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Title:

The Impact of COVID-19 on the Real Estate Market of Atlanta and Other Major Cities

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Section 1.0 – Introduction

Real Estate markets are one of the major indicators of how an economy (micro or macro) is performing. Nearly 5.8 million houses were sold in the US in May 2021 alone, which is a tremendous increase of over 44% from the previous year. Real Estate is considered one of the most stable markets in the US as it is one of the least liquifiable asset class. It is a fixed income asset class which provides reliable income for many investors which is why there is a sense of trust among people when purchasing real estate. This trust can depend on a lot of factors such as Government Policies (monetary and fiscal policy), Prospects of FDI (Foreign Direct Investment), DII (Domestic Institutional Investment), etc. When people are willing to invest/buy real estate, it means there has been (or is going on) an increase in savings, earnings, and income of households in a particular geographical/political area.

In the past two years, the pandemic has caused a lot of people to spend smaller portions of their income and save more. In this paper, I will look at whether Atlanta's real estate market is doing any differently than other major US Cities. If it is, what are some of the factors that are affecting it? My hypothesis is that due to multiple factors like migration, income, unemployment, government regulations, Covid-19 impacted Atlanta's real estate in a positive way compared to other US Cities. I will look at the data from the Bureau of Labor Statistics, and the US Census Bureau to compare the impact of Covid-19 on Atlanta with other major US Cities.

Section 2.0 – Background

Since the beginning of the pandemic in the US in March 2020, a lot of things have changed. Our day-to-day lives changed in many ways with worldwide lockdowns, travel bans, and stay at home orders. According to the National Academy for Health State Health Policy, between March 1 and May 31 of 2020, 71% of all US counties issued mandatory stay at home orders. This was around the same time when infections worldwide were multiplying by huge factors and was also known as the original or alpha wave. Stay at home orders caused a lot of people to feel the need of improving their homes because they would be spending most of their time at home for the foreseeable future. (Stanton, 2021) For some, it meant moving into a financed house and become a homeowner. The inventory of houses started shrinking in March itself as many of the rental residents started house hunting suddenly.

The pandemic also caused fluctuations in policy making. Moreover, these fluctuations were inconsistent across the country. The fluctuations depended upon a lot of factors like infection rates, population density, medical facilities, vaccination rates, fatality rates, and many more. The higher the population density, the more severe were the restrictions like mask mandates, vaccination requirements, and social distancing, quarantine, negative covid-19 test documentation, full travel bans to specific countries (international), etc. The US also saw a lot of inter-state migration. For example: People were moving away from places like California and New York State to places like Georgia, Florida, Texas, etc. This was mainly because of the higher cost of living in California/New York State vs cost of living in Georgia/Texas/etc. With almost the same amount of income, people were able to buy cheaper and bigger houses and live in a place where the cost of living was relatively, yet significantly low. I believe that this was the

other factor that caused the prices of Real Estate in Atlanta to do better than other cities. Research done by Leslie Stratton (2017) already suggests that there is a strong correlation between real estate prices and unemployment rate.

Section 3.0 – Data, Methods, and Analysis

The data for this paper is collected from the St. Louis Federal Reserve website (https://fred.stlouisfed.org/). I collected data for the following metro areas: Atlanta, Boston, Chicago, Dallas, Houston, Los Angeles, New York City, Philadelphia, San Francisco, and Washington DC.

I picked these cities because they are widely considered as the top ten metros in the US based on population. For most of these datasets, I have looked at county level data, specifically the central counties of the metro area. The definition of a central county is provided by the US Census Bureau. According to the census bureau, "central counties of a metropolitan area are those containing substantial portion of the core urban area. These counties, in turn, are used in measuring commuting time with other counties that potentially qualify for inclusion in the metropolitan or micropolitan statistical area as outlying counties." Please refer to Table 11 for a full list of all the counties used in this research. I collected time series data on population, unemployment, unemployment rate, labor force participation, house size in square feet, median listing price, and median household income for each central county of every metro area in my sample.

Section 3.1 – Population

Figure 1 provides a graphical representation of population growth of the metro areas from the year 2011 to 2021. The first line in the chart of a metro represents its population in 2011 and the last line represents the same in 2021. Some cities had higher population growth. Specifically, Atlanta, Washington DC, Dallas, and Houston saw the highest growth in population which was in the range of around 15-27%. Whereas other cities had very low population growth rates, which were in the range of around 0.5-4.5% over the 10-year period. The average year-over-year growth rate in the Atlanta, Dallas, Houston, and Washington DC was between 1.4-2.4% whereas other cities like New York, Chicago, San Francisco, Boston, Philadelphia, and Los Angeles saw an average annual growth rate of 0.08-0.46%.

It is interesting to notice that the only cities which have more than one percent growth rate are Atlanta, Washington DC, Dallas, and Houston. Other cities like New York, Los Angeles, Chicago, and Boston had almost no change in their population since 2019. Philadelphia saw very little change and San Francisco saw a decline of 1.2%. Differences in economic freedom across states may be a factor that effects these population growth patterns. Stansel et al. (2021) rank economic freedom of all 50 US states in 2019. Texas and Georgia rank number 4th and 6th, respectively. Pennsylvania and Massachusetts are tied for 19th, then Illinois at 32nd, California at 49th, and New York at 50th. Washington DC is not ranked in the report, but the surrounding states of Virginia and Maryland are ranked 5th and 25th, respectively. Laffer (2014) states that people often leave states with high tax rates to move to states with lower taxes. A full list of state income tax rates for the states in my sample is provided in Table 2. Using the most recent information from taxfoundation.org, Texas, Georgia, and California have the lowest state income tax rates for those with the lowest incomes. Texas collects no income taxes while Georgia and

California collect only 1% of earned income. When I look at the highest state income tax bracket across states in my sample, Texas still has the lowest rate at 0%. However, California collects 13.3% of earned income, New York collects 10.9%, and Washington DC collects 10.75% of earned income. Taken together it appears that people may be migrating from states that may be considered less economically free to states with more economic freedom.

Section 3.2 Unemployment and Unemployment Rate

Table 3 and Table 4 are summaries of changes in unemployment rates and unemployed persons in the forementioned metros over specific intervals of time. The first interval is from 2011Q1 to 2021Q4, and the second interval is from just before the start of the pandemic in 2019Q4 to 2021Q4. From Table 3, it can be seen that Atlanta saw a significant drop in unemployment rate since 2011. It was also the only city to have a drop in unemployment rate since 2019Q4.

Some cities saw drastic changes in unemployment compared to others. The same cities that experienced higher population growth also saw lower unemployment. The best performing city in terms of unemployment rate was Atlanta. A nonpareil unemployment rate of only 2.3% in 2021Q4 puts Atlanta at a great position compared to other cities. In fact, I find that Atlanta is the only city to have a lower unemployment rate in 2021Q4 than it had in 2019Q4.

Table 5 and Table 6 show the unemployment rate in all the metros for all financial quarters from 2019Q1 to 2021Q4, and the net percent change in during those quarters. The highest unemployment rate was during the 2020Q2 when the pandemic was at its peak. Although, the infections, deaths, and hospitalizations due to covid peaked at other times than 2020Q2, the main reason for the unemployment being significantly higher then was because of the uncertainty about the future. Scientists, Doctors, and Data Scientists had very limited data to work with hence there were heavy government regulation in terms of mask mandates, stay at home orders, etc. In all the other of the cities, the unemployment was between 23.3-109.5% higher than 2019Q4. This indicates that metros other than Atlanta have not yet fully recovered from Covid-19's economic impact on the country.

Section 3.3 – Median Household Incomes

Median household income data is collected in a time series format for each of the counties. The total percent change is then calculated from the first data point to the last one. Additionally, I calculate annual percent change from 2011 to 2020. At the time of data collection, median incomes for 2021 are not available. For each city, the data is averaged out using the weighted average method in which the 'population' is used as the factor deciding the weight of individual counties.

I looked at how the median household income in different cities changed over time. This dataset did not have 2021 data points for any cities, hence might be less reflective of how covid impacted people's household income. All the cities showed a common trend of an average increase in the median household income by 36.49% since 2011 and 3.512% year-over-year average increase, The standard deviation of each of these figures are 9.23% and 0.761% respectively. Hence considering the common rule of thumb of a data point being outside the range of 'mean +/-3 standard deviations', is an outlier. Furthermore, after doing the math, none of the data points fall outside the specified range and hence are not outliers. Table 7 and Table 8 are condensed data sets shows how median household income has changed in forementioned metros from 2011 through 2020.

Section 3.4 – Linear Regression Model

The descriptive statistics highlighted in sections 3.1 through 3.3 show some interesting differences and similarities of economic characteristics across metro areas, but they are unable to tell us whether any of these factors are jointly related to real estate values. I estimate the following linear regression equation to analyze the impact of Covid-19 and other factors on housing prices across metro areas.

$$HousePrice_{it} = \beta_0 + \beta_1 * Downtown_{it} + \beta_2 * PostCovid_{it} + \beta_3 * Downtown_{it} *$$

$$PostCovid_{it} + \beta_4 * PostCovid_{it} * \text{"Metro"}_t + \beta_5 * \textbf{X}_{it} + \beta_6 * \text{Time} + \beta_7 * \text{"Metro"}_t + \varepsilon_t$$

This equation controls for whether the house in downtown area, whether the house was listed in post-Covid era (March 2020 or later), whether a house in a specific city, and the following additional variables: Unemployment Rate, Population, Median Household Income, Median House size (sqft), and Labor Force Participation. These variables are directly or indirectly related to the housing prices. For example, the higher the unemployment rate, the lower the prices as people won't be willing to pay higher prices for houses. Higher populations may increase the demand for housing, and impact prices. Similarly, the higher the income, the more people are willing to spend on housing. Hence, inclusion of these factors is important in this paper.

The dataset compiled for these linear models consisted of a combination of the following variables: House size, Downtown, Post-Covid, the interaction between Downtown and Post-Covid, control variables for each of the metros, control variables for the interaction between post-covid and each of the metro, Unemployment Rate, Labor Force Participation, and Median Household Income. Table 9 lists summary statistics for the sample used in this analysis.

The results of my linear regression model are presented in Table 10. I ran a total of 3 linear models in which variables were added cumulatively. The base group for all specifications is suburban counties in the Atlanta metro area. The coefficient on square footage is negative and

statistically significant for all three specifications. An additional square foot of space reduces listing prices by $105 to $110. One potential explanation for this is that larger homes require more energy which results in higher utility bills. Sellers may be lowering prices to offset increases in utility bills. According to the first linear model, a house in downtown would cost $120,000 more than a house in suburban Atlanta. Similarly, a house would cost $47,670 more in a post-covid period. In column 2, I add an interaction of the indicators for post-covid and downtown homes. The coefficients for a downtown house and the post-covid house don't change significantly, but a house in downtown and post covid era would cost an additional $7,652 compared to Suburban Atlanta, however the result is not statistically significant. Therefore, downtown area didn't have statistically significant price hikes in residential real estate compared to Suburban Atlanta following the start of the Covid-19 pandemic. In column 3 of Table 10 all the metros were interacted with the post covid indicator variable. The coefficients of these interactions represent the change in listing prices metro area compared to Atlanta after the start of the Covid-19 pandemic. The cities which showed similar trends with Atlanta with respect to unemployment rate, population growth a were also the cities which had lower house cost compared to suburban Atlanta. The rest of the cities had higher cost of houses than suburban Atlanta and were statistically significant, except for Boston. After the start of Covid-19 pandemic, prices of houses in New York City were $75,890 more than houses in Suburban Atlanta, ceteris paribus. In Chicago, houses were $40,890 more than Suburban Atlanta, ceteris

paribus. A house in Los Angeles would cost $122,600 more than the same house in Suburban Atlanta. In San Francisco, the same house would cost $63,260 more than Suburban Atlanta. On the other hand, in Washington DC, housing is $5,023 cheaper than Suburban Atlanta. In Dallas, it is $17,670 cheaper than Suburban Atlanta. In Houston, prices of housing are $4,710 cheaper than Suburban Atlanta. Whereas, in Boston, houses are around $31,000 more expensive than in Suburban Atlanta. Lastly, in Philadelphia houses are $97,610 more expensive than Suburban Atlanta.

Section 5.0 – Conclusion and Future Prospects

Cities where post-covid housing prices didn't differ as much as from Atlanta are also the ones with similar trends for unemployment rate, labor force participation and population. These cities are Atlanta, Dallas, Houston, and Washington DC to some extent. These results may be tied into the fact that these metro areas are among the freest metro economies in the US by some measures. In the future, it would be interesting to look at the correlation and causality between real estate prices and freeness of metro economies. Another commonality which was not observed in the data was the strictness of Covid rules like stay-at-home orders, lockdowns, work from home environments, infection rates, hospitalization, time at which the cities were first hit with Covid-19 that the local government had to take some action. From experience, we can say

that Atlanta had a very lenient regulation on Covid-19 compared to other metros. I think this

could be the reason why the results differ for these cities. Going forward, it will be interesting to

look at the actual data of strictness levels of governments to deal with Covid, severity of the

cases, and the number of cases in these cities.

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Figures and Tables
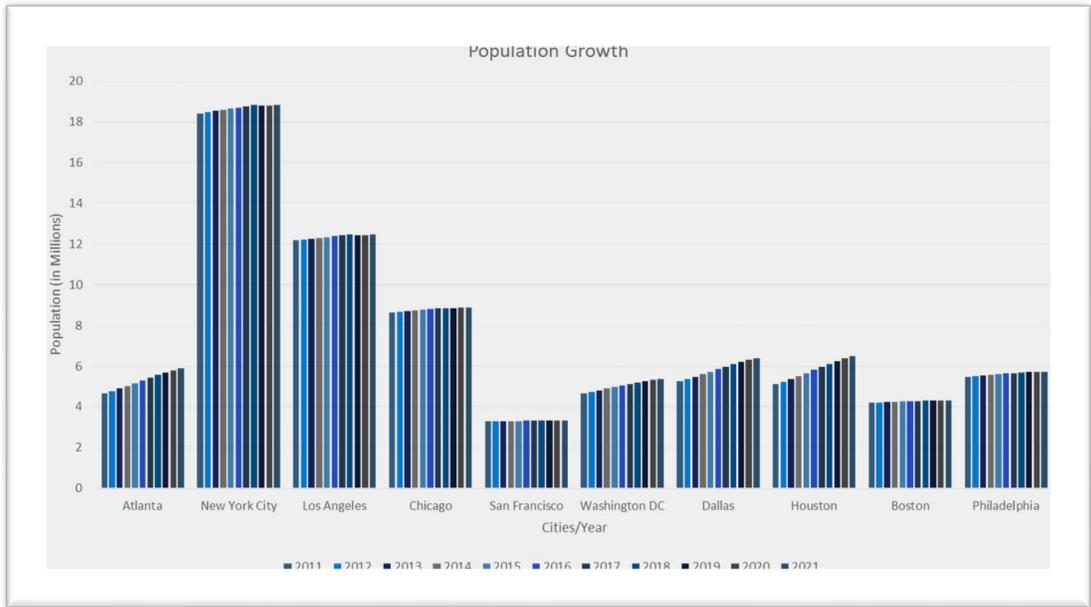
Figure 1: Annual Population Growth
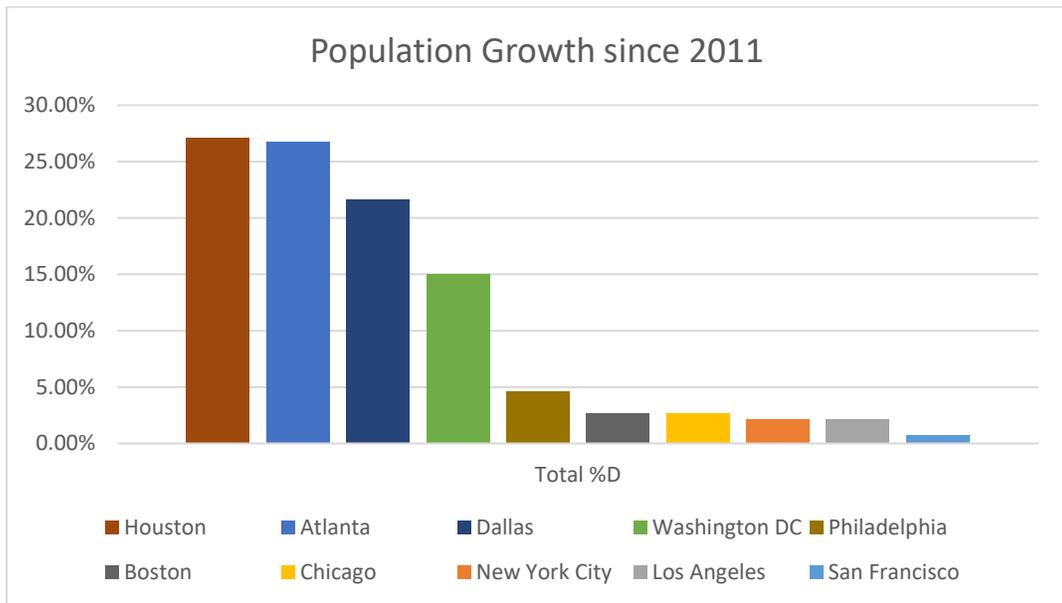
Figure 2: Population Growth Since 2011

Unemployment Rate 2011Q1 - 2021Q4
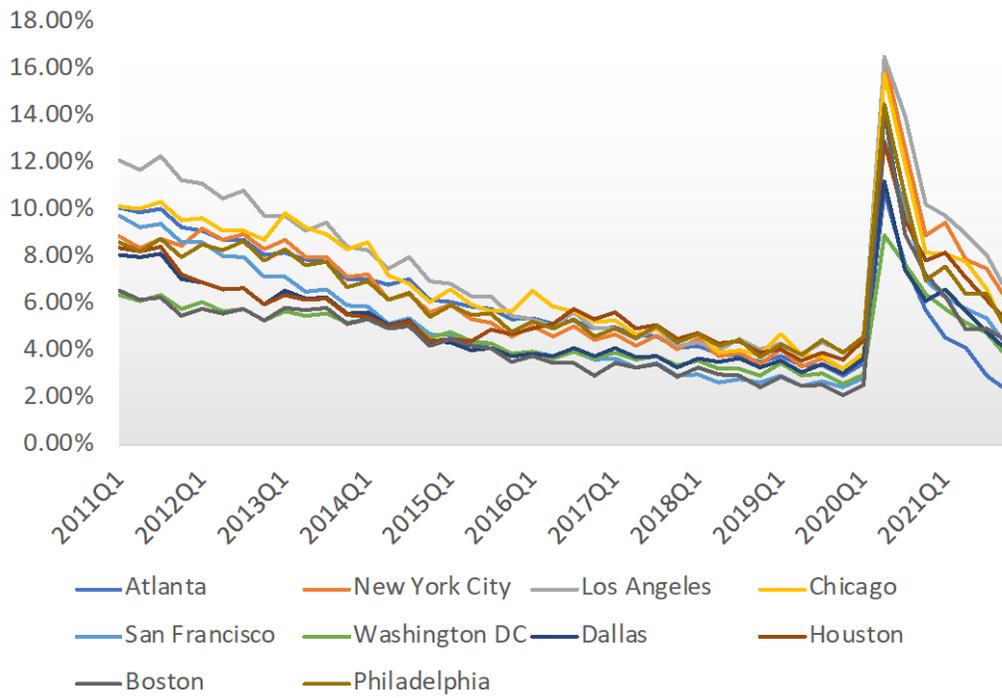
Figure 3: Unemployment Rate by Metropolitan Area

Table 1, Population Growth Rate 2019-2021									
	Atlanta	New York City	Los Angeles	Chicago	San Francisco	Washington DC	Dallas	Houston	Boston	Philadelphia
2019	2.10%	-0.07%	-0.08%	-0.02%	-0.21%	1.09%	1.67%	2.13%	-0.02%	0.18%
2020	2.00%	-0.01%	-0.01%	0.03%	-0.12%	1.10%	1.61%	2.02%	0.05%	0.21%
2021	1.86%	0.10%	0.10%	0.14%	-0.03%	1.05%	1.52%	1.88%	0.14%	0.30%
Avg	1.99%	0.01%	0.00%	0.05%	-0.12%	1.08%	1.60%	2.01%	0.05%	0.23%

Table 2, State Income Tax Rates in 2022

	Lowest Earners	Highest Earners
California	1.00	13.30
Delaware	2.20	6.60
Georgia	1.00	5.75
Illinois	4.95	4.95
Maryland	2.00	5.75
Massachusets	5.00	5.00
New Jersey	1.40	10.75
New York	4.00	10.90
Pennsylvania	3.07	3.07
Texas	0.00	0.00
Virginia	2.00	5.75
Washington DC	4.00	10.75
West Virginia	3.00	6.50

Notes: 2022 state income tax rates pulled from
https://taxfoundation.org/state-income-tax-rates-2022/

Table 3, Unemployment Rate Specific Time Interval (Atlanta, Boston, Chicago, Dallas, Houston)

		Atlanta	Boston	Chicago	Dallas	Houston
Unemployed Persons	Percent Change after 2011Q1	-73.98%	-30.83%	-49.83%	-37.05%	-27.89%
	Percent Change after 2019Q4	-33.39%	54.72%	35.23%	15.37%	18.03%
	Change after 2019Q4	-20011	60129	71601	47577	57740
Unemployment Rate	Percent Change after 2011Q1	-77.23%	-32.99%	-52.63%	-49.79%	-37.25%
	Percent Change after 2019Q4	-21.59%	109.52%	46.94%	33.52%	44.50%
	Change after 2019Q4	-0.63%	2.30%	1.53%	1.02%	1.62%

Table 4, Unemployment Rate Specific Time Interval (Los Angeles, New York City, Philadelphia, San Francisco, Washington DC)

		Los Angeles	New York City	Philadelphia	San Francisco	Washington DC
Unemployed Persons	Percent Change after 2011Q1	-38.15%	-31.88%	-42.92%	-57.76%	-37.04%
	Percent Change after 2019Q4	46.31%	51.02%	1.07%	25.34%	20.42%
	Change after 2019Q4	149817	265947	22902	62951	34422
Unemployment Rate	Percent Change after 2011Q1	-46.55%	-30.64%	-43.60%	-57.51%	-41.10%
	Percent Change after 2019Q4	62.61%	90.21%	23.31%	68.24%	42.41%
	Change after 2019Q4	2.48%	2.92%	0.92%	1.68%	1.12%

Table 5, Quarterly Unemployment Rate from 2019Q1 to 2021Q4 (Atlanta, Boston, Chicago, Dallas, Houston)					
	Atlanta	Boston	Chicago	Dallas	Houston
2019Q1	3.80%	2.90%	4.73%	3.57%	4.07%
2019Q2	3.37%	2.53%	3.83%	3.10%	3.57%
2019Q3	3.40%	2.57%	3.77%	3.43%	3.93%
2019Q4	2.93%	2.10%	3.27%	3.03%	3.63%
2020Q1	3.47%	2.57%	3.93%	3.70%	4.47%
2020Q2	10.73%	14.17%	15.73%	11.23%	12.87%
2020Q3	7.70%	8.97%	11.97%	7.43%	9.53%
2020Q4	5.73%	7.27%	8.20%	6.13%	7.83%
2021Q1	4.57%	6.30%	8.13%	6.60%	8.20%
2021Q2	4.13%	4.90%	7.80%	5.70%	7.10%
2021Q3	2.93%	4.97%	6.63%	4.80%	6.17%
2021Q4	2.30%	4.40%	4.80%	4.05%	5.25%
Percent Change after 2019Q4	-21.59%	109.52%	46.94%	33.52%	44.50%
Change after 2019Q4	-0.63%	2.30%	1.53%	1.02%	1.62%

Table 6, Quarterly Unemployment Rate from 2019Q1 to 2021Q4 (Los Angeles, New York City, Philadelphia, San Francisco, Washington DC)					
	Los Angeles	New York City	Philadelphia	San Francisco	Washington DC
2019Q1	4.33%	4.07%	4.27%	2.93%	3.47%
2019Q2	3.87%	3.33%	3.83%	2.50%	2.93%
2019Q3	4.37%	3.67%	4.47%	2.70%	3.03%
2019Q4	3.97%	3.23%	3.93%	2.47%	2.63%
2020Q1	4.43%	3.90%	4.60%	2.87%	3.00%
2020Q2	16.47%	16.40%	14.50%	12.93%	8.93%
2020Q3	14.00%	12.63%	10.57%	9.97%	7.70%
2020Q4	10.23%	8.93%	7.00%	7.00%	6.43%
2021Q1	9.73%	9.43%	7.60%	6.27%	5.80%
2021Q2	8.97%	7.90%	6.43%	5.80%	5.20%
2021Q3	8.10%	7.50%	6.43%	5.40%	4.77%
2021Q4	6.45%	6.15%	4.85%	4.15%	3.75%
Percent Change after 2019Q4	62.61%	90.21%	23.31%	68.24%	42.41%
Change after 2019Q4	2.48%	2.92%	0.92%	1.68%	1.12%

Table 7, Median Household Income (Houston, Washington DC, Philadelphia, Dallas, Atlanta)					
	Houston	Washington DC	Philadelphia	Dallas	Atlanta
2011	56512.44	86018.83	59829.42	60401.84	56205.9
2012	57841.88	88186.57	61310.91	60115.68	57560.76
2013	59291.39	90284.32	62120.35	61324.67	58428.17
2014	60999.95	90567.5	64539.8	63254.17	59601.23
2015	63844.04	92739.27	66679.5	64908.8	63076.65
2016	63265.38	95458.5	67803.53	68217.46	66033.23
2017	65885.18	98852.46	70074.31	71655.99	68600.78
2018	66917.1	101830.47	72489.22	74118.03	72157.49
2019	70494.2	107025.35	76199.72	76073.06	75248.7
2020	70278.55	110094.11	78741.13	79094.9	75236.02
Change	13766.11	24075.28	18911.71	18693.07	19030.12
Total %Change	24.36%	27.99%	29.94%	30.95%	33.86%
YOY %Change	2.47%	2.79%	3.01%	3.05%	3.31%

Table 8, Median Household Income (Chicago, Los Angeles, Boston, New York City, San Francisco)					
	Chicago	Los Angeles	Boston	New York City	San Francisco
2011	57691.74	56479.73	69271.57	52784.27	68909.7
2012	59265.32	56624.33	72112.77	54327.01	71499.67
2013	60689.92	58389.59	73540.18	56041.64	74159.28
2014	62384.09	59740.58	75769.71	57507.87	78406.9
2015	63784.55	62379.42	78834.47	59907.12	81517.53
2016	67018.8	64802.58	82706.95	62769.81	88798.06
2017	69021.98	68596.2	86763.63	65224.12	94582.24
2018	71255.62	71643.63	88856.82	68760.56	99958.6
2019	76571.6	76882.34	94141.48	74391.33	105818.64
2020	77320.66	79226.07	98091.02	75966.94	108865.83
Change	19628.92	22746.34	28819.45	23182.67	39956.13
Total %Change	34.02%	40.27%	41.60%	43.92%	57.98%
YOY %Change	3.32%	3.85%	3.95%	4.14%	5.23%

Table 9, Summary Statistics Table

Variables	N	Mean	Std Dev
House Price	4644	473128.134	282271.481
Downtown	4644	0.116	0.321
Post-Covid	4644	0.185	0.388
Downtown * Post-Covid	4644	0.022	0.145
New York City	4644	0.081	0.273
Chicago	4644	0.105	0.306
Los Angeles	4644	0.058	0.234
San Francisco	4644	0.151	0.358
Washington DC	4644	0.163	0.369
Dallas	4644	0.081	0.273
Houston	4644	0.023	0.151
Boston	4644	0.081	0.273
Philadelphia	4644	0.128	0.334
House Size sqft	4644	2080.35	489.692
Unemployment Rate	4644	4.947	2.881
Population	4644	845414.288	1296308.443
Labor Force Participation	4644	63.314	2.391
Median Household Income	4644	83164.234	20832.108

Table 10, Linear Regression Table

	Linear Model 1	Linear Model 2	Linear Model 3
Intercept	1,164,000.00	1,163,000.00	1,228,000.00
	(81,140.00)	(81,190.00)	(81,910.00)
House Size (In Sqft)	-105.7***	-105.5***	-110.50***
	(6.98)	(7.00)	(7.01)
Unemployment Rate	-10,220***	-10,280***	-12,590***
	(1,137.00)	(1,144.00)	(1,215.00)
Population	0.01061***	0.01061***	0.01***
	(0.00)	(0.00)	(0)
Labor Force Participation	-16,820***	-16,790***	-17,200***
	(1,194.00)	(1,195.00)	(1,202.00)
Time Trend	-1,088***	-1,089***	-1,170***
	(180.50)	(180.50)	(179.80)
Downtown	120,000***	118,600***	
	(8,175.00)	(8,657.00)	(8,631.00)
Post-Covid	47,670***	47,190***	21000.00
	(10,180.00)	(10,230.00)	(16,330.00)
Post-Covid X Downtown		7,652.00	5,750.00
		(16,170.00)	(16,330.00)
Median Household Income	8.135***	8.129***	8.10***
	(0.15)	(0.15)	(0.15)
New York	93,310***	93,640***	75,390***
	(12,900.00)	(12,920.00)	(13,560.00)
Chicago	-103,400***	-103,300***	-110,900***
	(9,310.00)	(9,314.00)	(10,080.00)
Los Angeles	195,300***	195,500***	171,000***
	(13,160.00)	(13,170.00)	(13,980.00)
San Francisco	309,100***	309,400***	295,600***
	(10,740.00)	(10,760.00)	(11,330.00)

Table 10 con'td, Linear Regression Table			
Washington DC	-32,050***	-31,960***	-32,330***
	(9,110.00)	(9,113.00)	(9,704.00)
Dallas	-26,150**	-26,170**	-24,080*
	(9,037.00)	(9,038.00)	(9,923.00)
Houston	(13,520.00)	(13,390.00)	(10,730.00)
	14,590.00	14,590.00	15,960.00
Boston	64,310***	64,420***	55,730***
	10,210.00	10,210.00	11,060.00
Philadelphia	-117,300***	-117,100***	-136,900***
	9,272.00	9,244.00	10,090.00
New York * Post Covid			75,890**
			23,930.00
Chicago * Post Covid			40,890.00
			21,430.00
Los Angeles* Post Covid			122,600***
			25,940.00
San Francisco * Post Covid			63,260**
			19,610.00
Washington Dc * Post Covid			(5,023.00)
			19,120.00
Dallas * Post Covid			(17,670.00)
			22,970.00
Houston * Post Covid			(4,710.00)
			36,530.00
Boston * Post Covid			31,000.00
			23,390.00
Philadelphia * Post Covid			97,610***
			20,480.00
Sample Size	4644	4644	4644
R^2	0.7685	0.7685	0.7718
Notes: Numbers in parenthesis are the standard errors			
*** 99.9%, ** 99%, * 95%, . 90%,			

Atlanta	Boston	Chicago	Dallas	Houston	Los Angeles	New York City	Philadelphia	San Francisco	Washington DC
Fulton	Norfolk	Cook	Collin	Austin	Los Angeles	New York	Burlington	Alameda	DC
Forsyth	Plymouth	DeKalb	Dallas	Brazoria	Orange	Kings	Camden	Contra Costa	Calvert
Cobb	Suffolk	DuPage	Denton	Chambers	Ventura	Queens	Gloucester	Marin	Charles
Clayton	Essex	Grundy	Ellis	Fort Bend	Riverside	Bronx	Bucks	San Francisco	Frederick
Cherokee	Middlesex	Kankakee	Hunt	Galveston	San Bernardino	Richmond	Chester	San Mateo	Montgomery
Gwinnett	Rockingham	Kane	Kaufman	Harris		Hudson	Montgomery	San Benito	Prince George's
Dekalb	Strafford	Kendall	Rockwall	Liberty		Bergen	Delaware	Santa Clara	Arlington
Rockdale		McHenry		Montgomery			Philadelphia	Napa	Clarke
Henry		Will		Waller			New Castle	Solano	Culpeper
Fayette							Cecil	Sonoma	Fairfax
Douglas							Salem	Merced	Fauquier
								Santa Cruz	Loudoun
								San Joaquin	Prince William
								Stanislaus	Rappahannock
									Spotsylvania
									Stafford
									Warren
									Jefferson

Table 11, List of Counties