

The Impact of Increased Development Fees on Existing Housing: Evidence from South Carolina

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April 16, 2020

Abstract

This paper investigates the impact of increased development fees in the residential housing market of York county, South Carolina. In July 2018, the Fort Mill school district, located within York county, increased new residential impact fees from \$2,500 to \$18,158. As the increased development fees only pertained to a single school district in the county, we consider the increase as a quasi-natural experiment and test for difference-in-differences in listing prices, closing price, and inventory after two separate increases in development fees. The evidence suggests that increased development fees correspond with a decrease in asking and closing prices and an increase in available inventory in the period immediately after the increase. This result is consistent with the capitalization of expected future tax liabilities in the prices of existing residential properties.

JEL Classifications: R31, R21, H71

Keywords: Taxes, Hedonics, Infrastructure Taxes, Capitalization

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Introduction

Since the Great Recession, some local areas have seen higher economic and population growth than others and as a result, must start thinking about infrastructure needs to accompany these growths. The main issue is how do these local governments finance the new infrastructure? In this paper, we investigate one such method: development fees, which are one time, per-unit fees paid by the developer to build housing and are used for a pre-determined purpose such as parks and recreation, municipal equipment, transportation, fire, or schools. We are concerned about the impact that these fees have on the housing market. Using the significantly large development fee increase in York county, South Carolina as our quasi-natural experiment, we empirically find that the increased development fees correspond with a decrease in asking and closing prices and an increase in available inventory in the period immediately after the increase.

Development fees are an increasingly popular choice among local governments because they can pass the fee directly to the developer instead of passing a fee directly to the residents, such as what happens with a property tax. Thus, development fees may be easier to implement because they do not put an immediate monetary cost on existing homeowners in order to pay for any new development. Instead, these fees put the monetary cost on the developers and in turn, these fees will hopefully be enough to pay for the new infrastructure. The implication then is that this supply side regulation will decrease the amount of new construction and increase the price of housing, which a large body of literature has shown.¹ This seems to be a suitable outcome because in a Fort Mill town hall meeting about the proposed increase of the development fees, one individual responded with:

“That’s gonna just raise the property value of all those houses as they get built, and so it’s actually gonna raise my property value, which is a good thing for me,” Knol said. “If it slows the growth a little, so we can catch up, like with the roads, that’s a win too, I think.”

The individual’s comments are in-line with previous evidence on supply side regulations and development fees. Due to the fact that developers must pay more to build a single unit of housing, the final price of the *new* home must also be higher in order to break even. In addition,

¹See Mayer and Somerville (2000), Quigley and Raphael (2005), and Ihlanfeldt (2007) to name a few.

developers may also build fewer units due to the increased cost of construction, which will slow the growth in the area. However, it is not clear whether *existing* property values will also increase. That is, it is not clear whether the decrease in new housing supply will increase the property value of existing homes. In fact, since growth in the area will slow down as a result of the development fees, there is uncertainty whether the increased development fees will cover the costs of the new amenities. If the development fee is set too low or too high and the amenities have not been completed, then existing housing must be taxed. This means that the expected tax burden on existing homeowners increases, which might lower prices of existing homes today.

This view, however, is inconsistent with the previous literature. There is a small, but consistent view in the literature that suggests that prices of *all* homes will increase.² Laid out in Ihlanfeldt and Shaughnessy (2004), there are currently two views on development fee's effect on home prices: the old and new view. The old view suggests that development fees increase the cost of construction, reduce the quantity of new construction, reduce the value of undeveloped land, and increase the price of existing housing. The new view suggests that development fees reduce the price of new housing because of lower quality but this is offset by new amenities (thus, no net impact on new housing prices) and increase the price of existing homes because of amenity effects. Ultimately, the new view incorporates the new amenities into home values and posits that existing home prices should increase. However, we argue that if the amenities are important and the development fee is set too low or possible growth is exhausted, then the only way to fund the completion of the amenities is to tax existing homeowners. This lowers existing home prices today and is exactly what we find empirically.

Unlike previous literature that largely looks at different cities and whether they have development fees or not, we have a unique opportunity to exploit how a dramatic *change* in the development fee can impact the housing market. Specifically, we examine the *change* in an already existing development fee within a single school district within a single county, which provides us with a nice framework for a quasi-natural experiment. In 1996, the Fort Mill school district in York county, South Carolina implemented a \$2,500 per-unit development fee to construct new homes. A study for the district was conducted and proposed that “the district would need 1.68 new elementary schools, 0.86 new middle schools, and 0.66 new high schools by

²Delaney and Smith (1989a), Delaney and Smith (1989b), Singell and Lillydahl (1990), and Ihlanfeldt and Shaughnessy (2004) all empirically examine the effect development fees have on existing and new homes. Each of those studies find that prices on both existing and new homes increased after the fees were put in place.

the year 2020.” Between 1996 and 2019, the Fort Mill school district constructed 7 elementary schools, 5 middle schools, and 2 high schools. Fees went untouched in Fort Mill until 2015 when the Fort Mill town council implemented additional development fees of \$1,822.39 on August 24, 2015. These fees were collected beginning on October 1, 2015.

As the area saw extensive growth in 2017, the Fort Mill school district conducted a study that suggested that development fees for single family and multi-family housing increase to \$18,158 and \$12,020 respectively. On June 27, 2018, the York county council passed the proposed development fee increase, and on July 16, 2018, the York county council instituted the newly proposed development fee. Any building permit obtained before July 16, 2018 still adhered to the previous development fee of \$2,500, but all new permits required payment of the increased development fee. Although housing developers sued the state of South Carolina on August 14, 2018 to stop the development fee increase, the development fee was still collected, and the proceeds were saved in an escrow pending the outcome of the lawsuit.

Using the dates from above, we are able to set up a difference-in-difference framework to test how *changes* in the development fees impact the single-family housing market. We find that after the first fee was passed and collected in 2015, home prices on existing homes decreased by 5.27%. However, home prices on new homes increased by 3.97%. This dynamic occurred again in 2018 after the passage of the new development fee. We find that home prices on existing homes decreased by 13.26%, while home prices on new homes increased by 7.18%.

To our knowledge, we are the first paper to find that a *change* in development fees decrease prices on existing homes and decrease the demand for existing homes. We believe a main driver of our results is the interaction between the level of the development fee and the amount of growth in the area. Fort Mill has grown a tremendous amount since 2010 relative to the other school districts within York county. According to the U.S. Census, Fort Mill has seen an average year-to-year increase in population of 6.91% between 2010-2018, whereas the other school districts within York county have seen an average of about 0.72%-4.22%. In addition, Fort Mill constructed 14 new schools between 1996-2019 when they were only expected to build three. Thus, when the 2015 development fee increase of \$1,822.39 went into effect, the fee may have been viewed as too small to adequately cover the costs of the new amenities. Thus, current and future residents may have expected an increase in future tax burden to cover these

amenity costs. However, when the new development fee went into place in 2018, the same price effects occurred. The most likely reason is that the significant increase in the development fee to \$18,158 may have led consumers to think growth will significantly stall as home developers exit the Fort Mill housing market. This would reduce the incoming revenue for the local government so that in response, taxes must increase to pay for the amenities.

The rest of the paper is as follows: Section 2 discusses the data, Section 3 discusses the main methodology used, Section 4 discusses the results, and Section 5 includes the closing remarks.

2 Data

We use two main data sources to study the effects of development fees on the housing market: the MLS and Metrostudy. Both cover the single-family housing market in York county, South Carolina between 2010-2018. Both data sets contain the sale price, sale date, address, and other housing characteristics. Most importantly, the MLS contains information not only on sold homes but also on homes that listed and did not sell. Thus, we can observe the total number of homes for sale in the market at a given time. Furthermore, each observation in the MLS also contains the list price as well as the listing contract date, which we use to find the days on the market for each sold home.

One downside of the MLS data is that it only covers homes that were sold by realtors, so it may miss a considerable amount of homes that were sold directly by the homeowner as well as information on land sales. For these reasons, we complement our analysis with the Metrostudy data. Metrostudy is a leading provider in residential construction activity across the nation, but they also have data with transaction level history for single-family homes and land sales. This transaction level housing data comes from CoreLogic, a major provider of housing data for the U.S, as well as from deed and tax assessor data from individual counties. Using the combination of data between the MLS and Metrostudy, we can capture a fairly complete picture of the housing market.

Finally, given that our primary focus is on the price effects in the Fort Mill school district within York county, South Carolina, we need to identify which homes were sold in this district. There are four school districts within York county: York school district 1, Clover school district 2,

Rock Hill school district 3, and Fort Mill school district 4. Identifying homes within each school district was an easy task since each observation in both the MLS and Metrostudy data provided us with the physical location of the home. Therefore, we classified homes as either within the Fort Mill school district or outside the Fort Mill school district. Any observation missing a physical address was dropped from our analysis. In addition, we removed any observations with outliers such as 20+ bathrooms and 10+ bedrooms, as well as any observations with missing attributes.

Table 1 shows the summary statistics for the MLS property sale data, the Metrostudy property sale data, and the Metrostudy land sale data. As expected, we can see that the biggest discrepancy between the MLS and Metrostudy data is the total number of observations. The MLS data set has 15,999 total observations, while the Metrostudy data set has 26,842 total observations. As a result, the percentage of new homes sold within the MLS data set is 17.43%, whereas the percentage of new homes sold within the Metrostudy data set is 13.80%. Similarly, the percentage of homes sold within the Fort Mill school district in the MLS data set is 55.92%, whereas the percentage of homes sold within the Fort Mill school district in the Metrostudy data set is 34.62%. However, these differences do not alter our main results.

Although the MLS data set has a significantly smaller number of observations, it does provide interesting detail on the listing activity within the housing market. From Table 1, the average list price of a sold home in the sample was \$297,533.26, and the average number of days until a home sold was 123.74. Figure 1 shows these dynamics between 2010-2018: the total number of homes sold, the average sale price, and the average list price all increased slowly over time, while the average days on market decreased. This positive relation between total homes sold and prices and the inverse relation between prices and days on market has been well documented in the literature such as Stein (1995) and Genesove and Mayer (2001). Overall, Figure 1 suggests that the York county housing market as a whole has seen significant growth. These patterns are also similar when York county is split into areas within the Fort Mill school district and areas outside the Fort Mill school district, which can be seen in Figure 2. This is important because our empirical framework relies on the assumption that trends in the treatment group (within the Fort Mill school district) and control group (outside the Fort Mill school district) are similar before the development fee increase is introduced.

As mentioned previously, one of the main reasons for using the Metrostudy data is that Metrostudy has an adequate amount of data on both land sales and construction activity at the local level. The last column in Table 1 shows the summary statistics for the land data. There are 4,785 total land sales between 2010-2018 with 1,420 (29.68%) of the sales occurring within the Fort Mill school district. The average price of a land sale is \$194,072.01. Figure 3 plots the total quarterly land sales and average quarterly land price by school district. During the sample period, land sales have steadily increased in areas outside of the Fort Mill school district, while land sales within the school district have been relatively flat. However, prices have shown the opposite: the average quarterly land sale price within the Fort Mill school district has increased since 2014, while the average quarterly land sale price outside the Fort Mill school district has remained relatively flat.

Figure 3A and Figure 3B show that more, relatively cheaper land is being purchased outside the Fort Mill school district. This seems to have slowed development, which is evident in Figure 3C, which shows the total quarterly number of lots submitted for development approval/zoning to the municipality.³ Since 2014, all areas within York county have seen a significant rise in planned construction of future housing. However, as areas outside the Fort Mill school district continue to see an increase in planned construction of future housing, the Fort Mill school district has seen a relatively flat amount in planned construction of future housing. In fact, since the second half of 2016, the Fort Mill school district has seen the number of lots submitted for consideration decrease and saw a further decrease in 2018.

3 Methodology

The summary statistics laid out in Section 2 suggest that from 2010-2018 York county has seen significant growth in the housing market. However, future development in the housing market may be a concern, especially within the Fort Mill school district, as land sales and future housing inventory has either remained flat or decreased between 2014-2018. Since growth may have stalled and individuals are forward looking, it is possible that individuals have priced this slow down in growth into current home prices. Thus, the main empirical question of this study: how did the dramatic increase in development fees impact the housing market?

³These data are collected by Metrostudy.

Unlike previous literature, we have the exact dates of when the development fee increases were passed and executed. Furthermore, the increased development fees only pertained to a single school district within a single county, giving us reason to consider the increase as a quasi-natural experiment. Using the two motives above, we use a difference-in-difference regression approach to analyze the effect of the increased development fee on the housing market.

As mentioned in the introduction, the Fort Mill school district passed two separate development fee increases: one on August 24, 2015 and one on June 27, 2018. Collection of the first fee began on October 1, 2015. Collection of the second fee began on July 16, 2018 and collection continued even after developers sued the state on August 14, 2018. Thus, with this design we have five separate events to analyze. To utilize our difference-in-difference approach, we set the treatment group as the Fort Mill school district and the control group as all other areas within York county, South Carolina but outside the Fort Mill school district.

Our main specification can be written as:

$$\begin{aligned}
 Dep_{i,t} = & \beta_0 + \alpha_1 FMSD_{i,t} + \sum_{j=1}^5 \delta_j IncreasedPeriod_{i,j,t} + \\
 & \sum_{j=1}^5 \gamma_j FMSD_{i,t} * IncreasedPeriod_{i,j,t} + \beta \mathbf{X}_{i,t} + L_i + T_t + \epsilon_{i,t} \quad (1)
 \end{aligned}$$

where $Dep_{i,t}$ is the outcome of interest (such as the log sale price), $FMSD_{i,t}$ is a dummy variable if the observation is from the Fort Mill school district at time t , $IncreasedPeriod_{i,j,t}$ are five separate dummy variables if the observation is from one of the five periods of increased development fees, $\mathbf{X}_{i,t}$ are other relevant characteristics (such as number of bedrooms, number of bathrooms, size of lot (acres), finished square footage, and age of the home), and L_i and T_t are location and time fixed effects, respectively. For the majority of our analysis we use city, year, month, day, and day of the week fixed effects. In addition, $IncreasedPeriod_{i,j,t}$ are five separate dummy variables that cover the periods between 8-24-15 and 9-30-15 (the passing of the first fee), 10-1-15 and 6-27-18 (the collection of the first fee), 6-28-18 and 7-15-18 (the passing of the second fee), 7-16-18 and 8-12-18 (the collection of the second fee), and 8-13-18 and beyond (the lawsuit by the developers).

We reemphasize that the increase in development fees may have different effects on new and existing homes. While we agree with previous literature that prices of *new* homes will

increase after the development fee increase, the price effects on *existing* homes are ambiguous. For this reason, in addition to the specification in Equation (1), we also run a difference-in-difference-in-difference test which includes whether the home was a new or existing home. This can be formally written as:

$$\begin{aligned}
y_{i,t} = & \beta_0 + \alpha_1 FMSD_{i,t} + \alpha_2 New_{i,t} + \sum_{j=1}^5 \delta_j IncreasedPeriod_{i,j,t} + \\
& \sum_{j=1}^5 \theta_j New_{i,t} * IncreasedPeriod_{i,j,t} + \sum_{j=1}^5 \gamma_j FMSD_{i,t} * IncreasedPeriod_{i,j,t} + \\
& \sum_{j=1}^5 \lambda_j FMSD_{i,t} * IncreasedPeriod_{i,j,t} * New_{i,t} + \\
& \beta \mathbf{X}_{i,t} + L_i + T_t + \epsilon_{i,t}
\end{aligned} \tag{2}$$

where $y_{i,t}$ is the log price of the home and $New_{i,t}$ is a dummy variable equal to one if the observation is a new home and zero otherwise. All other variables are the same as in Equation (1). The baseline case in Equation (2) is an existing home sale outside the Fort Mill school district before the introduction of the increased development fee.

Since developers must pay more to build a single unit of housing after a development fee increase, the final price of a *new* home must be higher in order for the developer to break even, so we expect positive values for the λ_j 's. However, unlike previous literature, we expect negative values for the γ_j 's because growth in the area may have decreased as a result of the development fees. This decrease in growth may increase the uncertainty on whether the new development fees will cover the costs of the proposed amenities. For this reason, the expected tax burden on existing homeowners might increase, which will lower prices of existing homes today.

4 Empirical Results

4.1 Impact on Home Sale and List Prices

Table 2 shows the main results for our difference-in-difference-in-difference test on home prices. In the first two columns, the dependent variable is the final sale price, and in the final column, the dependent variable is the list price. Furthermore, when the dependent variable is the final sale price, the first two columns of Table 2 uses the MLS and Metrostudy data,

respectively.

Across both data sets, after the first fee was passed, existing home sale prices within the Fort Mill school district decreased. Specifically, existing home sale prices within the Fort Mill school district decreased by 7.19%. This decrease in the final sale price of existing homes may come from the fact that list prices of existing sold homes also decreased by 5.63%. This dynamic continues even after collection of the first fee began. That is, after collection of the first fee began, existing home sales decreased by 5.27%, while list prices of existing sold homes decreased by 4.35%. On the other hand, prices on new homes reacted in the opposite direction. After the first fee was passed, final sales prices on new homes increased by 11.6%, while list prices on new homes increased by 10.32%. However, these results are not statistically significant. Nonetheless, once collection of the first fee began, final sales prices on new homes increased by 3.97%, while list prices on new homes increased by 5.07%. Both of these results are statistically significant.

Consistent with the previous literature, the results herein suggest that after the passage and collection of the development fee increase, prices on new homes increased. However, after this initial passage, development fees only increased by \$1,822.39, which is a relatively low amount. As the Fort Mill school district was experiencing extreme growth, this small increase in the development fee may not have been enough to fund the new infrastructure. Current homeowners might have realized future tax burdens may increase and priced this expectation into existing homes. Thus, we see the negative impact on prices after the passage and collection of the initial development fee increase.

With that rationale in mind, one may suggest that a higher increase in development fees should then help fund the infrastructure and reduce any future increases in the tax burden of current homeowners. However, once the second development fee increase of \$18,158 went into effect, the previous dynamics continue. That is, after collection of the second fee began, the final sale price of existing homes decreased by 13.26%, while the list price of existing homes decreased by 11%. New home prices showed similar behavior in which the final sale price increased by 7.18% and the list price increased by 6.92%. These results are both statistically and economically significant. To put the results in monetary value, after collection of the second fee increase began, home prices on existing homes decreased by \$41,512, while home prices on new homes increased by \$27,647.

While the first fee may have been viewed as too low by current homeowners, the second fee may have been viewed as too high. As a result, growth in the area may slow down, which would reduce the revenue to the Fort Mill school district and further reduce funding for future infrastructure. This would increase the future tax burden of current homeowners and lead to a strong negative impact of development fees on existing home prices.

4.2 Impact on Land Sales and Construction

The previous section presented the results of the development fee impact on home prices. The results suggest that future growth within the Fort Mill school district may be negatively impacted by the development fees. In this section, we analyze this idea. Specifically, we examine the impact of the development fee increase on land prices, total land sales, and future development inventory. We quantify future development inventory as the total quarterly number of lots submitted to the municipality for development approval/zoning. If our conjecture is accurate, we expect total land sales and total future development inventory to decrease after the *collection* of the increased development fees. The obvious reason being that it is more costly to develop new housing after the development fee increase is in effect.

However, the effect during the *passing* of the development fee is ambiguous. On one hand, the monetary cost has not yet increased for developers, which means that developers can purchase building permits at the pre-increase price level. This means that developer behavior may not change, and they will continue to purchase the same amount of land as before the passing of the fees. On the other hand, it is also possible that immediately after the passing of the development fee increase, developers may want to quickly purchase land so they can purchase the building permits before the increase goes into effect. One way to accomplish a quick sale is to pay a higher price.

Table 3 shows the results of this difference-in-difference test. After collection of both development fee increases began, the total number of weekly land sales decreased. After collection of the first development fee increase began, total land sales decreased by 2.27 lots per week, and after the collection on the second development fee increase, total land sales decreased by 4.64 lots per week. These results are both statistically significant and suggest that once the monetary effect was in place, developers chose not to purchase more land.

This reduction in land purchases directly influences the future inventory of new houses because as fewer land sales occur, fewer housing units can be built. This impact can be viewed in column 3 of Table 3: after collection of the first fee began, the total number of future inventory decreased by 93 units. The impact was even larger after the collection of the second fee began: the total number of future inventory decreased by 1,527 units. However, neither of these results are statistically significant. The main reason for the weak statistical significance is that the future inventory data is aggregated at a quarterly frequency and runs until the end of 2018. This means that we only have one full quarter of data immediately following the collection of the second development fee increase. As a result, we can not determine the long term impact of the development fee on construction growth.

Finally, Table 3 also shows the impact of development fee increases on land prices. As discussed above, developers may want to quickly purchase land so that they can purchase the building permits before the new development fees are put into effect. One way to facilitate a quick sale is to pay a higher price. Column 1 of Table 3 shows exactly this. After the passing of the first development fee increase, land prices within the Fort Mill school district increased by 23.94%. Land prices within the Fort Mill school district further increased by 69.71% after the passing of the second development fee increase. Since there were essentially no changes in the total weekly land sales during these two periods, it is entirely possible that some developers purchased at higher prices in order to outbid other developers and speed up the development process. This increase in land prices during the *passing* stage may also be a main driver for the increase in final sale prices of new homes during the *collection* stage that we see in Table 2. Additionally, once collection on these fees began, there were no changes in land prices. These results suggest that the increase in development fees slowed future inventory while also making newly built homes more expensive through increased land prices and development cost.

4.3 Impact on Demand

The land price dynamics in the previous section shed light on the way prices of *new* homes may have been effected. That is, in order to start new development before collection of the fees began, developers needed to purchase land quickly, and they did so by purchasing land at higher prices. This increased the cost of development. However, the land dynamics do little to

explain why home prices of *existing* homes decreased. Our main hypothesis for this is if the development fee is not optimally chosen and the new amenities are not fully funded by the development fees, then existing housing must be taxed to fulfill the shortfall. If this were the case, the expected tax burden on existing homeowners would increase, which would then lower prices of existing homes today.

To test this hypothesis, we examine the demand for housing. We believe that if current and future homeowners expect taxes to increase in the Fort Mill school district, then current homeowners may choose to put their home on the market while future homeowners may choose not to purchase in the Fort Mill school district. If this is the case, we should expect more homes to gradually be put up for sale but not be sold and homes should take longer to sell. In order to accomplish this, we utilize our general framework in Equation (1), which now uses new weekly sales, new weekly listings, cumulative weekly listings, and the days on the market as the dependent variables. If our hypothesis is correct, we should expect a positive impact on both the cumulative weekly listings and the days on the market after the passing and collecting of the new development fees.

Columns one and two of Table 4 show the impact of the development fees on new weekly sales and new weekly listings, respectively. There is no significant effect on new weekly sales after the new development fees were introduced. Furthermore, the introduction of the new development fees had a mixed impact on the total number of weekly listings. After the first development fee went into effect, the total number of weekly listings increased by 1.75. However, after the second development fee went into effect, the total number of weekly listings decreased by 4.01, although this effect is not statistically significant at conventional levels. As a result, it seems as though the development fee increase did not have an immediate impact on the sale patterns within the Fort Mill school district.

A further look into the homes for sale within York county suggests a different story. In a majority of cases, homes do not sell immediately after being listed for sale. In fact, within York county during the sample period, an average home was on the market for 123.74 days until it sold. For this reason, at any given time, there may be homes on the market that have been listed for many days but have yet to sell. This typically suggests a slow market (i.e. more sellers than buyers), which results in lower home prices on average. Over time, some homes will

sell and be taken off the market and different homes will be placed on the market to be sold. If more homes are being put on the market and are not bought, then there are more sellers than buyers, which would explain the negative impact on existing home prices. Column three of Table 4 shows exactly this. After the increased development fees were passed and put into effect, the cumulative number of homes that were listed on the market but did not sell increased. Specifically, after the first development fee increase was passed, the total number of homes listed for sale increased by 1,820. After the second development fee increase was passed, the total number of homes listed for sale increased by 2,382. This suggests that the introduction of the new development fees increased the ratio of sellers to buyers. Regardless of whether the increase was due to more listings or due to fewer sales, the results suggest that fewer people wanted to be homeowners within the Fort Mill school district.

The final column of Table 4 further suggests a decrease in housing demand within the Fort Mill school district. As mentioned earlier, the market is considered slow if there are more sellers in the market than buyers. This will not only result in lower prices, but it will also result in longer times for a home to sell. The final column of Table 4 reports results that show once the development fee increases were passed and put into effect, the time-on-market increased for the average home within the Fort Mill school district. Specifically, after the first and second development fee increases were put into effect, the average time-on-market increased by 16.67% and 15.47%, respectively. Both of these results are statistically significant and suggest that homes within the Fort Mill school district took longer to sell after the increased development fees were introduced and put into effect.

5 Conclusion

Using a difference-in-difference approach, we find that the increased development fees in the Fort Mill school district correspond with a decrease in asking and closing prices and an increase in available inventory in the period immediately after the fee increase. Specifically, after the first fee was passed and collected in 2015, we find that home prices on existing homes decreased by 5.27%, while home prices on new homes increased by 3.97%. This dynamic occurred again in 2018 after the passage of a new development fee, which was considerably higher than the previous fee. We find that home prices on existing homes decreased by 13.26% and home prices

on new homes increased by 7.18%. Furthermore, we find that after the second development fee increase was passed, the total number of homes listed for sale increased by 2,382. In addition, our results suggest that future housing development slowed down in response to the increased development fee.

Our results shed new light on how development fees may impact a local housing market and how these development fees might be selected. Unlike previous literature, we focus on how a dramatic *change* in development fees impact a local housing market rather than focusing on whether an area has a development fee or not. Given the amount of growth within the Fort Mill school district between 1996-2019, there would seem to be an optimal level for development fees such that they are neither too low nor too high. One indirect source of evidence is the somewhat arbitrary manner by which the new fees of \$18,158 was selected by the Fort Mill county commission. The second source of evidence is that in the aftermath of passing and collecting the new dramatically higher development fees in 2018, there was lower future inventory, lower existing home prices, and lower demand for single-family housing within the Fort Mill school district. The main argument for this was that if possible growth is exhausted, then the only way to fund the completion of the amenities is to tax the existing homeowners. We believe that our framework gave us a unique opportunity to extract this feature and leaves an area for future work to examine how to optimally set development fees given an area's current and future growth.

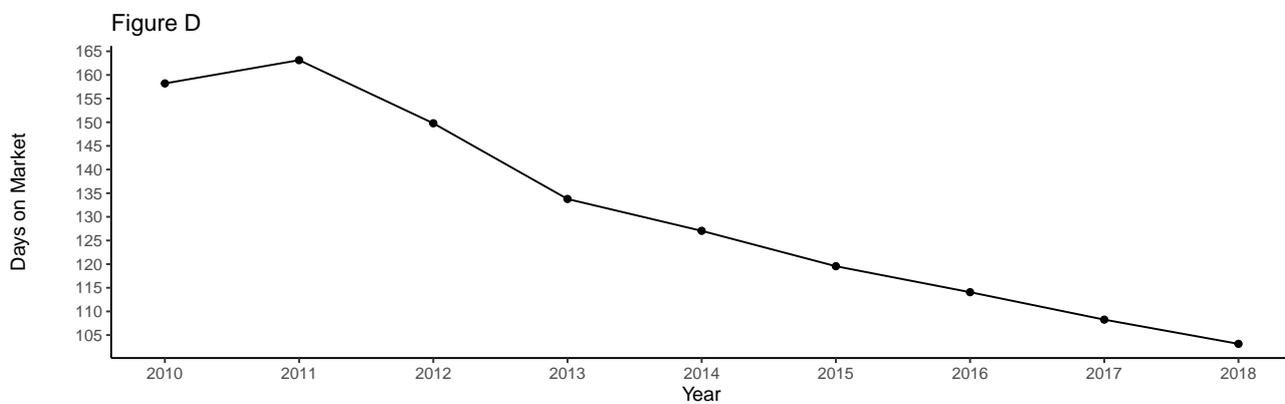
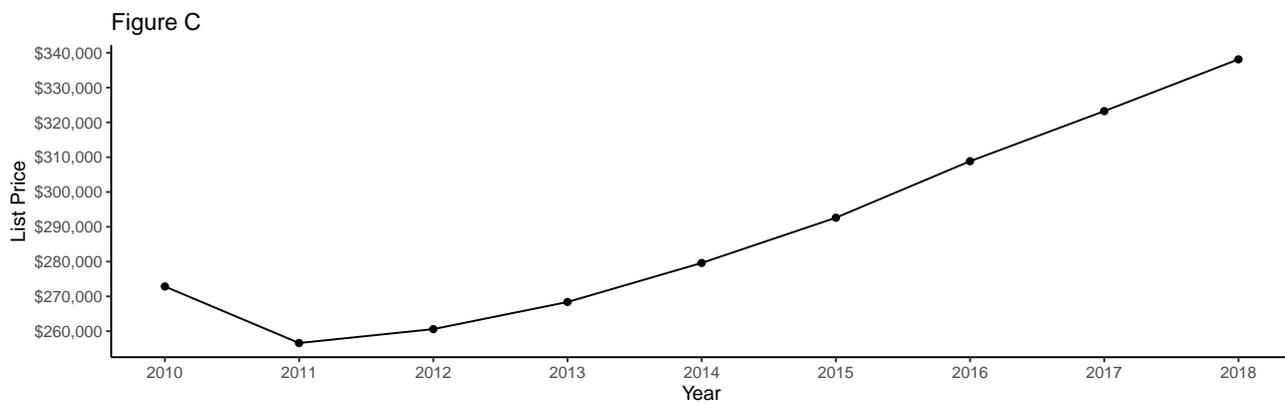
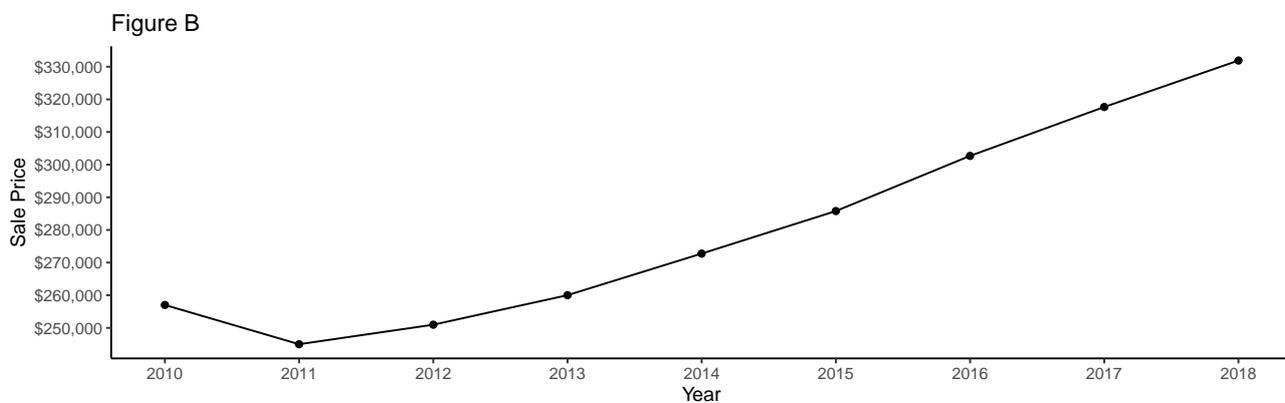
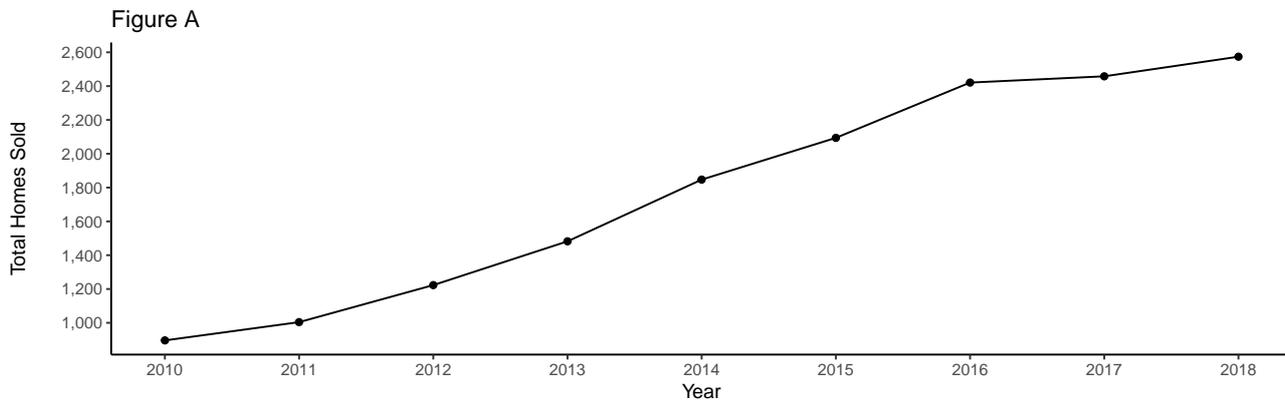
However, it is also important to note that even though existing home prices decreased after the fees were passed, this may only be a short term effect. In fact, since future development also seemed to have decreased after the new development fees were introduced, then future home prices may increase in the long term if demand was to increase. Given that housing affordability is a growing concern across the U.S., increasing development costs may not be the most effective tool to raising new funds dedicated to new infrastructure construction as it may reduce the number of lower valued homes in the area.

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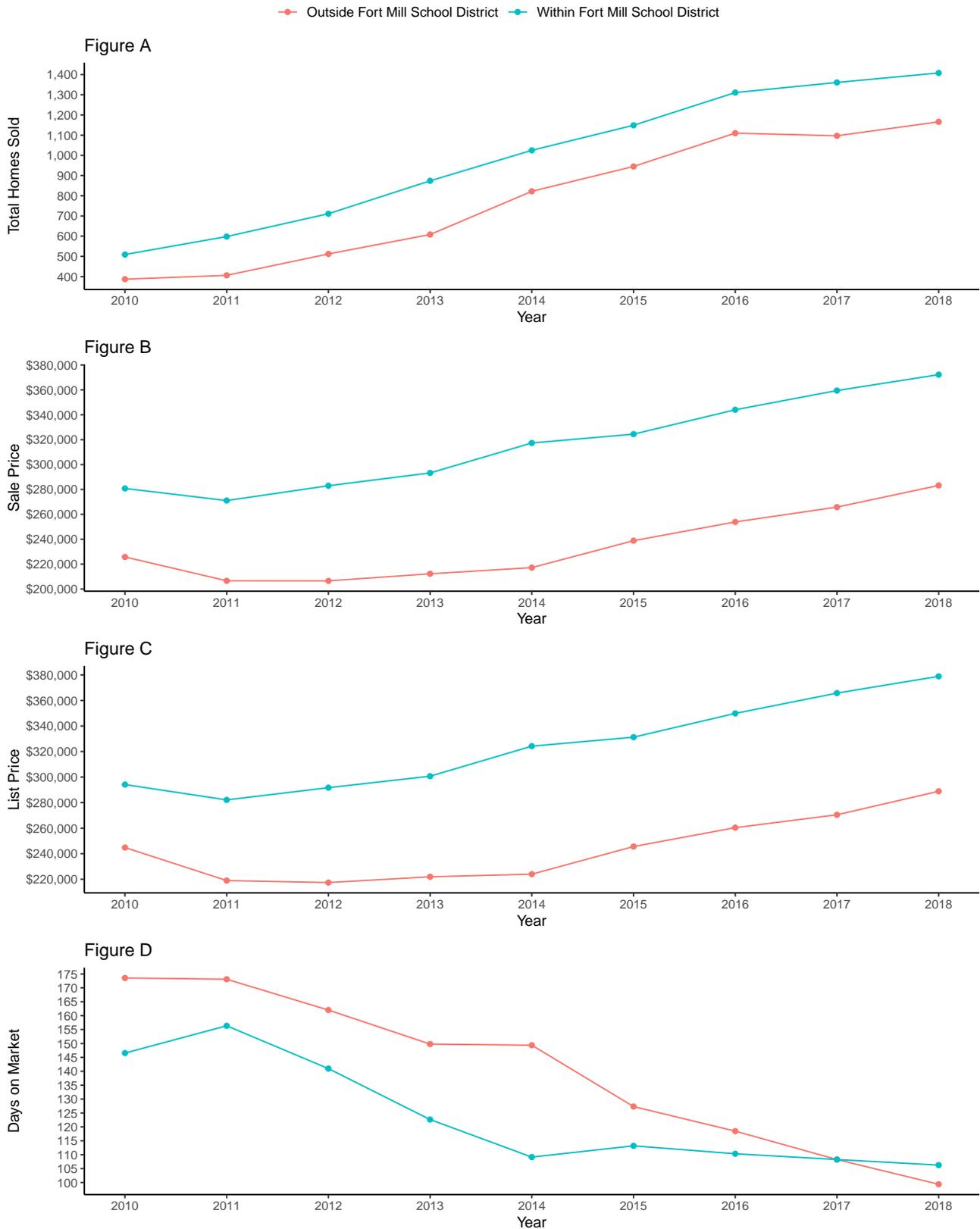
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Figure 1: Total Homes Sold, Average Sale Price, Average List Price, and Average Days on Market



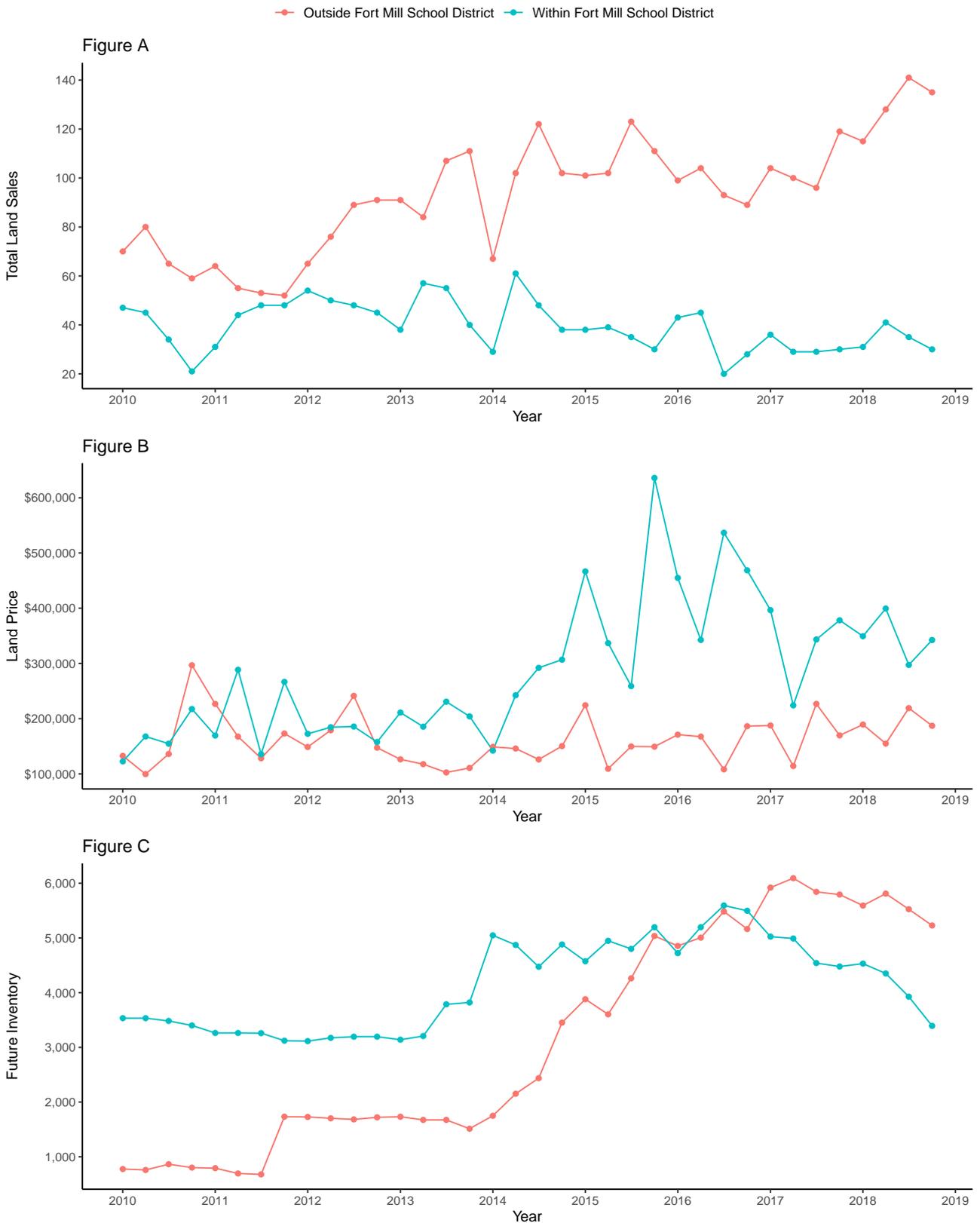
Data set is the MLS property data, which covers York County, South Carolina from 2010–2018. DOM is the average days on market until a home sold.

Figure 2: Total Homes Sold, Average Sale Price, Average List Price, and Average Days on Market by School District



Data set is the MLS property data, which covers York County, South Carolina from 2010–2018. DOM is the average days on market until a home sold.

Figure 3: Land Sales, Land Prices, and Future Construction



Data set is the Metrostudy total quarterly land sales, average quarterly land price, and average construction data, which covers York County, South Carolina from 2010–2018. Future inventory is the total number of lots submitted for consideration to the municipality for development approval/zoning. These lots are not ready for homes to be constructed upon them.

Table 1: Summary Statistics

Variables	MLS Property	Metrostudy Property	Land Sales
Total Observations	15,999	26,842	4,785
New Home Sales	2,789	3,703	
Within Fort Mill School District	8,946	9,294	1,420
Sale Characteristics			
Sale Price	\$289,939.57	\$249,877.55	\$194,072.01
Age	14.54	18.14	
Bedrooms	3.65	3.57	
Sqft Finished	2,555.79	2,384.22	
Sqft Lot	0.92	0.80	
Baths Full	2.45	2.35	
Baths Half	0.56	0.51	
DOM	123.74		
List Price	\$297,533.26		

Note:

Data set covers York County, South Carolina from 2010-2018. Sale characteristics are average values. DOM is the days on the market until a home sold.

Table 2: Difference-in-Difference-in-Difference Property Estimates

Variable	Sale Price		List Price
	MLS	Metrostudy	MLS
firstfeepass x fmschools	-0.072** (-2.369)	-0.081*** (-5.838)	-0.056* (-1.780)
firstfeepass x fmschools x new	0.116 (1.631)	0.120*** (5.706)	0.103 (1.366)
firstfeecoll x fmschools	-0.053** (-2.110)	-0.085*** (-4.940)	-0.044* (-1.754)
firstfeecoll x fmschools x new	0.040*** (3.972)	0.118*** (3.381)	0.051*** (6.775)
secondfeepass x fmschools	-0.049 (-1.216)	-0.092*** (-3.203)	-0.025 (-0.599)
secondfeepass x fmschools x new	0.091** (2.032)	-0.060 (-1.113)	0.057 (1.291)
secondfeepasscounty x fmschools	-0.091** (-2.269)	-0.135*** (-3.476)	-0.078* (-1.852)
secondfeepasscounty x fmschools x new	0.020 (1.078)	0.004 (0.521)	0.065** (2.167)
secondfeecoll x fmschools	-0.133*** (-4.316)	-0.170*** (-5.801)	-0.110*** (-3.683)
secondfeecoll x fmschools x new	0.072*** (3.298)	0.032** (1.996)	0.069*** (4.342)
Intercept	5.459*** (17.461)	5.250*** (26.276)	5.787*** (18.560)
Housing Characteristics	Yes	Yes	Yes
R ²	0.765	0.742	0.767
N	15,999	26,842	15,999

Note:

*** indicates significance at the 1% level, ** indicates significance at the 5% level, * indicates significance at the 10% level

^a The log sale price is the independent variable in the first two columns and the log list price is the independent variable in the last column. fmschools is equal to 1 if the home sale was in the Fort Mill school district. firstfeepass is equal to 1 if the home was sold between 8-24-2015 and 10-1-2015. firstfeecoll is equal to 1 if the home was sold between 10-1-2015 and 6-28-2018. secondfeepass is equal to 1 if the home was sold between 6-28-2018 and 7-16-2018. secondfeepasscounty is equal to 1 if the home was sold between 7-16-2018 and 8-13-2018. secondfeecoll is equal to 1 if the home was sold after 8-13-2018.

^b Each regression includes city identifiers and time-based fixed effects (year, month, day, and day of week sold). Standard errors are clustered at the city level. t-statistics are in parenthesis.

Table 3: Difference-in-Difference Land and Construction Estimates

Variable	Log Sale Price	Weekly Lot Sales	Quarterly Future Inventory
firstfeepass x fmschools	0.239*** (2.603)	-2.054 (-1.255)	
firstfeecoll x fmschools	0.124 (1.497)	-2.267*** (-5.703)	-92.931 (-0.266)
secondfeepass x fmschools	0.697*** (5.564)	-1.569 (-0.586)	-1092.507 (-1.123)
secondfeepasscounty x fmschools	0.029 (0.245)	-7.319*** (-3.850)	
secondfeecoll x fmschools	0.002 (0.011)	-4.644*** (-5.288)	-1526.507 (-1.568)
Intercept	10.493*** (84.818)	3.649*** (5.299)	224.655 (0.917)
R ²	0.437	0.463	0.789
N	4,785	901	144

Note:

*** indicates significance at the 1% level, ** indicates significance at the 5% level, * indicates significance at the 10% level

^a fmschools is equal to 1 if the sale was in the Fort Mill school district. firstfeepass is equal to 1 if the sale took place between 8-24-2015 and 10-1-2015. firstfeecoll is equal to 1 if the sale took place between 10-1-2015 and 6-28-2018. secondfeepass is equal to 1 if the sale took place between 6-28-2018 and 7-16-2018. secondfeepasscounty is equal to 1 if the sale took place between 7-16-2018 and 8-13-2018. secondfeecoll is equal to 1 if the sale took place after 8-13-2018.

^b Land price regression includes city, year, month, day, and day of week fixed effects. Weekly lot sale regression includes year and week fixed effects. Quarterly future inventory includes year and quarter fixed effects. Standard errors are clustered at the city level for the land price regression in column one. t-statistics are in parenthesis.

Table 4: Difference-in-Difference Demand Estimates

Variable	New Weekly Sales	New Weekly Listings	Cumulative Weekly Listings	DOM
firstfeepass x fmschools	-2.803 (-0.964)	-3.784 (-1.435)	736.392 (1.601)	0.218*** (4.080)
firstfeepass x fmschools x new				0.205 (1.289)
firstfeecoll x fmschools	0.654 (0.790)	1.755** (2.390)	1820.271*** (16.002)	0.167*** (7.620)
firstfeecoll x fmschools x new				0.040 (0.487)
secondfeepass x fmschools	4.900 (0.898)	2.950 (0.595)	2334.475*** (2.950)	0.183*** (3.061)
secondfeepass x fmschools x new				0.278* (1.797)
secondfeepasscounty x fmschools	2.649 (0.647)	-4.157 (-1.119)	1928.475*** (3.435)	0.153*** (3.530)
secondfeepasscounty x fmschools x new				0.550** (2.386)
secondfeecoll x fmschools	-1.910 (-0.941)	-4.005* (-1.907)	2382.075*** (9.243)	0.155*** (3.223)
secondfeecoll x fmschools x new				0.190 (1.414)
Intercept	-5.161*** (-3.492)	-5.395 (-0.982)	7823.758*** (66.622)	1.938*** (3.558)
Housing Characteristics	No	No	No	Yes
R ²	0.681	0.706	0.900	0.095
N	938	1,034	1,404	15,999

Note:

*** indicates significance at the 1% level, ** indicates significance at the 5% level, * indicates significance at the 10% level

^a The independent variables in the first two columns are the new weekly sales and new weekly listings respectively. The independent variable in the third column is the cumulative weekly listings. The independent variable in the last column is the log of the days on the market. fmschools is equal to 1 if the sale was in the Fort Mill school district. firstfeepass is equal to 1 if the sale took place between 8-24-2015 and 10-1-2015. firstfeecoll is equal to 1 if the sale took place between 10-1-2015 and 6-28-2018. secondfeepass is equal to 1 if the sale took place between 6-28-2018 and 7-16-2018. secondfeepasscounty is equal to 1 if the sale took place between 7-16-2018 and 8-13-2018. secondfeecoll is equal to 1 if the sale took place after 8-13-2018.

^b The new sales, new listings, and cumulative listings regressions include year and week fixed effects. The DOM regression includes city, year, month, day, and day of week fixed effects. Standard errors are clustered at the city level for the DOM regression in the last column. t-statistics are in parenthesis.