

The Good, the Bad and the Ordinary: Estimating Agent Value-Added Using Real Estate Transactions

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*These views expressed are those of the authors and do not necessarily reflect those of the Federal Reserve System.

Motivation-the role of agents



- Agents (including real estate agents) help negotiate large, infrequent transactions where client has less experience
 - investment banking
 - asset management
 - consulting
 - real estate transactions
- The information asymmetries that lead one to hire an agent, make it hard to evaluate their performance

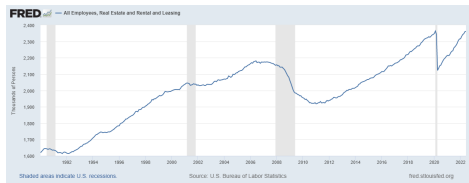
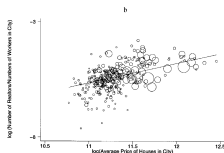
- ➊ description of the market
- ➋ brief economic framework
- ➌ data
- ➍ baseline hedonic/DOM/p(sale) regressions
- ➎ recovering agent fixed effects
 - price (listing and buying agents)
 - Days-On-Market (DOM) (just listing)(price/DOM)
- ➏ look at distributions and correlations of Agent FEs
- ➐ can we explain Real Estate Agent FEs?
- ➑ when do top agents earn their premium?

Main Findings

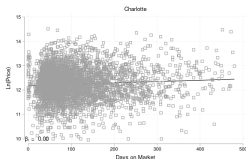
- homes sold via flat-fee agents sell at A premium 1 to 4.4% before commission
- ...may take longer to sell (0 to 6 days) ... if ever
- to outperform flat-fee a listing agent in final price needs to be in the top 15-20 percent
- most real estate agents that sell at a premium for more; buy at premium
- more experienced real estate agents sell quicker, but for less.
- best agents generate most value in down markets.

Real Estate Agents

- real estate agents are costly (in US, typical commission between 5-6 % and sticky)
- commission split between listing and buying agent
- paid by home seller (incidence?)
- but with free entry
 - brokerage license typically requires 20 hours of classes/exam



- inefficient labor allocation? ? show real estate productivity declines with average house price across cities.



Are real estate agents good agents for their clients?

- A client and listing agent have a partnership with different input and payout structure.
- The client provides house and receives equity net of commission.
- The listing agent provides labor/effort and typically gets 3 percent of the total sales price.
- The listing agent is likely to maximize her income by selling many homes, quickly, at a lower price than a few homes at a somewhat higher price.
 - When a real estate agent sells their own home, they take longer and sell for more. (Levitt,2008), (Rutherford, 2005)

Listing agent:

- place home on Multiple Listing Service (MLS)
 - provide network of related service providers: photographers, stagers, tradesmen, attorneys, lenders/mortgage brokers
 - write property description text for MLS and/or flyer
 - select photos brokers
 - advise on listing price(s)
 - advise on counter offers (price/terms)
 - make final offer(?)
- } negotiation

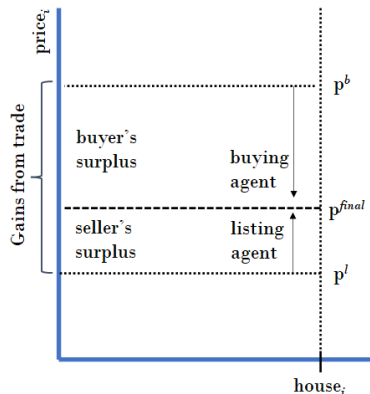
Buyer's agents:

- find desired property
 - pick opening bid offer
 - respond to any counter offer (price/terms)
 - make final offer(?)
- } negotiation

Bargaining/listing agent

agent's bargaining objective:

- ① close sale
- ② maximize surplus to client by:
 - ① discovering counter party's reservation price
 - ② not revealing client's reservation price

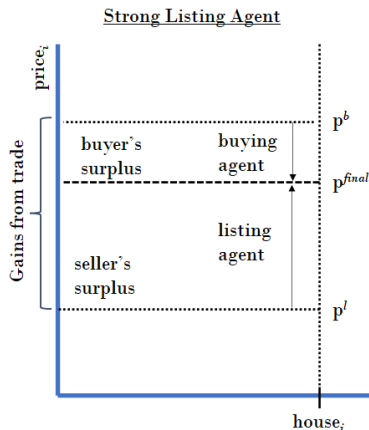


Bargaining/listing agent

- 1 set list price (may signal seller's reservation price)
- 2 await buyer's offer
- 3 accept or make counter offer (repeat)
- 4 make take-it-or-leave-it offer

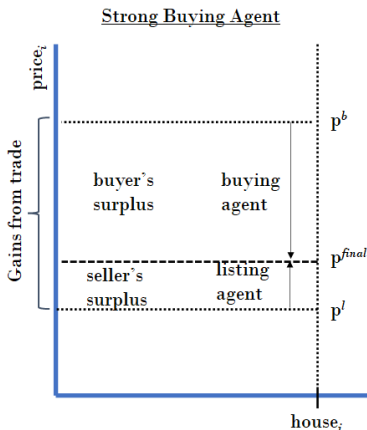
\underline{p} :

- if $\underline{p} \leq p^b$: sign contract
- if $\underline{p} > p^b$: await another buyer



Bargaining/buying agent

- 1 find house clients prefer
- 2 accept list price, or
- 3 make counter offer; (repeat)
- 4 make take-it-or-leave-it offer, \bar{p} :
 - if $\bar{p} \geq p^l$: sign contract
 - if $\bar{p} < p^l$: go find another house



- Multiple Listing Service (MLS) (Charlotte, Minneapolis, Houston)
 - largest cities with single, dominant MLS (more than 98% of sales.)
 - 20 years, repeat sales, house and lot characteristics
 - track agents over time and across firms using:
 - Realtor ID,
 - cell phone,
 - name,
 - email, website

Table: Descriptive Statistics by Metropolitan Area

	Charlotte		Minneapolis		Houston	
	Mean	Sd	Mean	Sd	Mean	Sd
Sale Price (Thousands \$)	259	203	268	172	246	216
DOM (# of Days on Market)	113	86.1	86.3	59.1	103	75.6
Living Area (100s Square Feet)	22.7	9.9	20.4	8.8	23.9	9.5
# Bathrooms	2.81	0.97	2.35	0.94	2.33	0.72
# Bedrooms	3.55	0.82	3.26	0.91	3.53	0.73
Building Age (Years)	20.2	21.9	35.4	30.7	20.2	19.5
Lot Size (Acres)	0.47	0.71	0.58	1.15	0.49	0.95
Fireplace (d)	.	.	0.578	.	0.906	.
New Construction (d)	0.184	.	0.050	.	0.183	.
Renovated (d)	0.017	.	0.030	.	0.028	.
View (d)	0.027	.	0.029	.	0.034	.
Gated (d)	0.014	.	0.001	.	0.042	.
Waterfront (d)	0.022	.	0.087	.	0.017	.
Owner Agent Transaction (d)	0.000	.	0.001	.	0.001	.
Dual Agent Transaction (d)	0.107	.	0.075	.	0.067	.
Flat Fee Realtor (d)	0.012	.	0.010	.	0.004	.
Listing Agent Experience (Years)	5.29	4.76	5.96	5.30	5.83	5.07
Buying Agent Experience (Years)	5.68	4.80	6.64	5.45	6.15	5.12
Firm Size (1000s Listing Agents)	3.04	3.58	4.07	3.76	6.86	13.43
Firm Size (1000s Buying Agents)	2.56	2.70	4.05	3.73	4.60	4.75
# Transactions	376,042		796,646		1,096,800	

Identifying Flat Fee Brokers:

- 1 Look for string in Realtor Name, Brokerage Name, or email address.
Ex: "flatfeegroup.com"
- 2 Web search "Flat Brokers Charlotte/ Minneapolis/Houston"
- 3 Web search individual brokers in top 10% of sales

clickitrealty.com/flat-fee-mls-listings-work/

Clickit Realty
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Home Packages Listings How It Works

FAQ: Who handles the paperwork?
We provide the needed paperwork to sell your home. If you have any questions, just call! Our expert staff can help answer your specific questions.

We offer a Flat Fee MLS Listing for as little as \$299 for sellers looking to save thousands of dollars in commissions, and maintain direct control of the sale!

Our goal is to ensure you are satisfied with the process of listing your home with Clickit Realty. We want to make the process simple, and of course, to save you thousands over full-service agents.

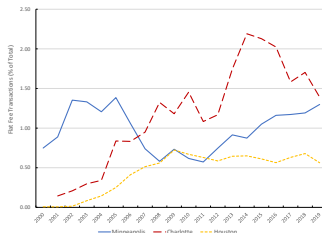


Table: Descriptive Statistics by Fee Group

Panel A: Charlotte

	Flat-Fee		Non Flat-Fee	
	Mean	Sd	Mean	Sd
Sale Price (Thousands \$)	286	167	258	204
DOM (# of Days on Market)	98.0	72.2	113	86.2
Living Area (100s Square Feet)	24.0	9.48	22.7	9.92
# of Bathrooms	2.90	0.887	2.81	0.972
# of Bedrooms	3.65	0.81	3.55	0.82
Building Age (Years)	21.5	19.9	20.2	22.0
Lot Size (Acres)	0.45	0.62	0.47	0.71
New Construction (d)	0.000	.	0.187	.
Renovated (d)	0.033	.	0.017	.
View (d)	0.033	.	0.027	.
Gated (d)	0.015	.	0.014	.
Waterfront (d)	0.028	.	0.022	.
Owner Agent Transaction (d)	0.000	.	0.000	.
Dual Agent Transaction (d)	0.037	.	0.107	.
# Transactions	4,568		371,474	

Conventional Hedonic type regression for $\ln(\text{price})$ and Days-On-the-Market (DOM)

$$\begin{aligned} y_{ijrt}^{P,DOM} = & X_i' \phi + \theta_t + \gamma_j \\ & + \beta_1 \text{OwnerAgent}_{it} + \beta_2 \text{Dual}_{it} + \beta_3 \text{FlatFee}_{it} \\ & + \lambda_i + \epsilon_{ijrt} \end{aligned}$$

- Without and With House FEs
- Add features of the sale (Estate, Owner Agent, Dual, Flat-Fee)

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- Without and With House FEs
- Add features of the sale (Estate, Owner Agent, Dual, Flat-Fee)

Baseline Regressions: Price

Table: Baseline Hedonic Regressions

Dependent Var: Ln(Price)									
	Charlotte			Minneapolis			Houston		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Ln(Squarefootage)	0.912*** (0.026)	0.912*** (0.026)	0.536*** (0.052)	0.539*** (0.023)	0.539*** (0.023)	0.185*** (0.017)	0.838*** (0.022)	0.838*** (0.022)	0.353*** (0.037)
Dual Agent		-0.004 (0.005)	0.012* (0.005)		0.020*** (0.003)	0.006 (0.004)		-0.018*** (0.004)	-0.007* (0.003)
Owner Agent		0.028 (0.046)	0.119 (0.066)		0.009 (0.013)	0.074** (0.025)		0.056*** (0.011)	0.052*** (0.015)
Flat-Fee Realtor		0.044*** (0.007)	0.031*** (0.006)		0.011* (0.005)	0.014** (0.004)		0.021** (0.007)	0.013* (0.006)
Year FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
Month FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
ZIP Code FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
Structure Vars	Y	Y	Y	Y	Y	Y	Y	Y	Y
Parcel Char.	Y	Y	N	Y	Y	N	Y	Y	N
Realtor Char.	N	Y	Y	N	Y	Y	N	Y	Y
Property FE	N	N	Y	N	N	Y	N	N	Y
Listing Agent FE	N	N	N	N	N	N	N	N	N
Buying Agent FE	N	N	N	N	N	N	N	N	N
# Observations	376,042	376,042	206,603	796,476	796,476	484,361	1,096,800	1,096,800	563,761
Adjusted R ²	0.843	0.843	0.940	0.794	0.794	0.909	0.862	0.862	0.949
Mean Ln(Price)	12.25	12.25	12.28	12.37	12.37	12.33	12.19	12.19	12.24

Baseline Regressions: DOM

Table: Days on the Market Regressions

Dependent Var: DOM									
	Charlotte			Minneapolis			Houston		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Ln(Squarefootage)	22.774*** (2.751)	22.779*** (2.800)	23.421** (8.797)	22.809*** (1.420)	22.759*** (1.411)	5.018* (1.938)	40.002*** (1.899)	39.927*** (1.899)	15.008 (8.155)
Dual Agent		1.771 (1.001)	0.321 (1.368)		2.873*** (0.594)	0.692 (0.856)		4.161*** (0.790)	2.537* (1.037)
Owner Agent		13.354 (13.103)	27.459 (32.930)		4.947 (4.473)	4.596 (7.921)		-5.683* (2.731)	-3.117 (7.122)
Flat-Fee Realtor		-0.818 (1.524)	2.117 (3.097)		3.535** (1.323)	5.988*** (1.677)		1.731 (1.406)	3.678 (2.393)
Year FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
Month FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
ZIP Code FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
Structure Vars	Y	Y	Y	Y	Y	Y	Y	Y	Y
Parcel Char.	Y	Y	N	Y	Y	N	Y	Y	N
Realtor Char.	N	Y	Y	N	Y	Y	N	Y	Y
Property FE	N	N	Y	N	N	Y	N	N	Y
Listing Agent FE	N	N	N	N	N	N	N	N	N
Buying Agent FE	N	N	N	N	N	N	N	N	N
# Observations	376,042	376,042	206,603	796,476	796,476	484,361	1,096,800	1,096,800	563,761
Adjusted R ²	0.145	0.146	0.195	0.128	0.128	0.163	0.130	0.131	0.166
Mean Ln(Price)	113.11	113.11	106.92	86.33	86.33	83.51	102.53	102.53	97.37

Panel A: Zip Code-by-Year Fixed Effects

	Charlotte		Minneapolis		Houston	
	(1) Ln(Price)	(2) DOM	(3) Ln(Price)	(4) DOM	(5) Ln(Price)	(6) DOM
Owner Agent (d)	0.039 (0.045)	5.437 (11.718)	0.006 (0.009)	-5.199* (2.135)	0.059*** (0.011)	-4.680* (1.777)
Dual Agent (d)	-0.008 (0.005)	0.323 (0.946)	0.018*** (0.003)	2.127*** (0.465)	-0.021*** (0.004)	1.879** (0.698)
Flat-Fee Realtor (d)	0.038*** (0.007)	0.787 (1.216)	0.016** (0.005)	6.804*** (1.045)	0.018* (0.007)	5.299*** (1.139)
ZIP Code-by-Year FE	Y	Y	Y	Y	Y	Y
Month FE	Y	Y	Y	Y	Y	Y
Structure Vars	Y	Y	Y	Y	Y	Y
Parcel Char.	Y	Y	Y	Y	Y	Y
Realtor Char.	Y	Y	Y	Y	Y	Y
Property FE	N	N	N	N	N	N
Listing Agent FE	N	N	N	N	N	N
Buying Agent FE	N	N	N	N	N	N
# Observations	376,038	376,038	796,463	796,463	1,096,786	1,096,786
Adjusted R ²	0.852	0.155	0.806	0.137	0.871	0.144
Mean Dependant Var.	12.3	110.7	12.4	85.2	12.2	101.2

Panel B: Flat-Fee Purchasers

Dependent Variable: Ln(Price)						
	Charlotte		Minneapolis		Houston	
	(1)	(2)	(3)	(4)	(5)	(6)
Flat-Fee Purchaser (d)	0.008 (0.007)	-0.010 (0.008)	-0.020*** (0.005)	-0.031** (0.009)	-0.006 (0.006)	-0.015 (0.008)
Year FE	Y	Y	Y	Y	Y	Y
Month FE	Y	Y	Y	Y	Y	Y
Zip FE	Y	Y	Y	Y	Y	Y
Zip-by-Year	N	N	N	N	N	N
Structure	Y	Y	Y	Y	Y	Y
Parcel Char.	Y	Y	Y	Y	Y	Y
Realtor Char.	Y	Y	Y	Y	Y	Y
Property FE	N	Y	N	Y	N	Y
Listing Agent FE	N	N	N	N	N	N
Buying Agent FE	N	N	N	N	N	N
# Observations	371,474	202,068	788,236	475,837	1,091,920	559,028
Adjusted R ²	0.843	0.940	0.795	0.909	0.862	0.949
Mean Ln(Price)	12.25	12.28	12.37	12.33	12.19	12.24

Table: Probability of Sale Regressions

	Dependent Var: Prob(Sale occurs \leq 1 year)					
	Charlotte		Minneapolis		Houston	
	(1)	(2)	(3)	(4)	(5)	(6)
Flat-Fee Realtor	-0.096*** (0.008)	-0.111*** (0.011)	-0.078*** (0.008)	-0.098*** (0.010)	-0.061*** (0.008)	-0.090*** (0.010)
Owner Agent	-0.049 (0.043)	-0.108 (0.086)	-0.033* (0.016)	-0.011 (0.021)	-0.041** (0.015)	-0.046* (0.022)
Year FE	Y	Y	Y	Y	Y	Y
Month FE	Y	Y	Y	Y	Y	Y
ZIP Code FE	Y	Y	Y	Y	Y	Y
Structure Vars	Y	Y	Y	Y	Y	Y
Parcel Char.	Y	N	Y	N	Y	N
Realtor Char.	Y	Y	Y	Y	Y	Y
Property FE	N	Y	N	Y	N	Y
Listing Agent FE	N	N	N	N	N	N
Buying Agent FE	N	N	N	N	N	N
# Observations	614,114	473,324	1,288,323	1,055,143	1,780,973	1,304,192
Adjusted R ²	0.128	0.151	0.360	0.319	0.089	0.115
Mean Dependent Var	0.60	0.55	0.44	0.40	0.61	0.54

- Hedonic regression for $\ln(\text{price})$ and for Days-On-the-Market (DOM) including listing agent fixed effects (omit flat fee)

$$\begin{aligned}y_{ijrt}^{P,DOM} = & X_i' \phi + \theta_t + \gamma_j \\ & + \beta_1 \text{OwnerAgent}_{it} + \beta_2 \text{Dual}_{it} \\ & + \lambda_i + \alpha_r^l + \epsilon_{ijrt}\end{aligned}$$

- Hedonic regression for $\ln(\text{price})$ including buying agent fixed effects (omit dual agents)

$$\begin{aligned}y_{ijrt}^P = & X_i' \phi + \theta_t + \gamma_j \\ & + \beta_1 \text{OwnerAgent}_{it} + \beta_3 \text{FlatFee}_{it} \\ & + \lambda_i + \alpha_r^b + \epsilon_{ijrt}\end{aligned}$$

- Hedonic regression for $\ln(\text{price})$ and for Days-On-the-Market (DOM) including listing agent fixed effects (omit flat fee)

$$\begin{aligned} y_{ijrt}^{P,DOM} = & X_i' \phi + \theta_t + \gamma_j \\ & + \beta_1 \text{OwnerAgent}_{it} + \beta_2 \text{Dual}_{it} \\ & + \lambda_i + \alpha_r^l + \epsilon_{ijrt} \end{aligned}$$

- Hedonic regression for $\ln(\text{price})$ including buying agent fixed effects (omit dual agents)

$$\begin{aligned} y_{ijrt}^P = & X_i' \phi + \theta_t + \gamma_j \\ & + \beta_1 \text{OwnerAgent}_{it} + \beta_3 \text{FlatFee}_{it} \\ & + \lambda_i + \alpha_r^b + \epsilon_{ijrt} \end{aligned}$$

Distribution of Agent Fixed Effects: Price

Table: Distribution of Agent Fixed Effects

Panel A: Hedonic Regressions									
		Property FE	N	Percentile of Distribution					Adj R ²
				5th	25th	50th	75th	90th	95th
<u>Charlotte</u>									
Listing Agent	No	2,751	-0.25	-0.09	-0.04	0.00	0.06	0.12	0.87
	Yes	2,746	-0.12	-0.05	-0.02	0.01	0.05	0.08	0.93
Buying Agent	No	3,011	-0.11	-0.03	0.02	0.07	0.11	0.16	0.85
	Yes	3,011	-0.10	-0.04	-0.01	0.02	0.04	0.07	0.92
<u>Minneapolis</u>									
Listing Agent	No	6,197	-0.11	-0.06	-0.03	0.01	0.06	0.10	0.82
	Yes	6,192	-0.09	-0.04	-0.02	0.01	0.04	0.06	0.90
Buying Agent	No	6,789	-0.10	-0.05	-0.02	0.01	0.04	0.07	0.81
	Yes	6,789	-0.07	-0.02	0.00	0.02	0.05	0.07	0.89
<u>Houston</u>									
Listing Agent	No	7,161	-0.14	-0.07	-0.03	0.01	0.07	0.11	0.88
	Yes	7,153	-0.11	-0.04	-0.01	0.02	0.05	0.08	0.93
Buying Agent	No	8,604	-0.07	-0.01	0.02	0.06	0.10	0.14	0.87
	Yes	8,603	-0.06	-0.01	0.02	0.04	0.07	0.09	0.93

Distribution of Agent Fixed Effects: DOM

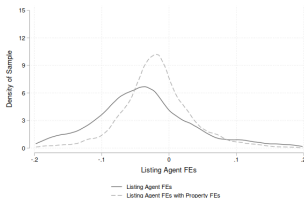
Table: Distribution of Agent Fixed Effects

Panel B: DOM Regressions

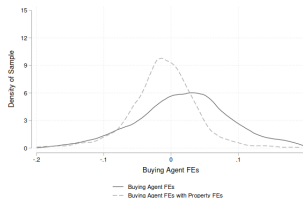
		Property FE	N	Percentile of Distribution						Adj R ²
				5th	25th	50th	75th	90th	95th	
<u>Charlotte</u>										
Listing Agent	No	2,751	-29.57	-16.23	-6.39	5.15	19.53	29.33	0.18	
	Yes	2,746	-34.15	-16.79	-6.05	8.72	28.26	43.03	0.21	
<u>Minneapolis</u>										
Listing Agent	No	6,197	-24.85	-16.20	-9.79	-1.98	7.00	13.64	0.17	
	Yes	6,192	-27.51	-16.75	-9.44	-0.78	8.77	17.23	0.19	
<u>Houston</u>										
Listing Agent	No	7,161	-29.05	-17.03	-8.62	2.44	14.37	22.39	0.17	
	Yes	7,153	-33.06	-17.67	-7.27	4.53	18.46	28.96	0.18	

Distribution of Realtor Fixed Effects: Sales Price

Panel A: Charlotte

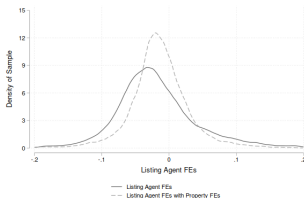


Listing Agent

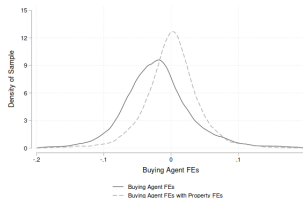


Buying Agent

Panel B: Minneapolis



Listing Agent

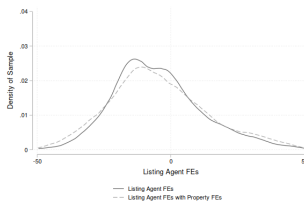


Buying Agent

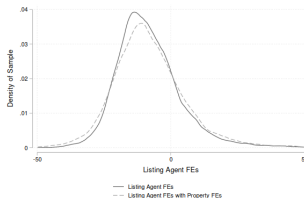
Distribution of Listing Agent's DOM

Figure: Density of Listings Realtor Fixed Effects: DOM

Panel A: Charlotte

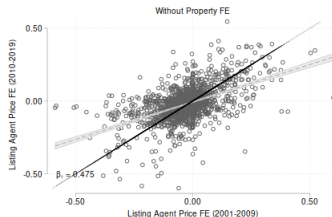


Panel B: Minneapolis



Persistence in Agent FEs (Charlotte)

Panel A: Selling Price FE



Panel B: Buying Price FE



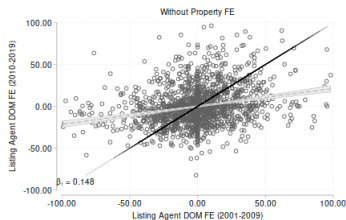
Without Property FEs

With Property FEs

Panel C: Selling Price FE



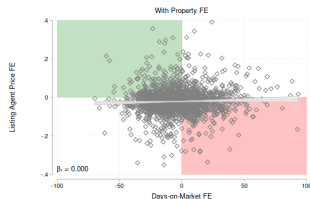
Without Property FEs



With Property FEs

Listing Agent: Price Effect vs. DOM Effect

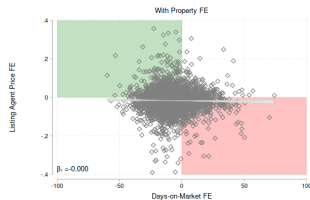
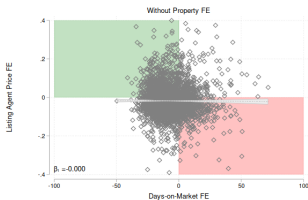
Panel A: Charlotte, NC



Without Property FEs

With Property FEs

Panel B: Minneapolis, MN



Without Property FEs

With Property FEs

Agent's Listing vs. Buying Price Effect

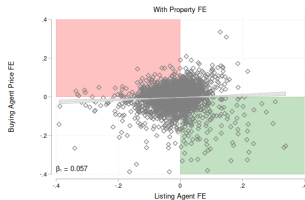
Panel A: Charlotte, NC



Without Property FEs

With Property FEs

Panel B: Minneapolis, MN



Without Property FEs

With Property FEs

Determinants of Agent Ability?

"Some people have an ability to negotiate. It's an art you're basically born with. You either have it or you don't." (DJT, 1985)

Experience, Firm size?

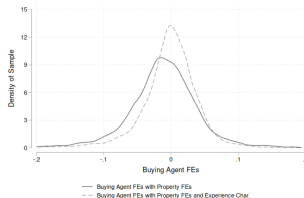
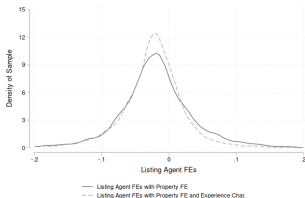
$$\begin{aligned} y_{ijrt}^{P,DOM} = & X_i' \phi + \theta_t + \gamma_j \\ & + \beta_1 OwnerAgent_{it} + \beta_2 Dual_{it} + \beta_3 FlatFee_{it} \\ & + \iota_1 Experience_{it} + \iota_2 FirmSize_i + \lambda_i + \epsilon_{ijrt} \end{aligned}$$

Table: Effect of Agent Experience and Firm Size

VARIABLES	Charlotte			Minneapolis			Houston		
	1 ln(p)	2 ln(p)	3 DOM	4 ln(p)	5 ln(p)	6 DOM	7 ln(p)	8 ln(p)	9 DOM
Listing Agent Years of Experience	-0.002*** (0.001)		-2.276*** (0.334)	-0.001*** (0.000)		-1.435*** (0.222)	-0.001* (0.000)		-1.581*** (0.240)
Listing Agent Firm Size	0.001 (0.001)		-0.318 (0.281)	0.000 (0.000)		-0.369** (0.113)	0.000* (0.000)		-0.455*** (0.097)
Buying Agent Years of Experience		-0.001* (0.000)			0.000 (0.000)			0.001* (0.000)	
Buying Agent Firm Size		0.000 (0.000)			0.001* (0.000)			0.000 (0.000)	
Observations	190,989	179,414	190,989	426,590	417,706	426,590	518,884	477,053	518,884
Adjusted R-squared	0.951	0.943	0.191	0.923	0.912	0.191	0.954	0.952	0.189
Mean Ln Price	12.25	12.25	122.34	12.36	12.36	96.59	12.18	12.18	110.78
Year FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
Month FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
Zip FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
Structure	Y	Y	Y	Y	Y	Y	Y	Y	Y
Parcel Char.	N	N	N	N	N	N	N	N	N
Realtor Char.	Y	Y	Y	Y	Y	Y	Y	Y	Y
Property FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
Listing Agent FE	Y	N	Y	Y	N	Y	Y	N	Y
Buying Agent FE	N	Y	N	N	Y	N	N	Y	N

Distribution of Realtor Fixed Effects Controlling for Experience, Firm Size: Sales Price

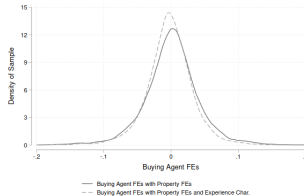
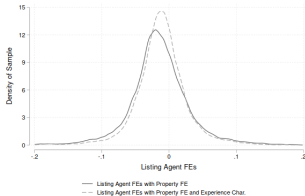
Panel A: Charlotte



Listing Agent

Buying Agent

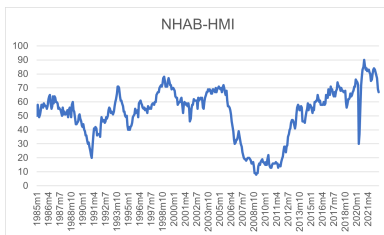
Panel B: Minneapolis



Listing Agent

Buying Agent

When Do Top Agents Perform Best?



$$\begin{aligned} y_{ijrt}^{P,DOM} = & X_i' \phi + \theta_t + \gamma_j \\ & + \beta_1 OwnerAgent_{it} + \beta_2 Dual_{it} + \beta_3 FlatFee_{it} \\ & + \phi_1 HMI_t + \phi_2 D_{b/l}^{TopAgent} + \phi_3 D_{b/l}^{TopAgent} \times HMI_t + \epsilon_{ijrt} \end{aligned}$$

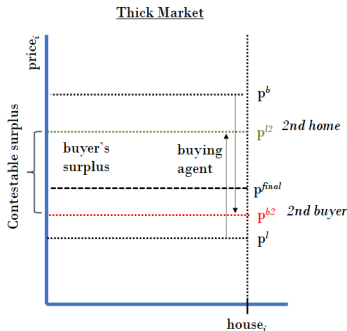
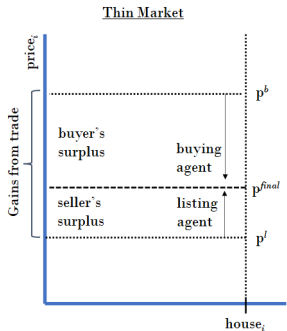
- include house market strength indicator from NAHB
- interact with top 10 % dummy for listing price, listing DOM, and buying price.

Agent Skill vs. Market Conditions

Panel B: Repeat Sale Sample

	Charlotte			Minneapolis			Houston		
	Seller Agent Price (1)	Buyer Agent Price (2)	Seller Agent DOM (3)	Seller Agent Price (4)	Buyer Agent Price (5)	Seller Agent DOM (6)	Seller Agent Price (7)	Buyer Agent Price (8)	Seller Agent DOM (9)
Top Performer×HMI	0.000 (0.000)	0.002*** (0.000)	0.133*** (0.037)	-0.002*** (0.000)	0.002*** (0.000)	0.169*** (0.026)	-0.000** (0.000)	0.001*** (0.000)	-0.153*** (0.034)
Housing Market Index (HMI)	0.000 (0.000)	-0.000 (0.000)	0.377 (0.852)	0.001*** (0.000)	0.001* (0.000)	-0.094 (0.520)	0.001*** (0.000)	0.000 (0.000)	0.321 (0.746)
Top Performer(d)	0.074*** (0.021)	-0.193*** (0.017)	-24.888*** (2.140)	0.153*** (0.015)	-0.141*** (0.016)	-22.139*** (1.424)	0.079*** (0.009)	-0.079*** (0.008)	-8.454*** (1.794)
Year FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
Month FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
ZIP Code FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
Structure Vars	Y	Y	Y	Y	Y	Y	Y	Y	Y
Parcel Char.	N	N	N	N	N	N	N	N	N
Realtor Char.	Y	Y	Y	Y	Y	Y	Y	Y	Y
Property FE	Y	Y	Y	Y	Y	Y	Y	N	N
# Observations	183,213	139,145	183,213	382,501	350,124	382,507	380,129	347,392	380,146
Adjusted R ²	0.856	0.856	0.142	0.780	0.781	0.136	0.877	0.881	0.133

Bargaining in Thin and Thick Markets



- Hot markets are thick markets
- when there are more alternatives for either buyer or seller, there is less surplus for the skilled realtor to capture

- Homes Sold via Flat- Fee Agents Sell at A Premium 1 to 4.4% before commission
- ...but may take longer to sell (0 to 6 days, or never)
- to outperform Flat-Fee a listing agent needs to be in the top 20 percent
- Much of the dispersion in apparent skill is just the value of the homes being transacted
- Realtors don't appear to specialize in speed vs DOM.
- **Most realtors that sell for more also buy for more.**
- more experienced realtors sell quicker, but for less.
- Top agents (for both buying and selling) most valuable in down (thin) markets.