

ANALYZING THE EFFECTIVENESS OF OPPORTUNITY
ZONES IN THE NORTH TEXAS REGION

by

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ZONES IN THE NORTH TEXAS REGION

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ABSTRACT

Opportunity Zones are a place-based incentive designed to promote economic welfare in distressed neighborhoods by providing tax credits to investors. The policy has undergone much academic scrutiny as there is a vested interest from urban development groups to understand if it helps cities, and a vested interest from investors who wish to know if it will provide them with better investment opportunities. In this paper, I analyze single family home prices in two primarily suburban Opportunity Zones in the Dallas-Fort Worth region to try to understand how this policy affects areas lacking previous investment opportunities. This is accomplished by looking at the price of each home and running regression analysis to see if there is a correlation between Opportunity Zone status, and price. Further, I synthesize relevant research that takes a look at the policy and comparable policies to gain insight on what other researchers have already concluded. Lastly, I provide my thoughts and recommendations on this policy and the goals it seeks to accomplish as it relates to the bigger picture.

INTRODUCTION

A Place-Based Incentive is a policy initiative designed to promote economic welfare in a designated area. Often times these incentives come in the form of government tax breaks and they seek to spur development in underdeveloped areas. Included in the “Tax Cuts and Jobs Act of 2017” was the provision for one such Place-Based Incentive known as the “Opportunity Zone.” Opportunity Zones, which may be referred to as “OZs” in this paper, are federally designated census tracts with preferential tax treatment for investments.

In order to qualify as an Opportunity Zone, a census tract must have a poverty rate of at least 20 percent and have a median household income that is less than 80 percent of the median household income of neighboring tracts. Eligibility requirements were made available to states, who then designated up to 25% of their eligible census tracts. (Tax Cuts and Jobs Act, 2017). Of the more than 42,000 eligible census tracts, just over 8,760 were designated as Opportunity Zones. The average poverty rate of the designated areas was 29% in 2016, compared to an average poverty rate of around 15% in the same year. (Gelfond, H., & Looney, A, 2018).

Once designated as an Opportunity Zone, certain investments are eligible for tax benefits. An investor who wishes to defer their capital gains on an existing investment can do so by reinvesting in an Opportunity Zone. The deferral extends until December 31, 2026 or until their investment in the OZ is sold. If a qualifying investment is held in an Opportunity Zone for more than five years, 10 percent of the gain can be deducted from its taxable value. If the qualifying investment is held for more than 7 years, 15 percent of the gain can be deducted from its taxable value. If the investment is held for more than 10 years, its tax basis increases to its fair market value. This means the investment will appreciate tax-free, similar to a Roth IRA. To prevent investors from simply purchasing a property and doing nothing with it, the IRS specifies that

substantial improvements must be made to the property or a business must be run on the property. Substantial improvements require that a capital improvement at least equal to the initial acquisition cost be implemented within 30 months of purchase; however, the test for running a business is much looser and may be more easily taken advantage of. (Sage, A., Langen, M., & Van de Minne, A, 2019). It is important to note that these benefits do not apply to owner-occupiers or home builders selling homes as a product.

Opportunity Zones investments can also be organized into “Qualified Opportunity Funds” to allow several investors to pool their money and receive preferential tax treatment. To qualify as a Qualified Opportunity Fund or QOF, the investment vehicle must hold 90 percent or more of its assets in Opportunity Zone property. (Eastman, S., & Kaeding, N, 2019).

Clearly, Opportunity Zones can be lucrative for investors seeking to reduce their tax bill, but do they really provide any real economic benefit to residents within the zones? This paper seeks to answer the question by examining the price trend in residential real estate, as well as employment trends within Opportunity Zones in the North Texas Region.

LITERATURE REVIEW

Place based incentives such as Opportunity Zones have been a focus of discussion for many decades as the idea is nothing but new. In the 1980s, Ronald Reagan attempted to implement “Enterprise Zones” as a free-market solution to revitalize inner cities and create jobs in underserved areas. (Denton, H, 1982). Though this policy never passed congress, similar policies have been implemented around the world and have been the subject of much academic scrutiny. A thorough synthesis of research in this topic leads to a muddy conclusion as numerous

authors find little effect, or even negative impacts, while others find positive results from their implication.

Although the official Reagan policy of “Enterprise Zones” never passed, following the creation of an enterprise zone in Connecticut in 1982, many states followed suit in creating their own programs. (Ham, J. C., Swenson, C., İmrohoroğlu, A., & Song, H, 2011). These programs are far less encompassing than Opportunity Zones and are entirely up to the state’s discretion as to how their legislation is written. A study published in 2010 looks at the effects of California’s Enterprise Zone program which was created through the 1996 merger of the state’s Enterprise Zone Act, and the Employment and Economic Incentive Act. Unlike Opportunity Zones, this program seeks to provide direct incentives designed to benefit under-represented groups. Employers within the zones can receive hiring credit for hiring “disadvantaged” workers, tax credits for using machinery within a zone, a longer period to carry net losses to reduce tax liability, accelerated depreciation of depreciable assets, and a tax credit that low-income employees can claim. (Neumark, D., & Kolko, J, 2008).

The previously mentioned study finds a few increases in employment in its results by comparing enterprise zone employment prior to and following the implementation of the policy. Meanwhile, another study published in 2010, finds a statistically significant reduction in employment and poverty in Enterprise Zones when compared to nearby “Non-Enterprise Zones.” The reduction in poverty rate amounts to 1.6% while the reduction in poverty rate amounts to 6.1% at a national level. (Ham, J. C., Swenson, C., İmrohoroğlu, A., & Song, H, 2011). It should be noted that this study looks at several different states with similar, but different, policies; and continues to find a significant result.

Despite this positive result, one of the authors of this study, David Neumark, presents a new study in 2019 which uncovers numerous flaws in a 2011 study touting their findings of positive effects of Enterprise Zones. (Neumark, D., & Young, T, 2019) Neumark and Young discuss flaws in the 2011 study and point out that any reduction in poverty and unemployment as a result of the Enterprise Zone policy is likely to be relatively small if significant. Unfortunately, the body of research for Opportunity Zones is far thinner than that of state-based Enterprise Zones. That being said, useful conclusions can still be drawn on the effectiveness of these zones using existing data.

A study published at the end of 2019, analyzing data from 2018, finds little in favor of Opportunity Zones. In their analysis, the authors note that any correlation they found between Opportunity Zone status and house prices is less than 1 percentage point and hardly statistically significant. They note that at the time of their research it may be too soon to draw conclusions on the program as Opportunity Zone selections were not made public until mid-2018. (Chen, J., Glaeser, E., & Wessel, D, 2019). Although one would expect the economic benefits of OZs to make their way to the local housing market, it is almost certainly too soon to say a mere few months after the implementation of the policy.

More recent studies have begun to uncover potential benefits of Opportunity Zones by utilizing the wider timescale of data available, but these benefits may not be so readily available to residents. A study published in February 2021 analyzes properties using data from 2017 through 2019 to reveal potential correlation between OZ designation and property price increases. The authors note that when analyzing general properties, no interesting correlation is found, but that in commercial redevelopment properties and land, price increases of 7-20% and 40% respectively are seen when collated with comparable Non-OZ tracts. (Sage, A., Langen, M.,

& Van de Minne, A, 2019). This supports the idea that those seeing the greatest benefit from the OZ program are existing commercial property and landowners, but that a wider economic benefit has yet to be reflected in general price trends within these zones.

A paper published in February 2021 utilized national real estate data and difference-in-differences analysis to create a model comparing real estate price per square foot between Opportunity Zones and eligible census tracts that were not designated. The authors' model suggests OZ designation increased real estate prices by an average of 4.03-6.13% with statistical significance. (Bekkerman, R., Cohen, M. C., Maiden, J., & Mitrofanov, D, 2021). A closer analysis of their results shows that certain states, such as Louisiana, saw average gains approaching 30%, while others, such as Alabama, saw declines as high as 20%. Some states, including Texas, were excluded from this study due to lack of disclosure data. Regardless of the change in price, the authors noted that a statistically significant change in transaction volume in OZs was not found. This suggests that both the supply and demand curves were affected by the policy as prices increased, but certain property owners were incentivized to hold their assets longer.

In a study published in mid-2020 the authors note that the vast majority of OZ capital appears to be flowing into real estate, not the operation of businesses. This is believed to be due to the undesirability of selling equity in small businesses from both the investor and equity standpoint. The authors perform numerous interviews with industry professionals from fund managers to real estate developers who are actively involved in Opportunity Zone investments. A common theme is echoed among these professionals which is that OZ status does not make a bad investment good, it merely sweetens an already good deal. (Theodos, B., Hangen, E., Gonzalez, J., & Meixell, B, 2020). This indicates that these investors do not believe this program

will bring in excess development beyond what was already happening in these zones before their designation. Combine this with the price increase seen with development properties and the benefits become even more limited as those who would see the greatest benefit from this program are priced out by market forces.

A key reason for this lack of faith in the ability of the OZ program to provide wider economic benefit is due to its misalignment of incentives. Investors are merely incentivized to create the most profitable project in a particular geographic area, not one that creates social impact. (Lester, R., Evans, C., & Tian, H, 2018). For example, if an investor wishes to develop a warehouse property, they may seek an OZ for its tax benefits and potential profitability. While they have incentive to seek out a particular geographic location for their own personal gain, they have no incentive to seek out a workforce from that location which would provide direct economic benefit to its residents. In this manner, tax benefits will be absorbed by the wealthy investor instead of making their way into the local economy. Some have called this a government subsidy for gentrification, claiming that neighborhoods could be hurt more than helped by a spur of new development. In reality, it is more likely in this scenario that the neighborhood itself would benefit from an increase in capital, but its current residents would not.

The issues underlying Opportunity Zone policy extend beyond a misalignment of investor incentives. Many of the criteria qualifying a census tract for Opportunity Zone status has been criticized for being too encompassing. In a 2018 paper looking at OZs, the authors point out that the 20 percent poverty metric used to define eligible census tracts includes dozens of college campuses due to their student population being legally impoverished. The University of Southern California, located in Census Tract 222700, is one such university designated as an Opportunity Zone due to its official poverty rate of 88 percent. Although this number may seem staggering, it

is important to note that 99 percent of the residents in the designated tract are enrolled in college. Likewise, both Texas State University and Texas A&M University reside in Opportunity Zone tracts with student populations greater than 85 percent. (Gelfond, H., & Looney, A, 2018). This should come as no surprise given the criteria qualifying tracts for OZ status and the simple fact that state legislatures are often looking to maximize economic gain with whatever tools they are given.

Once more, in a 2019 paper that takes a look at some of the potential drawbacks of the Opportunity Zone program, it is noted that a portion of “outlier” zones exist where investment opportunities have been ripe for quite some time. (Jacoby, S, 2019). The author points to Opportunity Zones in Las Vegas which include attractions such as the Luxor Hotel, Four Seasons, McCarran International Airport, and the recently completed Allegiant Stadium. (Opportunity Zones – Map, n.d.). While this could certainly be an excellent opportunity for the city of Paradise and nearby Las Vegas, it seems to miss the point of Opportunity Zones which exist as “an economic development tool that allows people to invest in distressed areas in the United States” according to the IRS. (Opportunity zones, n.d.). The author notes that “outlier” zones such as this one, and those located in highly gentrifying areas and college campuses, could account for a disproportionate share of OZ investment, and lost federal revenue.

This inequity grows when one considers the way in which investments will be selected. An investor is more likely to choose an investment in a luxury hotel in a high growth OZ over an affordable housing investment in a slower growing OZ. This is obvious due to the higher potential return of the luxury hotel given the same tax breaks as the affordable housing project. The author of the previous study notes that even former Trump Administration White House Communications Director, Anthony Scaramucci, referred to his REIT’s investment in an OZ in

Oakland as “building a swank, boutique hotel that’s going to create excessive economic rents.” (Buhayar, N, 2018). It was also noted that Cadre, a New York based fintech and data-driven investment fund, announced its plans to invest only in OZs that were expected to grow with “outsized future growth potential.” Cadre further claims, “[You] can’t avoid taxes without taxes to pay” referring to the need for a project to be profitable without the tax incentive to be able to realize the tax incentive. (Anastasi, C, 2020).

These concerns are amplified in an article from the Journal of Legislation published in 2019. In this article, the author mentions “economic efficiency” issues posed by tax policy in which “[economic efficiency issues] result from taxes changing the economic decisions that people make.” The author points to Opportunity Zones as being a source for future economic efficiency issues as people, and states, change their investment patterns to better suit the guidelines of the program and avoid taxes. (Bennett, J, 2019). The author argues that the change in investment behavior will result in capital being pulled from other potential investment locations and a disruption of free market economics.

Despite the negative bias in a few of these examples, it is still important to consider the flaws underpinning the creation of this policy as we look to the future and consider what could be done better. While the Opportunity Zone program may have been written with the intent of promoting positive change in underdeveloped communities, it seems to have lacked the careful consideration that would have allowed for flow of capital in a manner that more directly impacts zone residents. That being said, if secondary effects of the Opportunity Zone program come to fruition it could be a relatively cheap way for the federal government to spur development when compared to direct spending.

METHODS & RESULTS

The theory underpinning this study is that an increase in housing prices reflects positive economic development. To discover trends in housing prices I chose to analyze MLS sales data to give a more accurate depiction of market house prices than you would otherwise get from appraisal data. Large national datasets utilizing MLS data can be purchased from data aggregation companies, but this would exceed the scope and budget of this study. Instead, I elected to analyze a much smaller dataset that would allow me to get more accurate data on each listing in order to create a more descriptive model that isolates as many independent variables as possible.

Before any MLS data can be analyzed, I first had to select Opportunity Zones and control zones to compare. Zones had to be selected in the Dallas/Fort Worth area due to my availability of data. Utilizing Arc GIS tools, I was able to easily view census tracts which were designated as Opportunity Zones. The tracts I selected demonstrate greater relative homogeneity in investment opportunity when compared to Opportunity Zones located closer to the cities of Dallas and Fort Worth. As mentioned in the previous section, an analysis of Opportunity Zone effectiveness could easily become clouded by pre-existing development opportunities. Given that zones near Downtown Dallas' Bishop Arts district and Fort Worth's Cowtown district are likely to exhibit pre-existing development opportunities, I ruled out these areas as potential candidates for clean data. Other suburban zones were ruled out due to a lack of available data or due to differentiating factors.

The two zones chosen were the entirety of census tracts 1229.00 and 0166.21. The former is located in Arlington, Texas and represents the area bounded by Park Row Drive to the North, Collins Street to the West, Arkansas Lane to the South, and New York Avenue to the East. This

area will be continually referred to as the “Arlington OZ.” This zone features the “Arlington ISD College and Technology Center” completed in 2017. The latter of the two census tracts is located in DeSoto, Texas and represents the area bounded by Parkerville Road to the North, Hampton Road to the West, Bear Creek to the South, and Interstate-35E to the East. This area will be referred to as the “DeSoto OZ.”

Concurrently, two Non-Opportunity Zone tracts were chosen to be comparable. The census tracts selected were 1115.21 and 0166.20. The former is located in Arlington, Texas and represents the area bounded by Arkansas Lane to the North, New York Avenue to the West, Mayfield Road to the South, and TX-360 to the East. This area will be continually referred to as the “Arlington Non-OZ.” The latter of the two census tracts is located in DeSoto, Texas and represents the area bounded by Pleasant Run Road to the North, N Hampton Road to the West, E Belt Line Road to the South, and Interstate-35E to the East. This area will be referred to as the “DeSoto Non-OZ.” Selected demographic data for all 4 census tracts can be seen below in Figure 3.1.

Figure 3.1

Tract Number	166.20	166.21	1115.21	1229.00
City	DeSoto, TX	DeSoto, TX	Arlington, TX	Arlington, TX
Opportunity Zone?	No	Yes	No	Yes
Population (2015)	5,905	6,091	8,157	8,253
Poverty Rate (2015)	16.30%	14.60%	18.70%	19.80%

As evidenced by the previous demographic data, these tracts are all highly comparable in their size, scope, and population. Once these four zones were selected, data was ready to be collected from the North Texas MLS system. Sales data was collected for all full years following the implementation of the policy; this includes 2018, 2019 and 2020. The listings were further

segmented in time by season. Due to limitations in the MLS software, some data had to be aggregated manually. By viewing the individual listing of each property, I was able to gather the age of each home and information regarding any recent updates to the property. For the purposes of the model, a dummy variable was created within the data titled “Updated Kitchen” which was assigned a value of “1” if the kitchen had been updated per the listing photos, and “0” if no improvements had been made. Through visual analysis of all 850 listings, I found an updated kitchen to be an excellent predictor of further renovations being performed on the property.

Following the aggregation of all this listing data, I sought to create a model that would isolate as many independent variables as possible in order to gain the most accurate insight on the efficacy of the Opportunity Zone program. In theory, a hedonic pricing model could be created in order to derive price as a function of a home’s physical characteristics and other contributing factors. (Sirmans, S., Macpherson, D., & Zietz, E, 2005). To create such a function, multiple regression analysis will be used to uncover any correlation between independent variables, such as age and updated kitchens, and the dependent variable, price. Many researchers find these types of models favor location specificity in their results. As such, I added a dummy variable to allow the model to differentiate between the two zones located in Arlington, and the two zones located in DeSoto.

Prior to any regression analysis, a couple of variables were added to improve the effectiveness of my model. To reduce the impact of diminishing returns in age and square footage, $(Age)^2$ and $(Square\ Footage)^2$ were both added to the data for each observation. This helps the model to understand an extra year in age means less for a home that is 60 years old compared to one that is just 3 years old. Similarly, an extra 100 square feet means less for a 4,000 square foot home than a 1,000 square foot home. Lastly, the natural logarithm of price was

taken to create $\ln(\text{Price})$. This will be used as the dependent variable in the multiple regression analysis. Using a natural logarithm allows the correlation of the dependent variables with respect to the dependent variable to be analyzed as a percentage as opposed to some non-standardized constant.

As evidenced by other hedonic pricing models, such as that created by Aroul, Hansz, and Rodriguez, to identify price variables for homes in Fresno, California, a significant number of variables can be added to these models in order to achieve R^2 values exceeding 0.87 and highly predictive results. (Aroul, R. R., Hansz, J. A., & Rodriguez, M, 2020). For the purposes of this study, I believe the ten variables used, including OZ status, $(\text{Age})^2$ and $(\text{Square Footage})^2$, are sufficient as they achieve R^2 values as high as 0.765 in the models I created.

Prior to creating a working model, I trimmed the top and bottom 5% of observations from the dataset thus reducing the number of observations from 850 to 765. Then, using data analysis tools in excel, I ran a multiple regression analysis comparing the dependent variable, $\ln(\text{Price})$, and the following independent variables: Year, Location (DeSoto or Arlington), Total Bathrooms, Total Square Footage, Age, Updated Kitchen, Season, OZ Status, $(\text{Age})^2$, and $(\text{Square Footage})^2$, and COVID-19. One model was created using all 765 observations, another was created using the 454 trimmed observations from the DeSoto OZ and DeSoto Non-OZ, and another was created using the 311 trimmed observations gathered from the Arlington OZ and Arlington Non-OZ. A final two models were created excluding any new construction. One utilized only DeSoto data, while another utilized data from Arlington and DeSoto.

The full output of multiple regression analysis utilizing all 765 observations is shown below in Figure 4.1. This model achieved the highest R² of all models at 0.765.

Figure 4.1

Regression Statistics								
Multiple R	0.874669539							
R Square	0.765046803							
Adjusted R Square	0.761930713							
Standard Error	0.107069733							
Observations	765							
ANOVA								
	df	SS	MS	F	Significance F			
Regression	10	28.14565952	2.814565952	245.5149782	2.1516E-229			
Residual	754	8.643801464	0.011463928					
Total	764	36.78946099						
	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	11.22705979	0.056487146	198.7542403	0	11.11616901	11.33795056	11.11616901	11.33795056
Years after 2017	0.063607774	0.004862337	13.08172877	2.1743E-35	0.054062446	0.073153102	0.054062446	0.073153102
1 - DeSoto 0 - Arlington	0.010451201	0.010938233	0.955474263	0.339644144	-0.011021812	0.031924213	-0.011021812	0.031924213
Baths Total	0.06127534	0.011453269	5.350030518	1.16743E-07	0.038791253	0.083759427	0.038791253	0.083759427
SqFt Total	0.00058539	4.80902E-05	12.17275942	2.99686E-31	0.000490983	0.000679796	0.000490983	0.000679796
Age	-0.006428078	0.000916318	-7.015119539	5.11836E-12	-0.008226915	-0.004629241	-0.008226915	-0.004629241
Updated Kitchen?	0.085893829	0.008566062	10.02722476	2.68208E-22	0.069077663	0.102709996	0.069077663	0.102709996
Season	0.024275849	0.00353762	6.862197487	1.41555E-11	0.017331093	0.031220605	0.017331093	0.031220605
OZ	-0.008183843	0.010122679	-0.80846612	0.419077309	-0.028055827	0.011688142	-0.028055827	0.011688142
(Age)^2	5.7912E-05	1.24365E-05	4.656629779	3.79815E-06	3.34978E-05	8.23262E-05	3.34978E-05	8.23262E-05
(SqFt)^2	-9.62589E-08	1.1443E-08	-8.412045626	2.01118E-16	-1.18723E-07	-7.3795E-08	-1.18723E-07	-7.3795E-08

As shown by the highlighted “OZ” variable, this model suggests there is no significant correlation between Opportunity Zone status and price in the analyzed regions. Figure 4.2 shows the output of multiple regression analysis using only observations gathered from the Arlington OZ and Arlington Non-OZ.

Figure 4.2

Regression Statistics								
Multiple R	0.739233849							
R Square	0.546466683							
Adjusted R Square	0.532905886							
Standard Error	0.119902817							
Observations	311							
ANOVA								
	df	SS	MS	F	Significance F			
Regression	9	5.214104855	0.579344984	40.29753477	9.72247E-47			
Residual	301	4.327382336	0.014376686					
Total	310	9.541487191						
	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	11.24342761	0.128772161	87.31256432	7.9391E-216	10.9900199	11.49683533	10.9900199	11.49683533
Years after 2017	0.064198604	0.008538904	7.518365479	6.412E-13	0.047395094	0.081002113	0.047395094	0.081002113
Baths Total	0.057622357	0.018398792	3.131855357	0.001907881	0.021415805	0.093828909	0.021415805	0.093828909
SqFt Total	0.000581767	0.000149244	3.8980997	0.000119563	0.000288074	0.00087546	0.000288074	0.00087546
Age	-0.006541918	0.002533023	-2.582651883	0.010276474	-0.011526595	-0.00155724	-0.011526595	-0.00155724
Updated Kitchen?	0.089818328	0.014574361	6.162762847	2.29104E-09	0.061137786	0.11849887	0.061137786	0.11849887
Season	0.023296936	0.006170067	3.775799325	0.000192153	0.011155005	0.035438866	0.011155005	0.035438866
OZ	-0.008616118	0.032656618	-0.263839879	0.792083844	-0.072880309	0.055648073	-0.072880309	0.055648073
(Age)^2	6.30266E-05	3.34655E-05	1.883333362	0.060619205	-2.82928E-06	0.000128883	-2.82928E-06	0.000128883
(SqFt)^2	-1.02375E-07	4.74908E-08	-2.155675958	0.031901372	-1.95831E-07	-8.91875E-09	-1.95831E-07	-8.91875E-09

Note this model lacks the “1 – DeSoto 0 – Arlington” variable from the previous model as it only includes Arlington data. Once again, this model suggests there is no correlation between Opportunity Zone status and price in this region. The next model, shown in Figure 4.3, utilizes only the data captured from DeSoto.

Figure 4.3

Regression Statistics								
Multiple R	0.799798663							
R Square	0.639677902							
Adjusted R Square	0.632374076							
Standard Error	0.153719323							
Observations	454							
ANOVA								
	df	SS	MS	F	Significance F			
Regression	9	18.62560314	2.06951146	87.58120396	1.18031E-92			
Residual	444	10.4915558	0.02362963					
Total	453	29.11715894						
	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	11.95040341	0.065255858	183.1315031	0	11.82215468	12.07865214	11.82215468	12.07865214
Years after 2017	0.001442996	0.009286058	0.155393807	0.876581486	-0.016807091	0.019693083	-0.016807091	0.019693083
Baths Total	0.047329629	0.023340417	2.027797071	0.043177635	0.001458211	0.093201047	0.001458211	0.093201047
SqFt Total	2.47054E-06	1.91608E-05	0.128937172	0.897465749	-3.51865E-05	4.01276E-05	-3.51865E-05	4.01276E-05
Age	-0.001601919	0.000623794	-2.568026411	0.010554033	-0.002827874	-0.000375964	-0.002827874	-0.000375964
Updated Kitchen?	0.028979452	0.016006074	1.810528381	0.070889716	-0.002477627	0.06043653	-0.002477627	0.06043653
Season	0.016492529	0.006704952	2.459753433	0.014283376	0.003315144	0.029669915	0.003315144	0.029669915
OZ	-0.03918145	0.018906633	-2.072365286	0.038807975	-0.076339058	-0.002023842	-0.076339058	-0.002023842
(Age)^2	-5.99625E-05	5.89699E-06	-10.16832416	5.65051E-22	-7.15519E-05	-4.8373E-05	-7.15519E-05	-4.8373E-05
(SqFt)^2	6.47616E-08	3.94036E-09	16.43546362	9.30538E-48	5.70175E-08	7.25057E-08	5.70175E-08	7.25057E-08

This model suggests a statistically significant correlation between Opportunity Zone status and price amounting to a 4% decrease when designated as an Opportunity Zone. While collecting the data for the DeSoto Opportunity Zone, I noticed a relatively large amount of newly constructed homes for sale in 2020 in this zone. Upon further investigation, I discovered a new neighborhood had been built in the zone and completed in 2020. It's important to remember that home builders do not qualify for Opportunity Zone tax benefits, so this neighborhood is unlikely to be a result of the policy. In Image 4.1 shown below, a satellite view of the DeSoto Opportunity Zone is shown as of November 2018. The Opportunity Zone is delineated by the blue outline, while the future neighborhood is outlined in red.

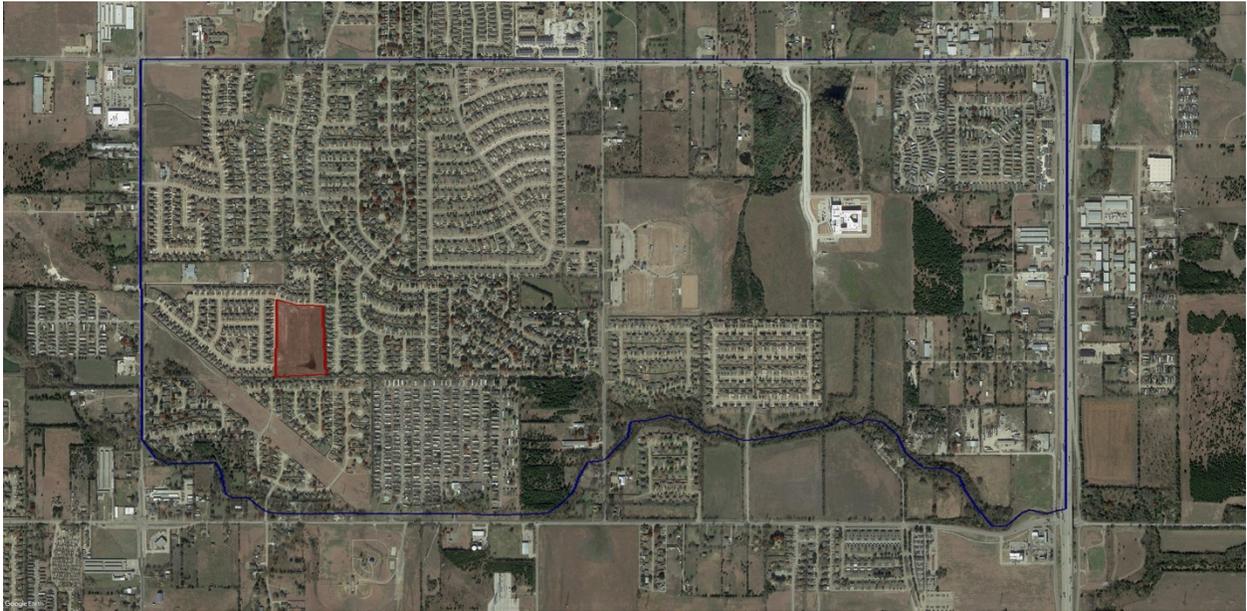
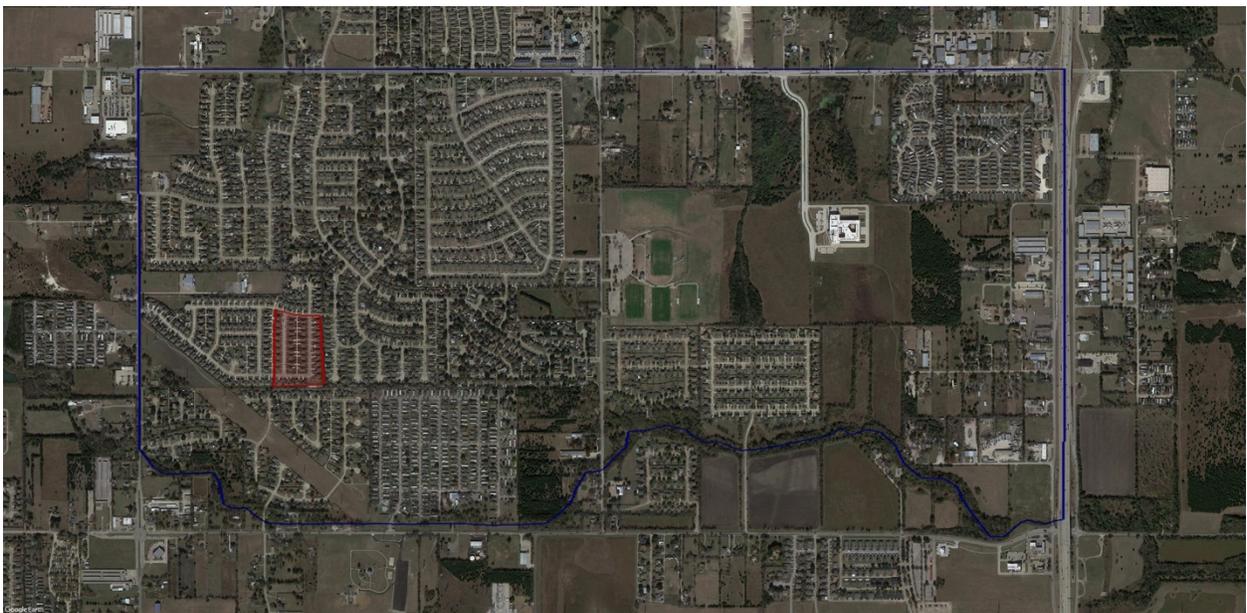
Image 4.1

Image 4.2 shows the same zone in November 2020. Of the forty-two new homes constructed in this region, 26 were listed for sale in 2020 and captured in my dataset.

Image 4.2

After analyzing the list price of these new homes, I found their average price to be \$262,850.78 and median price to be \$264,900. An analysis of other listings in the DeSoto Opportunity Zone during the same period showed their average price to be \$232,407 with a median price of \$239,000. In order to control for the relatively high prices of the new homes, I created a new model using DeSoto data with all homes having an age value of 0 removed. This reduced the number of observations from 454 to 427. The results of this model can be seen in Figure 4.4.

Figure 4.4

Regression Statistics									
Multiple R	0.605344962								
R Square	0.366442523								
Adjusted R Square	0.352768621								
Standard Error	0.152647202								
Observations	427								
ANOVA									
	df	SS	MS	F	Significance F				
Regression	9	5.619964804	0.624440534	26.79867918	1.68481E-36				
Residual	417	9.716587181	0.023301168						
Total	426	15.33655199							
	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%	
Intercept	11.88328527	0.063501553	187.1337751	0	11.75846223	12.00810832	11.75846223	12.00810832	
Years after 2017	-0.00617508	0.009516442	-0.648885324	0.516769696	-0.024881257	0.012531097	-0.024881257	0.012531097	
Baths Total	0.047980283	0.023207	2.06749181	0.039304202	0.002362998	0.093597567	0.002362998	0.093597567	
SqFt Total	-5.40711E-06	1.89929E-05	-0.284690205	0.776022822	-4.2741E-05	3.19267E-05	-4.2741E-05	3.19267E-05	
Age	0.003224882	0.001630123	1.978305772	0.048551934	2.05992E-05	0.006429165	2.05992E-05	0.006429165	
Updated Kitchen?	0.027815128	0.016834783	1.652241545	0.099238039	-0.005276486	0.060906742	-0.005276486	0.060906742	
Season	-0.001752335	0.006827249	-0.256667767	0.797561841	-0.015172448	0.011667778	-0.015172448	0.011667778	
OZ	0.011840102	0.019146034	0.61841013	0.53664265	-0.025794668	0.049474871	-0.025794668	0.049474871	
(Age)^2	-6.39437E-05	2.06621E-05	-3.094734103	0.002102616	-0.000104558	-2.33288E-05	-0.000104558	-2.33288E-05	
(SqFt)^2	5.98859E-08	4.78829E-09	12.50674579	1.06652E-30	5.04737E-08	6.92981E-08	5.04737E-08	6.92981E-08	

Interestingly the correlation between Opportunity Zone status and price has now gone positive, but with no statistical significance. Lastly, a model was created using data from both Arlington and DeSoto with all homes having an age value of 0 removed. This reduced the total number of observations from 765 to 735. The results of this model can be seen in Figure 4.5.

Figure 4.5

Regression Statistics								
Multiple R	0.864149594							
R Square	0.74675452							
Adjusted R Square	0.743256655							
Standard Error	0.107893377							
Observations	735							
ANOVA								
	df	SS	MS	F	Significance F			
Regression	10	24.85216898	2.485216898	213.4886172	2.7733E-208			
Residual	724	8.428070112	0.011640981					
Total	734	33.28023909						
	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	11.22312109	0.057923226	193.7585651	0	11.10940355	11.33683863	11.10940355	11.33683863
Years after 2017	0.061349004	0.005028303	12.20073629	2.86371E-31	0.051477208	0.071220801	0.051477208	0.071220801
1 - DeSoto 0 - Arlington	0.008539384	0.011163996	0.764903882	0.444578028	-0.013378286	0.030457053	-0.013378286	0.030457053
Baths Total	0.061945989	0.011557861	5.359641459	1.12201E-07	0.039255065	0.084636913	0.039255065	0.084636913
SqFt Total	0.000582781	4.85063E-05	12.01453904	1.89062E-30	0.000487551	0.000678011	0.000487551	0.000678011
Age	-0.005839211	0.001076368	-5.424922958	7.91186E-08	-0.007952386	-0.003726037	-0.007952386	-0.003726037
Updated Kitchen?	0.084767567	0.008709463	9.732811538	4.02418E-21	0.067668747	0.101866386	0.067668747	0.101866386
Season	0.022919056	0.003628279	6.31678368	4.66098E-10	0.015795851	0.030042261	0.015795851	0.030042261
OZ	-0.004900072	0.010495651	-0.466866923	0.64073555	-0.025505616	0.015705472	-0.025505616	0.015705472
(Age)^2	5.0941E-05	1.39597E-05	3.649149383	0.000282016	2.35347E-05	7.83473E-05	2.35347E-05	7.83473E-05
(SqFt)^2	-9.49114E-08	1.1558E-08	-8.211761419	9.9982E-16	-1.17603E-07	-7.22202E-08	-1.17603E-07	-7.22202E-08

This model exhibits a slightly lower R² value than the model which includes new homes, decreasing from 0.765 to 0.747; however, the significance of the “OZ” variable shows little change between the two models and remains well in insignificant territory.

IMPLICATIONS

Prior to discussing the results of the study, it is important to understand some limitations of methods used. This study seeks to find a correlation between Opportunity Zone status using data collected from the Dallas/Fort Worth Metropolitan Statistical Area. The use of a single MSA limits the scope of this study as it only accounts for conditions of the local market. Opportunity Zones may be more, or less effective in other regions depending on market and political idiosyncrasies. Furthermore, by focusing on a metropolitan area this study fails to acknowledge the potential effects of rural Opportunity Zones. That being said, the analysis of a

metropolitan area does allow for a greater scope of localized data allowing conclusions to be drawn on a much smaller scale.

The use of a single property type only allows for conclusions to be drawn on the property type analyzed as other property types, namely commercial office/retail, commercial multifamily, and industrial properties, are not included in this study. A significant barrier exists in attempting to gather data on these property types in Texas in the form of “non-disclosure laws.” I ran into this issue early in the study when attempting to analyze zones that are more homogeneously commercial in their property type makeup.

As evidenced by the previous section, four out of the five models produced for this paper suggest there is no significant correlation between Opportunity Zone designation and single-family home price. The one model showing statistical significance demonstrated a negative price influence of 4% for homes designated in an Opportunity Zone versus those that were not. Due to the lack of locational control in this model, however, I do not see this result as significant for the policy at large. Interestingly, one would expect this model to show a positive correlation since a batch of newly constructed homes existed in the Opportunity Zone with higher prices relative to all other homes in both the DeSoto Non-OZ and DeSoto OZ. A potential explanation for the result seen in this model is a negative connotation associated with the designation of one’s neighborhood as an Opportunity Zone. This could lead purchasers to believe the neighborhood experiences more issues associated with impoverished neighborhoods such as higher crime rates and poorer education quality.

Despite the limitations of this policy when applied to owner-occupied properties, one would still expect to see a price increase in the Opportunity Zone as the capital gains discount is priced into existing properties. Smaller investors can still reap capital gains benefits in these

primarily suburban neighborhoods by purchasing a home as a rental property and making improvements to it. Unfortunately, it seems this is not the case in the analyzed zones. Despite a large portion of homes in the Opportunity Zones being recently renovated, the data suggests these renovations have little to do with the Opportunity Zone policy as a similar number of homes were renovated in the Non-OZ areas analyzed. Through conversations with active real estate developers, I am inclined to believe these zones were not simply overlooked as many developers actively sought out developments in Opportunity Zones following their implementation. The more likely explanation for the lack of benefit in these zones is that investors can simply find a higher IRR in other Opportunity Zones where pre-existing investment options exist.

To confirm this theory, more research could be done comparing Opportunity Zones with previously high growth rates and those with stagnant growth such as the ones analyzed in this paper. Potentially higher growth Opportunity Zones such as those discussed in the literature review include those with college campuses and rapidly gentrifying populations. Similarly, active development opportunities could be examined to confirm the IRR theory. If enough development opportunities exist with estimated returns high enough to overshadow their more stagnant counterparts, that could point to a disparity.

Implications

Similar to the Enterprise Zones discussed in the literature review, Opportunity Zones are a place-based incentive that seeks to promote social change in the lower classes through secondary effects by providing primary benefits to those in the upper classes. While it may be easy to assume implementing more direct policies, such as those seen from California's Enterprise Zones which provide direct benefits for hiring "disadvantaged" workers, these

policies may still struggle to promote the change as evidenced by prior studies looking at these zones. That does not mean improvements could not be made to the Opportunity Zone policy, however. Expanding the benefits of the policy to provide incentives more focused on promoting social change may be more akin to the right direction to move in, but it may not come in the form of direct compensation for hiring unemployed peoples or zone residents.

It may simply be the case that blanket government policy cannot promote neighborhood change in areas where the neighborhood does not want to be changed. In order to truly promote social change at a mass scale, the residents of each underserved neighborhood must experience a growth in their personal wealth and status. Otherwise, these residents will simply be displaced by the effects of gentrification and little will change as the poverty rate in one neighborhood rises to offset the decreasing poverty rate in another neighborhood. In my view, it is more likely that the problem is not necessarily one of businesses and real estate, but of the underlying asset that business and real estate employ: people.

The unfortunate fact is that most cases of poverty are circumstantial in nature. Nobody asked which neighborhood to be born into and nobody chose their family, yet we exist in a society which marginalizes individuals based on the circumstances they did not choose. Over the last several years, I have spoken with well over a dozen people who would identify as “homeless” in both Dallas and Fort Worth and while, granted, these individuals exist at the extreme end of the spectrum; they all had one thing in common. Each individual I spoke to mentioned being “forgotten.” Whether by society, their family, or their friends, every one of these people had lost their safety net. In a way this is also analogous to the neighborhoods themselves, which are often forgotten or given labels identifying them as places one should never go.

While this is not a significant dataset to draw conclusions upon, I think it speaks to a larger issue in that the solutions political society produces for its people tend to speak at the people rather than listen to their issues. In this way, I think the only true solution for the problems Opportunity Zones seek to solve is to listen to those who are truly marginalized and remember that each neighborhood is a real place comprised of real people rather than a simple concept. The best way to support a business in an “Opportunity Zone” is to become their customer and tell your friends. Given the right time scale, when we include other neighborhoods in our day-to-day conversation instead of imagining places as being “on the wrong side of the tracks,” we may begin to see genuine change in the fabric of these neighborhoods and our society as a whole.

CONCLUSION

In this paper, I sought to better understand the implications and potential effectiveness of the Opportunity Zone policy. The Opportunity Zone policy, derived from the 2017 Tax Cuts and Jobs Act, provides tax benefits for investors who invest capital in businesses or real estate in specifically designated “Opportunity Zones.” The goal of this policy is to promote the economic development and social change of underdeveloped and economically disadvantaged neighborhoods. To understand the effects of this policy I elected to analyze property values in two Opportunity Zones in the Dallas-Fort Worth area. These zones were chosen due to their relative separation from the major metropolitan centers and lack of previous investment/development opportunities. This is an important distinction as previous development opportunities would likely have already been completed without the assistance of this policy.

One of the selected zones is in Arlington situated between Dallas and Fort Worth, and the other is in DeSoto, located in the suburbs south of Dallas. For each of these two zones, a

comparable adjacent Non-Opportunity Zone tract was selected in order to uncover any significant differences resulting from the Opportunity Zone designation. I then gathered sales price data from 850 homes spread across the two Opportunity Zones and two Non-Opportunity Zones. After trimming the top and bottom 5% of observations, I ran 5 separate regression models comparing the natural log of price as the dependent variable to physical factors including renovation status, Opportunity Zone status, number of bathrooms, square footage, age, season, year and city, all as the independent variables. Four out of the five models found no significant price effect as a result of Opportunity Zone designation. The remaining model found a statistically significant negative price impact of 4%. It should be noted that this result only includes sales data from a single area, and this result was reversed following the removal of a block of new houses from the dataset.

These results do not provide enough information to reject the null hypothesis and suggest that Opportunity Zones have little effect on single family home prices in the areas analyzed. I believe this result reflects a larger issue in social policies which attempt to solve complicated problems with simple blanket solutions, but more research is needed to fully understand these implications. The Opportunity Zone policy may show some promise for commercial property, but this hypothesis also requires more research to confirm.

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