J Real Estate Finan Econ (2023) 67:65–71
https://doi.org/10.1007/s11146-020-09780-7

PUBLISHER CORRECTION

Publisher Correction: The Bargaining and Contagion Effects of Investors in Single Family Residential Properties: The Case of Denver Colorado

Jeffrey P. Cohen [1] · John P. Harding [2]

Published online: 3 July 2020

Publisher Correction: J Real Estate Finan Econ
https://doi.org/10.1007/s11146-020-09766-5

The original version of this article unfortunately contained mistakes. Errors were found within Tables 2, 3, 5, 6 and 7. The corrected versions of these tables are as follows. The Publisher regrets these mistakes.
The original article has been corrected.

The online version of the original article can be found at https://doi.org/10.1007/s11146-020-09766-5

✉ Jeffrey P. Cohen
Jeffrey.Cohen@business.uconn.edu

John P. Harding
johnh@business.uconn.edu

[1] Center for Real Estate and Urban Economic Studies, Department of Finance, School of Business, University of Connecticut, Mansfield, CT, USA

[2] Center for Real Estate and Urban Economic Studies, University of Connecticut, Mansfield, CT, USA

Table 2 Estimates of Bargaining Effects

Dependent Variable: Sale Price ($)						
	Individual Investors		Professional Investors		All Investors	
Variables	Full Sample	2003–2016	Full Sample	2003–2016	Full Sample	2003–2016
Lot Size (sq. ft.)	3.55	3.74	3.59	3.76	3.57	3.80
	(34.21)	(23.52)	(35.32)	(24.41)	(34.80)	(24.45)
House Size (sq. ft.)	89.26	109.59	89.41	109.78	88.84	109.25
	(151.91)	(122.17)	(155.74)	(126.25)	(153.02)	(124.67)
Finished Basement (sq. ft.)	36.42	41.33	35.91	40.52	36.06	40.58
	(70.28)	(51.46)	(70.82)	(51.99)	(70.39)	(51.71)
No. of Bedrooms	−5258.06	−6217.82	−5208.23	−6139.03	−5182.17	−6137.06
	(−16.62)	(−12.31)	(−16.82)	(−12.52)	(−16.57)	(−12.44)
Full Bathrooms	7459.79	16,207.32	7829.46	16,835.23	8724.74	16,847.15
	(19.85)	(27.28)	(21.31)	(29.17)	(21.07)	(29.02)
Half Baths	4775.21	6098.24	5094.00	6566.82	4888.37	6405.74
	(9.54)	(7.82)	(10.40)	(8.68)	(9.88)	(8.41)
House Age (5–10] yrs	−10,656.72	18,762.03	9991.75	71,839.60	−10,305.50	18,147.52
	(−7.50)	(−9.27)	(−7.18)	(−9.07)	(−7.34)	(−9.17)
House Age (10–20] yrs	−23,585.88	30,627.37	22,884.69	29,772.14	−23.378.32	30.375.12
	(−16.87)	(−14.26)	(−16.72)	(−14.28)	(−16.92)	(−14.48)
House Age (20–50] yrs	−23,357.72	47,203.01	51,587.74	45,127.25	−53,100.05	46,297.86
	(−37.01)	(−21.08)	(−36.75)	(−20.76)	(−37.27)	(−21.16)
House Age >50 yrs	−16,620.80	59,099.47	59,295.26	55,673.59	−60,765.23	56,785.34
	(−41.87)	(−26.03)	(−41.16)	(−25.25)	(−41.78)	(−25.59)
Bargaining Effect	−1487.01	−1604.51	34,186.72	38,475.28	19,362.83	28,669.60
	(−2.81)	(−1.81)	(65.85)	(57.64)	(46.73)	(47.87)
Demand Effect	−3752.31	−7950.33	26,092.86	28,817.74	−11,947.08	21,162.17
	(−11.23)	(−12.20)	(−51.32)	(−44.10)	(−43.05)	(−47.08)
Constant	130392.92	144,555.36	128,402.08	141,975.31	130,196.46	143,602.82
	(79.94)	(56.94)	(80.67)	(57.78)	(80.72)	(57.88)
Observation	126,351	68,745	126,351	68,745	126,351	68,745
R−squared	0.407	0.464	0.432	0.495	0.420	0.489
Number of Fixed Effects	3545	1790	3545	1790	3545	1790

1. All models estimated using STATA's xtreg command including tract by year fixed effects

2. Sample excludes transactions deemed to be REO sales and sales by Financial Institutions

3. Bargaining Effect estimated using (investor seller − investor buyer)

4. House age at sale is measured as sale year less year built. New homes are defined as those with age equal to 0 or 1 year

5. New homes are excluded from the estimating sample because they are not secondary sales (see text)

6. The excluded house age category includes homes older than 1 year and <= 5 years

Table 3 Investor Bargaining Power for Single Family Residential Home Sales

(t-statistics in parentheses)

	Individual Investor Bargaining Effects		Professional Investor Bargainig Effects		Professional & Indivduals Pooled	
Model Description	Bargaining Effect (D_{sell} - D_{buy})	Demand Effect (D_{sell} + D_{buy})	Bargaining Effect (D_{sell} - D_{buy})	Demand Effect (D_{sell} + D_{buy})	Bargaining Effect (D_{sell} - D_{buy})	Demand Effect (D_{sell} + D_{buy})
Model 1:	Models 1 Through 4 Exclude New Home Sales and REO Sales					
Without log transforms	−1487.01	−3752.31	34,186.72	−26,092.86	19,362.83	−11,947.08
Full Sample	(−2.81)	(−11.23)	(65.85)	(−51.32)	(46.73)	(−43.05)
Model 2:						
With log transforms	0.00	−0.03	0.16	−0.13	0.10	−0.07
Full Sample	(1.14)	(−17.13)	(65.25)	(−54.08)	48.98)	(−49.32)
Model 3:						
Without log transforms	−1604.51	−7950.33	38,475.28	−28,817.74	28,669.60	−21,162.17
2003–2016 Sales	(−1.81)	(−12.20)	57.64)	(−44.10)	(−43.05)	(−47.08)
Model 4:						
With log transforms	−0.00	−0.04	0.17	−0.13	0.13	−0.10
2003–2016 Sales	(−0.92)	(−13.97)	(59.07)	(−46.60)	(49.52)	(−50.19)
Model 5:	Model 5 Excludes New Home Sales and Includes REO Sales - Compare with Model 1					
Includes REO & FI Sales	−1654.19	−4010.15	29,378.94	−22,588.66	17,272.18	−11,357.61
Full Sample W/O ln tran	(−3.37)	(−12.64)	(62.61)	(−48.96)	(45.29)	(−43.32)
Model 6:	Model 6 Includes New Home Sales and Excludes REO Sales -- Compare with Model 1					
Includes New Home Sales	−2025.44	−4564.39	43,331.11	−24,765.13	25,288.98	−12,342.64
Full Sample W/O ln tran	(−3.77)	(−13.22)	(84.30)	(−47.74)	(60.78)	(−43.02)

Table 3 (continued)

Model 7:	Model 7 Uses real (2016) Dollars and Excludes New Home Sales and REO Sales – Compare with Model 2					
Prices in 2016 $	0.00	−0.03	0.16	−0.13	0.10	−0.07
Full Sample With ln trans	(1.07)	(−17.14)	(65.42)	(−54.53)	(49.09)	(−49.57)

1 Table 3 reports the coefficients for the bargaining and demand factors only. The full model specification includes the house and lot characteristics and year by census tract fixed effects. See Tables 2 for full model specification and results for Models 1–4 (without log transform)

2 Models 1–4 exclude transactions deemed to be likely REO sales and new home sales. The Full Sample for Models 1–4 includes 126,351 records. For models 1–4, the 2003–2016 Sample includes 68,745 records

3 Models 5–7 are based on modified samples. Model 5 includes REO and financial institution sales. For this model, the RHS variable list is expanded to include indicators for REO sales and financial institution sales. The model is run on for the full sample and includes 136,363 transactions

4 Model 6 excludes REO and financial institution sales but includes new home sales. The model specification is the same as that for models 1–4, but includes an indicator variable for homes 2–5 years old. The model is estimated for the Full sample and includes 138,291 transactions

5 Model 7 is identical to Model 2 (uses log transforms) except that prices are expressed in 2016 $. Model 7 is run on the Full sample of 126,351 transactions

Table 5 Comparison of House Characteristics in Repeat Sales Sample

	Full Sample		Repeat Sales Sample		Excluded Sample		Difference	
	mean	s.d.	mean	s.d.	mean	s.d.	mean	sig
House Size (sq. ft.)	1504	788	1464	711	1551	866	−86	***
Lot size (sq. ft.)	6769	3192	6457	2440	7132	3856	−676	***
Finished Basement (sq. ft.)	398	482	405	471	391	495	14	***
House Age (yrs.)	47	32	48	32	46	32	2	***
No. of Bedrooms	2.79	0.84	2.79	0.84	2.83	0.86	−0.04	***
No. of Bathrooms	2.27	1.13	2.28	1.08	2.26	1.18	0.02	**
Full Bathrooms	1.95	0.89	1.97	0.85	1.92	0.92	0.05	***
Half Baths	0.32	0.50	0.31	0.49	0.34	0.52	−0.03	***
No of Observations	99,817		53,648		46,169			

** denotes significance at the 5% level

*** denotes significance at the 1% level

1. Table 5 reports house characteristics for the full sample, the repeat sales sample and the excluded sample

2. The "Full Sample" includes all single family houses for which we haveat least one sales transaction between 1986 and 2016

3. The Repeat Sales Sample includes only those houses that have at least one repeat sales transaction that passes filters described in text

4. The Excluded Sample includes houses with only a single sale and repeat transactions that fail the filters described in text

Filters include excluding "flips", excluding sales < $5000 or more than $1,000,000, excluding new home sales and REO sales

5. Significance is measured by a t-test assuming equal variances. Null is that there is no difference in means for the two subsamples

6. Not all characteristics are known for all houses because characteristics are not required for repeat sales estimates

Table 6 Summary Statistics for Repeat Sales and Contagion Estimation

Variable	Full Sample		Individual Investor Buyer		Professional Investor Buyer		Owner Occupier Buyer	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Purchase Price	$199,049	$133,419	$169,992	$112,599	$266,526	$180,103	$201,318	$133,362
Sale Price	$271,057	$164,735	$234,883	$140,072	$314,689	$205,592	$275,377	$165,771
Holding Period	5.86	4.29	5.10	3.95	3.40	3.48	6.08	4.33
$\ln(P_1/P_0)$	0.3377	0.4217	0.3619	0.3837	0.1788	0.5850	0.3396	0.4194
Avg Annual Return	7.73	10.09	9.86	10.27	12.42	21.81	7.20	9.23
# of Nearby Houses	88	31	88	32	87	35	88	30
# of Nearby REOs—t_0	1.05	3.01	1.06	3.02	1.29	3.27	1.05	3.00
# of Nearby REO - t_1	1.63	4.06	1.24	3.32	1.19	3.03	1.72	4.20
# of Nearby Investor-Owned – t_0	13.36	11.73	15.54	12.20	21.33	27.03	12.69	10.49
# of Nearby Investor Owned - t_1	12.84	9.99	15.58	11.16	18.25	20.92	12.18	8.97
Change in # of nearby REOs	0.58	4.62	0.18	4.08	−0.10	3.90	0.67	4.73
Change in # of nearby Investors	−0.52	7.18	0.04	7.59	−3.08	11.39	−0.52	6.88
Number of Observations	92,753		12,877		2864		76,743	

1. Table 6 presents summary statistics for the sample used to estimate the contagion effect and compares characteristics by the type of buyer at the first transaction

2. Dependent variable is ln(price1/price0)

3. Columns 3–8 present summary statistics based on the nature of the buyer at the first transaction in the repeat sales pair

4. The number of nearby houses, REOs and Investor Owned Properties are measured using a circle of radius .2 km or roughly .12 miles

The number is calculated at t0, the time the property was bought and t1, the time the property was resold

5. The changes in number of REOs and Investor Owned Properties are calculated as the number at the acquisition of the property (t0) less the number at the subsequent resale(t1)

6. The holding period is calculated in years as the year of sale (t1) minus the year of acquisition (t0)

7. The repeat sale regression is run using annual year indicator variables defined in the standard manner is −1,0 or 1 depending on whether the property was bought or sold in the given year

Table 7 Contagion Coefficients (t-stats in parentheses)

	REO Effect	Investor Effect	Average Annual House Price App.	Number of Repeat Sales
Model 1				
No Controls for REO or Investor Contagion	–	–	5.23%	92,753
Excludes REO Related at t_0	–	–		
Model 2				
Controls for REO & Investor Contagion	−0.01256	0.00544	5.12%	92,753
Excludes REO Related at t_0	(−46.71)	(23.16)		
Model 3				
No Controls for REO or Investor Contagion	–	–	5.33%	97,238
Includes REO Related at t_0	–	–		
Model 4				
Controls for REO & Investor Contagion	−0.01291	0.00543	5.29%	97,238
Includes REO Related at t_0	(24.35)	(−51.04)		

1. Contagion effects are estimated using the change in the number of in nearby REOs and nearby Investor-Owned Properties as well as the standard repeat sales indicators for the years 1987–2016

2. Models 3 & 4 include 4483 records where the initial purchase at t0 appears to be an REO Sale