

# Superstar Firms and Local Housing Effects: The Case of Amazon HQ2 Selection

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Based on research joint with Matthew Famiglietti and Eugenio Miravete.

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- In the pre-covid-19 era, the placement of new headquarters expansions of “superstar firms” has driven a lot of attention in the media.
- This is often view as an opportunity to generate “free” publicity and attract subsidies or direct transfers from competing municipalities, with the direct benefits associated to place or relocate they HQ.
- In the post-covid era, the relocation of many more firms might occur to states that are more business friendly, highly educated population, or less prone to lock-downs (i.e. Tesla moving to Austin).
- One of the challenges is that these re-locations imply creating/moving a sizeable amount of workforce to areas that are already densely populated. As a result, it affects local economic conditions, and in particular housing markets.

# Measurement Opportunities (I)

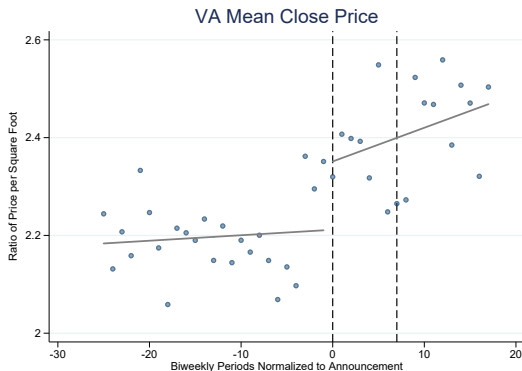
- We want to measure the economic local effects of “superstar firm” relocation using the process of selection of the location for Amazon second headquarters (HQ2) as a case study.
- The process of selection set in motion a natural experiment uniquely suited to answering how much local economic conditions, and in particular housing prices, change due to a change in expectations of future income growth in the **winning cities**: Long Island City NY, and Crystal City VA.
- To make the case even more interesting, as you might know, three months after the winning announcement Amazon **withdrew** from NYC as political opposition to their development plans and aid package increased locally.
- This saga can be interpreted as producing **two identical**, but in opposite directions, unexpected shocks to future income to neighborhoods in large MSA's.
- We will attribute the excess housing price appreciation in the selected winners (“treated group”) as being driven by the announcement of the location of a “superstar firm”.

# Measurement Opportunities (II)

- The experiment also allows for measuring optimism biases as we observe both listing (“what sellers think they can get for the property”) and close prices ( what buyers are willing to pay for the property”)..
- Novel data allows for exploring the timing and the magnitude of the change in house prices which happens before the “superstar firm” re-locates.
- Provides information on changes in housing liquidity (how fast housing units get transacted) due to the re-location announcement.
- Allows for identifying expectations pass-through across different housing sub-markets by exploring changes in the distribution across all types of housing units.

# A Picture is Better than a Thousand Words

The idea is that the Amazon HQ2 decision increases house prices for the winners (relative to the non-winners) around the announcement date, even prior to the realization of the HQ2 move.



# Pictures are Nice, but Numbers are Better

- Economic announcements pertaining to local activity have sizeable causal effects on transacted residence prices.
- Six months after the announcement, housing prices in Crystal City, VA increased between \$26 and \$35 per square foot relative to similar residences in other markets.
- The effect is very significant, and for the average-sized residence represents between \$40,000 and \$55,500, or 7.5% to 10%.
- In NY shows a similar price increase in the very short-run, 4.7% in NY vs. 4.9% in VA in the first three months after the announcement.
- The decision to withdraw from NY caused a loss in real estate values that nearly double any gains in the initial 3 months.

# Amazon's Selection Process

Amazon sought significant incentives from municipalities to build a second headquarters, and in return promised significant investment rewards.

- Amazon initially promised \$5 billion in investment in their new location. Also promised 50,000 jobs averaging over \$100,000 in salary.
- Amazon sought metropolitan areas with over one million people, friendly business environment and an urban or suburban location.
- Amazon explicitly asked for additional incentives including tax breaks and fee reductions for HQ2.

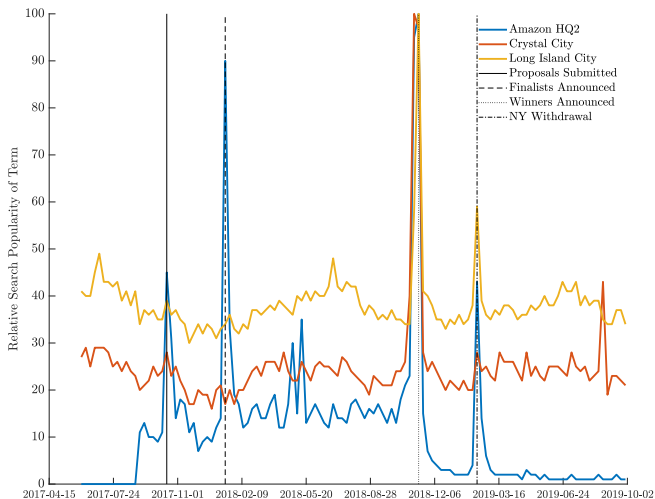
# Amazon HQ2 Timeline

- **September 7, 2017:** Announcement search for HQ2. Amazon promises 50,000 jobs and \$5 billion in investment in the winning location.
- **September 7- October 19, 2017:** Cities submit proposals for HQ2 site.
- **January 18, 2018:** Selection of 20 finalists from among 238 applicants.
- **November 13, 2018:** Amazon splits winning into two locations: Long Island City (NY) and Crystal City (VA). Prize purse to be equally split to each location.
- **February 14, 2019:** Due to political opposition, Amazon withdraws from NYC, but maintains the agreement/size of the Virginia headquarters.



# Was this Really a Natural Experiment?

Use data from Google searches to show that for the public in general, the announcements were unanticipated.



# Treatment and Control Groups

To causally estimate the effect of Amazon HQ2 on residential real estate prices we implement a methodology known as “differences-in-differences” (DiD). This method compares how prices evolved after the HQ2 announcements in the neighborhoods of Crystal City and Long Island City relative to how prices changed in a “control group” of property transactions.

Our **Treatment Group** is comprised of real estate transactions a year prior to and up to a year after the HQ2 announcement in the neighborhoods of Long Island City, NY and Crystal City, VA.

Our **Control Group** is comprised of transactions in large metropolitan areas that were not finalists for Amazon HQ2 for the same time period. This is to avoid any expectation contamination that resulted from the HQ2 process. MSA's in this group include Seattle, St. Louis, Memphis, and Houston.

# Crystal City, VA: Amazon's HQ2 Local Effects

Close prices had risen almost \$26, or 7.5% in the six months after the announcement, whereas list prices increased by almost \$30, or 7.9%.

Time on the market in Crystal City initially declined, but as prices rose transacting properties became more difficult.

	Treatment Effects			
	1 Month	3 Months	6 Months	12 Months
<b>Y = Close Price/Sq.Ft</b>				
<i>HQ2</i>	16.155***	17.453***	25.897***	29.772***
<b>Y = List Price/Sq.Ft</b>				
<i>HQ2</i>	24.520	10.857*	29.766***	31.818***
<b>Y = Time on Market</b>				
<i>HQ2</i>	-3.200***	-2.375***	1.169**	0.917

# Long Island City, NY: Amazon's HQ2 Local Effects

We find an almost identical but opposite effect for Long Island City, however the results are less significant.

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	<u>3 Months after Winning</u>	<u>6 Months after Withdrawal</u>
<b><u>Y = Close Price/Sq.Ft</u></b>		
<i>HQ2</i>	26.650*	-50.545*
<b><u>Y = List Price/Sq.Ft</u></b>		
<i>HQ2</i>	53.162	-61.345***

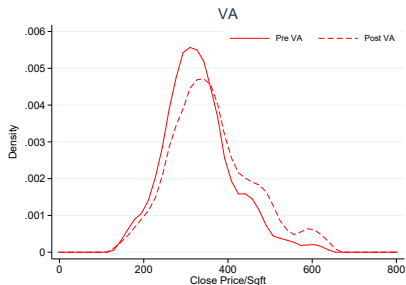
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## What was the effect of the HQ2 announcement on the different housing sub-markets?

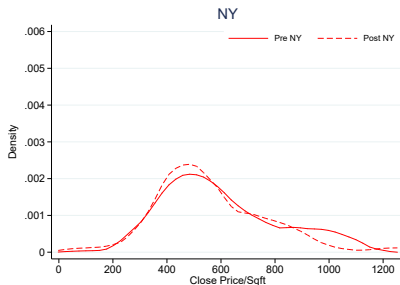
- This question has important implications regarding the desirability of an HQ2-like shock on residential real estate markets within a municipality.
- If the positive shock to house prices is concentrated in the upper-level of the market, such events could present a windfall to wealthier homeowners and landlords while increasing the cost of living for lower-income households in the region.
- To answer this question we show the price distribution in these neighborhoods and compare the price distribution six months prior to the announcement to the six months post-announcement.

# Impact in Housing Sub-Markets (II)

- Notice how the announcement caused a significant shift in the distribution across most units (higher prices for VA and lower for NY).
- Our tests indicate that the effect of the Amazon HQ2 announcement was more or less uniform across different segments of the housing market.



(a) VA Close Price Distribution



(b) NY Close Price Distribution

# Amazon's Response

Amazon is aware of the impact they, and other internet giants, have on property appreciation in the localities they choose as their headquarters. Recent moves suggest “superstar firms” may seek to take a more active role in residential real estate markets.

- This week, Amazon announced it would launch a \$2 billion housing equity fund.
- Goal is create more than 20,000 affordable housing units available for families in Washington, Arlington and Nashville.
- Fund will offer low cost loans and grants to housing organizations including public agencies and minority-led organizations.

# Conclusions

- Economic announcements pertaining to local activity have sizeable causal effects on transacted residential real estate prices.
- Six months after the announcement, housing prices in Crystal City, VA increased between \$26 and \$35 per square foot relative to similar residences in other markets.
- The effect is very significant, and for the average-sized residence represents between \$40,000 and \$55,500, or 7.5% to 10%.
- In NY shows a similar price increase in the very short-run, 4.7% in NY vs. 4.9% in VA in the first three months after the announcement.
- The decision to withdraw from NY caused a loss in real estate values that nearly double any gains in the initial 3 months.
- The changes in prices were not concentrated within a particular market segment.
- Cost-benefit analysis for municipalities challenging as increased investment and income has not been realized yet.



# Thank you

Feel free to reach out with questions to  
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