

# Housing and the Tech Boom:

Using LEHD and Zillow Data to Understand Market Impacts

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# About Zillow Economic Research

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 **FOR SALE BY AGENT**

 **\$2.2M**

 FOR SALE BY AGENT

\$2.2M

 FOR SALE BY OWNER

\$750K

 FORECLOSURE

\$457K

 PREFORECLOSURE

\$480K

 FOR SALE BY AGENT

\$800K

 RECENTLY SOLD

\$899K

 FOR RENT

\$3.3K

 MAKE ME MOVE

\$675K

 NEW CONSTRUCTION

\$550K



\$630K

\$642K

\$495K

\$510K

\$720K

\$710K

\$2.2M

\$500K

\$750K

\$1.5M

\$457K

\$960K

\$800K

\$1.5M

\$1.3M

\$1.4M

\$480K

\$820K

\$1.1M

\$800K

\$790K

\$899K

\$1.5M

\$3.3K

\$950K

\$675K

\$700K

\$550K

FOR SALE BY OWNER

FOR SALE BY AGENT

FORECLOSURE

PREFORECLOSURE

FOR RENT

RECENTLY SOLD

MAKE ME MOVE

NEW CONSTRUCTION

# Our Mission and Principles

## **Zillow Research Mission Statement:**

“Zillow Research aims to be the most open, authoritative source for timely and accurate housing data and unbiased insight. Our goal is to empower consumers, industry professionals, policymakers and researchers to better understand the housing market.”

## **Our Research Principles:**

1. Zillow Research provides unbiased data and analysis about the housing market in a transparent way. Whenever possible, the team makes code and underlying data available so work can be replicated independently. Methodology is always clearly explained.
2. Zillow Research is independent of Zillow’s business goals, and is not a revenue center.
3. Zillow Research is open about how data sources and data quality impact research, and is transparent about potential issues with data used.
4. Zillow Research benchmarks findings against outside datasets whenever possible to ensure accuracy and appropriate context.
5. Zillow Research respects the integrity of data and uses it honestly, and never manipulates data to create a desired result. We are data- and fact-driven.



AFFORDABILITY - BUYING/SELLING

## Post-IPO, Home Values Grew Faster in Areas Home to Lots of Facebook Employees

BY JEFF TUCKER

Between March 2012 and March 2013, home values around likely Facebook employees climbed 21 percent, compared to 17 percent in all other Bay Area census tracts.

### The Latest

Feb. 6, 2019

[Fed Fallout, Overdue Data Drive Rates...](#)

Feb. 4, 2019

[Post-IPO, Home Values Grew Faster in...](#)

Feb. 4, 2019

[What Modern-Day Housing Discrimination...](#)

Feb. 1, 2019

[Share of Homes Selling Above List Price...](#)

[See more...](#)

### The Numbers

December 2018

U.S. Median Home Value (Zillow Home Value Index)

**\$223,900**

December 2018

Annual Change in U.S. Median Home Value

**7.6%**

December 2018

U.S. Median Monthly Rent (Zillow Rent Index)

**\$1,460**

December 2018

Annual Change in For-Sale Inventory (SA)

**-0.4%**

[See more...](#)



# #TurnOnTheLights

## Data

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### Home Values

Zillow Home Value Index (ZHVI): A smoothed, seasonally adjusted measure of the median estimated home value across a given region and housing type. It is a dollar-denominated [alternative to repeat-sales indices](#). Zillow also publishes home value and other housing data for [local markets](#), as well as a [more detailed methodology](#) and a [comparison of ZHVI to the S&P CoreLogic Case-Shiller Home Price Indices](#).

Data Type

Geography

Download

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### Home Listings and Sales

Zillow provides data on sold homes, including median sale price for various housing types, sale counts (for which there's [detailed methodology](#)), and foreclosures provided as a share of all sales in which the home was previously foreclosed upon. There is also current and historical for-sale listings data, ranging from median list prices and inventory counts to share of listings with a price cut, median price cut size, age of inventory, and the days a listing spent on Zillow before the sale was final. Inventory and other housing data also are available for [local markets](#).

Data Type

Geography

Download

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### Rental Values

Zillow Rent Index (ZRI): A smoothed measure of the median estimated market rate rent across a given region and housing type. ZRI is a dollar-denominated alternative to repeat-rent indices. Zillow publishes ZRI and other housing data for [local markets](#) as well as its [ZRI methodology](#).

Data Type

Geography

Download

# Applications of LEHD data in Zillow's real estate research

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# 1. Housing and the Tech Boom

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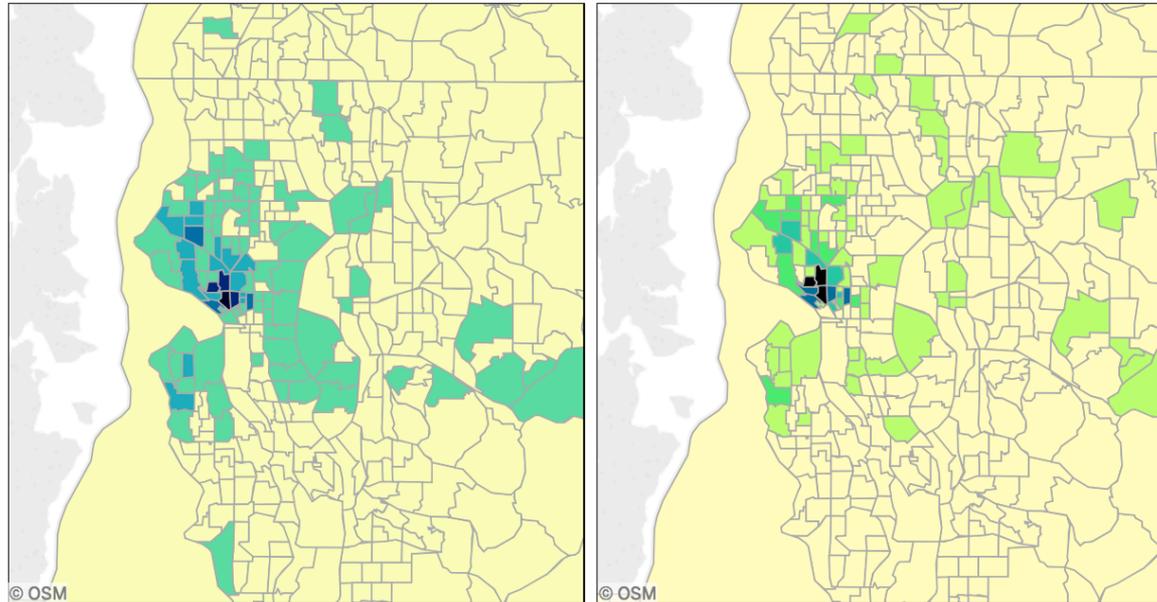


# LODES: Labor Demand Shocks

**South Lake Union and nearby areas have both the greatest density and the largest growth in residents who work in South Lake Union.**

Distribution of SLU workers  
across census tract of residence, 2015

Average annual change in number of SLU workers  
by residence census tract, 2011-2015



0.0% 1.5%

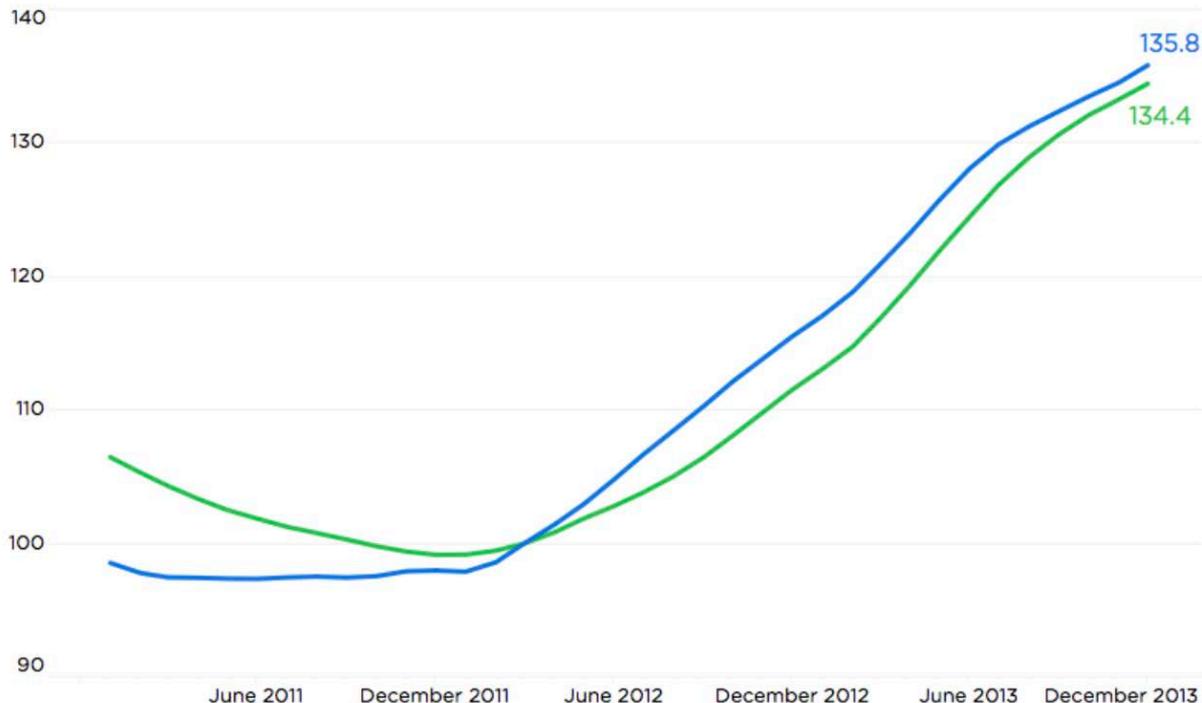
0 40



# LODES: Wealth Shocks

## Home value growth in census tracts with Facebook employees outpaced other Bay Area census tracts

Home value growth index, (March 2012 = 100)





# Key Takeaways

1. Significant, but small, effects on local housing markets
2. Macro housing market trends much more important

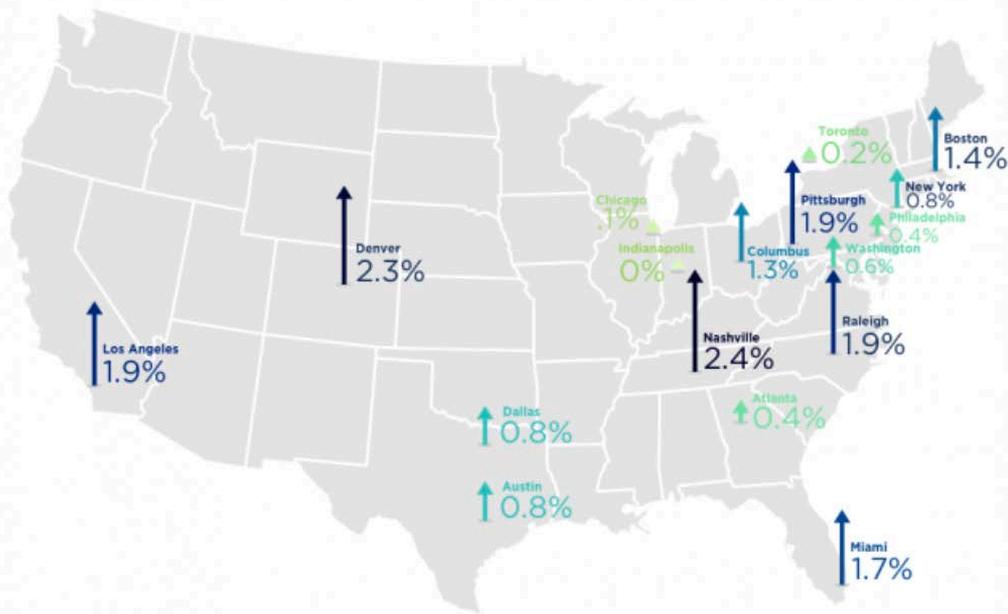
## 2. Price Elasticities

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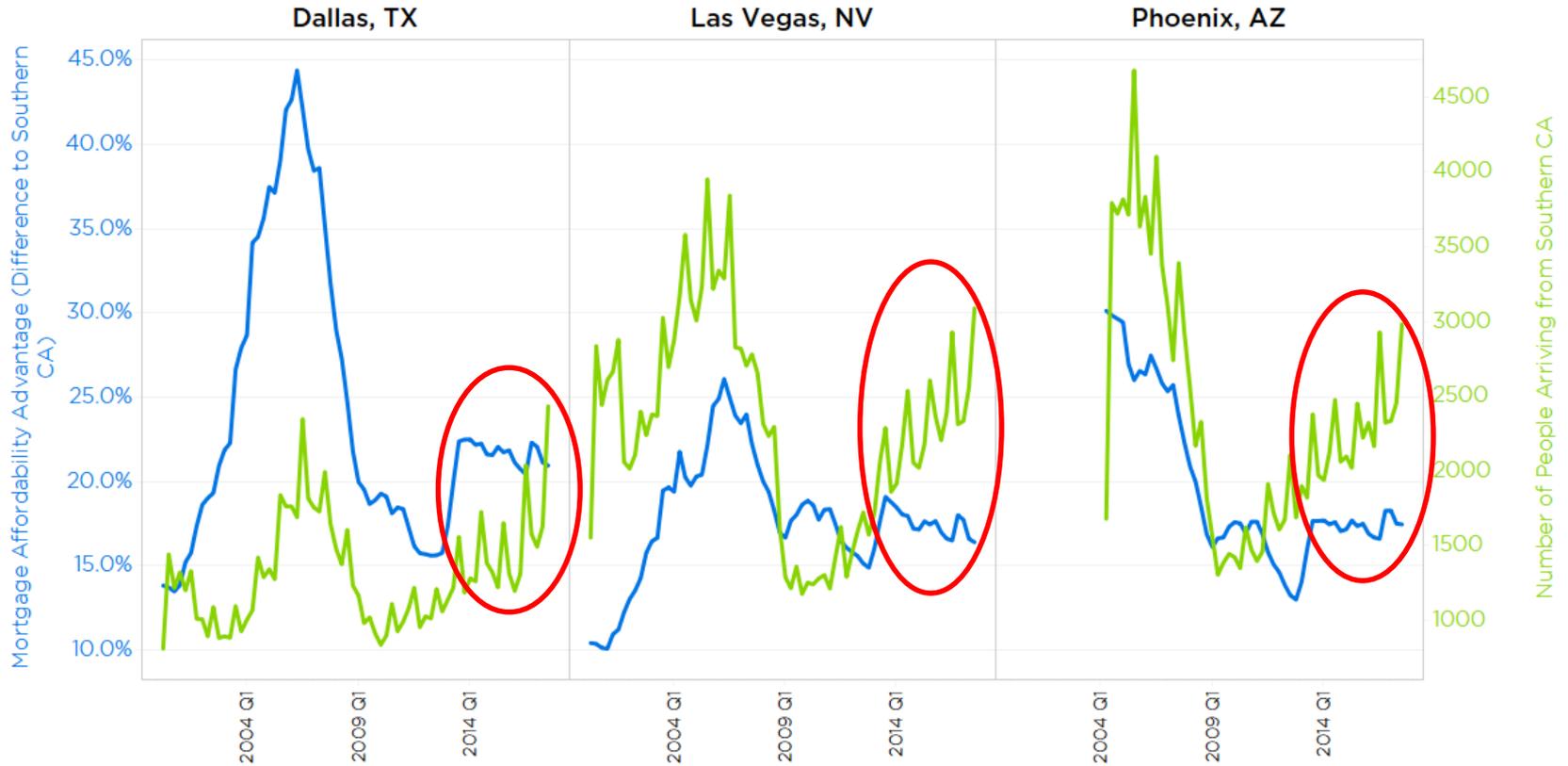
# J2J: Price Elasticities of Demand

## The Amazon Effect

Amazon plans to employ up to 50,000 people in a second headquarters location expected to be chosen later this year from one of the following metro areas.\* That kind of growth will have an undeniable impact on the local housing market. Assuming Amazon adds those 50,000 employees steadily over time, here's the estimated "Amazon Effect" on rents in each market -- the additional rental appreciation that could be expected, on top of what is already anticipated, as a result of Amazon moving in.



# J2J: Regional Migration and Housing Affordability



# 3. Housing and Transit

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# LODES: Cost vs Commute

*Median Price of a Home within Commuting Distance of the Downtown Core*

	Denver, CO			San Francisco, CA			Seattle, WA		
	\$	\$/sqft	Necessary Income	\$	\$/sqft	Necessary Income	\$	\$/sqft	Necessary Income
<b>15m to 30m</b>	\$420,300	\$263	\$72,200	\$1,569,400	\$1,187	\$269,600	\$890,200	\$532	\$152,900
<b>30m to 45m</b>	\$397,000	\$199	\$68,200	\$1,217,100	\$855	\$209,100	\$693,300	\$423	\$119,100
<b>45m to 60m</b>	\$433,700	\$192	\$74,500	\$1,074,200	\$662	\$184,500	\$663,200	\$349	\$113,900
<b>60m to 75m</b>	\$485,200	\$182	\$83,400	\$903,300	\$541	\$155,200	\$512,700	\$270	\$88,100

**Median household income (2017):**

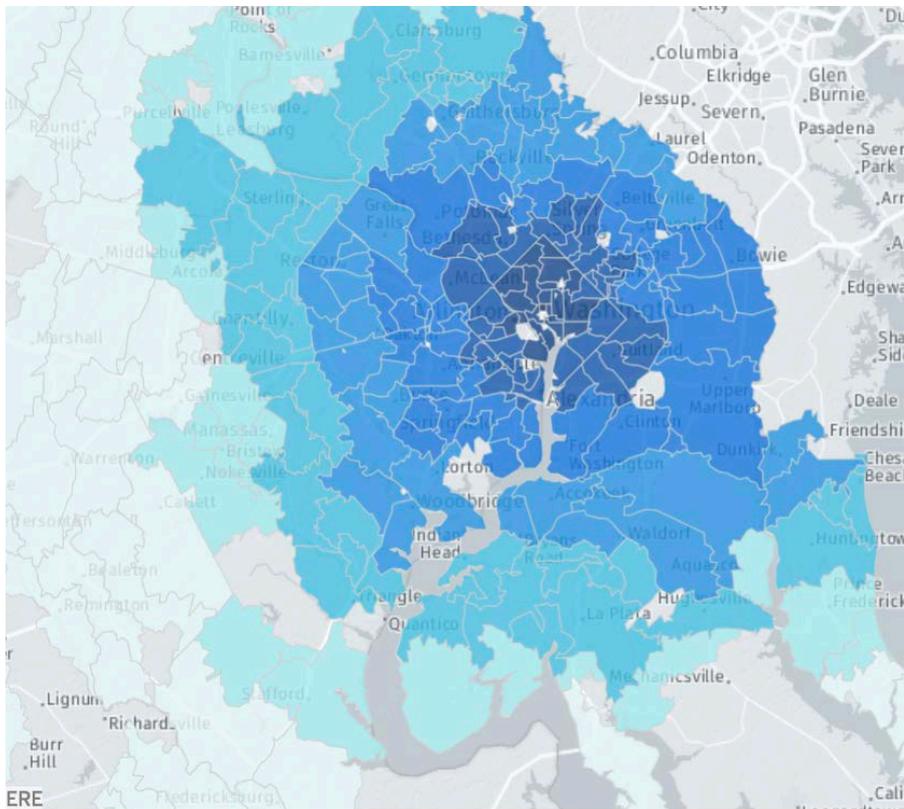
\$76,643

\$101,714

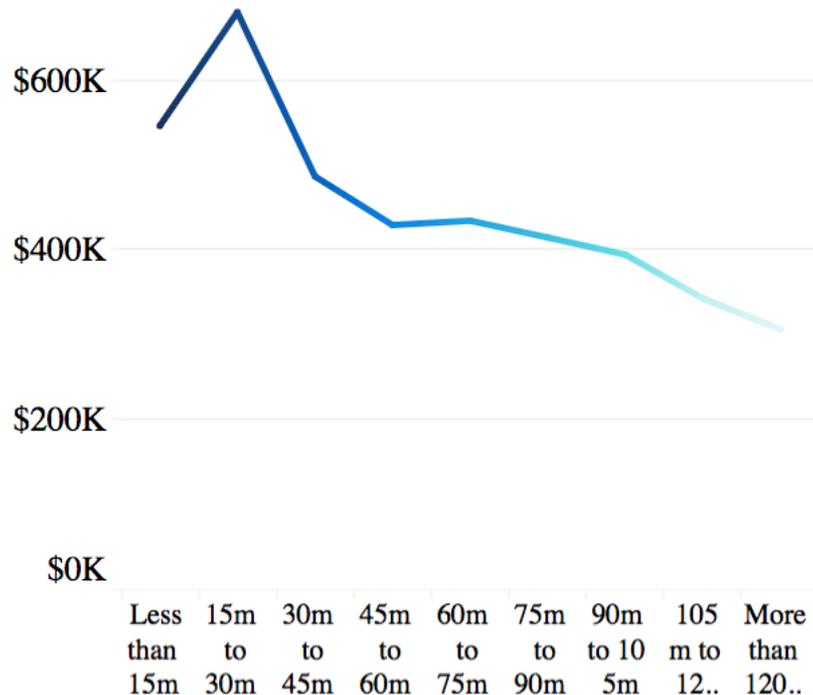
\$82,133



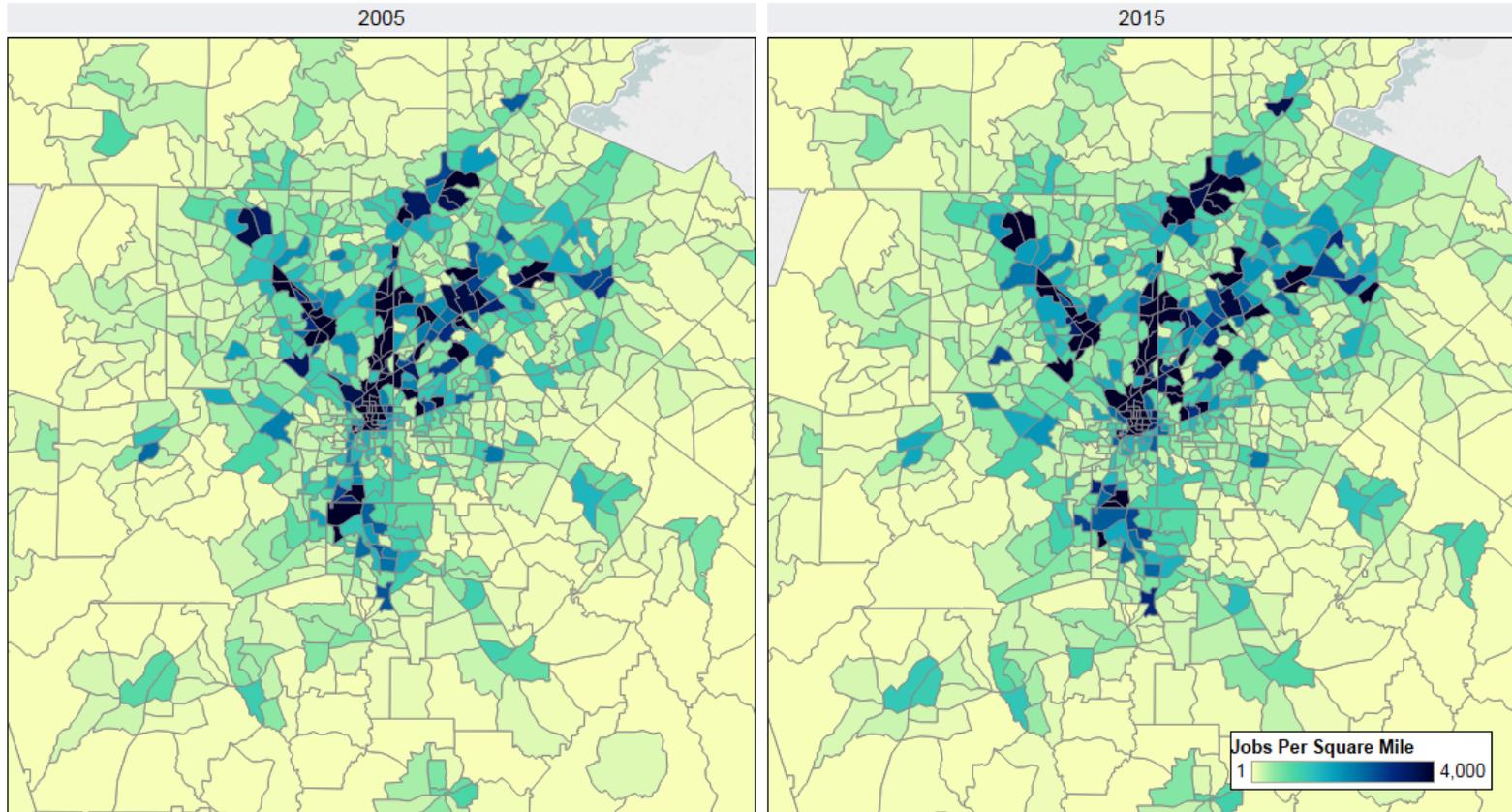
# LODES: Cost vs Commute



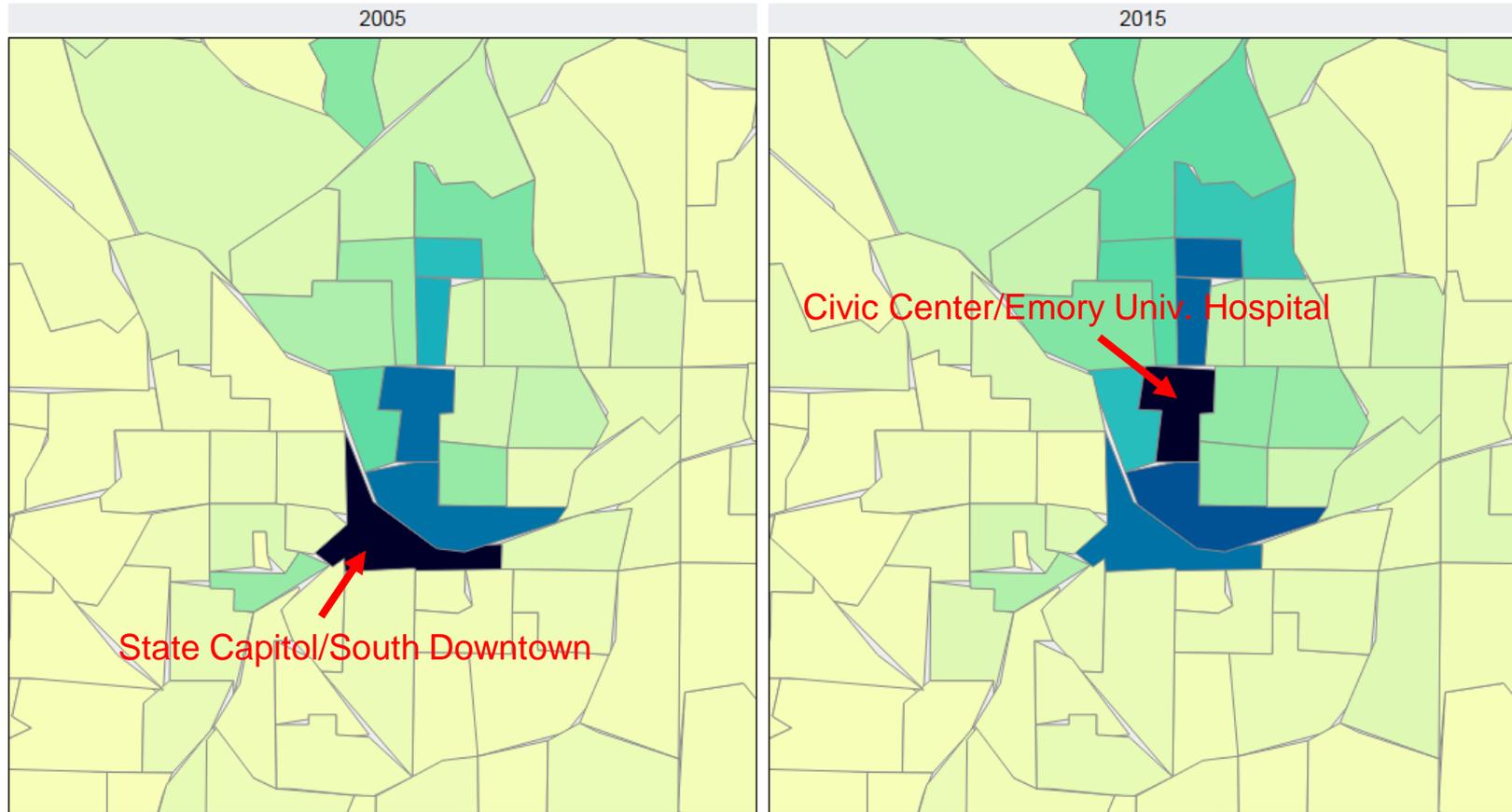
## Median Home Value by Commute Time



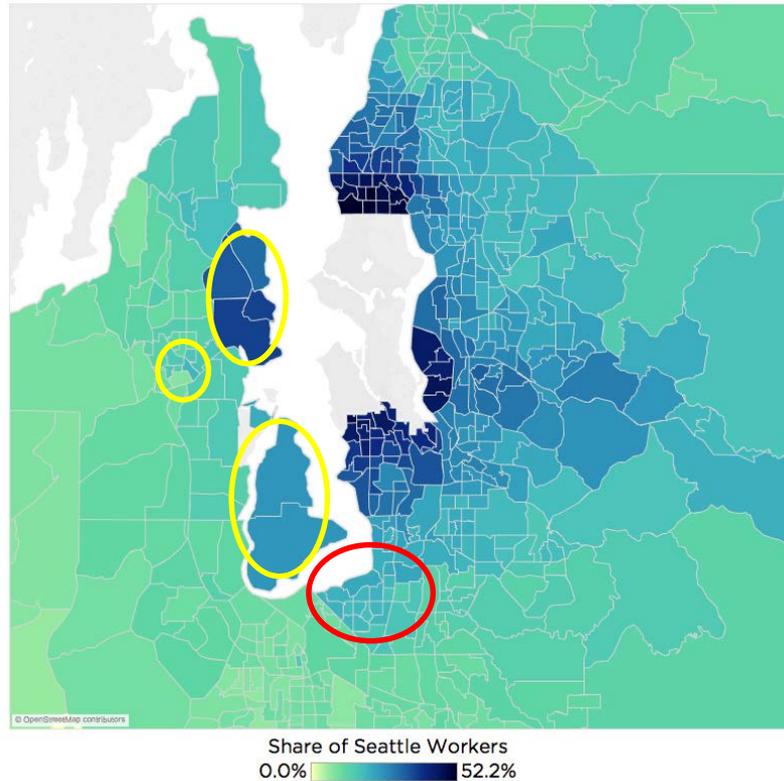
# LEHD: Where is “Downtown” Atlanta?



# LEHD: Where is “Downtown” Atlanta?



# LODES: Regional Transit Development





Thank you.  
[zillow.com/research](https://zillow.com/research)