

# Impact of Large Investors in Distressed Housing Markets

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- Motivation and Background
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# Introduction

- The rental market for single-family homes have been traditionally dominated by local investors and individual “mom and pop” style owners.
- However, the recent financial crisis has
  - decreased the homeownership rate
  - increased rental demand, and
  - consolidated millions of single-family homes under the ownership of banks and government-sponsored enterprises.
- These developments have attracted large investor buyers into single-family homes market.



# Introduction

- Business investors buying three or more homes accounted for 6.5% of home sales nationwide in 2012, up from less than 1% in 2004 (Molloy and Zarutskie, 2013).
- Large investor buyers, mainly private equity firms (e.g., Blackstone and Colony Capital) have invested \$20 billion to purchase as many as 200,000 single-family homes.
- About 2.4 million single-family homes were converted from owner-occupied to rental tenure between 2007 and 2011.



# Introduction

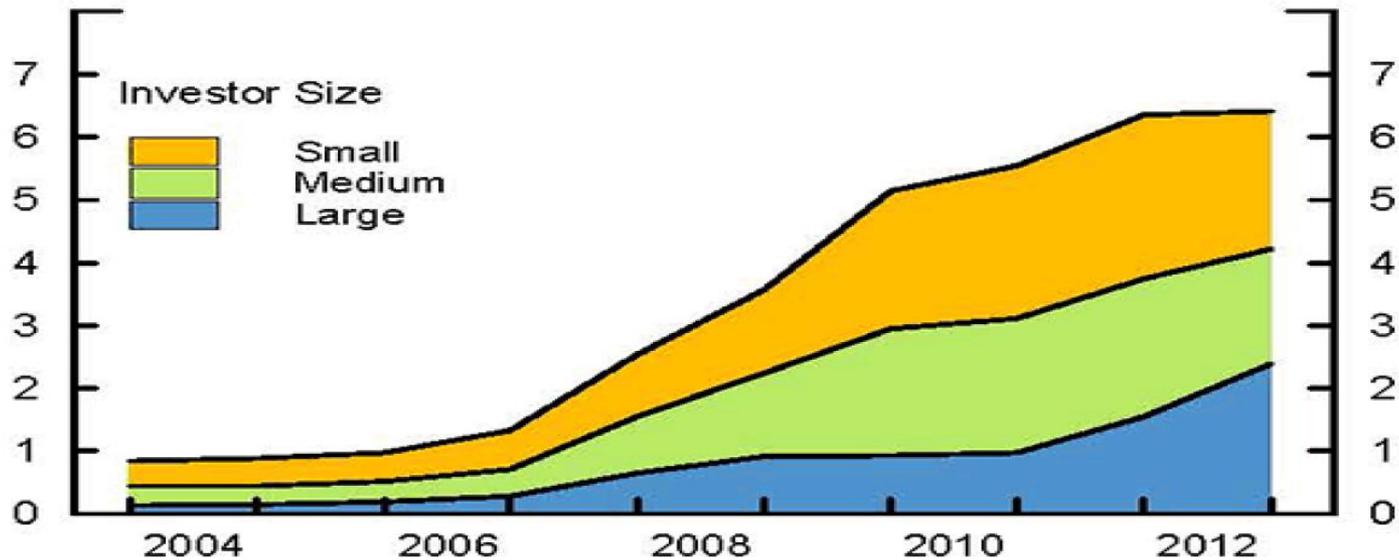
- Global investment banks have provided credit lines to fund single-family home purchases by investment firms, and helped them issue the first rent-backed security in November, 2013.
  - Deutsche provided approximately \$3.6b to Blackstone
  - Wells Fargo provided a \$500m line of credit to American Homes 4 Rent.
  - The market for rent-backed securities is estimated to reach \$1.5 trillion level (Rahmani, et. al., 2014).
- The monetary policy by the Fed also contributed; low interest rates pushed pension funds and mutual funds to seek higher yields,
  - and this led to additional flows of capital into rental single-family markets.



# Business Investor Home Purchase Shares

(Source: Molloy and Zarutskie, FED Notes 2013)

Percent of All Homes Sold



Note: Large investors are businesses that have purchased 200 or more homes since 2000. Medium investors purchased between 25 and 199 homes. Small investors purchased between 3 and 24 homes.

Source: Amherst Holdings

## Business Investor Activity in Selected Metro Areas in '12

(Source: Molloy and Zarutskie, FED Notes 2013))

MSA	Investor Purchase Share (%)	Large Investor Purchase Share (%)
Atlanta	16.43	7.89
Phoenix	13.99	5.8
Las Vegas	10.97	3.98
Tampa	8.91	4.54
Charlotte	8.47	2.66
Miami	6.92	1.07
Dallas	6.21	2.04
Los Angeles	5.53	2.39
Chicago	4.05	1.45
Detroit	3.88	0.31
Denver	3.82	0.54
San Diego	3.74	0.86
Minneapolis	3.37	0.09
Washington	3.17	0.52
Cleveland	3.1	0.29
San Francisco	2.51	1.03
Seattle	2.42	0.36
Portland	2.36	0.17
Boston	1.24	0.1
New York	1.14	0.24

# 35% of rental units are single-family structures (US Averages)

Source: <http://www.nmhc.org/Content.aspx?id=4708>

## What Type of Structure Do Renter Households Live In?

Structure Type	Households	Percent	Residents	Percent
Single-Family	14,893,351	35%	43,356,219	43%
2 to 4 Units	7,696,087	18%	17,619,289	17%
5 or More Units	17,899,088	42%	34,859,643	35%
Mobile Homes	1,897,954	4%	5,041,499	5%
Other	41,032	0%	75,633	0%
<b>Total</b>	<b>42,357,512</b>	<b>100%</b>	<b>100,952,283</b>	<b>100%</b>

*Note: Excludes group quarters. Source: NMHC tabulations of 2013 American Community Survey microdata. Updated 11/2014.*



# Purpose

- The empirical question is:
  - whether large investors acquire single-family dwellings at prices higher or lower than single-purchase buyers, and
  - whether their purchases lead to higher or lower prices for other dwellings in that market.



# Motivation

- **Why care?**
  - A simple transaction between two consent parties?
- Potential efficiencies and externalities involved?
  - Large investors potentially bring
    - liquidity,
    - transactional efficiencies (i.e., sophisticated targeting of potential acquisition properties, cash purchases, superior negotiation skills and experience, streamlined closings, etc.), and
    - operational efficiencies (i.e., property and portfolio management expertise).



# Motivation

Large Investor Buyers may also:

- lessen the negative externalities caused by foreclosed homes on other home values, and bolster local fiscal conditions.
- help with price discovery in markets where transaction volume has dried up
- potentially affect prices, and help/hinder with recovery.



# Motivation

- Investment community: Price impact and investment performance of large investors
- Academics and policy makers:
  - Impact on the speed and magnitude of recovery.
  - Recovery in housing markets is a leading indicator of economic growth (e.g., Green, 1997; Case, Quigley, and Shiller, 2005; Leamer, 2007; Ghent and Owyang, 2010; and Kydland, Rupert, and Sustek, 2014).



# Concerns

- Large investors will seek to quickly get rid of as many of their houses as they can and cut maintenance expenditures as soon as they find more attractive investment instruments.
- The possibility of another speculative cycle.
- The impact on the local rental markets and affordability and accessibility for renters.



# Our focus

- It is out of the scope of this paper to address all of these questions.
- In this paper, we focus on
  - whether investor buyers acquire single-family dwellings at a premium or discount to single-purchase buyers
  - **and** whether their purchases lead to higher or lower prices (externalities) for other dwellings in that market.



# Large Investors and Transaction Prices

**On the one hand**, large investor buyers enjoy buying power because:

- their monopsony advantage in many housing markets with an abundance of distressed properties for sale and little demand
- their sophisticated targeting of potential acquisition properties, superior negotiation skills and experience and streamlined closings.
- their cash purchase



# Large Investors and Transaction Prices

**On the other hand**, large investor buyers may pay more bec.:

- They increase the overall demand in the market and deplete inventory of distressed properties in the local market,
- single-purchase buyers are mostly local buyers while large investors are more likely to be non-local buyers (informational disadvantage).
- They may have a shorter time horizon to purchase, particularly when the investor buyer is a fund that has allocated a certain amount of funds for investment in specific single-family home markets.
  - This effect should be stronger in markets where investor buyers' target volume is a larger percentage of the total value of homes available in that market.



# Large Investors and Externalities

1) Purchases by large investors reduce the inventory of distressed properties.

Distressed properties have a negative externality on the values of other properties

2) When targeting to buy large number of units, the buyer may be able to enjoy the positive externalities of her early purchases.

By internalizing these positive externalities, large buyers may attach a higher value for these early purchases than small buyers.

3) Large volumes of purchases by investors might send a signal to other potential (and hesitant) buyers that the homes are temporarily undervalued and now is the right time to buy.



# Literature Review – extremely short!

Mills, Molloy and Zarutskie (2015) study buy-to-rent investors.

They have a narrower and more descriptive focus: They show that large “buy-to-rent” investors are less likely to re-sell homes within two years of purchase, their purchases are more highly concentrated in certain set of metropolitan areas and neighborhoods, and that house price appreciation in 2013 was higher in areas with a larger share of buy-to-rent investor purchases in 2012.



# Data

- We obtain data from a number of datasets.
- The primary dataset contains information on sales in Miami-Dade County, Florida, from January, 2009 through September, 2013.
- The initial data had 148,128 transactions. Final set included 72,128 transactions with investors purchasing 24,607 of these properties and individuals purchasing the remaining 47,521 properties.
- The average number of purchases for the 118 institutional purchasers is 39.58 properties over the five years. Fifty eight percent of the institutional purchases have 40 or more purchases, 72% have 30 or more purchases, 87% have 20 or more purchases.



# Definition of Investor

- **Investors:** Grantees that purchased two or more properties during the sample period; or grantees that were identified as a LLC, LP, Inc.
- **Small investor:** less than 2 purchases during the sample period.
- **Medium investor:** 3-5 purchases during the sample period.
- **Larger investor:** 6 to 28 houses during the sample period, but no years in which the entity has 10 or more purchases.
- **Institutional investor:** 10 or more purchases in at least one year during the sample period.

# Methodology

## We estimate 3 models

### 1) Probit model:

$$\text{Prob (Investor)} = \pi(X, \text{Cash}, \text{REO}, \text{MLS}, Q, \text{TS})$$

### 2) (logged) sale price model:

$$\text{Log}P_i = \beta_0 + \beta_1 I + \beta_2 \text{Cash} + \beta_3 \text{REO} + \beta_4 \text{MLS} + \sum \beta_i Q_i + \sum \beta_i \text{TS}_i + \sum \beta_i X_i + \varepsilon_i,$$

### 3) and a time-on-the-market model (plus a hazard model with a Weibull specification of the baseline hazard function):

$$f(t|X, I, C, R, Q, \text{TS}) = \varphi \lambda(X, I, C, R, Q, \text{TS})^\varphi t^{\varphi-1} \exp(-(\lambda(X, I, C, R, Q, \text{TS}) * t)^\varphi)$$

where  $\varphi$  is a duration dependency parameter,  $\lambda$  is a scaling parameter,  $t$  is time on the market.

Also included: % of Houses sold in CB (proxy for market demand) and % of Houses bought by Investors in CB (to capture impact of Investor purchases on the market)

$X$ : housing characteristics,  $Q$ : set of quality variables,  $\text{TS}$ : variables describing the type of sale,  $C$ : Cash,  $I$ : Investor,  $R$ : a dummy for a REO (Real Estate Owned: property owned by a lender after an unsuccessful sale at a foreclosure),  $M$ : dummy for sold through the MLS.

## Table 5 - Investor Probit Model

Probit model where the dependent variable (investor=1, 0 otherwise) is defined as a buyer that purchased two or more properties or an entity such as an LP, LLC, etc.

Independent Variable	Model 1, Probit	Model 1, Reporting Marginal Effects	t-statistics
Informed Seller/Large Grantor	0.032	0.011	1.95
Land Square Feet	-0.011**	-0.004**	-4.26
Land Percentage	0.000**	0.000**	3.32
Age	0.002*	0.001*	2.53
Bedrooms	0.036**	0.013**	3.44
Fair quality	0.010	0.004	0.16
Above Average quality	-0.104**	-0.036**	-3.36
Excellent quality	-0.134**	-0.046**	-3.00
Cash Purchase	0.994**	0.350**	90.82
REO Sale	0.115**	0.041**	7.03
Listed on the MLS	-0.470**	-0.170**	-39.41
Sale Year Month fixed effects	Yes		
Location Census Block Group fixed effects	Yes		
Number of Observations	72,128		
Pseudo R2	0.1749		

# Probit results

- Larger properties and above average quality properties are less likely to be purchased by investors.
- Cash purchases are 35% more likely to be purchased by an investor.
- REO sales are more likely to be purchased by an investor.



**Table 6- Investor Purchases**

Independent Variable	Model 1-All Sales		Model 2-All Sales		Model 3-All Sales		Model 4-All Sales	
Constant	12.02209**	789.14	11.34181**	454.76	11.43700**	509.43	11.41614**	511.33
Cash Purchase					-0.12238**	-39.02	-0.12266**	-39.18
Corrective deed, quit claim deed, etc.					-0.74712**	-59.54	-0.74457**	-59.37
Auction/Deeds from financial institutions					-0.21568**	-28.70	-0.21316**	-28.32
Deeds executed by bankruptcy trustees					-0.08927**	-5.88	-0.08773**	-5.74
Transaction involving affiliated parties					-0.62686**	-35.53	-0.62424**	-35.40
Sale not exposed to the open-market					-0.17152**	-11.03	-0.17696**	-11.59
Forced sale or sale under duress					-0.25821**	-24.52	-0.25490**	-24.07
REO sale					-0.14549**	-53.89	-0.14497**	-53.73
MLS sale					0.04245**	13.12	0.04491**	13.80
Percent Sales in Census Block by year							0.00079**	7.95
Percent Investors in Census Block by year							0.00020**	3.53
<b>Investor Purchase</b>	<b>-0.17935**</b>	<b>-46.75</b>	<b>-0.17231**</b>	<b>-50.61</b>	<b>-0.08352**</b>	<b>-24.32</b>	<b>-0.09529**</b>	<b>-21.00</b>
Sale Year/Month fixed effects	Yes		Yes		Yes		Yes	
Location Census block group fixed effects	Yes		Yes		Yes		Yes	
Number of Observations	72,128		72,128		72,128		72,128	
R <sup>2</sup>	0.755		0.816		0.859		0.860	

# Price Model (Table 6)

- Investors purchase properties at approximately a 17% discount.
- We then control for types of sales along with REO and Cash, this results in a reduction of the discount to approximately 8%.
- Then we control for the % of Sales in a Census Block (= number of sales / the number of housing units).
  - prices increase as the % of houses purchased in a census block increases.
  - a 10% increase in investor purchases is associated with a 0.20% increase in purchase price.
    - **Thus, while investors purchase at a discount relative to individuals, their purchases have a positive impact on market values of houses in that census block market.**
- After controlling for the percentage of sales and percentage of investor purchases in a census block, the Investor Purchase discount is 9.5%.

**Table 7- Investor Purchases by Investor group**

Independent Variable	Model 1-All Sales		Model 2-All Sales		Model 3-All Sales		Model 4-All Sales	
Constant	12.02137**	789.96	11.34373**	455.12	11.43536**	509.75	11.41471**	511.45
Cash Purchase					-0.12178**	-38.89	-0.12205**	-39.03
Corrective deed, quit claim deed, etc.					-0.74728**	-59.53	-0.74476**	-59.36
Auction/Deeds from financial institutions					-0.21382**	-26.10	-0.21119**	-25.76
Deeds executed by bankruptcy trustees					-0.08805**	-5.79	-0.08653**	-5.66
Transaction involving affiliated parties					-0.62748**	-35.55	-0.62488**	-35.42
Sale not exposed to the open-market					-0.17295**	-11.16	-0.17826**	-11.70
Forced sale or sale under duress					-0.25747**	-24.44	-0.25419**	-24.00
REO sale					-0.14431**	-53.24	-0.14379**	-53.09
MLS sale					0.04272**	13.21	0.04516**	13.88
Percent Sales in Census Block by year							0.00079**	7.97
Percent Investors in Census Block by year							0.00020**	3.41
<b>Smaller Investor with 2 or fewer purchases</b>	<b>-0.14044**</b>	<b>-25.39</b>	<b>-0.13763**</b>	<b>-28.90</b>	<b>-0.06881**</b>	<b>-15.77</b>	<b>-0.08021**</b>	<b>-15.06</b>
<b>Medium Investor with 3 to 5 purchases</b>	<b>-0.18410**</b>	<b>-27.67</b>	<b>-0.17430**</b>	<b>-28.41</b>	<b>-0.09946**</b>	<b>-17.13</b>	<b>-0.11066**</b>	<b>-16.87</b>
<b>Larger Investor with 6 to 28 purchases</b>	<b>-0.24343**</b>	<b>-35.67</b>	<b>-0.23063**</b>	<b>-37.10</b>	<b>-0.12465**</b>	<b>-18.81</b>	<b>-0.13554**</b>	<b>-18.85</b>
<b>Institutional Investor purchases</b>	<b>-0.20754**</b>	<b>-30.93</b>	<b>-0.19879**</b>	<b>-31.87</b>	<b>-0.06524**</b>	<b>-9.10</b>	<b>-0.07730**</b>	<b>-10.21</b>
Sale Year/Month fixed effects	Yes		Yes		Yes		Yes	
Location Census block group fixed effects	Yes		Yes		Yes		Yes	
Number of Observations	72,128		72,128		72,128		72,128	
R <sup>2</sup>	0.755		0.816		0.859		0.860	

# Million dollar Q

- Jump in front of investor buyers or follow them?
  - Especially Institutional Investors!!!



# Price Model with investor groups (Table 7)

- Two middle groups (3-5 and 6-28 purchases) purchase at deeper discounts (~11% and 13.5%); small investors and institutional investors purchase at similar discounts (~8%).
- Why?
  - Transactional Efficiency versus Informational Asymmetry?



**Table 9 - Time on the Market using only the MLS sample.**

Independent Variable	Model 1 - DOM		Model 2- DOM		Model 3-Duration		Model 4-Duration	
	Investor		Investor Groups		DOM Investor		DOM Investor	
Investor Purchase	0.020	1.65			0.006*	2.55		
Smaller Investor with 2 or fewer purchases			0.011	0.79			0.005	1.77
Medium Investor with 3 to 5 purchases			0.024	1.49			0.005	1.54
Larger Investor with 6 to 28 purchases			0.005	0.26			0.004	1.11
Institutional Investor purchases			0.071**	3.28			0.017**	4.04
DOP (degree of overpricing)	0.005**	18.82	0.005**	18.75	0.001**	18.40	0.001**	18.32
Only MLS Listed and Sold Properties	Yes		Yes		Yes		Yes	
List Year/Month fixed effects	Yes		Yes		Yes		Yes	
Location Census block group fixed effects	Yes		Yes		Yes		Yes	
Number of Observations	46,019		46,019		46,019		46,019	
Adjusted R <sup>2</sup>	0.257		0.257					
Log pseudolikelihood					23,494		23,499	

# TOM (Table 9)

- (Model 1) Investors purchase properties that have been on the market about the same amount of time as individual purchased properties.
- (Model 2) the Institutional investor group purchases properties that have been on the market about 7.1% longer than individual purchased properties.
- Translates to roughly 3-11 more days depending on whether you use the estimate from the duration model or the regression model.
- Thus, time on the market is only marginally important in examining investor activity in the housing market.



# Year by year discounts

- **Table 10 - Panel A:** The discount for investors is stable over time, with a discount of approximately 10% each year.



# Cash vs. Financing Purchase

- **Table 10 - Panel B** separates sample into a CASH sample and a Financing sample.
- **Investor** properties purchased with CASH compared to **individual** purchases with CASH are purchased at about a 9.8% discount.
- Investors that use financing purchase at a discount of 7.5% compared to individuals who purchased with financing.



# REO purchases

(Real Estate Owned: property owned by a lender after an unsuccessful sale at a foreclosure)

- **Table 10 - Panel C:**
- Investors are able to purchase REO properties at deeper discounts than individuals purchasing an REO (11.6% versus 6.6%).
- REOs make up about 26% of institutional purchases, the lowest of any group,
- Individuals purchased about 30% of their purchases are REOs.



# Conclusion

- Investors purchased residential real estate at discounts relative to individuals (single-purchase buyers) during the years 2009-2013.
  - Thus, single-purchasers rather than investors are more likely to be responsible for price recovery in this market.
- But that there is substantial variation in buyer power across small, medium, large, and institutional investors.
  - Smaller investors purchased at a discount of approximately 8.0%, medium investors purchased at a discount of 11%, larger investors purchased at a discount of 13.6%, and institutional investors purchased at a discount of 7.7%.
- However, while investors purchase at a discount relative to individuals, their purchases have a positive impact on market values of houses in that census block market.
- We provide evidence regarding the price externality created by investor buyers in the market.
  - The percent of investors in a census block result in upward pressure (positive externality) on prices.

