Using Census and Zillow Data to Understand COVID-10s Impact on the Housing Market
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12:30 pm CT

Coordinator: This call is being recorded if you have any objections please disconnect at this time. I will now turn the call over to Earlene Dowell. Thank you. You may begin.

Earlene Dowell: Thank you (Jennifer). And thank you to Jeana Bunn-Hector from the Census Bureau for hosting our Webinar. Good afternoon everyone. Happy St. Patrick's Day and thank you for joining us for our March LED Webinar.

Before I introduce our presenters I am thrilled to invite all of you to the 2021 Local Employment Dynamics Partnership Virtual Workshop on Friday, April 30. This year's theme is New Horizons Charting the Course with data. We will be highlighting the work of our state labor market information partners and other data users through plenary sessions. Please visit our Web site at L-E-H-D.C-E-S.census.gov for more information.

On behalf of the US Census Bureau and the Local Employment Dynamics Partnership in collaboration with the Council for Community and Economic Research and the Labor Market Information Institute it is my pleasure to welcome Alexandra Lee, Nicole Bachaud and Treh Manhart from Zillow as they present using Census and Zillow data to understand COVID-19's impact on the housing market.

This presentation will demonstrate how the Zillow's Economic Research Team regularly pairs Census data with Zillow's local housing market data in their research. 2020 presented a unique challenge in trying to understand quickly developing an unprecedented business market trends. This Webinar

will focus on Zillow's use of census data in their research surrounding COVID-19 effects on local housing markets particularly on how remote work might have shifted housing preferences.

Alexandra Lee is an Economist on Zillow's Economic Research Team. She uses data and economic analyses to understand and answer questions about the housing market with a particular focus on how policy affects local markets. Prior to joining Zillow she was – she worked as an Economic Consultant in antitrust and financial litigations in industries ranging from healthcare to transportation. Alexander holds bachelor's degrees in Economics and Political Science from the University of Chicago.

Nicole Bachaud joined Zillow as a Market Analyst in February 2018. She currently works as an Economic Data Analyst on the Economics Research Team using data to develop and validate research content. Prior to working at Zillow Nicole was a consultant for Landesa working in the Center for Women's Land Rights. Nicole holds two bachelor's degrees in Development Economics and Global Development from Seattle Pacific University.

Treh Manhertz joined Zillow in November 2018 as a Data Analyst on the Economic Research Team to develop and validate research content. He previously managed data pipelines and disability of estimations for chronic health disorders at the University of Washington's Institute for Health Metrics and Evaluation.

Treh received his Bachelor's of Arts in Economics with a correlate in computer science at Vassar College. With that I will hand it over to Alexandra Lee.

Alexandra Lee: Thank you Earlene and thanks for that introduction. So again I'm here today with my colleagues Nicole and Treh and we're just going to talk through some of our research that uses Census and Zillow data to understand COVID-19's impact on the housing market. And just to note that other team members have spoken in the series before and it's just always a treat to be invited because we use so much census data in our research.

So, you know, internally at Zillow we have data on every listing that makes it on our site but to tell a nuance stories, we need data on things like demographics, income, occupation and so that we heavily rely on census.

So in the past year when housing has reacted so surprisingly to the pandemic and this economic fallout we really wanted to drill down on what types of places saw different market trends, who the market was affecting both negatively and positively. So for this presentation we've rounded up some of our research over 2020 that really digs into this question.

But before I dive into the research I just want to take a minute to talk about our team. And our team's mission is to be the most open authoritative source for timely and accurate housing data and unbiased insights. Our goal is to empower consumers, industry professionals, policymakers and researchers to better understand the housing market.

So in practice this means getting our data and research in front of audiences like this as well as working with local and national housing reporters to help them understand our (fee), creating relevant research on various housing related policies -- things like that.

So if any of that sounds interesting at all I'd encourage you to check out our research site, zillow.com/research. And this is just a research screenshot of it.

You'll see, you know, plug in my own name a little here, my recent research piece on how a $15,000 tax credit could help really bolster first-time homeownership. And you'll see, you know, a full body of research on that site.

And I also keep talking about our data. And the good news is that a lot of it is publicly available for download on our data site. So these are aggregated metrics that we create, aggregated in that we create metrics at various geography levels so national, metro down to the ZIP Code.

We have data on things like home values, our ZHVI Zillow Home Value Index. We also have rentals, inventory and sales. And these are created on a periodic basis weekly and monthly views. And these are really the data that we turn to keep our finger on the pulse of the housing market to really understand where the trends are going.

And as you can imagine this very data really allowed us a real-time view on what was happening during the pandemic especially, you know, during the lockdowns. And during the lockdowns starting in March going through early spring, summer the housing market really came to a screeching halt.

So here we have new for-sale inventory and sales year-over-year and you'll see that, you know, deep drop in the spring. But, you know, what really shocked us was the speed and size of the rebound especially in sales after the lockdown started being lifted.

You'll see that new for sale inventory also improved from that low in the summer but it never really took off the way that sales did. And it even ended 2020 at lower levels than the year before. And that just really shows how buyers have really hit the market in a big way throughout 2020 or at least

since the lockdown. But sellers just haven’t, and that’s created a very competitive home buying market -- really competitive conditions.

And just to backtrack a little bit and say that even before the pandemic going into 2020 we did expect this to be a strong home buying season just looking at the demographics of potential buyers out there.

So there’s this huge wave of Millennials, this huge generation that's aging into their home buying years and we're pretty much just at the start of that crest. So we expected this home buying season to be strong but I think this past year really surprised all of us in terms of just how strong it was.

And then as the year wore on another surprising trend that came to light was that home buyers and rent was actually diverging. And here you’ll see year verse year trends for both of these theories, and you’ll see that sharp divergence happen just as the pandemic hit.

And the economic recovery of the from the pandemic has been described as K-shaped. And I think we can apply that here as well, you know, beyond the obvious K-shape. But it’s the higher income households that have been largely insulated from the economic impacts of the pandemic right. And it's these higher income households that are more likely to be buyers, to be potential home buyers and sellers. And they’ve really been able to participate in the for-sale housing market.

And then on the other hand we have lower income households more likely to be renters that have been really negatively impacted by the pandemic, you know, job loss wage loss. And that’s forced a lot of them to pursue affordability maneuvers, you know, like doubling up.

From CPS we know that a lot of young adults moved back in with their families during this time. So that really created a waning in rental demand which really caused rents to really slow down.

But I think among the biggest media stories in the last year starting, you know, sometime in the summer was this narrative that start a building scheme that we were seeing a mass exodus in our cities. You know, we started fielding all these questions about whether COVID has killed our cities.

And obviously that’s not a yes or no question or at least it shouldn’t be. So over the last year we really tried to answer this question in a few different ways. But what quickly became clear was that there were very different regional responses.

So we really dug into this question over this last year and we wanted to look at how some of the key indicators behaved in urban versus suburban areas across the country, you know, things like inventory sales and prices as well as rent. And to tackle this question we needed some way to define urban and suburban areas which there's surprising little consensus on. So obviously census defines metro areas but that’s not too helpful when we're trying to break out areas within metros.

So luckily we could use some of the work of a former truly a chief economist which classifies ZIP Codes into urban, suburban and rural. And I linked that methodology here but basically it takes Zillow group survey data where respondents classify their own ZIP Codes into urban, suburban, rural and then it takes that survey did and includes census variables on things like population density, age of the housing stock, other housing related variables to create this classification.

So here we just see the DC area and beyond. You'll see that the urban ZIP Code of DC and Baltimore and further a field are in orange and suburban ZIP Codes are in blue.

And what we were able to tell even at a regional level was that the Northeast and West were showing a very clear divergence compared to the Midwest and South. So in all these regions you'll see that inventory which is on this bottom series, inventory in urban areas consistently trended higher than suburban. But there was always this consistent upward trend and urban inventory in the West and Northeast.

And it's clear that this was because new inventories or the series on the top, inventory in urban areas consistently outpaced suburban areas. So its not just that there aren't as many urban buyers in the West or Northeast but there's also this glut of urban sellers.

But within the Northeast and West regions New York and San Francisco are particular standouts. So inventory in both areas surged in the city proper compared to the metro during the summer. And at the same time sales in the city proper lagged behind the metro overall.

So we're seeing evidence that demand really is waning in the urban cores of these metros and in the West and Northeast generally. You know, sellers are flocking to the market but buyers aren't really coming close to meeting that supply. So in both these areas we're seeing that inventory is actually accumulating in the urban areas.

So the New York and San Francisco being big media markets, you know, that grain of truth of waning urban demand might have really propelled all of these urban exodus new cases last year. But what was also happening at the same

time was the opposite trend in a lot more affordable markets, especially in the Midwest.

So throughout last year we started seeing that urban home values in a number of Midwest markets were outpacing suburban homes. And that that gap only grew throughout the year in many areas. So you'll see here that Kansas City is leading the pack but Cleveland, Indianapolis and more are also seeing this similar trend.

So to recap, we have this divergence where urban areas lagged in expensive markets like New York and San Francisco but the opposite divergence was happening in cheaper markets like Kansas City and Cleveland where urban areas are booming. And this boils down to the relative affordability of urban versus suburban areas.

So in metros where urban home values were cheaper than suburban homes before the pandemic, urban home values growth was higher throughout the pandemic. But on the flipside most larger expensive metros have cheaper suburban homes and that's where the demand went in those areas, so suburban price growth was higher in expensive metros.

So the takeaway here is that cities as a whole aren't dying. You know, there's not a mass exodus. But in these larger and more expensive metros it appears that people perhaps just aren't willing to pay those premiums anymore to live near amenities that they can't enjoy during a pandemic like restaurants, museums, theaters. But where urban areas are more affordable we're actually seeing a boom in demand.

And this relationship is reflected in rents as well. So earlier we mentioned how home values and rents diverged and that divergence is happening in those

metros. But in larger expensive metros in particular that divergence is particularly wide and urban rents have fallen considerably.

So again New York and San Francisco is at the top of the list here but also now DC and Austin are among metros where not only there's a gap in urban and suburban rent trends wide but urban rents have even fallen. And in these expensive markets it's even the most expensive ZIP Codes that have seen rents fallen the most.

So while we can attribute some rental softening in most markets to job loss and wage loss, in these expensive markets it looks like it is the most affluent renters that are leaving or not moving in. So renters that probably work in jobs that are more likely to be remotable who have the flexibility and savings to move somewhere else.

So with that I'll hand it over to Nicole to switch gears a little bit and talk about what we know about trends pre-pandemic.

Nicole Bachaud: Thanks Alexandra. So as she mentioned we're going to start talking now about some pre-pandemic trends looking at the connection between housing and jobs. So you can go ahead and move to the next slide.

It's important to call out the relationship between housing and jobs and how intertwined these things are. At the macro level job gains influenced housing. When an area gets an increase in jobs people will move there to work putting pressure on the housing market which will often result in an increase in prices.

We see in these graphs here the differences in how metros are able to match housing group to job gain. The larger typically more expensive metros on the left, even a small increase in jobs has driven up home values.

Smaller metros on the right often more sprawling and less expensive are better able to match housing to job gains -- something that has positioned them well for what we are about to talk about. Next slide.

At the micro level the connection between housing and jobs is seen through the importance we place on the proximity between where we live in where we work. In 2019 Zillow surveyed renters, buyers and sellers to gauge how far they're willing to commute between home and work. Most landed on 30 minutes one way stressing how important being close to the workplace is for many.

Almost 2/3 of our survey said their commute was very or extremely important when deciding on where to live and n over half of renters cited the same. There is no doubt that this proximity is important. But to better understand the relationship between the home and the workplace we analyzed 2017 LODES (LEHD Origin-Destination Employment Statistics) data to get a better sense of what this actually looks like in action.

Next slide. One surprising finding when looking at the classifications of where people live and where they work is there is a pretty high share of what we are calling reverse commuters across the country. These are workers who live in urban ZIP Codes but commute to work in suburban and rural ZIP Codes.

We already mentioned the short commute times were a significant driver for where people live. So the fact that some were choosing to live urban and work suburban is interesting. We combined this with Zillow's date on home values and found that these reversed commuters were more likely to be concentrated in less expensive markets. In 20 of the top 35 largest markets over half of

urban workers were reverse commuters. And markets like Orlando, Tampa and Riverside over 70% of urban residents work outside of urban areas.

So then on the left side of the graph we see places like San Francisco, New York and Los Angeles since they are more expensive coastal markets where the share of reverse commuters is considerably lower. And there is a fundamental distinction between the places the reverse commuter side and where they go.

Next slide. Here we see the relationship between reverse commuters and the difference in urban versus suburban home value growth during the pandemic. Metros where urban areas currently right now have higher growth had higher shares of reverse commuters in 2017. So having the highest share of reverse commuters is actually an indicator for how a metro would fare during a pandemic.

What's important about this is that these metros are the same ones we looked at earlier that are more sprawling, often more expensive and those factors have allowed them to keep housing in pace of job gains. And those factors create environments for reverse commuters to thrive.

People will live where it's affordable for them to do so especially if that happens to be in a place like an urban core where they have access to more amenities and services than they would in suburban areas even if that means if they had a longer commute to work.

This is why we don't see a huge share of reverse commuters in places like San Francisco and New York. It's more affordable in those metros to live in the suburbs. And that's something that's really key in this whole conversation around the great reshuffling and where people will move as a result.

And this is especially important to call out when we go back to the media conversations Alexandra mentioned earlier about the death of cities and how the pandemic will one way or another change the identity of urban America and push everybody to the suburbs. This is not what we're seeing in the current data and this is not what these reverse commuting trends are pointing to.

Next slide. Something worthwhile to call out here is that reverse commuting trends aren't specific to any one generation. This isn't a Millennial fad that will fade as younger generations start having families and moving from city life to the suburbs. Older urban residents are as likely and even more likely in some markets like Charlotte, San Jose and Washington DC to be reverse commuters. This is another signal that urban centers aren't going to die as people continue to live where it makes sense for them to do so.

Next slide. I'm not sure even with the rise of remote working long before the pandemic in 2019 Zillow surveyed recent homebuyers who worked remotely at least one day a week to get a sense of how remote work influences housing decisions. Of those who made a major housing change over half cited remote work as a driver for their housing decision.

So remote work might change how people choose to live after all. So is the media right? Well not entirely because these same remote workers were more likely to buy in urban areas than non-remote workers. And this is found for both the population of buyers who worked remote at least one day a week and those who were fully remote.

Even without physical ties to the workplace, people still choose to live in urban areas a trend we anticipate will stick around as vaccines become more

widely distributed, the world settles into a new normal and the great reshuffling continues. Now I'm going to pass it off to Treh to talk about how the role of telecommuting plays in the current picture.

Treh Manhertz: Thanks Nicole. So the pandemic was a shock to the housing market in several ways and Alexandra talked about how the media narratives that are being the death of cities were largely overblown. And many of those stories were anchored on disease risk and social distancing as the reason for urban dissolution.

But that doesn't make a lot of sense given what we know about how people make housing decisions in general, particularly the choice to buy with the upfront costs and the longer time horizons that that entails.

So a great majority of homebuyers will stay in that own for more than four years. And most make the choice of where to buy based on affordability, amenities and major life events like a new job, a growing family, or kids moving out -- things of lifestyle implications on the scale of several years.

So this is where we should look for potential long-term changes in housing. And Nicole set the stage here. Housing has been closely tied to work, not just in affordability with incomes determining price points, but in terms of location with gone - with the job concentration accelerating price growth as people look to find homes within half an hour of their workplace and with all the amenities that they and their families need.

So a shift to telework for those that feasibly could at least part-time would relieve some of that centralized pressure on the housing market in job centers. Nicole showed a survey from Zillow in the pre-pandemic days of 2019 where

about half of remote working buyers said that remote work led to a major housing change including 40% or so who actually moved.

Next slide please. So we conducted another survey in May 2020, almost two months into shutdowns to check our expectations on this. And of Americans working from home 75% said that they would prefer to continue working at least half-time remotely after their workplace reopens. And so that - to us that confirms that this trend has the potential to endure post-pandemic.

Of these possible long-term remote workers 66% said that they would consider moving if they could work from home or remotely as often as they want. Compare that to relatively few who ascribed their desire to move to social distancing.

So there's a changing intersection of work home in affordability. And Zillow Research looked at one facet of this to see where people's housing options would be most affected by a switch to remote work. We looked at the share of renters in major US metro areas that could feasibly buy a home in the broader US market outside of their metro if allowed to telework in their current job and so here's the headline. Next slide.

Four point five percent of renters are on the telework tipping point for home ownership. That's almost 2 million households at all. And so this tipping point is where a renter household earns enough to buy the typical US starter home but not a starter home in their current metro area and that they're in a remote job. And when I refer to starter homes I'm referring to the middle of the lower third of the price retribution, so about the 17th percentile home by price.

So to get a count of who is in a remotable job we used estimates of who could work remotely by industry and occupation in a BLS report using the American Time Use Survey.

We then mapped this to industries and occupations in the American Community Survey to get really granular with it. And this let us get these metro level estimates and go even deeper on race. So as you might expect here markets where renters are on this tipping point are the more sensitive markets where renters earn a lot relative to nationally and are more likely to be in remotable occupations for example in tech or financial services.

California metros are predictably high on the list. With San Jose at the top with 25% of renters who can maintain their current job and buy a home similar or more affordable. Now clearly there are a lot of reasons why someone might not want to leave their metro area and not all jobs that are remotable can be completely remote but you can imagine that many folks needing to go into work only a couple days a week might be okay with a longer commute and so might take the opportunity then to buy a home even just a little further out from the urban core in metros where that makes sense.

So let’s now look at the city level. Pictured here are metros among the largest 50 in which starter homes in the metro area are more expensive than nationally or starter homes in the city are more expensive than in the metro at-large, in other words where there is a price incentive to move outward.

So looking over here at the graph on the left on the x-axis we saw - what we saw on the last slide the share of renters that could leave the metro to buy a home. On the y-axis is the share of renters living in the named city that could afford to buy a home elsewhere in the metro at-large, so same thing but on a smaller scale.

We see that there's a split among the expensive metros where some have extra expensive cities. So in addition to those who could benefit by leaving the metro there are more renters with slightly higher income who could buy a home just by moving out of the urban core into the suburbs.

Calling back to the stats from the urban suburban report we see how these groupings compared in home value growth during the pandemic. The graph over on the right shows that in metros that are generally lower cost, the cities were actually hotter. Home values in the city center in these areas grew over a percentage point faster on average than the metro at-large referring to just the metros pictured here.

The expensive metros generally were a bit of a mixed bag, but the areas with extra expensive cities saw those cities underperformed their metros by about 2 percentage points. Perhaps not surprising but where people had the most reason to leave based on affordability and the most flexibility to leave from telework that was the most softening in the market.

And this is what combining these rich data sets has let us study. Again this is Census data, BLS data and Zillow data combined to paint a complex and localizable picture. And I'll dig a little deeper here to show quickly just one more layer of how powerful this can be.

When talking about access to housing it's always important to understand who has access and why. And you might guess that since black households have the lowest median income and low incomes correlated with less remotable work that black renters would have the least access to opportunities presented by a broad shift to remote work. And that could be true but not at this home

ownership’s tipping point that we're looking at here. So let’s take a look at how that works.

First, we have out income or home values. Here we have a breakdown of what share of renters by race work in each industry. Leftmost column has the most remotable industries the rightmost column has the least remotable industries.

We see that White and Asian renters, the gray and navy blue bars here have jobs skewed toward the left, more remotable. Black renters, the gold bar have jobs that tend more towards the middle and Latin renters, the bright blue bar have jobs skewing towards the right, less remotable.

So all else equal we expect White and Asian renters to have the greatest boost from remote work but all else isn't equal. White and Asian renters in those more remotable industries are also more likely to have incomes that put them over the threshold to buy a home in their current home metro area. So location isn’t likely to be the primary reason not to buy. Going remote isn't as likely to convert to homeownership.

So next slide please. Here's how those conditional likelihoods look by metro area. For White and Asian renters on the outer graph here, most metros fall below the x-axis meaning for remotable occupations, incomes are not as likely to be in the right range, the relevant range for what we’re citing here.

Now comparing the inner charts for Black and Latin renters we see that despite comparable income levels overall, Latin renters with qualifying incomes are less likely to be in remotable jobs, the points far to the left. Only Black renters are consistently more likely across metros to be earning qualifying incomes in remotable jobs and this makes them 29% more likely

overall across US metros to be at that telework tipping point for homeownership.

Now I've talked a lot about achieving homeownership and affordability constraints at one end of the spectrum here but there is another side of the remote work equation that hints at coming changes in some markets. And for that I'll pass it back to Nicole.

Nicole Bachaud: Thanks Treh. Yes so now we're going to talk a little bit about where we're going in the future. This - and this on a little bit of a lighter note. We can go to the next slide.

Remote work has opened doors for many to reconsider their housing options as Treh just talked about. Even for those for whom remote work isn't an option, the last year has inspired people to dream a little broader about where they can see themselves in the future.

For many that might've meant hours of Zillow searching in luxurious markets to imagine what life would be like in a beach town or sea town. We use ACS data to identify vacation towns, places of high shares of second and vacation homes and analyze how different Zillow metrics are performing in these areas.

We consider things like page views, the number of times that someone clicks on a house page on Zillow, favorites, the number of times people save those pages and pending sales data, the year over year increase in the number of listings that when pending in any given week to see how these places these vacation towns stacked up against the rest of the country.

Combined, page views for for sale listings in these vacation towns were up almost 50% in August 2020 when we ran this report from the year prior

compared to 37% increase in page views nationally over the same period. So people were definitely more interested in these areas and favorites were higher as well indicating that people were again saving these homes to come back to look at them in the future.

These metrics are signals that people might be shifting their preferences and dreaming a little broader but they don't necessarily indicate any of these reviewers are hard set on actually moving to these vacation towns. However when you looked at growth and pending sales we saw that 2/3 of the vacation towns that we analyzed had higher year over year growth rates and pending sales the weeks that we ran this report showing that some buyers were already making their move to make their dreams a reality.

So this is just a glimpse of where we're going in the future and that brings us to the end of our presentation. So we thank you for having us here today. It's such an honor to be able to share our research, especially our research that has been so heavily influenced by all of these amazing census data products. I'll pass it off now to the operator for Q&A.

Coordinator: Thank you. If you have a question from the phone please press Star followed by the Number 1. Please make sure to unmute your phone to record your name at the prompt. Again that is Star 1 for any questions. One moment please while questions come through.

Earlene Dowell: And while we wait for the questions to queue up on the phone, I'd like to remind everyone to please be courteous and keep your questions pertaining to the presentation with one follow-up question. We received a few questions regarding the presentation which will be accessible on the Census Academy Web site in a week or two at census.gov/academy under the Webinar tab.

Also an evaluation will be mailed to following this Webinar. We would appreciate if you could take the time to fill this short survey out so we can better serve you. With that operator are there any calls at this time?

Coordinator: I am showing no questions at this time. It is Star 1 if you have a question.

Earlene Dowell: So some questions did come out on the chat. One of the questions was, "What does the observed rent metric count? Is it percent change in renters or rents?"

Alexandra Lee: So I'll take this one. It is rent, listed as rent. And it's a repeat rent index which means that we look at what the same unit is listed at one time and then the next time. So we capture the change in comparable units. So it controls for things like housing quality but yes it is listed rents.

Earlene Dowell: Thank you Alexandra. Here's another question. "Does Zillow expect to have change – does Zillow expect to have to change their presences to deal with application of differential privacy that will introduce noise into the Census products at the local and lower geographics levels? What methods are they looking to use not particularly focused on COVID but in your overall usage of Census data?"

Treh Manhertz: I can take this one, another great question. We don't have any methods around that right now. But it's a great point and there are areas where that will potentially affect our estimates.

For example we estimate the HPI by race. And it uses small level racial distributions in housing to make those calculations. And so that'll be something that we need to be fairly considerate of. That said, most of our estimations that are a larger geographical level since they'll likely won't be affected. That's a great question.

Earlene Dowell: Operator are there any questions on the phone?

Coordinator: We do have questions from the phone. The first one comes from (David). Your line is open.

(David): Thank you, fascinating work. And I was wondering if you could compare the trend before the COVID pandemic from urban to suburban or more rural areas over a longer historical period. Was - is there a trend like 1% to 2% or 5% a year one way or another and how much did that change? And I'll ask it kind of a quasi follow-up if you don't mind.

Alexandra Lee: Sure. So - and, you know, Nicole and Treh jump in if you know more than I do. But short answer is I don't have those numbers, you know, at - ready, at the ready. That's certainly something we can do. We have these data carries over a longer period than just, you know, the last two years. Yes sorry, I don't have a more complete answer for you right now.

(David): That's perfect, fine.

Alexandra Lee: That's a great point.

(David): I don't either but the other part is do you have any information on trends moving to the US Virgin Islands?

Alexandra Lee: For that in particular, we do not. We look at, you know, the 50 states.

(David): Very good. Thank you all very much. It's very enjoyable.

Alexandra Lee: Oh, thank you.

Coordinator: The next question comes from (Liz Annette). Your line is open.

(Liz Annette): Hi everybody, excellent presentation. I'm looking forward to downloading it so I can consume all the actual data that's in it. It was explicit.

So my question is are about the terms that was protected or are people moving out of the more expensive areas into the more suburban areas? Is it expected that the pricing or the - for delivery of housing in the more expensive will start to decrease or I mean, the pricing decrease and the affordability go up or would it be expected or can you see a trend in the suburban pricing continues to rise as well as the extra expensive areas keeping high so that affordability overall will become more difficult and impacting migration of course?

Alexandra Lee: Again Nicole and Treh jump in if you have more to add. But I think the short story is that we are, you know, the way that we are sort of understanding that the demand is shifting is an pricing right? So areas where, you know, there's these extra expensive cities we have seen the HPI or Zillow Home Value Index really well moderate or even decrease in those areas whereas suburban home value growth, you know, might still show pretty strong growth.

The reverse is true in areas where urban home values or urban homes are still also quite in strong demand. We have seen urban home value growth increase over suburban.

You know, that said, you know, prices are somewhat cyclical. You know, they moderate if they come to a point that, you know, affordability is just too skewed, right? We saw in 2019 a lot of very expensive metros saw a decrease in home values.

So I - again I don't think we have firm, you know, long-term estimates in terms of urban versus suburban home value trends but we are seeing some of these effects already.

(Liz Annette): Thank you. And definitely it's something to look and as well as you match that with race as you had presented here, that was very interesting to see if there are any shifts among the races and the affordability of the - of their places housing become more affordable for those. Thank you.

Alexandra Lee: Yes, excellent. Thank you.

Coordinator: The next question comes from (Lori). Your line is open.

(Lori): Hi. I'm in Maine. And we've seen two trends here. One is teleworkers coming into the state which has helped with - we've had a workforce depletion over quite a long time. But the bigger trend has been people moving in because the state is safe but moving to very rural areas. And we're wondering how long they're going to stay here. If, you know, if the vaccine takes hold and we get herd immunity will they suddenly flock out of the state or what kind of trends are you seeing elsewhere that might reflect what might happen in rural Maine?

Alexandra Lee: Yes that's a great question. And again I think, you know, we just we just don't have a crystal ball that can help you there. And that's definitely something that we're trying to track as well just what will happen with more vaccine rollout.

You know, unfortunately I think generally our data doesn't cover rural areas very well. But to the extent that, you know, teleworking to suburban areas and broader are topics that we're looking into. You know, that's just something we'll have to keep in mind.

Treh Manhertz: Yes and I'd just like to point out that yes this is one of the reasons that we're looking at this remote work trend in particular because we think of that it won't be the sort of transient phenomenon that would lead someone to buy a home somewhere and necessarily leave a year or two later. It's more likely to be long-term.

So if their long-term preferences are stable you might expect that to be a longer term residency…

(Lori): Okay.

Treh Manhertz: …because we'd be more focusing on work.

(Lori): Okay thank you.

Coordinator: The next question comes from (Guadalupe). Your line is open.

(Guadalupe): Thank you very much. First let me say gosh, this is some great work here. I've got to commend you on that. And my question - I've got two questions. One is very simple. The other one is a little bit more complex. I was just wondering if on your site you have this information as it is affected by the availability of homes in certain, you know, metro areas, the urban areas and the suburban areas?

And then my second question is regarding the actual presentation the slides, if those would be – will be made available or could be made available to us?

Alexandra Lee: So the second yes, definitely these will be available I think Earlene or the host might have more information on just exactly how to access. I think I missed your first question though.

(Guadalupe): Oh I'm sorry okay. First question is your information on your Web site, does it include the effect of housing, you know, homes that are actually for sale availability in the region, because I know that in some regions we have seen a huge increase in my area in particular in San Bernardino County in California a huge increase in cost for homes because the availability is not there.

Alexandra Lee: Yes, yes.

(Guadalupe): So I was wondering how that, you know, if that was part of your factors in there?

Alexandra Lee: Yes definitely. And that's just data that we have right, inventory, total inventory as well as new inventory are both data that we look at. And in terms of research yes that's definitely a big factor that we see in what's making competition so fierce right? So it's driving up prices. It is also shortening the days of pending right, the number of days it takes a listing to - from hitting our site to going into pending.

So yes, you'll definitely find some research on our site. And if there's like particular geographies that you're interested in you could probably find data on our data site as well.

(Guadalupe): Wonderful. Thank you very much.

Coordinator: The next question comes from (Donna). Your line is open.

(Donna): Thank you. So I enjoyed the presentation. Just anecdotally I'm in the Kansas City metro market where it is affordable in the city but the downside is the school districts and the crime. So for instance our son and his wife are looking in the suburban areas. They don't have the option for remote work in their jobs 25 to 30 bids, you know, competing.

And so the availability in the kind of beginner price range is exceedingly low whereas on the lower price range in the urban areas and then the kind of the trade up kind of pricing there's plenty of inventory. So the total inventory picture doesn't really tell the picture because all the competition is in a particular segment and then in particular areas where the school districts are better.

So it's, you know, it's hard to get a full picture. I understand Zillow, BLS and Census doesn't include…

Alexandra Lee: Yes.

(Donna): …school district data. But just curious as to if there is a way of tracking like who the buyers are because in many cases they're competing against cash buyers which implies these are investors.

Alexandra Lee: Yes unfortunately we don't have that data just, you know, the source of…

(Donna): Right. I didn't think so.

Alexandra Lee: Yes.

(Donna): But it's just another aspect I guess for the data that's…

Alexandra Lee: Yes, no that's a great point. And like I was saying just for the last question, you know, we do look at other source of metrics to try to understand market competition and hotness. So, you know, it might look like there is very low inventory but is it because there's not many sellers putting their homes on the market or is it just a lot of buyers that are taking up the inventory very quickly? So yes definitely, you know, just looking at inventory across doesn't tell the whole picture.

Nicole Bachaud: I think it's important to look at too, Zillow recently released some research around a survey we did where sellers, potential home sellers said they would be more likely to sell once the vaccine is more widely distributed. So, you know, over the past year we've seen really depressed supply and an increase demand. That might be shifting slightly in the future as more people feel comfortable putting the homes on the market. So it's definitely something to consider for the future.

(Donna): And I don't think you can completely rule out the psychological factor because their friends are all buying houses so they want to buy a house too so…

Alexandra Lee: Yes don't want to feel alone.

(Donna): Right, right I mean it's the demographics of the Millennial generation is kind of late to the party and they're all joining at one time, you know? Thank you.

Alexandra Lee: Thank you.

Coordinator: The next question comes from (Ruth). Your line is open.

(Ruth): Yes thank you, excellent presentation (Alexandria), Nicole and Treh. I am in the rural area and like you're saying it's very little data. And I'm not blaming the Census but when they were supposed to have the enumerators come out, at that time the data wasn't collected. So my question is about the rentals the first one is about rentals by venue.

So I am part of agri-tourism in South Carolina. And our members have a brochure out. So the rental situation whether it's by venue or by ZIP Code there's some interest in visiting farms, visiting farms with animals, crop or trees and finding out more about it as people pass our area to go to the beach. So rentals is not being included or venues by the census data in the rural areas. And that is a problem because it helps us market what we're offering besides raising crop, animals and trees.

And then the other interest is about the foreclosure listings or sheriff sales in particular ZIP Codes. I know that's not answered in the census either but if that's tracked in the sense then it would feed into the house sales indirectly. But even – so what we find too in the southern states is that the climate change now, more hurricanes and other stuff that hasn't been happening, the wanting to buy in the warmer climates is interesting but then the opposite of the insurance factor, because that's another thing to track, you know, climate change weather incidence is going to be a factor as far as the future of buying in warmer climates with the climate change.

So I'm just saying we need more data and if Zillow can trace it and track it more than the census which kind of ended 2020 but I know there's, you know, the American ACS in-between but we really rural areas need more focus and climate change needs to be considered and foreclosures and sheriff sales that could lead to a better purchase or whatever. Okay thank you.

Alexandra Lee: Yes. No, that is a great point. You know, even at Zillow I imagine real data is just sparser just because there's less homes so it is harder to sort of guarantee and validate data quality. That's a, you know, rural housing is a topic that we definitely try to think about and try to be creative in learning more about it despite data challenges.

In terms of climate change definitely, you know, important topic. We have some research on our research site about, you know, homes in high risk areas. I'd encourage you to check it out if that sounds interesting.

(Ruth): Thank you.

Coordinator: The next question comes from (Melanie). Your line is open.

(Melanie): Hi, thanks for the presentation. Early on you all talked about lower income households being more impacted by COVID negatively than higher income households. Can you talk a little bit about what metrics were used to measure that?

Alexandra Lee: Yes so I think just on that slide, you know, looking at home values refer - with just rents, that was just based on, you know, it - we didn't pull from that data directly but for other research we've looked at, you know, unemployment and the types of industries that are – that were more likely or more strongly affected by wage loss during the pandemic. And, you know, as you can imagine they were largely service industry jobs, jobs that generally just have lower incomes. Yes Nicole am I missing anything? I know you presented that data.

Nicole Bachaud: Can you repeat the question really quick just so I can make sure I'm understanding it?

(Melanie): So just what metrics were used to measure the relative impact of COVID on households by income in regards to housing?

Nicole Bachaud: Yes. Yes so I think Alexandra got most of it. You know, we also looked at how unemployment across different job sectors impacted different households. And that definitely plays into the income levels as well.

(Melanie): Okay great. Thank you both.

Coordinator: Just a reminder if you have a question for the phone it is Star 1. And the next question comes from (Daniel). Your line is open.

(Daniel): Yes hi. Thank you for that great work. That's just really, really clear results.

So I'd just like to ask a little bit more along a broader picture of the economy. Have you looked at or observed or studied the impact of housing, new housing permits? And have you also looked at the composition of buyers and sellers in terms of household sizes because I would say households with children is going to have a slightly different dynamic than like a two - a married people with no children as well as by age, you know, elderly more elderly buyers versus younger buyers in terms of Millennials? That's all I have, thank you.

Alexandra Lee: Yes thank you. So for the second question we don't have data through Zillow on, you know, buyer and seller characteristics. Any research around that I think we would actually turn to like a census data source.

You know, our recent research about the potential effects of $15,000 first-time homebuyer tax credit for example, we look at renter households and like who are the households that are most likely to have incomes that can afford the

monthly payment on a home so sort of the implication being that the only hurdle for them is the down payment.

And we'll see we look at that breakout by race. And we might guess that, you know, White households, also Asian households are much better positioned than Black and Hispanic households to buy. So stuff like that, you know, we would look at census.

And sorry, I think I forgot your first question.

(Daniel): Oh I was referring to have you looked at housing starts how it correlates…

Alexandra Lee: Oh.

(Daniel): …or not correlates? And I would add also interest rates affecting mortgages so thank you.

Alexandra Lee: Yes so I don't know that we've had research just like tightly correlating housing starts to whatever else is happening to the market. We understand that, you know, builders are noticing this influx and demand and so we expect that housing starts would improve.

Obviously, interest rates have been at sort of record lows throughout last year and that's definitely what we see as a very big driver for demand over this last year.

(Daniel): Good work. Thank you.

Coordinator: The next question comes from (Samantha). Your line is open.

(Samantha): Hi. Thank you very much. This is a very good presentation. I apologize, I missed probably the first ten, 15 minutes. But I'm very interested in the data that Zillow has. I know your Web site you have zillow.com research/data. And from there you can get down to the neighborhood level with the, you know, the price, the square footage.

My question is though would Zillow partner - I'm an academic. I'm University of Albany. Does Zillow have a way to partner with researchers for grants to exploit the data that you have on like the characteristics of the housing unit?

Like I'm really interested in whether there is like an air-conditioning unit, whether there is a generator. So I'm very interested in these issues because they really impact climate change.

And unfortunately just the census data they don't ask those questions in the American Community Survey and the American Housing Survey is very limited in the scale at which you can get the data at that low level of geography. So that's my question.

Alexandra Lee: Yes Treh do you know all about the data availability of that specifically, we see with generators? I would encourage you definitely reach out to this contact email press@zillow.com. We definitely…

(Samantha): Okay.

Alexandra Lee: …work with academics very frequently and we're always very happy to help in whatever way we can. So we can – if we don't know right now to answer your question, definitely follow-up and we'll look into that for you.

(Samantha): Okay, thank you.

Treh Manhertz: Yes I don’t know whether that particular data is, you know, certain how it's formatted. But the - yes definitely go through the channels to - figure out if you can get access. It will depend on how resourced that data probably is so but, you know, our contact to reach out to be able to let you know.

(Samantha): Okay so price@zillow.com is where I should send an email?

Alexandra Lee: Yes.

Treh Manhertz: Yes and that will likely get redirected to our data site yes.

(Samantha): Okay perfect. Thanks so much.

Coordinator: The next question comes from (Guy). Your line is open.

(Guy): Hi. Thanks for the presentation. I think this is a question for (Alexandria). I have a couple - up until a couple of years ago you had county level data on rental cost index and inventory. And now all I can find at the county level is home sales prices. So do you know why or what changed on your site that you don’t have that level of geographic availability anymore for like the rental and inventory set…

Alexandra Lee: Yes.

Alexandra Lee: Well thanks for being such a long time user of our data. And yes we have taken off county level data just in terms of, you know, time - resource constraints. That’s not unfortunately a data series that we could regularly produce publicly.

That said again you can reach out to us through this email that's on the slide press@zillow.com if there's is a particular series that you need and we can see if we can pull that ad hoc for you.

(Guy): Great, thank you so much.

Alexandra Lee: Yes. And just another point that our rent index series ZORI, Zillow Observed Rent Index is a little bit different than what has been on rent index in years past. So now it's a repeat rent index instead of just an aggregation like the median rental value across the entire housing stock. So should do a better job at controlling for things like housing quality.

(Guy): Great thank you.

Alexandra Lee: Thank you.

Coordinator: I am showing no other questions at this time. It is Star 1 if you have a question from the phone.

Earlene Dowell: I actually have a couple questions that came through the chat. So one of the questions was, "Will you eventually begin to analyze those areas that are semi-suburban and closer to rural areas known as the ex-burbs, ex-urbs?"

Alexandra Lee: Yes I think, you know, it's not really like a data series that we produce on hand like on our data site. But certainly, you know, that's a whole, you know, area of vicinity that we can and should look into. So I think especially as, you know, remote trends play out I think that would be great for us to continue to look into.

Treh Manhertz: I do want to…

Earlene Dowell: Great.

Treh Manhertz: …take a second there to promote the data product that we're using to define urban suburban and rural. The same source does give a continuous measure of urbanicity in addition to the classifications. And so that's a great resource to be able to cut a little finer on, you know, what you want to consider suburban, ex-urban, rural and it's what we'll be using.

Earlene Dowell: Thanks Treh. Here's another question. "Do you think the quick rebound may have been due to the very low interest rates?"

Alexandra Lee: Yes I mean I think we definitely see that is a big reason. I think our - the three main drivers that we believe this boils down to is again the demographic shift, very low interest rates and sort of the pandemic right, shifting housing preferences. So definitely low interest rates have been a huge driver.

Earlene Dowell: "Does Zillow share their data on housing units? If so where can researchers go to get access?"

Alexandra Lee: I'm not sure what you mean by housing units. So we have data on like total inventory just like what's on the market, different cuts of that inventory data process if that's what you mean.

Earlene Dowell: Well here's another question that might be relatable to it. "Does Zillow have an API to allow the data to be used in a dashboard?"

Alexandra Lee: We do. So if you go to zillow.com/data that'll take you to that page that you sent screenshots of. But there's also a link that will describe how to use our APIs to get to that same data.

Earlene Dowell: "What do you make of the trend for production builders such as Dr. Horton adding communities while outside the urban areas?"

Alexandra Lee: Well…

Earlene Dowell: Or is that just DR Horton?

Alexandra Lee: You know, I don't want to, you know, shoot from the hip here on a topic that we haven't really done research on.

Earlene Dowell: Okay.

Alexandra Lee: But, you know, we have seen strong suburban demand in a lot of areas particularly if they're cheaper than urban. So I, you know, I would think that affordability and demand plays into that picture.

Earlene Dowell: I'll do one more question and then we can just double check on the lines. "How does Z-H-V-I account for renovations in home improvements? My memory is that repeat sales in indices may only partially capture home improvements. So I'm curious if the presenters have any thoughts about whether differences in improvements might contribute to some of the urban suburban differences found?"

Alexandra Lee: So ZHVI is based on our Zestimates so are approximates into the aggregation. Our Zestimate is only as accurate as the amount of data we have on our home. So if we're not able to see that there have been renovations perhaps the home

hasn't been sold prior or after these renovations that certainly brings the as accurate. But I'm not sure that there have been a lot more, you know, renovations in urban versus suburban areas but, you know, but just generally that's a great question. I think the short answer is that there will be some amount of error, especially on things we can't observe in our data.

Earlene Dowell: Great. (Jennifer) are there any more questions on the phone?

Coordinator: We do have a question on the phone from (Kaylee). Your line is open.

(Kaylee): Hi. I was wondering, this may be slightly outside the scope of Zillow but have you all been looking at potentially the relationship between housing prices, wages and remote work? My prior is that I'm thinking with more remote work we might see a downward pressure on wages and that might also show up in housing prices as well.

Alexandra Lee: Yes…

Treh Manhertz: We…

Alexandra Lee: …that's a great point. I don't – I think we're early on to really see the effects of that. Treh do you want to jump in?

Treh Manhertz: Yes just to say that it's unclear right now, you know, if and when will see that downward pressure how companies that can support remote employees will approach that. So definitely too early for us studying housing to quantify that specific trend but we'd expected to respond similarly to any wage change just with a different geographical impact.

(Kaylee): Thank you.

Coordinator: I'm showing no other questions from the phone at this time.

Earlene Dowell: Okay great. So we are at almost at the 2:45 point. I know that there were a lot of questions on the chat and what I will try to do is send them to the panelists and then we are could possibly have them answer the questions. And then we'll be posting that on our Web site at census.gov/academy under the Webinars tab.

And we'll just accompany all the questions that were not answered in a Word document hopefully. And then we'll be able to answer your questions.

So I apologize that we couldn't get to everybody else's questions but I would like to take this time to just thank Alexandra Lee and Nicole Bachaud and Treh Manhertz for such a wonderful, wonderful presentation. and I can tell that it was very well-received so I really appreciate the time that you all did for this excellent presentation.

The LED Webinar series will continue again on April 21, 2021 at 1:30 pm Eastern Standard Time when Andy Hait presents Improving Access to Key Data, Key Census Data, what's New on COVID data Hub and Census Business Builder. So with that I hope everyone has a safe and happy and happy St. Patrick's Day.

Coordinator: That concludes today's call. Thank you for participating. Please disconnect at this time.

END