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

Overview

1. description of the market
2. brief economic framework
3. data
4. baseline hedonic/DOM/p(sale) regressions
5. recovering agent fixed effects
   - price (listing and buying agents)
   - Days-On-Market (DOM) (just listing)

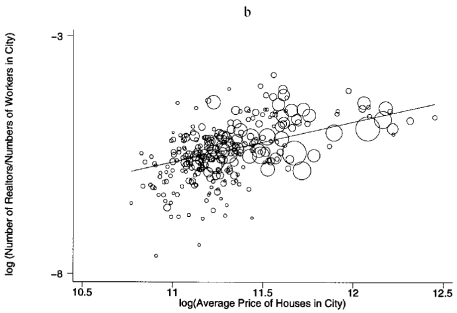
   (price/DOM)
6. look at distributions and correlations of Agent FEs
7. can we explain Real Estate Agent FEs?
8. when do top agents earn their premium?

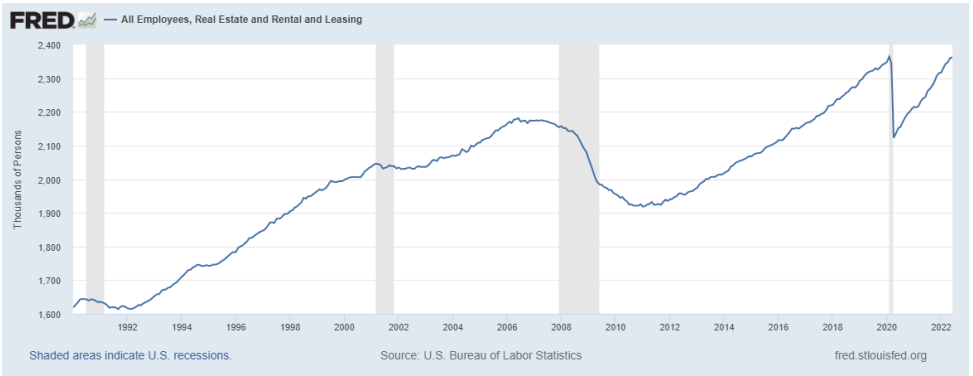
Main Findings

- Homes Sold via Flat- Fee Agents Sell at A Premium 1 to 4.4 before commission%
- ...but take longer to sell (0 to 7 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

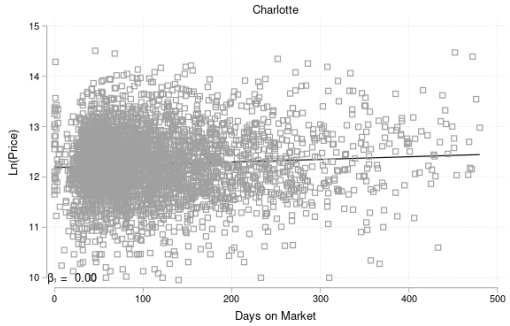
- Real Estate Agents are costly (in US, typical commission between 5-6 % and sticky)
- commission split between listing and buying agent
- paid by home seller (incidence?)
- But with free entry
  - Brokerage license typically requires 20 hours of classes/exam





- inefficient labor allocation? Hsieh and Moretti [2003] show real estate productivity declines with average house price across cities.

Principal/Agent



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 and Syverson [2008],Rutherford et al. [2005])

Agent Services

Listing agent:

- place home on Multiple Listing Service (MLS) (like Immoweb)
- 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:

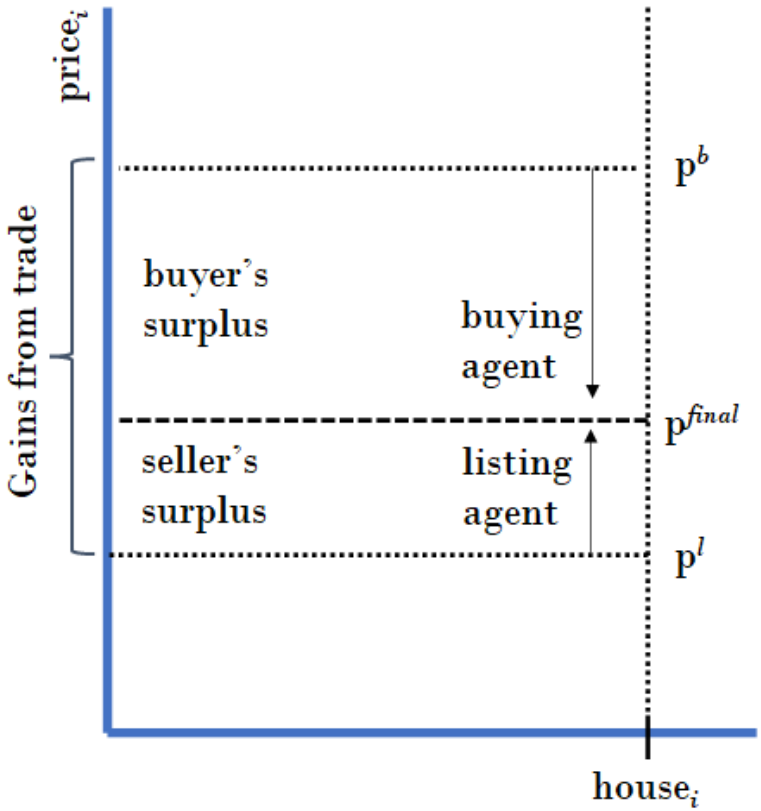
- find desired property
- pick opening bid offer
- respond to any counter offer (price/terms)
- make final offer(?)

} negotiation

Bargaining/listing agent

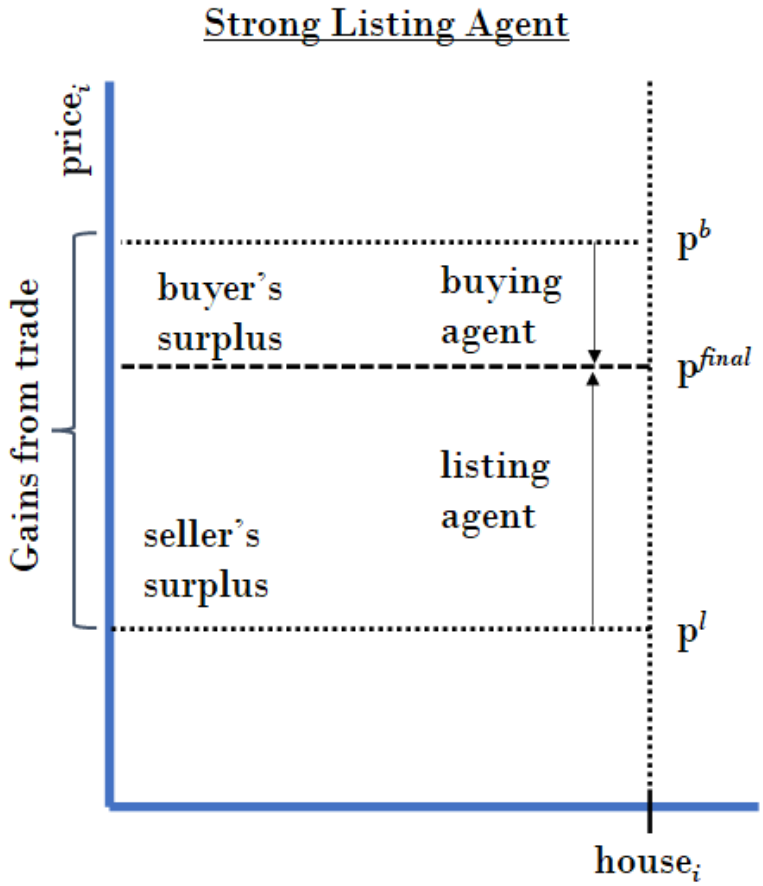
Agent's bargaining objective:

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



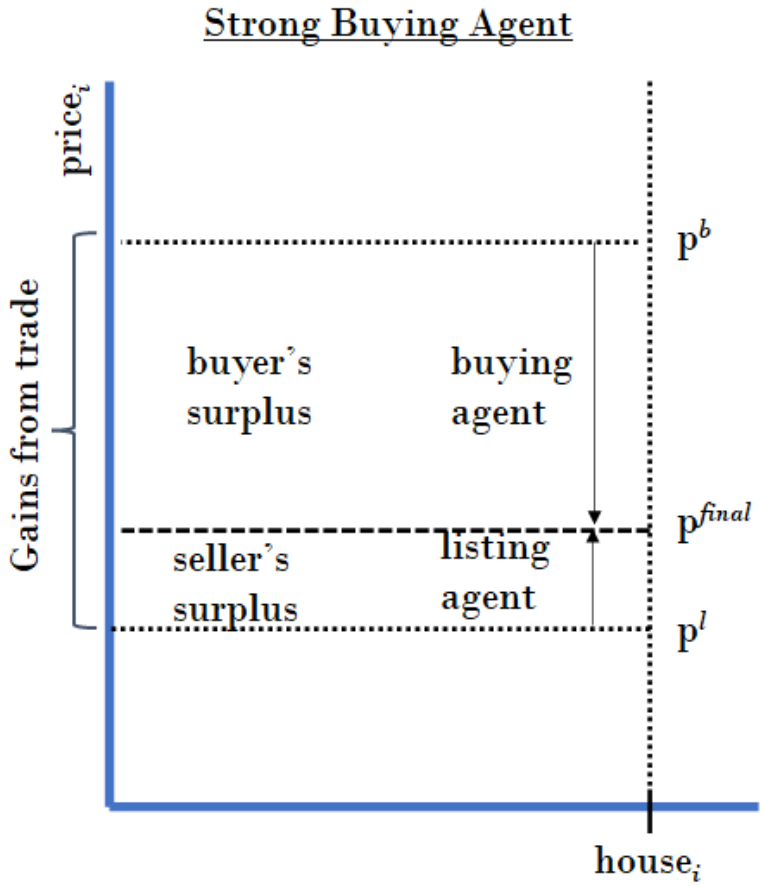
Bargaining/listing agent

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, $\overline{p}$:
   - if $\overline{p} \geq p^l$: sign contract
   - if $\overline{p} < p^l$: go find another house



Data

- 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

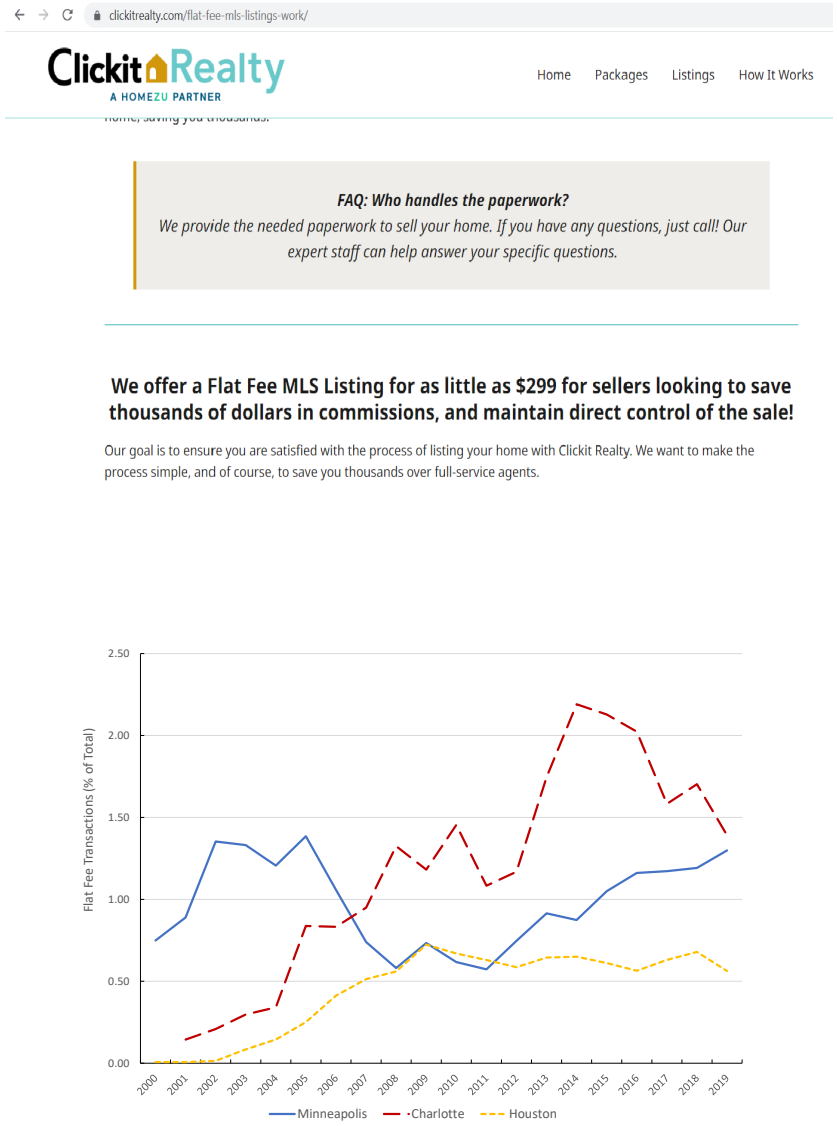
Table: Descriptive Statistics by Metropolitan Area

	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	

Data: Flat Fee

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



Data: Flat Fee

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(price) and Days-On-the-Market (DOM)

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

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

Conventional Hedonic type regression for ln(price) and Days-On-the-Market (DOM)

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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(Living Area)	0.915***	0.914***	0.531***	0.545***	0.544***	0.186***	0.840***	0.840***	0.354***
	(0.026)	(0.026)	(0.054)	(0.023)	(0.023)	(0.017)	(0.022)	(0.022)	(0.037)
Owner Agent (d)		0.033	0.111		0.012	0.076**		0.060***	0.053***
		(0.044)	(0.056)		(0.013)	(0.024)		(0.010)	(0.013)
Dual Agent (d)		-0.005	0.010		0.020***	0.006		-0.018***	-0.007*
		(0.005)	(0.005)		(0.003)	(0.003)		(0.004)	(0.003)
Flat-Fee Realtor		0.043***	0.030***		0.010*	0.014**		0.022**	0.014**
		(0.007)	(0.006)		(0.005)	(0.004)		(0.007)	(0.005)
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(Living Area)	19.024***	18.984***	19.761**	16.744***	16.688***	1.398	31.239***	31.291***	11.210
	(2.357)	(2.411)	(6.573)	(1.069)	(1.062)	(1.490)	(1.433)	(1.418)	(6.230)
Owner Agent (d)		8.737	11.859		-5.600*	-8.287*		-5.200**	-3.633
		(11.415)	(37.488)		(2.176)	(3.986)		(1.706)	(3.755)
Dual Agent (d)		0.691	-0.503		2.457***	0.116		2.136**	0.891
		(0.960)	(1.215)		(0.485)	(0.564)		(0.701)	(0.918)
Flat-Fee Realtor		0.389	3.747		6.373***	7.969***		4.959***	6.752***
		(1.218)	(2.265)		(1.060)	(1.237)		(1.109)	(1.907)
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

Robustness/1

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	5.437	0.006	-5.199*	0.059***	-4.680*
	(0.045)	(11.718)	(0.009)	(2.135)	(0.011)	(1.777)
Dual Agent (d)	-0.008	0.323	0.018***	2.127***	-0.021***	1.879**
	(0.005)	(0.946)	(0.003)	(0.465)	(0.004)	(0.698)
Flat-Fee Realtor (d)	0.038***	0.787	0.016**	6.804***	0.018*	5.299***
	(0.007)	(1.216)	(0.005)	(1.045)	(0.007)	(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	-0.010	-0.020***	-0.031**	-0.006	-0.015
	(0.007)	(0.008)	(0.005)	(0.009)	(0.006)	(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

Probability of Sale

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***	-0.111***	-0.078***	-0.098***	-0.061***	-0.090***
	(0.008)	(0.011)	(0.008)	(0.010)	(0.008)	(0.010)
Owner Agent	-0.049	-0.108	-0.033*	-0.011	-0.041**	-0.046*
	(0.043)	(0.086)	(0.016)	(0.021)	(0.015)	(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

Econometrics: Agent Fixed Effects

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

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

- Hedonic regression for ln(price) including buying agent fixed effects (omit dual agents)

$$\begin{aligned} y_{ijrt}^{P,DOM} =& X_i'\phi + \theta_t + \gamma_j \\ &+ \beta_1 OwnerAgent_{it} + \beta_3 FlatFee_{it} \\ &+ \lambda_i + \alpha_r^b + \epsilon_{ijrt} \end{aligned}$$

Econometrics: Agent Fixed Effects

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

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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	
Charlotte									
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
Minneapolis									
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
Houston									
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

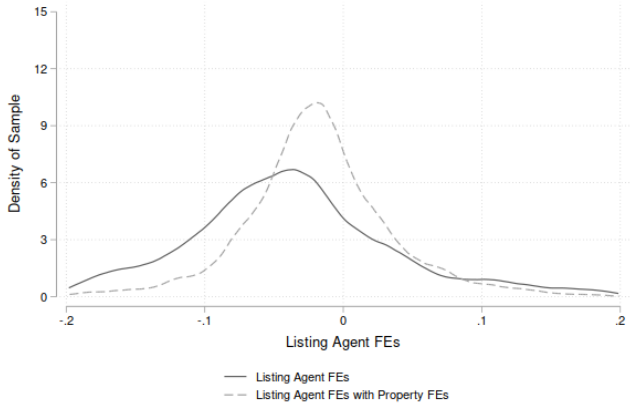
Table: Distribution of Agent Fixed Effects

Panel B: DOM Regressions

	Property FE	N	Percentile of Distribution						Adj R^2
			5th	25th	50th	75th	90th	95th	
Charlotte									
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
Minneapolis									
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
Houston									
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

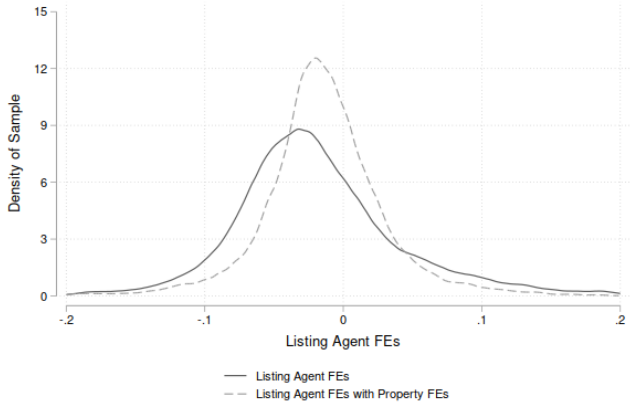
Panel A: Charlotte



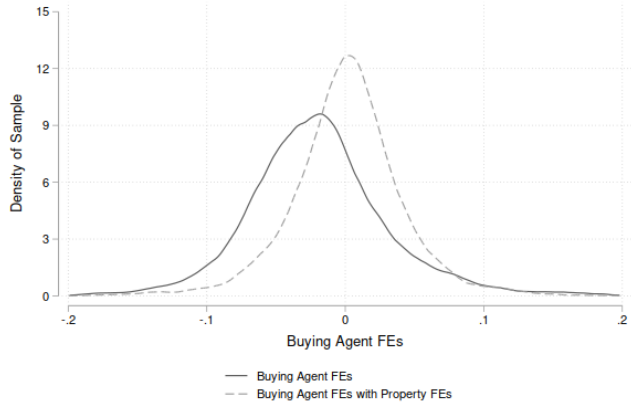
Listing Agent

Buying Agent

Panel B: Minneapolis



Listing Agent

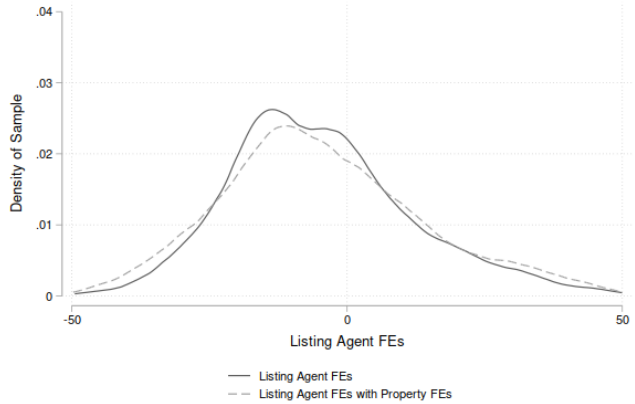


Buying Agent

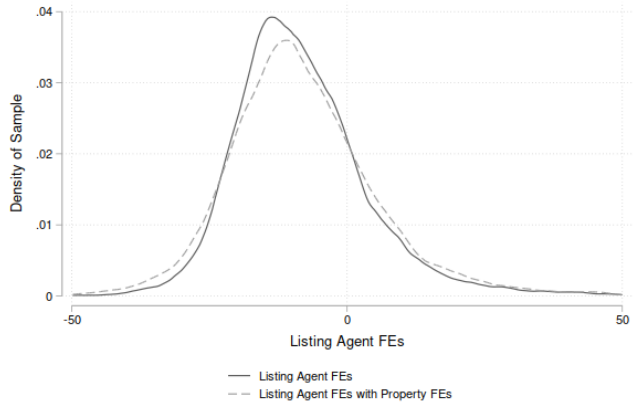
Distribution of Listing Agent's DOM

Figure: Density of Listings Realtor Fixed Effects: DOM

Panel A: Charlotte

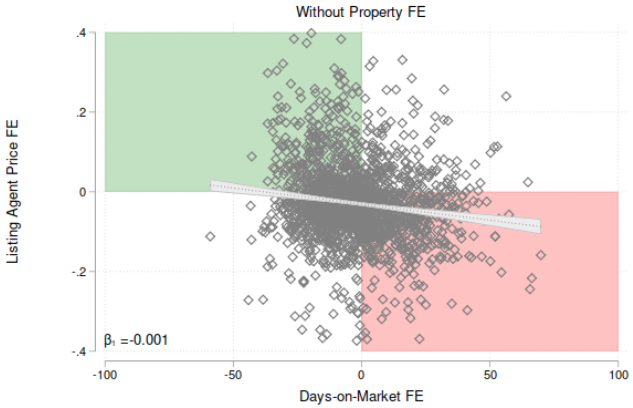


Panel B: Minneapolis

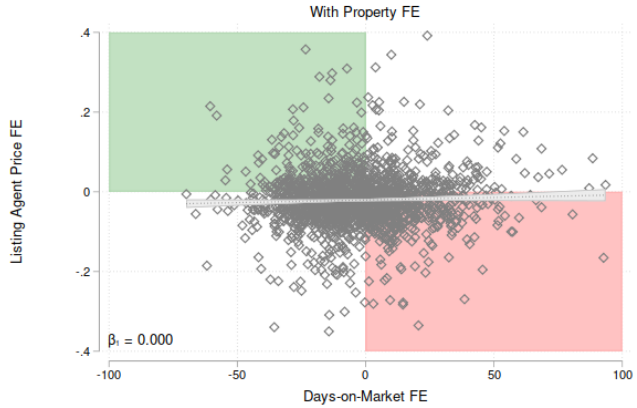


Listing Agent: Price Effect vs. DOM Effect

Panel A: Charlotte, NC

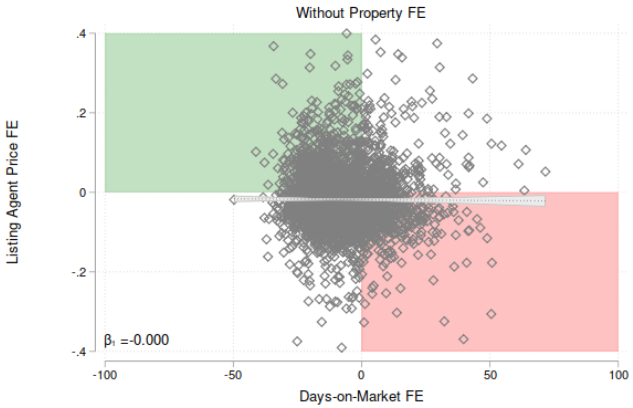


Without Property FEs

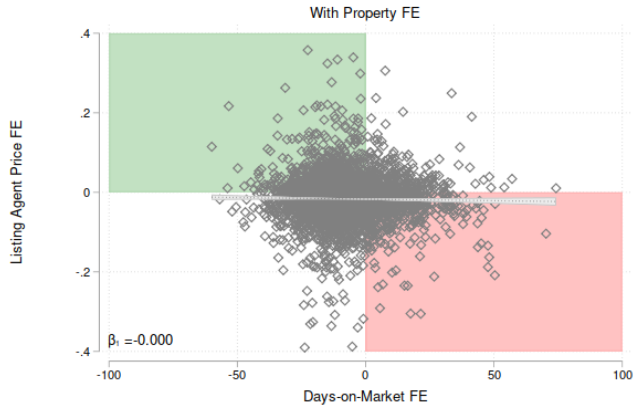


With Property FEs

Panel B: Minneapolis, MN



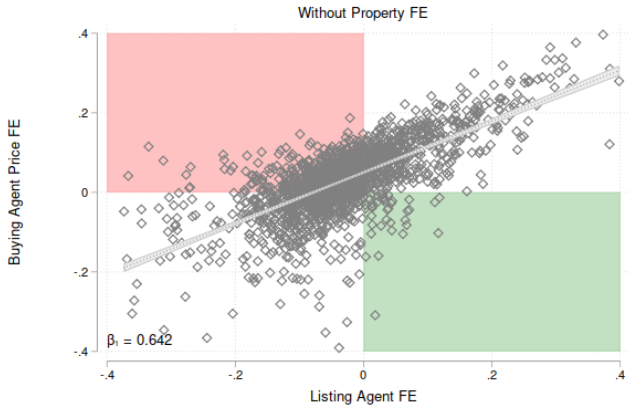
Without Property FEs



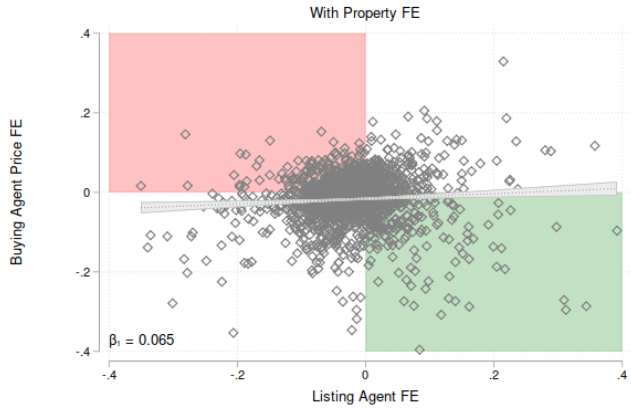
With Property FEs

Agent's Listing vs. Buying Price Effect

Panel A: Charlotte, NC

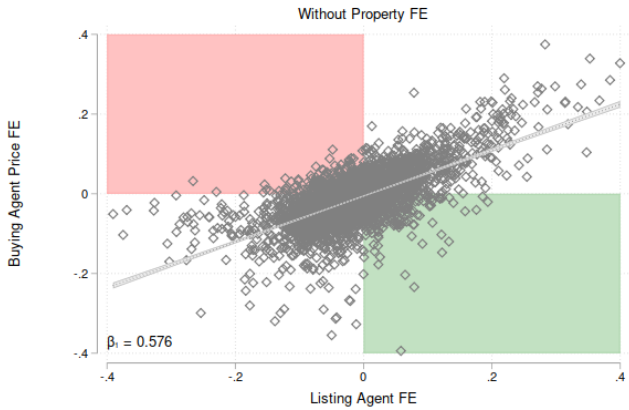


Without Property FEs

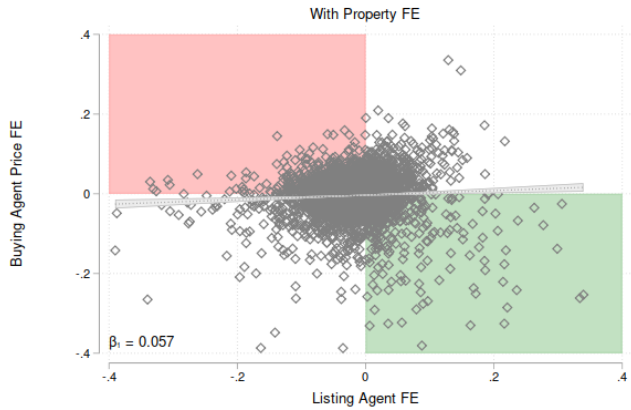


With Property FEs

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?

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

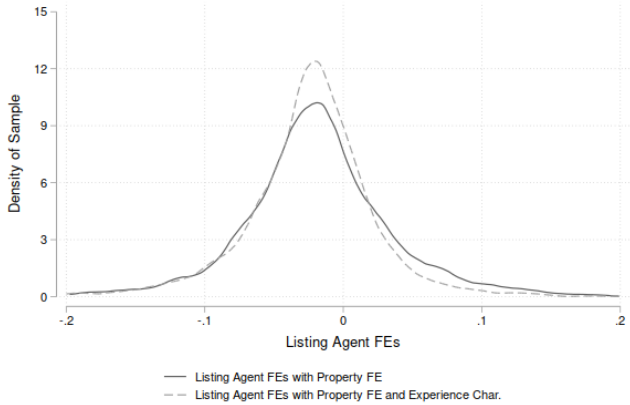
Experience and Firm Size

Table: Effect of Agent Experience and Firm Size

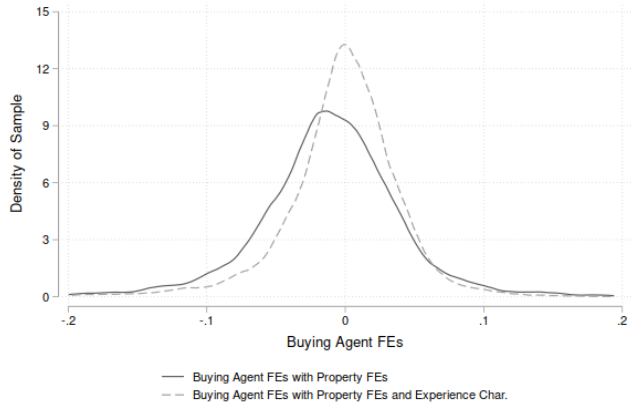
	Charlotte			Minneapolis			Houston		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Dependent Var:	Ln(Price)	Ln(Price)	DOM	Ln(Price)	Ln(Price)	DOM	Ln(Price)	Ln(Price)	DOM
Listing Agent Experience (Years)	-0.002***		-1.485***	-0.001***		-0.807***	-0.001**		-0.995***
	(0.001)		(0.263)	(0.000)		(0.158)	(0.000)		(0.172)
Listing Agent Firm Size	0.001		-0.102	0.000		-0.188*	0.000*		-0.312***
	(0.000)		(0.234)	(0.000)		(0.079)	(0.000)		(0.074)
Buying Agent Experience (Years)		-0.001*			0.000			0.001*	
		(0.000)			(0.000)			(0.000)	
Buying Agent Firm Size		0.000			0.001*			0.000	
		(0.000)			(0.000)			(0.000)	
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	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
# Observations	206,603	194,100	206,603	484,361	474,440	484,361	563,761	519,134	563,761
Adjusted R^2	0.951	0.944	0.222	0.925	0.914	0.191	0.954	0.952	0.194
Mean Dependent Var	12.25	12.25	113.11	12.37	12.37	86.33	12.19	12.19	102.53

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

Panel A: Charlotte

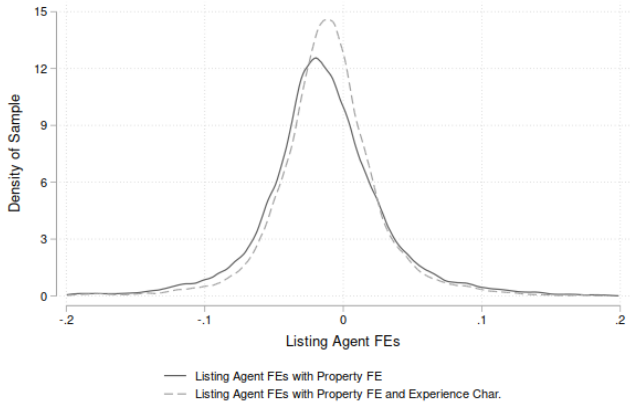


Listing Agent

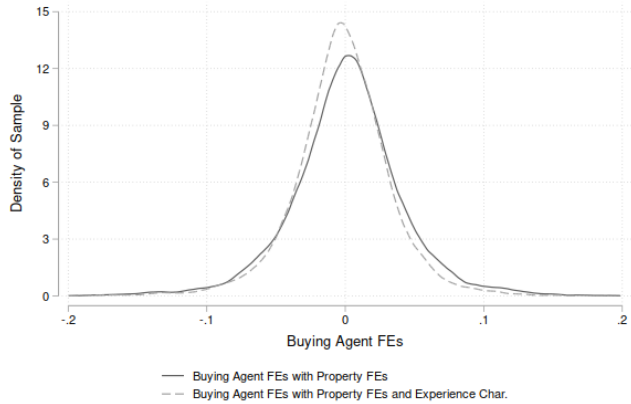


Buying Agent

Panel B: Minneapolis

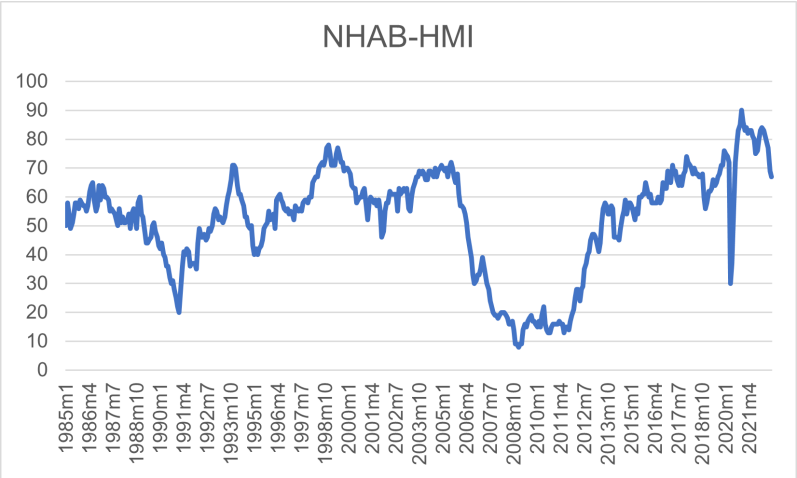


Listing Agent



Buying Agent

When Do Top Agents Perform Best?



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

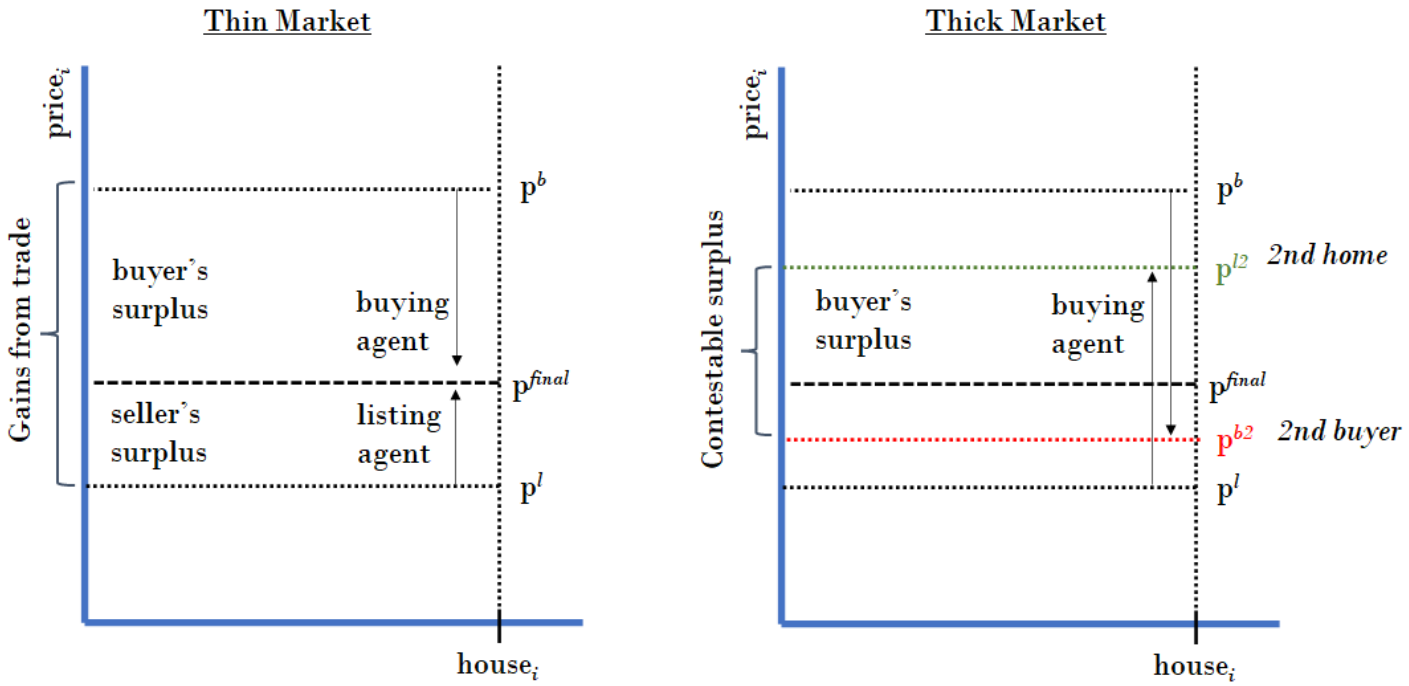
- include house market strength indicator from NAHB
- interact with top 25 % dummy for listing price, listing DOM, and buying price.

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	0.002***	0.133***	-0.002***	0.002***	0.169***	-0.000**	0.001***	-0.153***
	(0.000)	(0.000)	(0.037)	(0.000)	(0.000)	(0.026)	(0.000)	(0.000)	(0.034)
Housing Market Index (HMI)	0.000	-0.000	0.377	0.001***	0.001*	-0.094	0.001***	0.000	0.321
	(0.000)	(0.000)	(0.852)	(0.000)	(0.000)	(0.520)	(0.000)	(0.000)	(0.746)
Top Performer(d)	0.074***	-0.193***	-24.888***	0.153***	-0.141***	-22.139***	0.079***	-0.079***	-8.454***
	(0.021)	(0.017)	(2.140)	(0.015)	(0.016)	(1.424)	(0.009)	(0.008)	(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

Conclusion

- Homes Sold via Flat- Fee Agents Sell at A Premium 1 to 4.4 before commission%
- ...but take longer to sell (0 to 7 days)
- 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; buy for more.**
- more experienced realtors sell quicker, but for less.
- Top agents (for both buying and selling) most valuable in down (thin) markets.