronounced, but similar trend to the national data reported in Table 1. Our data reports only the buyer broker commission rate, while the REAL Trends data reports the total commission. Both data sets report the same thing: commissions are falling. According to our data, from 2001 to 2003 the median buyer broker commission decreased 1.88%, most likely due to price competition amongst brokers whom undercut

[15] Adapted From A Report by the Federal Trade Commission and U.S. Department of Justice: Competition In the Real Estate Brokerage Industry, April 2007, available at (www.ftc.gov/reports/realestate/V050015.pf).
Sources: Commission rates are from REAL TRENDS 500©; real median home prices are from U.S. Department of Housing and Urban Development, U.S. Housing Market Conditions, 4th Quarter 2006, Table 6-9 (Feb. 2007), and are a weighted average of new and existing home prices, based on annual sales; median home prices are converted into 2006 dollar with consumer price index for all goods for all urban consumers (CPI_U) from Bureau of Labor Statistics, available at (http://data.bls.gov/PDQ/servlet/SurveyOutputServlet); commission fees are calculated by multiplying commission rates by real median home prices.

[16] Weicher, John C, *The Price of Residential Real Estate Brokerage Services: A Review of the Evidence, Such As It Is,* (presented at AAI Conference on Competition in the Residential Real Estate Brokerage Industry Nov. 8, 2005). Weicher's calculations use average home sales prices, not median home sales prices.

each other to gain business. The commission constitutes a reward for service provided. Despite an agent's fiduciary duty to his client, the sheer volume of homes gives agents the power to serve their own interests. The typical home buyer searches for eight weeks and views 10 homes.[17] There are typically more than 10 properties that fit the buyer's search criteria. The buyer's agent has significant discretion to "steer" the buyer to particular properties. As the 2007 Federal Trade Commission Staff Report notes, brokers have certain incentives to "steer" consumers toward those homes that offer the highest cooperating broker commission payment and away from homes listed by brokers known to charge home sellers discounted commission rates. As such, brokers can take advantage of their superior knowledge of market conditions by steering clients away from home listings that otherwise match the criteria identified by the consumers, but provide lower financial gains for the broker than other homes.[18] The ability to "steer" clients is aided by the practice of never publicly showing the commission rate offered. Only licensed real estate agents have access to the commission rate information, such that a consumer would never know that a broker screened listings based on commission rates.[19] The 1983 FTC report further describes the problems at hand: "because many buyers think they are seeing all the properties a broker or salesperson knows to be on the market, the practice of steering coupled to the general practice of denying consumers direct access to information from a MLS may mislead buyers."[20] Disparities in commission rates can occur because competition among brokers primarily occurs through lower commission rates.[21] If a listing agent offers a below average commission to the buyer broker, does the transaction perform below average? Is the FTC's concern valid? i.e., does the practice of steering buyers cause properties with lower commission rates to perform worse on the market due to decreased buyer broker interest? This study attempts to empirically answer the previous questions and determine whether reducing the compensation of the buyer agent, compared to the prevailing average commission rate common at a specific time and location, diminishes the value of services being provided to the buyer and seller. The results of this study should help sellers and listing agents decide what commission rate to offer the buyer broker.

Brokerage Compensation Structure and Housing Transactions

Real estate brokerage compensation has been a hotly debated topic. To date, most literature compares the effects of percentage commission and flat-fee listings on agent performance. However, this paper is not concerned with different compensation structures between broker and agent. Rather, this paper focuses on the impact the level of compensation given by the listing agent to the buyer agent has on the transaction's performance.

As described above, until the 1990s, buyers typically worked with agents, who were paid by the listing agent and recognized by the law as subagents of the listing agent's firms. As subagents of the seller, the buyer agent had a fiduciary duty to the seller's agent, requiring him to pass along any secrets that the buyer shared with him, even

[17] National Association of Realtors 2008 Survey of Home Buyers and Sellers, (February 16, 2009).

[18] Federal Trade Commission, supra note 1.

[19] *See* Brokeck, S., and Woodall, P., Consumer Federation of America, State Real Estate Regulation: Industry Dominance and It's Consumer Costs 3 (July 2006), *available at* http://www.consumerfed.org/pdfs/CFA_Real_Estate_Commissioner_Report.pdf.

[20] Federal Trade Commission, supra note 1.

[21] A Report by the Federal Trade Commission and U.S. Department of Justice: *Competition In the Real Estate Brokerage Industry,* April 2007, available at (www.ftc.gov/reports/realestate/V050015.pf).

to the detriment of the buyer. To remedy this conflict, the concept of the buyer agent evolved. Today, about 81% of buyers use an agent.[22] Interestingly, most buyer agents rely on the fees offered by listing brokers, instead of negotiating their fee with the buyer. This reliance is facilitated by the MLS, which requires members to list a commission offered to the buyer agent if the buyer agent produces a ready, willing and able buyer.

Nadel argues that, under certain circumstances, allowing the listing agent to set the buyer agent's fee can lead the buyer agents to withhold options from the buyer, despite fiduciary duties to the contrary.[23] Those circumstances include 1) the co-operation fee offered to the buyer agent for a home is too low, 2) the seller appears to expect free assistance from the buyer agent, or 3) the agent wants to discourage price competition. Nadel further argues that this practice of fee setting violates duties imposed by state laws of agency and that they also conflict with the first principle of loyalty in the National Association of Realtors "stringent, enforceable" code of ethics. Yavas and Cowell further substantiate Nadel's claim by noting that "compensating […] buyer brokers as if they were subagents suggests a profound misalignment of buyer and buyer broker incentives,"[24] because the buyer broker gets paid more when the buyer pays more for a house.

Several authors have tried to empirically study the effects that brokers and agents have on the residential housing market.[25] These studies have reached differing conclusions, illustrating the complexities of the topic. Janssen and Jobson (1980) found that real estate agents have an influence on price.[26] Jud (1983) found that brokers do not affect the price of the houses they sell. However, brokers do appear to influence the level of housing consumed by buyers.[27] Jud and Frew (1986) found that broker-assisted buyers have a greater demand for houses than those without the assistance of a broker. Their results suggest that the broker plays a screening role for the seller, matching up buyers and sellers.[28] Zumpano, Elder, Baryla (1996) found that home buyers with high opportunity costs and the least information about local housing market conditions were most likely to seek out the services of real estate professionals.[29] Their study also demonstrated that, after taking into account the buyer choice process, the real estate broker has no appreciable, independent influence on selling price; this suggested that the housing market was non-segmented and competitive. Baryla and Zumpano (1995) found that real estate brokers are able to reduce the search time for virtually all classes of consumers.[30] Elder, Zumpano, and Baryla (1999) found that, in addition to reducing buyer search duration, the buyer broker mechanism also increased the search intensity. Having more market access and housing information than buyers working without brokers, broker-assisted consumers were able to visit more homes during a given time period. These results suggest that buyers with high information and search costs are more

22 *Supra*, note 21.

23 Nadel, M.S., A Critical Assessment of the Traditional Residential Real Estate Broker Commission Rate Structure, *Cornell Real Estate Review Vol. 5, 2008.*

24 Yavas, A, and Colwell P., Buyer Brokerage: Incentive and Efficiency Implications, *Journal of Real Estate Finance and Economics*, 18:3, 259-277, 1999.

25 This summary is adapted from Elder, Zumpano, Baryla. 2000. Buyer Brokers: Do They Make a Difference? Their Influence on Selling Price and Search Duration, Real Estate Economics, 28: 2; 337

26 Janssen, C.T.L. and J.D. Jobson. Applications and Implementation on the Choice of Realtor. *Decisions Sciences*, 11: 299-311, 1980.

27 Jud, G.D. Real Estate Brokers and the Market for Residential Housing. *The AREUEA Journal*, 11: 69-81, 1983.

28 Jud, G.D. and J. Frew. Real Estate Brokers, Housing Prices, and the Demand for Housing. *Urban Studies*, 23: 21-31, 1986.

29 Zumpano, L.V., H. Elder and E.A. Baryla. Buying a House and the Decision to Use a Real Estate Broker. *Journal of Real Estate Finance and Economics*, 13: 169-181, 1996.

30 Baryla, E.A and L.V. Zumpano. Buyer Search Duration in the Residential Real Estate Market: The Role of the Real Estate Agent. *Journal of Real Estate Research*, 10: 1-14, 1995.

likely to seek out the services of real estate brokers.[31] Finally, Elder, Zumpano and Baryla (2000) found that buyer agents are more effective at reducing search time for their clients than more traditional listing agents or non-agent facilitators.[32] This study attempts to further the discussion by examining the impact that buyer broker compensation, and the ability of buyer brokers to "steer" the consumer, have on the market performance of the residential real estate transaction.

The Data

This study uses 16,112 broker-assisted residential real estate transactions obtained from Multiple Listing Services in Mercer County, Somerset County, and Hunterdon County, NJ, for the time period from 2000 through 2004. These three counties are located in North-Central NJ and situated about an hour from Philadelphia and New York City. Table 3 displays the relevant housing data for each County.

Table 3

County	Hunterdon	Mercer	Somerset
Population, 2000	121,989	350,761	297,490
Housing Units, 2007	46,764	140,431	121,403
Homeownership Rate, 2000	84%	67%	77%
Median Value of Owner-Occupied Housing Units, 2000	$245,000	$147,400	$235,000
Median Household Income, 2007	$100,089	$69,139	$96,792

The data contains the following variables:

1. Listing Date: the date that a property was listed for sale.
2. Off Market Date: The date that a listing was taken off market and put under contract.
3. List Price: the listing price for a property.
4. Sale Price: the sale price for a property.
5. Commission: the buyer broker commission rate offered by the listing broker.
6. County: the county in which a transaction occurred; here, Hunterdon, Mercer, or Somerset County.

The Methodology

This study analyzes how buyer agent commission rates influence transaction performance. Transaction performance has been measured in the following two ways:

1. Days on Market (DOM):
   DOM is defined as the number of days between the listing date and off market date. DOM measures how fast an agent helped to implement a transaction or how quickly a listed property was sold.

2. Transaction Premium (PREMIUM):
   The transaction premium is defined as follows:

[31] Elder, H., L.V. Zumpano and E.A. Baryla. Buyer Search Intensity and the Role of the Residential Real Estate Broker. *Journal of Real Estate Finance and Economics*, 18: 351-368, 1999.

[32] Elder, Zumpano, Baryla. Buyer Brokers: Do They Make a Difference? Their Influence on Selling Price and Search Duration, *Real Estate Economics*, 28: 2; 337, 2000.

$$\text{PREMIUM} = \frac{\text{Sale Price - Listing Price}}{\text{Listing Price}} \times 100\%$$

The transaction premium reflects the strength of a listing on the housing market. The aggregation of this measure also reflects the relative strength of demand (to supply) in the marketplace at a particular time and location.

This study is premised on two regression equations. The first equation captures the market performance of a transaction by determining the total days on market for a listing. The following regression equation analyzes the set of variables that affect the time between listing date and off market date, denoted as Days on Market (DOM), for a particular transaction:

$$\text{DOM} = a + b1\ \text{Log\_LP} + b2\ \text{COMMISSION} + b3\ \text{PREMIUM DUMMY} + b4\ \text{WEEKEND} + b5\ \text{SPRING} + b6\ \text{COUNTY} + b7\ \text{YEAR} + e \quad (1)$$

The second equation measures market performance by normalizing the sale price as a discount or premium of the listing price, denoted by PREMIUM. Equation (2) is defined as:

$$\text{PREMIUM} = a + b1\ \text{Log\_LP} + b2\ \text{COMMISSION} + b3\ \text{DOM} + b4\ \text{WEEKEND} + b5\ \text{SPRING} + b6\ \text{COUNTY} + b7\ \text{YEAR} + e \quad (2)$$

The control variables used in the regression are derived from previous research and/or anecdotal evidence provided by parishioners. Log_LP, the natural log of the listing price, is used to control the size of a listed property. We do not have information on housing characteristics with individual transaction to control hedonic factors. However, listing price should reflect the pricing differences associated with differences in housing characteristics. COMMISSION is the buyer broker commission rate offered by the listing agent, and is the main independent variable. The PREMIUM DUMMY variable is used to capture the relationship between listings that sell at a premium and listing duration. Houses that sell at a premium probably do so because of competition between multiple buyers. This also may create a shorter listing duration. WEEKEND is a dummy variable used to measure the effects of listings that began on a Friday, Saturday, or Sunday. Normally, shopping for houses is a family event that occurs on the weekend. This control is used to indicate that a property listed closer to the weekend improves the housing transaction. Families would not want to move during the school year and force their children to switch schools; therefore, there might be an advantage to listing a house in the spring when more families are looking to purchase a home. Previous studies have shown that transaction volume is higher during the spring. The SPRING dummy measures the effects of listings that occurred in February, March or April. The YEAR and COUNTY dummies control for the performance variation across time and location.

One would suspect that, as the listing price increases, there will be fewer potential buyers and the days on market will increase. The buyer broker commission rate has several effects on the days on market. First, a commission rate might encourage more buyer brokers to attempt to sell a particular listing, which would increase the competition and the days on market. However, a higher buyer broker commission may reflect a listing agent's perception of the difficulty involved with selling a particular listing. A listing agent with a more difficult listing might feel the need to increase the compensation to buyer brokers to encourage them to pursue a listing. By contrast, a listing agent with a great property in a sellers' market may offer a lower buyer broker commission because the house can sell without further incentive. Furthermore, because commission rates are segmented by time and individual company policy, they may not have a large effect on listing time duration.

Table 4 Summary Statistics

Variable	Description	Mean	Median	Mode	St. Dev.	Max	Min	N
DOM	Days on Market	55	36	14	0	654	0	16,112
(SP-LP)/SP	Percentage Premium	-1.795	-1.338	-	3.759	36.265	40.12	16,112
COMMISSION	Buyer Broker Commission (%)	2.70%	2.50%	2.50%	0.002	5%	0.50%	16,112
LISTING PRICE	Property Listing Price	346,076	275,000	249,900	269,350	6,500,000	1,200	16,112
SALE PRICE	Property Sale Price	338,500	270,000	215,000	257,266	6,430,000	1,200	16,112

Table 5 Frequency Statistics

	Variable	Frequency	Percentage
Weekend	Weekend Listing	5,405	34%
	Not Weekend Listing	10,707	66%
	Total	16,112	100%
Spring	Spring Listing	4,606	29%
	Not Spring Listing	11,506	71%
	Total	16,112	100%
County	Hunterdon	3,429	21%
	Mercer	5,527	34%
	Somerset	7,156	44%
	Total	16,112	100%
Year	2001	2,057	13%
	2002	8,546	53%
	2003	5,509	34%
	Total	16,112	100%
Premium	Sold at Listing Price	2,871	18%
	Sold Above Listing Price	3,190	20%
	Sold Below Listing Price	10,051	62%
	Total	16,112	100%

The Results

Table 6 Empirical Results

	Coefficient (S.E.)	
	Model 1	Model 2
DEPENDENT VARIABLE	DOM	Premium
INTERCEPT	-150.054***	3.200***
	(-10.417)	(-0.74)
LOG(LIST PRICE)	38.000***	-0.582***
	(-1.612)	(-0.115)
COMMISSION	2.342	-0.517***
	(-1.713)	(-0.12)
Premium Dummy	-18.660***	-
	(-0.857)	-
DOM	-	-.015***
	-	0.0005
WEEKEND	-1.758*	0.021
	(-0.865)	(-0.061)
SPRING	-1.07	0.348***
	(-0.931)	(-0.067)
COUNTY: MERCER	-11.672***	0.065
	(-1.191)	(-0.084)
COUNTY: SOMERSET	-14.605***	0.164*
	(-1.078)	(-0.077)
YEAR: 2001	56.222***	0.124
	(-1.384)	(-0.102)
YEAR: 2002	6.173***	0.262***
	(-0.906)	(-0.065)
N	16,111	16,111
ADJUSTED R-SQUARE	0.1811	0.0601

Standard errors are in parenthesis, ***p<0.001, **p<0.01, and * p<.05

Equation (1) measures the effect on listing duration associated with changes in buyer broker commission rates, holding all else equal. Somewhat surprisingly, the correlation between buyer broker commission and listing duration was not statistically significant. This suggests that parties can expect the listing duration to be unaffected by changes in buyer broker commission rates, and that decisions about buyer broker commission rate pricing should proceed without concern that it will impact listing duration. However, the Equation (2) results suggest that the buyer broker commission level does have a statistically significant effect on the normalized discount or premium of the selling price compared to the listing price. A one unit change in buyer broker commission, e.g., from 2% to 3%, is associated with a sale price discount of .512% from the listing price. One might expect that, as the buyer broker commission rate rose, it would increase competition and thus the ability of a property to sell for its listing price. However, the data did not support this hypothesis. This discrepancy may be explained by the theory that listing agents use a higher buyer broker commission to signal that a house is more difficult to sell. A more challenging house will often sell at a discount. As such, a higher buyer broker commission will be associated with a discount in sale price from the listing price. As expected, as the list price increased so did the duration of the listing and the amount of the discount. Holding all else equal, when comparing two homes, one twice the value of the other, the more expensive home is associated with a 38-day increase in listing duration and a discount of .582% compared to the less expensive home. The potential negative impacts of 'steering', which would have been seen in the data by an increase in time on market and an a discount in the sale price associated with a decrease in the buyer broker commission rate, are not likely to be as pronounced because "the Internet offers consumers increased knowledge of homes available for sale and, consequently, may limit the ability of cooperating brokers to steer buyers away from desirable homes listed by discount and fee-for-service brokers."[33] According to an NAR survey, 80 percent of home buyers used the Internet during their home search in 2006, and 24 percent of recent home buyers first located the home they bought on the Internet.[34]

Listings that sold at or above listing price sold 18 days faster, on average, than homes that sold below listing price. Clearly, homes that sell at or above listing price also sell faster than homes selling for below list price. For a home to sell above listing price, competition normally exists among buyers shortening the time on market as each party hustles to close the deal.

An increase in the days on market is associated with a sale price discount of .015% per day. Listings are said to become 'stale' as they sit on the market, and sellers are encouraged to lower the listing price to encourage the sale of their property. A property that has been on the market for a while may have been listed with the price too high, so as time increases the seller either lowers the price or becomes increasingly willing to accept a lower sale price.

The correlation between weekend listings and time on market is statistically significant. However, the correlation between weekend listings and a discount or premium is not. Specifically, weekend listings (Friday, Saturday, and Sunday) are associated with a decrease of almost 2 days on market over listings which do not begin on the weekend. Interestingly, while spring time listings (February, March, April) do not have a statistically significant correlation with days on market, they do have a statistically significant correlation with price premium. Properties listed in the spring are associated with an increase of the overall premium (or a reduction of the overall discount) of .348% ceteris paribus. About 29% of properties enter the market in the spring, suggesting that other factors also contribute to the listing decision beyond seasonal effect. Though, this result also confirms the common wisdom that the housing market is more active during spring season. On average, houses that are sold in spring may not necessarily sell faster, but they do sell at a premium.

Transaction location in our model acted as a control that represents deference in potential demand (population, home ownership rate) and supply (land, Development, etc.). Houses in Mercer and Somerset County are sold faster and at a higher premium relative to similar houses sold in Hunterdon County. When comparing Mercer County to Hunterdon County, one can expect a decrease in days on market of 12 days. The effect of location on sale price premium is not statistically significant between Mercer County and Hunterdon County. Somerset County is associated with fewer days on market (15 days fewer) and an increase in the premium (.164% on average) when compared to Hunterdon County.

With just three years of market data, the data makes clear that market conditions change over time. In the regression, 2003 is used as the base case. Compared to 2003, listings in 2002 took, on average, 56 days longer to sell and are associated with a premium of .262%. The 2002 and 2003 days on market data were more similar. The market duration for a 2002 listing was, on average, six days longer than a 2003 listing. The effect on the premium is not statistically significant between properties listed in 2002 and 2003.

Conclusion

The present study attempted to analyze with empirical evidence the impact that the compensation paid to buyer brokers has on transaction performance using 16,112 broker-

[33] *Supra* note 15.

[34] National Association of Realtors Profile of Home Buyers and Sellers 34, 38 (2006) (Covering a 12-month period ending June 2006).

assisted housing transactions from three New Jersey counties. This study analyzed the factors affecting residential real estate performance, as measured by days on market and transaction premium. With the unique control variable – buyer broker commission rate, we were able to assess whether a variation in commission rate affected the transaction's performance. The regression results indicate that size of the property, location, and time are important factors in determining sale performance. And, while the buyer broker commission rate did not have a statistically significant correlation with time on market, it did have a statistically significant correlation with transaction price. A higher commission fee was associated with a larger discount to the transaction price. This result was statistically significant at the 0.001% level. For the average priced home in the data pool, a sale price discount of .5% associated with a 1% increase in buyer broker commission from the listing price represents a discount of $1,375. In short, when the listing agent and homeowner enter the decision making process about the buyer broker commission rate, they should do so knowing that the commission rate likely will not affect the days on market of the transaction but may be correlated with a discounted sale price. During spring, transaction volume is higher than during other seasons. While houses sold in the spring may not necessarily sell faster, they normally trade at a premium. Weekend listings attract more visitors and shorten the days on market. However, the listing dates do not have a statistically significant impact on trading prices. As illustrated above, there are numerous factors influencing residential real estate transaction. The role played by broker incentives remains an area ripe for future research.

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