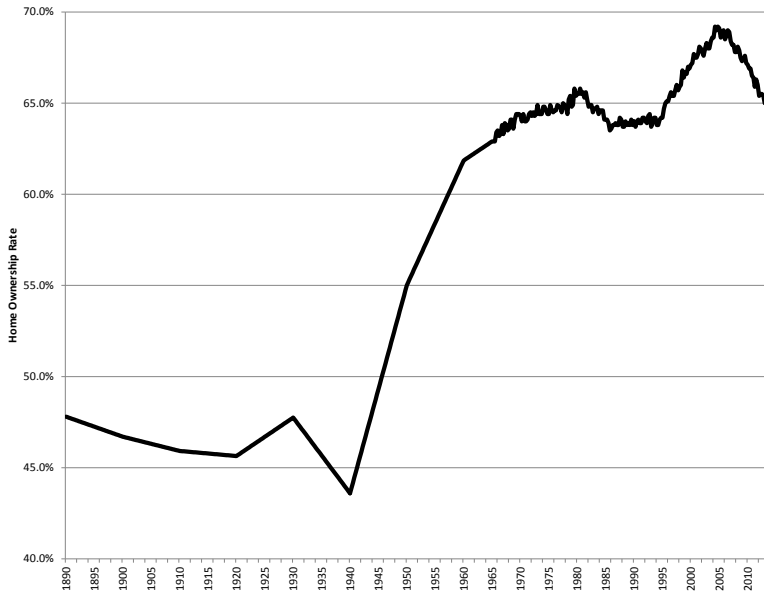


THE RETURNS TO SINGLE FAMILY RENTAL STRATEGIES

Andrew Demers and Andrea L. Eisfeldt

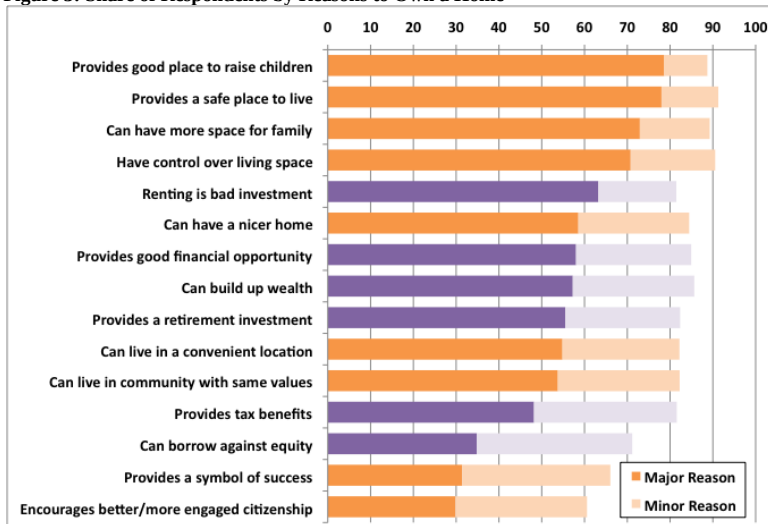
January 2014

HOMEOWNERSHIP RATES



FANNIE REASONS TO BUY A HOUSE

Figure 3: Share of Respondents by Reasons to Own a Home



Notes: Bars in orange are considered lifestyle reasons and bars in purple as financial reasons for buying a home. Reasons are listed in order of share of respondents selecting it as a major reason to buy.

OVERVIEW OF RESEARCH STRATEGY

- ▶ Real investment strategy $\Rightarrow$ Traditional NPV Analysis
But, over 1 yr with reasonable rental yields and HPA, IRR's apporoximately proportional to "Total Returns"
- ▶ Define annual total returns as

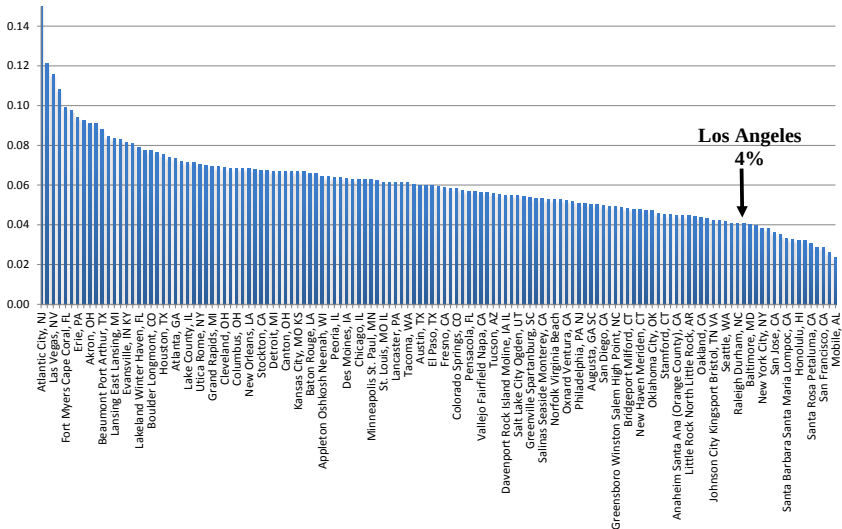
$$\text{Total Returns} \equiv \text{Net Rental Yield} + \text{HPA}$$

- ▶ Start with an overview of total returns.
- ▶ Then, discuss total returns:
 1. Nationally across MSA's
 2. Within MSA's across zip codes

Across MSA Total Returns

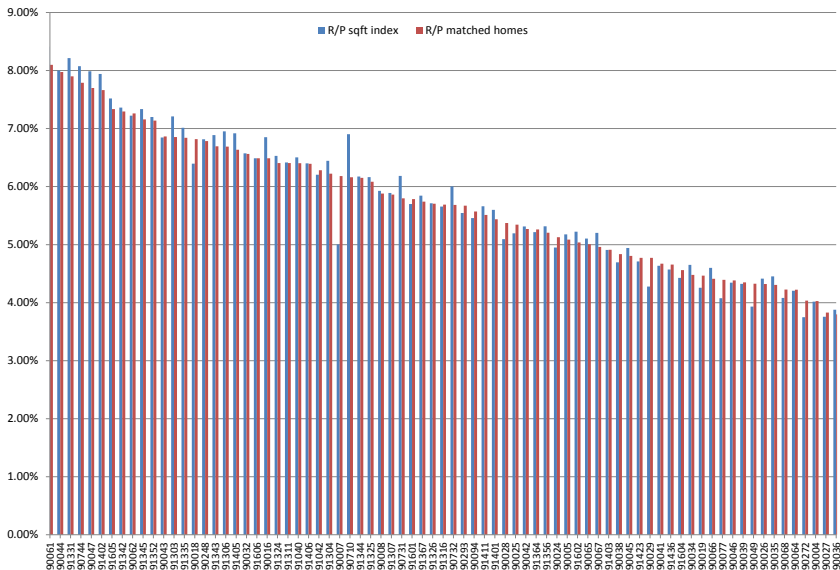
R/P FROM HEDONIC MODEL

Median Characteristic Adjusted Rent/Price Ratio for Owner Occupied Housing

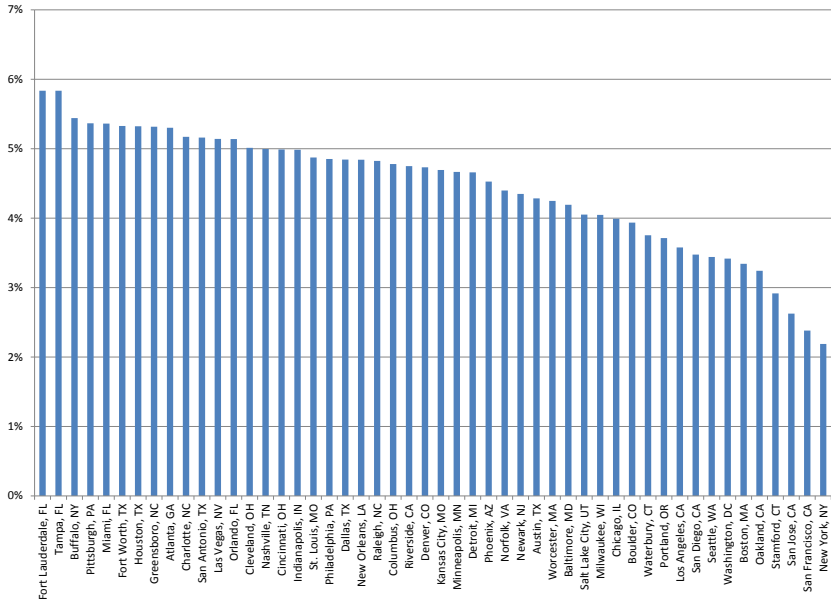


R/P WITHIN LA: TWO WAYS

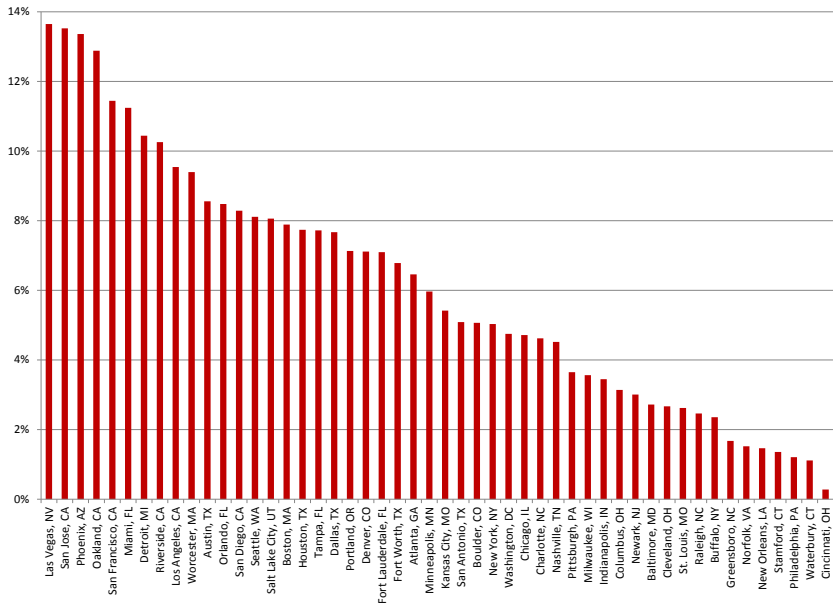
Los Angeles R/P by Zip



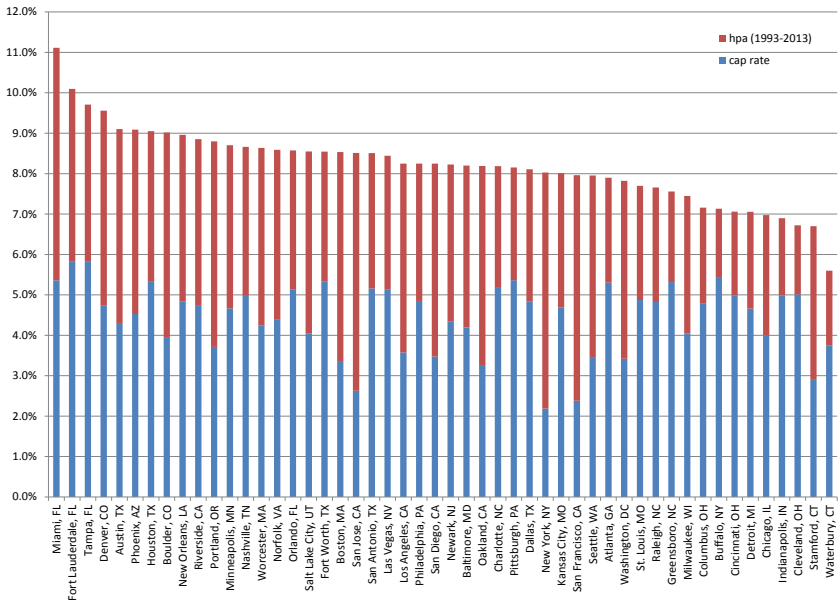
CAP RATES 11/13 CORE LOGIC



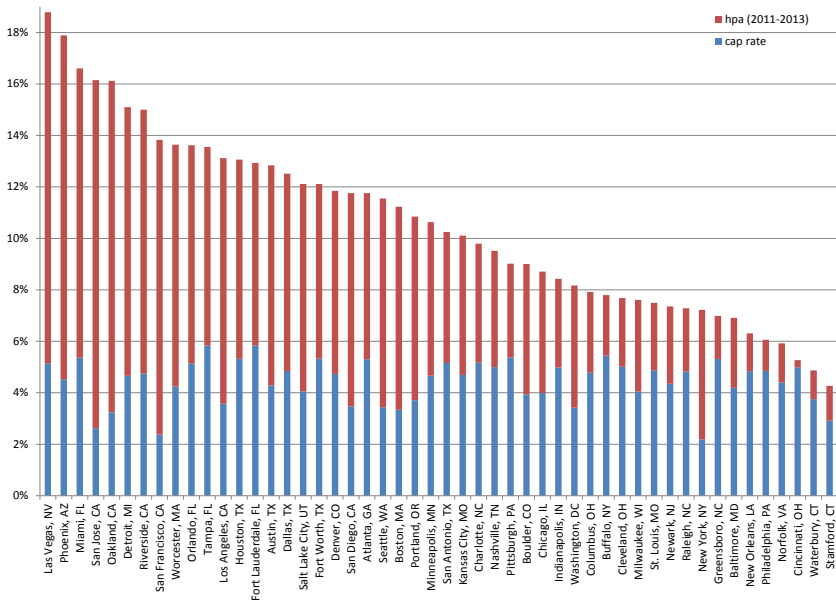
HPA 2011-2013 CORE LOGIC



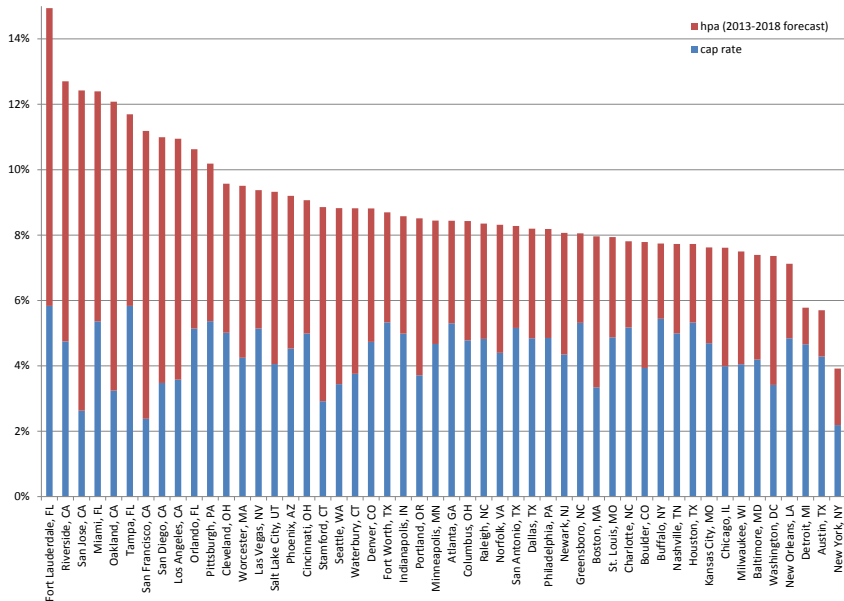
TOTAL RETURN HISTORICAL HPA



TOTAL RETURN RECENT HPA



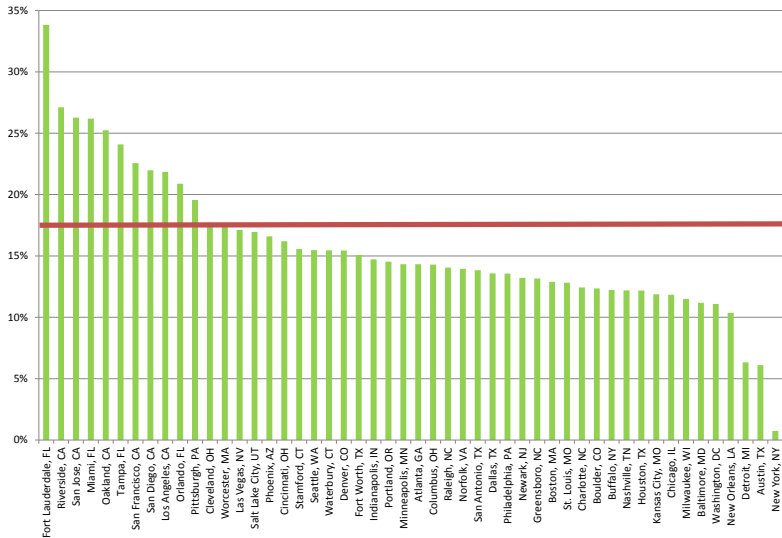
TOTAL RETURN FORECAST HPA



TOTAL LEVERED RETURN

$3(\text{HPA} + \text{CAP RATE}) - 2(\text{FINANCING})$

■ 3x hpa (2013-2018 forecast)+3x cap rate-2x5.5% financing



HPA IS KEY TO TOTAL RETURNS

Preview: HPA Model “Two Stage Error Correction”

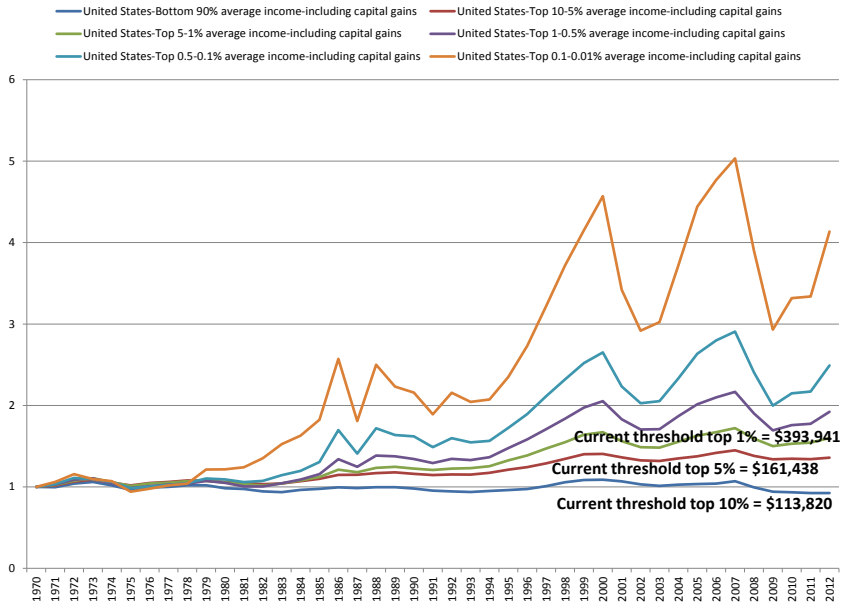
1. Stage 1: Predict trend of house prices using income, supply inelasticity, and user cost inputs.
2. Stage 2: Predict deviation from trend using measures of “disequilibrium”.

Long run HPA based on fundamentals in stage 1,
while

Short run HPA also depends on disequilibrium in stage 2.

INCOME GROWTH IS KEY TO HPA

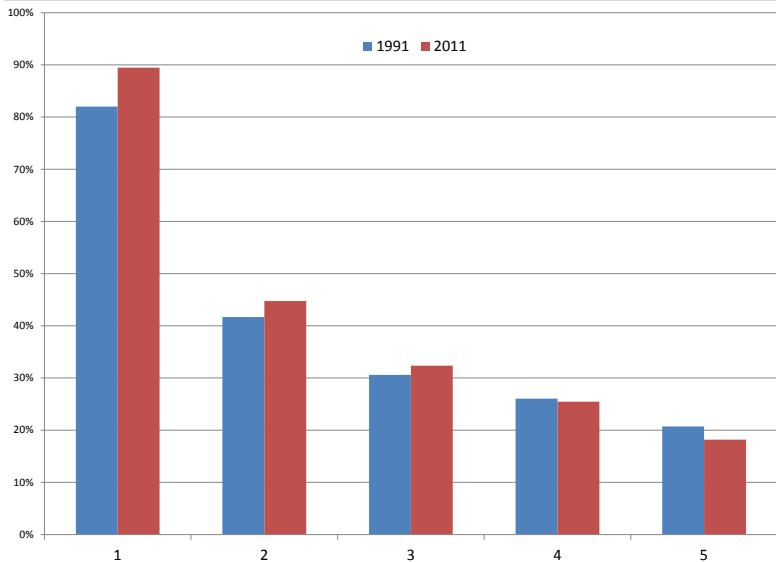
ONLY TOP OF DISTRIBUTION IS GROWING



INCOME GROWTH IS KEY TO HPA

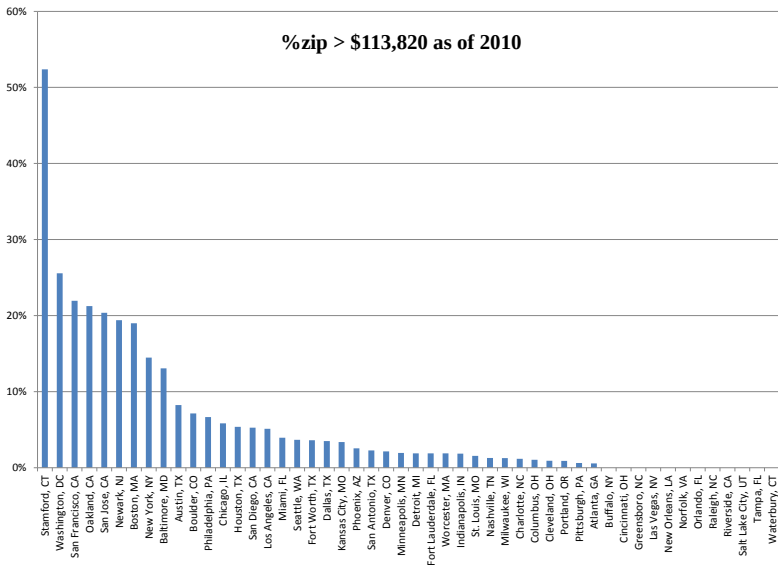
POOR CONSTRAINED, RICH UNCONSTRAINED.

% OF INCOME ON HOUSING

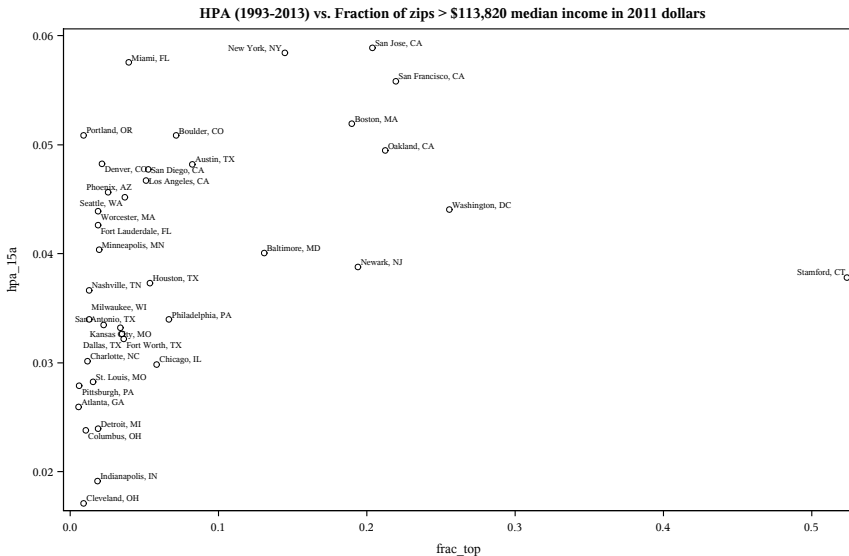


INCOME GROWTH IS KEY TO HPA

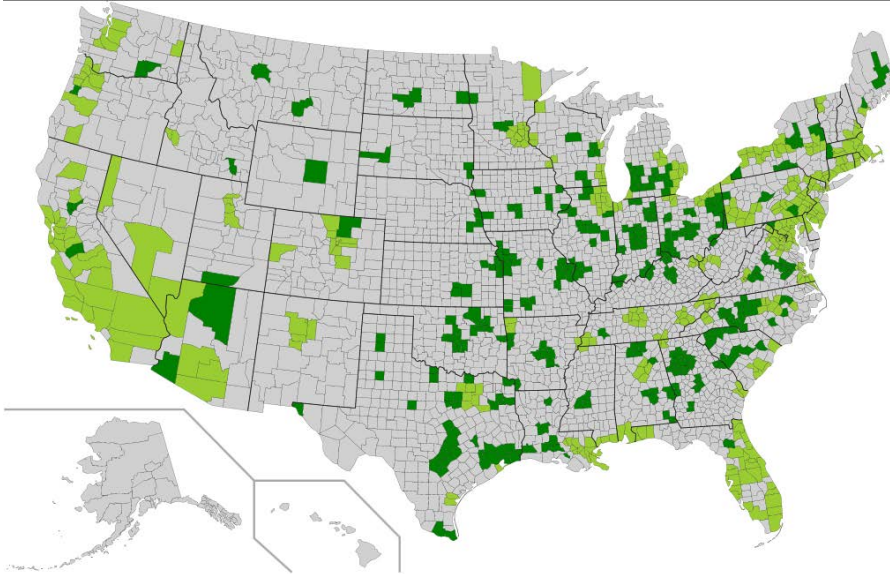
ZIPS WITH THE TOP 10%



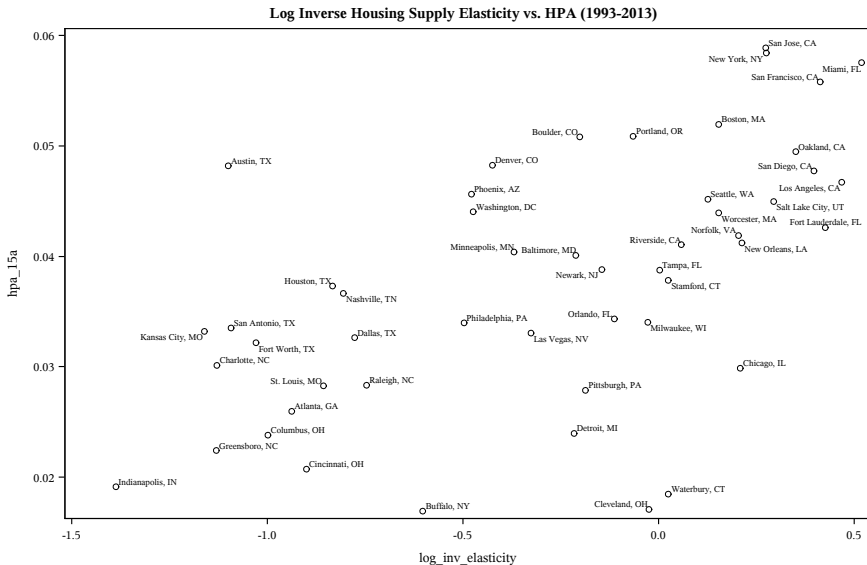
INCOME GROWTH IS KEY TO HPA



SUPPLY ELASTICITY IS KEY TO HPA

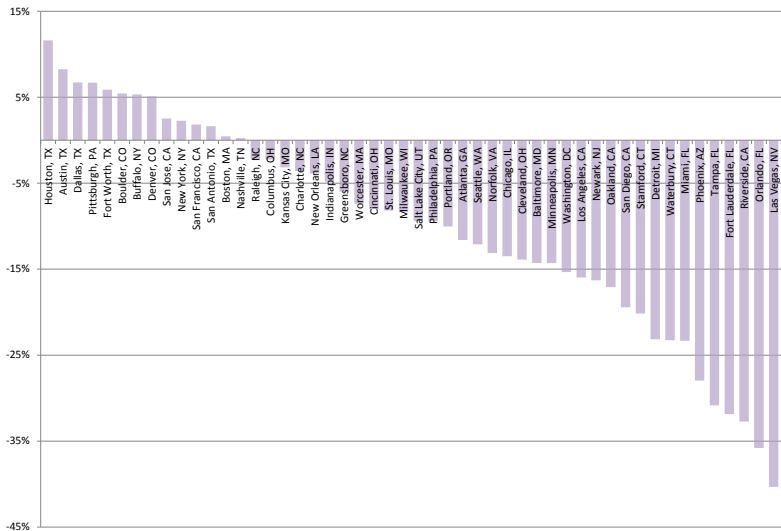


SUPPLY ELASTICITY IS KEY TO HPA



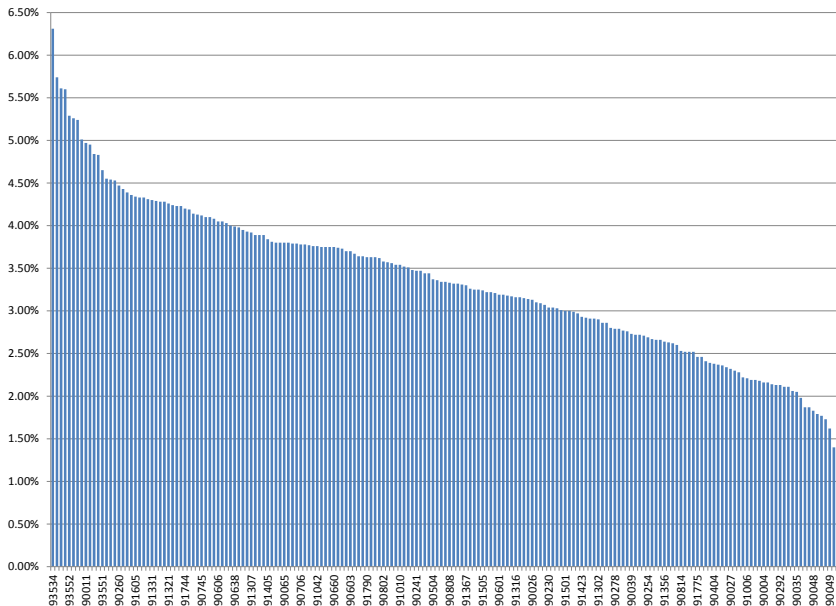
POOR MAN'S ERROR CORRECTION TERM: RELATIVE TO BOOM PEAK

Distance from Pre-2009 Peak

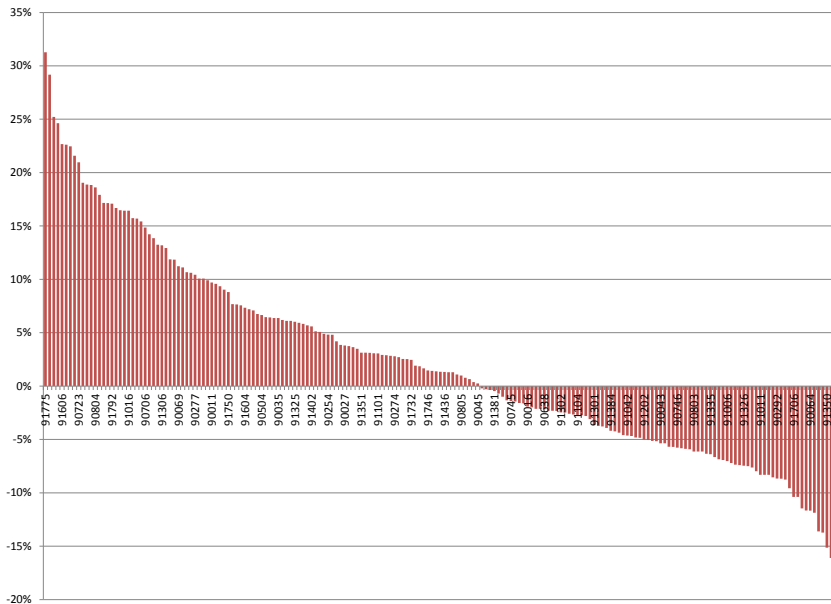


Within MSA Total Returns

WITHIN LA CAP RATES 11/13 CORE LOGIC

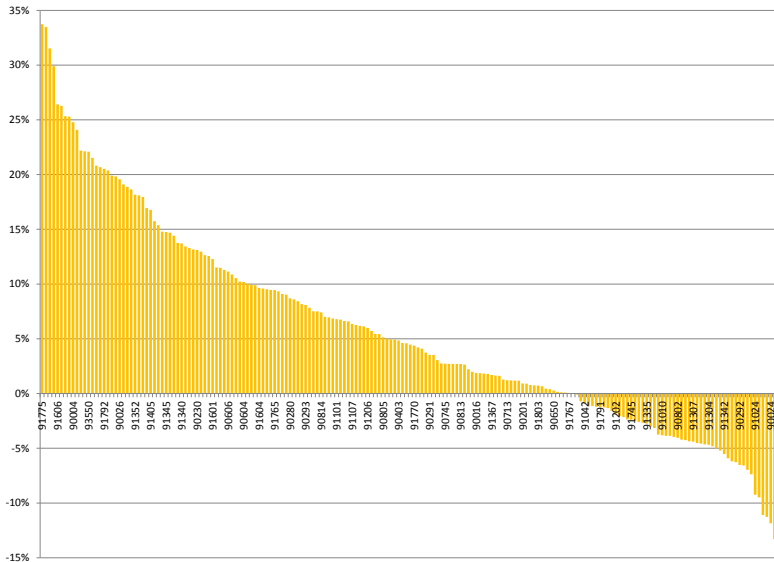


WITHIN LA RECENT HPA (AVG. 2012-2013)



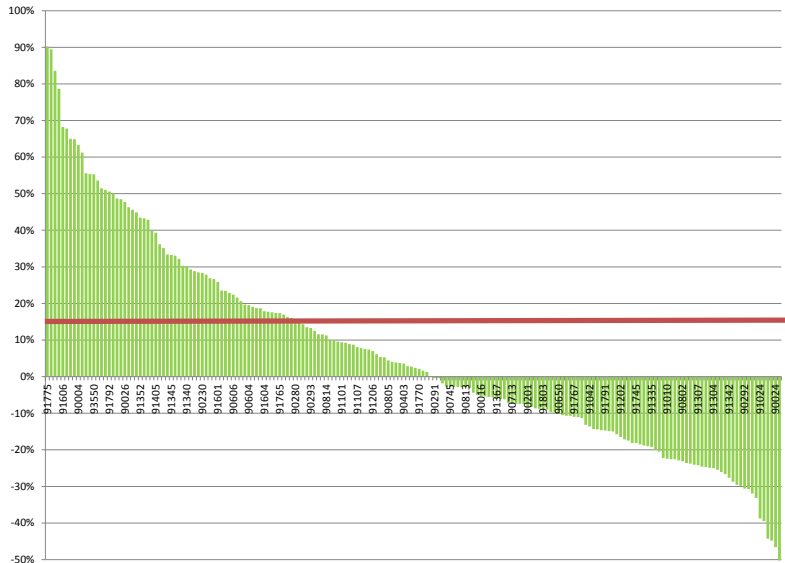
WITHIN LA TOTAL RETURN

11/13 CAP, AVG. 2012-2013 HPA



WITHIN LA TOTAL LEVERAGED RETURN

11/13 CAP, AVG. 2012-2013 HPA



EXPLAINING HPA WITHIN MSA'S

HPA within MSA's is very disperse and can be very large.

- ▶ Ways to understand within MSA HPA:

1. Gentrification:

Assignment model based on income growth and income distribution, house quality distribution.

Van Nieuwerburgh Weill, Hurst Hartley Guerrieri

2. Housing “CAPM”:

Compensation for MSA and Nationwide HPA factors.

3. Subprime/financing effects:

Seem large for 2003-2007.

Landvoight Piazzesi Scheider

Unlevered IRR's

PROFORMAS

Carried Inputs from Year 1 Assumptions

[illegible]

PROFORMA ASSUMPTIONS

Assumptions
or Implied
Percentages

Assumptions

House Characteristics

Bedrooms	3	
Bathrooms	2	
Square Feet	1,438	
Price per square foot	\$353.00	For calculations per square foot. Implied by Trulia average price 3BR/average price per square foot From Trulia for 3BR homes

Capital Investment

Purchase Price	\$ 507,500.00	From Trulia for 3BR homes
Renovation		
Paint	\$ 1,725.21	\$1.20 Cost per square foot
Floor	\$ 2,012.75	\$1.40 Cost per square foot
Appliances	\$ 4,000.00	Assume directly (assume a value conditional on price range)
Landscaping	\$ 2,000.00	Assume directly (assume a value conditional on price range)
Cleaning	\$ 359.42	\$0.25 Cost per square foot
General Repairs	\$ 2,875.35	\$2.00 Cost per square foot
Total Renovation	\$ 12,972.73	2.6% Implied percentage renovation cost/purchase price
Total Invested Capital	\$ 520,472.73	

Baseline First Year Income and Expenses

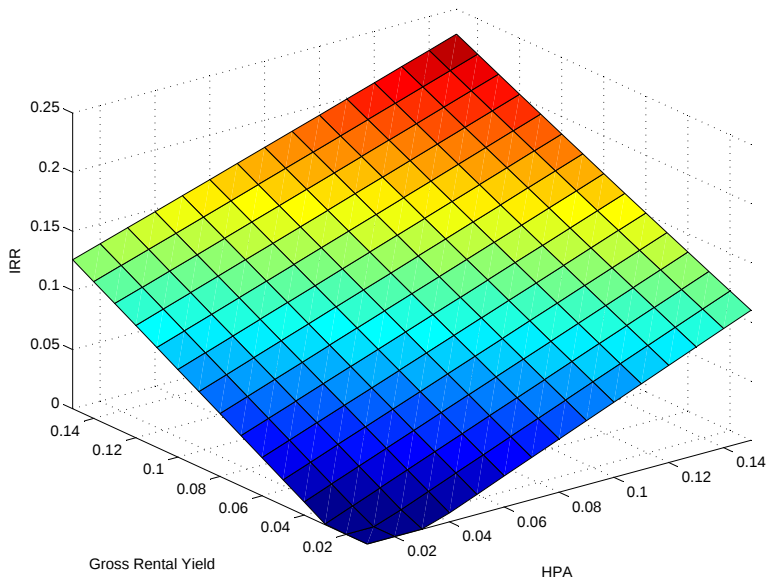
Revenue		
Gross Rent	\$ 47,816.91	Assume a gross yield. This is like R/P except it is R/(purchase price+renovations)=R/Capital Invested. Use PR
Vacancy	\$ (1,195.42)	9.19% ratio from our hedonic model since those properties are in "good shape".
Credit Loss	\$ (350.98)	2.5% Percentage of gross rent (Vacancy rate of 10% once every 4 years)
Effective Gross Rent	\$ 46,270.51	0.7340% Percentage of gross rent
		96.77% Implied percentage effective gross rent

Expenses		
Property Management	\$ 2,821.20	5.900% Percentage of gross rent
Leasing Fees	\$ 908.52	1.900% Percentage of gross rent
Property Taxes	\$ 6,505.91	1.250% Percentage of capital investment
HOA Fees	\$ 1,951.77	0.375% Percentage of capital investment
Insurance	\$ 1,951.77	0.375% Percentage of capital investment
Repairs and Maintenance	\$ 3,122.84	0.600% Percentage of capital investment
Turnover Costs	\$ 3,643.31	0.700% Percentage of capital investment
Total Expenses	\$ 20,905.32	4.017% Implied percentage total expenses/capital investment

Annual Capex	\$ (5,204.73)	1.00% CapEx in addition to maintenance and repairs.
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Net Operating Income	\$ 25,365.19
Free Cash Flow	\$ 20,160.47

IRR COMPARATIVE STATICS



EXPENSE ASSUMPTIONS

EXPENSE ASSUMPTIONS

	Morgan Stanley	Deutsche Bank	Five Ten	Fed White Paper
Renovation	costs per square foot imply 8.8% of purchase price	8.70%	none	none
Vacancy	2.5% of gross rent	5.4% of gross rent	5.60%	one month per year =1/12 of gross rent
Credit Loss	.73% of gross rent	none	none	none
Property Management	5.9% of gross rent	5.7% of gross rent	4-8% of gross rent or \$1000/year	8% of gross rent
Leasing Fee	1.9% of gross rent	none	75% of gross rent initial, 25% rollover	one month's rent=1/12 of gross rent
Property Taxes	1.25% of initial investment	16.7% of gross rent, includes insurance	1.5%-2% of property value	none
HOA Fees	0.375% of initial investment	none	none	none
Insurance	0.375% of initial investment	rolled in with taxes	\$750-2000/year depending on hazards, construction costs	none
Repairs and Maintenance	0.6% of initial investment	15.5% of gross rent	\$1500-2000/year	2% of property value
Turnover costs	0.7% of initial investment	none	\$1000 every 3 years	none
Additional annual capex	1.15% of initial investment	none	none	none

CORE LOGIC CAP RATE FORMULA INPUTS

$$\text{Cap Rate} = \frac{\text{Revenue} - \text{Expense}}{\text{Cost}}$$

$$\text{ROI} = \frac{\text{Revenue} - \text{Expense} + (\text{Discount} - \text{Renovation} + \text{Cap Gain})_{\text{Annualized}}}{\text{Cost}}$$

Rent

HOA fees

Insurance

Maintenance

Management

Property Tax

Resident Risk

Vacancy Loss

Property Value

Rent Amount Model

MLS data

Formula: 0.35% of property value annually

Formula: 17.5% of rent

Formula: 8% of rent

Property data

SafeRent ScorePLUS

Vacancy Rate Model

AVMs, HPI Forecast