

# Analyzing the Effects of Subway Proximity on Real Estate Prices in London \*

Aman Rana

Pierre Sarrailh

1007034692

1006770111

aman.rana@mail.utoronto.ca

pierre.sarrailh@mail.utoronto.ca

ECO375: Applied Econometrics

University of Toronto

Department of Economics

5<sup>th</sup> December, 2024

## Abstract

Zhou et al. (2019) shows us that the completion of subway lines increases the prices of real estate in their vicinity. Our contribution will be to look at these effects in London. We find precise null effects by a multivariate linear regression of the log of house prices on distance to the nearest station in metres, with controls for time and district. We find a slope coefficient of -0.0001261 with a standard error of 0.00000145 on the subway distance variable. The effect is economically insignificant, even a 10km distance from a station (Which is above the 95th percentile of our distance data) would lead to only a 0.2% decrease in house price. On more relative terms, a standard deviation difference in distance is only associated with a 14% of a standard deviation change in log house price. This statistically significant relationship of small effect leads us to conclude precise null effects. While the marginal effect of distance is precisely null, we find a threshold effect: the price of houses within 2km of a subway station is 0.18% higher than those further away, with economic and statistical significance after controlling for district and time fixed effects.

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\*Code and data supporting this analysis is available at: [https://github.com/Aman-Rana-02/Subway\\_Proximity\\_and\\_House\\_Prices](https://github.com/Aman-Rana-02/Subway_Proximity_and_House_Prices)

# 1 Introduction

Accessibility to public transit has been long established as a key factor influencing the price of residential properties, particularly in dense urban environments where vehicle mobility is greatly constrained (Rietveld et al., 2007). In the context of the Greater London Area subway stations are the most efficient method of transportation for most commuters and thereby play a critical role in shaping the greater housing market. To this end in this paper we investigate how the euclidean distance from a residence to its nearest subway station affects market price.

By focusing on the Greater London Area our study contributes to already established relationships between subway proximity and house prices. Early studies such as those done by Muth (1969) are cornerstones in establishing a relationship between densification and land use in cities. More recently a greater number of studies have found a significant positive relationship between transit proximity and real estate prices in cities such as those in Shanghai (Zhou et al., 2019) where subway stations proximity was specifically correlated to increased house prices at statistically significant results. However London presents unique opportunities for research. As the historical pioneer in subway technology the city has had the opportunity to develop around an already established subway system and culture.

In our analysis we investigate two effects, the premium associated with being marginally closer to a subway station, as well as the threshold effect of being within a certain distance of a subway station. We find precise null effects for the marginal distance on house price. Rietveld et al. (2007) finds that the price effect of subway stations on commercial buildings is present at short distances, we find the same results for London house prices, setting a 2km threshold.

The rest of the paper is structured as follows: Section 2 describes the data used in this analysis. Section 3 outlines the methodology and model specifications used to measure the subway effect, and presents the results of our analysis. Section 4 discusses the limitations of our methodology and concludes. Appendix A holds figures and tables.

## 2 Data

We begin our analysis by sourcing data from ONS, the national statistics arm of the UK government, which provides panel data containing each lease transfers (home sale) that occurred in the U.K. from 1995 to today (HM Land Registry, 2014). We prune this dataset to only contain observations within the Greater London Area. This dataset amounts to approximately

350 thousand observations. Each unit of observation represents a single lease transfer in London containing the date, coordinates, neighborhood, and house price in British Pounds during the transfer. We also sourced the coordinates of every subway station in the London Underground and the date at which it was opened (Wikipedia.org, 2014). We combine the subway and housing datasets, finding the closest subway station to each house at the time of the lease transfer using euclidean distances based on latitude and longitude. Delving into the summary statistics of our data, we can look at how the data is spread across our different variables. For our main variable of interest, the distance to subway stations, we see an average distance of 2821 meters with a variance of 2915 meters (Table A.3). On average houses are located quite far from a subway station but also contain vast amounts of variation. Houses are clustered around subway stations therefore we end up with long tails, a few houses that are very far away bringing kurtosis to our data. We truncate these outliers at 10km, and the distribution of the minimum distance to a subway station can be seen in Figure 2. Raw house price is also right skewed with a long tail, so we take the log of house prices to make our regression more interpretable and the distribution of log price can be seen in Figure 3. We see that our houses are very evenly spread between our neighborhood controls with the largest neighborhood only being 2 points off of the mean (Table A.3). Similarly, our lease transfers are also evenly spread between years with each year accounting for approximately 2% of our dataset (Table A.3). This is good for the robustness of our future models as every neighbourhood and year is well represented. On the other hand the spread between newly built and old homes is skewed with 97% of lease transfers coming from the sale of pre-owned homes (Table A.3). As a result it may be more sensitive to outliers.

### 3 Regression Analysis

For our regression analysis we build four different specifications to best capture the relationship between the distance to a subway station and the log of price. We choose a log-linear model so that our coefficients are interpretable as percentage changes in price. We inspect our variable of interest in two forms, continuous so we can see the marginal effect of each additional meter of distance on price, and as a dummy variable to see the effect of being subjectively close to a subway station. We look at Figure 1 to see the relationship between distance and price, and decide on 2000m as distinguishing being close to a station or far. For our analysis, we assume that our data is identical and independently distributed since we do not expect the lease transfer

of one house to affect the lease transfer of another. In our data cleaning section we windsorized distance at 10km and can assume our data contains no large outliers. We use robust standard errors in our regressions, and therefore aren't concerned about the homoscedasticity of errors.

### 3.1 Univariate Linear Regressions

We run two univariate regressions, Specification 1 and Specification 2, to understand the relationship between distance and price. Specification 1 regresses the log of price on distance to the nearest subway station in meters, while Specification 2 regresses the log of price on a dummy variable for whether the house is within 2000m of a subway station.

#### 3.1.1 Univariate Results

We start with our simplest specifications. We regress the log of price on distance to get a basic understanding of the relationship between our variable of interest and our dependent variable (Specification 1). Using this specification we find statistically significant null effects for distance on price. Table A.2 shows us that the coefficient of our variable of interest is  $-0.0000431$  at above the 5% significance. The coefficient can be interpreted as a  $0.0000431\%$  decrease in house price for each additional meter of distance from a subway station, which is economically insignificant. Even houses positioned 10 km away from a subway station wouldn't even observe a difference above 1% in house price from the mean. Looking at the results from specification 2 we see that the coefficient is economically and statistically significant, with a coefficient representing a  $0.31\%$  increase in house price for houses within 2000m of a subway station (Table A.2). What this tells us is that the marginal effect of being a metre closer to a subway station is not significant. But, buyers' willingness to pay follows a piecewise function, and have some threshold of distance over which they are willing to pay more for a house. Essentially, above a certain threshold the distance from a subway station is not a consideration. In this case, whether you are within 2km of a subway station or not is a significant factor in determining house price, and adds a  $0.33\%$  premium.

However, these models are underspecified. They suffer from omitted variable bias, there are variables that comove with distance from a subway station that also affect house prices, and we delve into these controls in our multivariate analysis. We would expect the economic significance of distance to increase with the inclusion of these controls. Since subway stations are typically central, we would expect neighbourhoods further away to have lower house prices. Omitting

district controls would bias our coefficient to be more positive than it should be. We would also expect house prices to increase over time, whereas they decrease with `min_dist`. Omitting time controls would bias our coefficient to be more positive than it should be.

### 3.2 Multivariate Linear Regressions

We include a squared term for distance in our multivariate regression to account for the non-linear relationship between distance and price we find in Figure 1.

We now include controls for the age of the house, the district of the house, and the year of the observation. The economic basis for this, is we expect there to be price variation between older and newer homes because of the quality of the home. We also expect price variation between districts as some districts hold premiums due to proximity to a city center or other amenities. We also expect price variation over time as the economy grows and inflation occurs. Consider that some districts receive more or less government funding and expansion. Since we might expect the time varying effect to be different across districts, we include an interaction term between district and year. The two Specifications are formally outlined in the Appendix. Specification 3 includes the continuous distance variable with controls, while Specification 4 includes the dummy variable for being close to a subway station, with controls.

#### 3.2.1 Multivariate Results

Table A.2 hides the coefficients of the controls, but a full table of the results can be found in the appendix under Table A.4.

In our multivariate regression with the continuous polynomial for distance (Specification 3), we find that the coefficient is still economically insignificant (-0.0001261). As expected, controlling for district and time-varying effects increases the magnitude of our result, but we still conclude a precise null marginal effect of distance on house price.

In our final specification (Specification 4), we find that the coefficient of the dummy variable for being close to a subway station is still economically and statistically significant. However, much of the variation is now explained by the controls, and we find a more reasonable 0.18% increase attributable to being close (Within 2km) to a subway station. This aligns with the results of Rietveld et al. (2007), which finds that the price effect of subway stations is primarily in short distances.

Notably, our  $R^2$  jumps from 0.03 in our univariate regression to 0.6 in our multivariate

regression (Table A.4). This is a good sign that our multivariate specifications which include controls are explaining much of the variation in logarithmic house prices.

Looking at the predicted versus actual plots in Figure 5 and Figure 6, we see that our models are well-specified, apart from at the lower tail. Most predicted values lie on the 45 degree line, however, we are systematically underpredicting the prices of the lowest priced homes. This is further reflected in the residual fits as seen in Figure 4 and Figure 7. We see that our residuals are randomly distributed around 0 apart from at the lower tail, where they are systematically positive.

## 4 Discussion

### 4.1 Limitations of Results

The analysis of our limitations can be broken into internal and external validity.

#### 4.1.1 Internal Validity

Our regression is misspecified and has an omitted variable bias. One potential omitted variable could be house size. We would expect house size to explain some of the variation in house price since larger houses command higher prices. However without further analysis it would be difficult to estimate the effect of house size since larger houses are in less dense areas of the city where property is also generally cheaper. We also run into the problem of simultaneous causality, areas that become trendy and develop would command higher housing prices, which could justify a new subway station nearby. We attempt to control for this using time and district fixed effects, but that does not solve the time-variant relationship where growing neighborhoods get subway allocations. In a future work we would frame a subway being built as a treatment, and attempt a difference-in-difference analysis, so we can gauge economic significance and price effects of subways without having to consider some of the other omitted variables. In our analysis we also assumed that our data was i.i.d. However, this may not be true as we saw in the 2008 financial crisis when many people sold houses at the same time, leading to a depreciation in house price, causing panic and further selling. This means that there are regimes where selling a house has a causal effect on another person selling a house.

### **4.1.2 External Validity**

The external validity of our regression is limited. The population studied are homes in the Greater London Area, with observations from 1995 to 2024. We can use our model to make inferences on homes that fit within this sample space, however, expect pricing dynamics to be different between cities and regimes. For example, in smaller cities we might expect price variation to be independent of subway locations if there is sufficient coverage.

## **4.2 Conclusion**

Houses closer to subway stations in the Greater London Area see higher prices than those further away. This analysis includes controls for time, district, and a polynomial fit for the distance and price relationship. The relationship is likely piece wise, beyond 2km away from a station the distance from a station has little effect on price. We would warn against assuming external validity, and exogenous factors like governance and housing density could affect inferences. Marginal distance from subway stations are statistically significant but economically insignificant in their relationship with house price. Being ‘close’ to a subway station however, is statistically and economically significant, even when controlling for district, building age, and time effects. We are wary about causality given that our residuals have a non-zero mean. Given the distribution of our residuals vs fitted, the specification is missing a factor that explains the variation in lower priced homes. This may be size, which we’ve discussed, or some other factor.

## References

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# Appendix

## A Appendix

### A.1 Regression Specifications

#### A.1.1 Univariate Specifications

$$\log(\text{Price}) = \beta_0 + \beta_1 \cdot \text{Min\_dist} + \epsilon \quad (1)$$

$$\log(\text{Price}) = \beta_0 + \beta_2 \cdot \text{close} + \epsilon \quad (2)$$

Where:

- $\log(\text{Price})$  is the log of the price of the house
- $\beta_0$  is the intercept and not shared between the two specifications
- $\beta_1$  is the coefficient of the distance to the nearest subway station
- $\beta_2$  is the coefficient of the distance dummy, whether the house is close (within 2000m) to a subway station or not
- $\text{Min\_dist}$  is the distance to the nearest subway station
- $\epsilon$  is the error term

#### A.1.2 Multivariate Specifications

$$\begin{aligned} \log(\text{Price}) = & \beta_0 + \beta_1 \cdot \text{Min\_dist} + \beta_3 \cdot (\text{Min\_dist})^2 \\ & + \beta_4 \cdot \text{oldnew} + \beta_5 \cdot \text{district} + \beta_6 \cdot \text{year} + \beta_7 \cdot (\text{district} \times \text{year}) + \epsilon \end{aligned} \quad (3)$$

$$\begin{aligned} \log(\text{Price}) = & \beta_0 + \beta_2 \cdot \text{close} \\ & + \beta_4 \cdot \text{oldnew} + \beta_5 \cdot \text{district} + \beta_6 \cdot \text{year} + \beta_7 \cdot (\text{district} \times \text{year}) + \epsilon \end{aligned} \quad (4)$$

Where:

- $\beta_3$  is the coefficient of the squared distance to the nearest subway station
- $\beta_4$  is the coefficient on the age of the house
- $\beta_5$  is a matrix of coefficients for district dummies
- $\beta_6$  is the coefficient of the year
- $\beta_7$  is a matrix of coefficients for the interaction of district and year dummies
- $\text{oldnew}$  is a dummy variable for the age of the house

- district represents dummy variables for the district of the house
- year represents dummy variables for the year of the observation

## A.2 Regression Summary and Figures

| Coefficient           | 1                           | 2                  | 3                         | 4                  |
|-----------------------|-----------------------------|--------------------|---------------------------|--------------------|
| Intercept             | 12.52<br>(0.00208)          | 12.22<br>(0.00202) | 14.57<br>(1.826)          | 14.57<br>(1.826)   |
| min_dist              | -0.0000441<br>(0.000000470) |                    | -0.000126<br>(0.00000145) |                    |
| close                 |                             | 0.314<br>(0.00283) |                           | 0.189<br>(0.00290) |
| min_dist <sup>2</sup> |                             |                    | 1.09e-08<br>(1.35e-10)    |                    |
| Controls              | No                          | No                 | Yes                       | Yes                |

Table 1: Regression Coefficients and Standard Errors for Model Specifications 1-4. Controls hold district, year, house age, and year-district interactions.

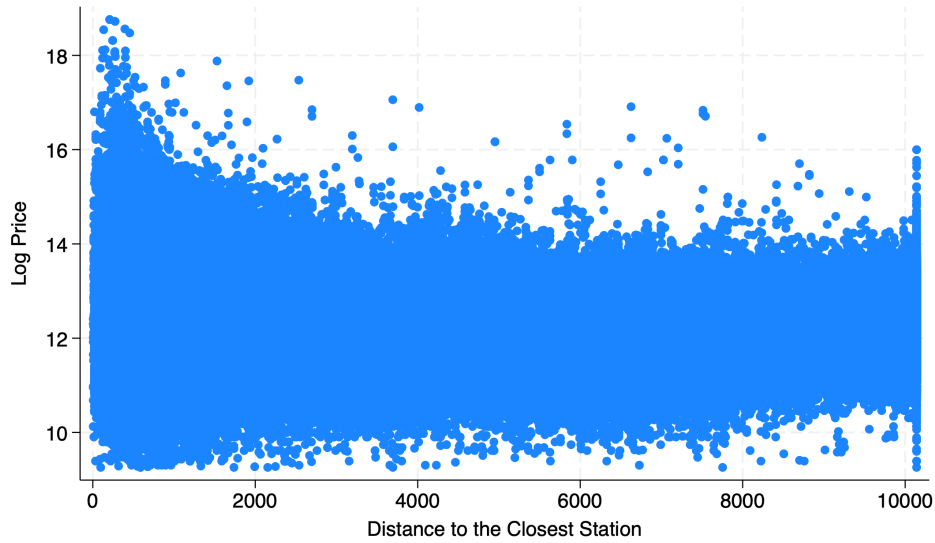


Figure 1: Scatter plot of log price against distance to the nearest subway station. Notice the non-linear relationship, and piece wise nature beyond 2km.

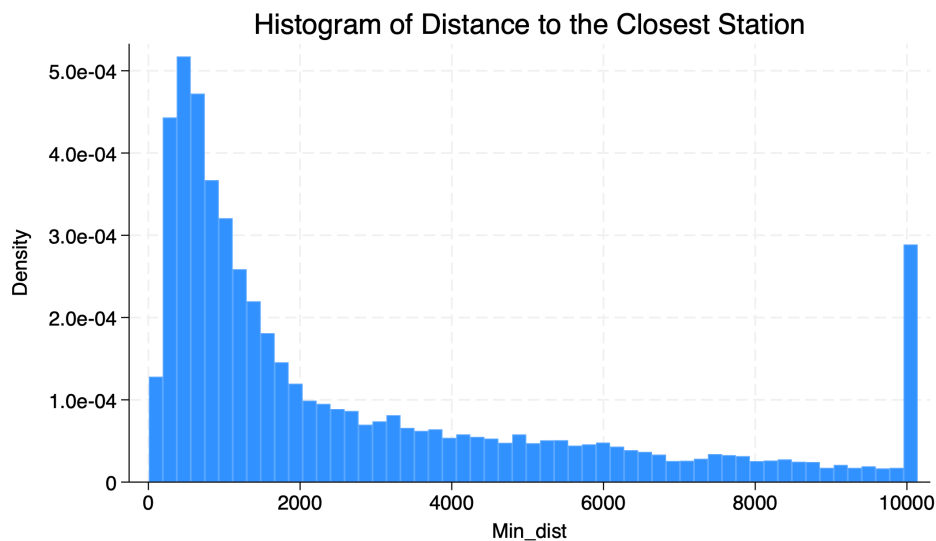


Figure 2: Distribution of the minimum distance to a subway station. The raw distribution is right skewed with a long tail so we windsorize at 10km.

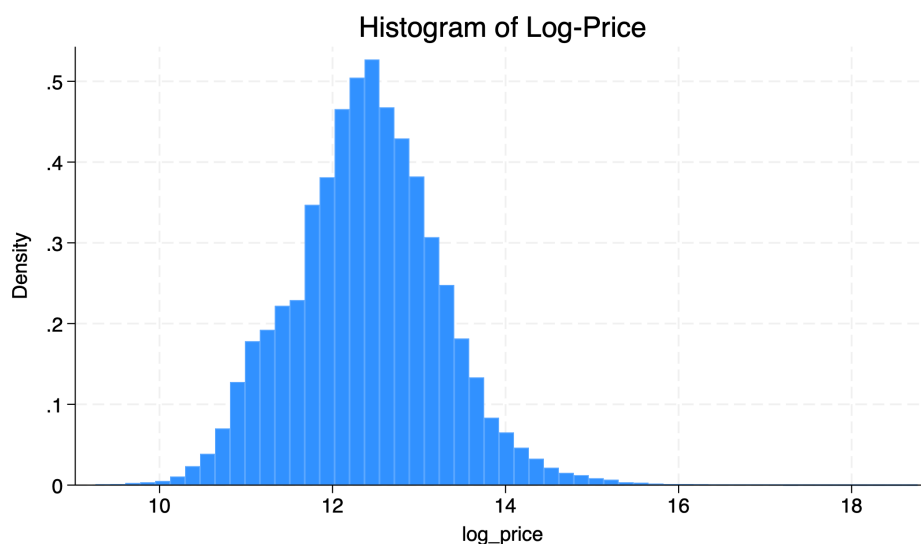


Figure 3: Distribution of log price. The log transformation accounts for the long tails in house price's distribution, and makes our regression nicely interpretable.

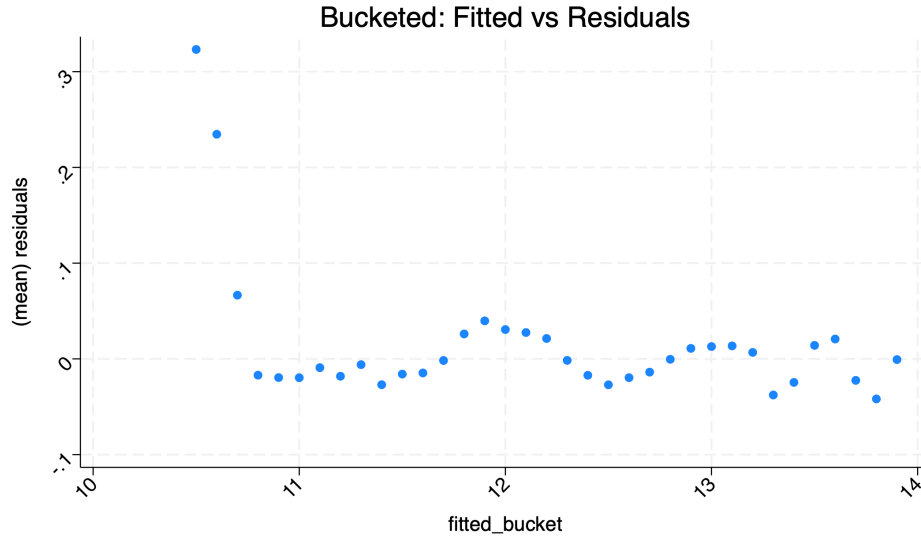


Figure 4: Fitted vs Residuals plot for the multivariate regression. The residuals are distributed randomly around 0 apart from at the lower tail where they break down. Results are after bucketing predicted into bins for easier interpretation. Results are from the regression in Specification 3.

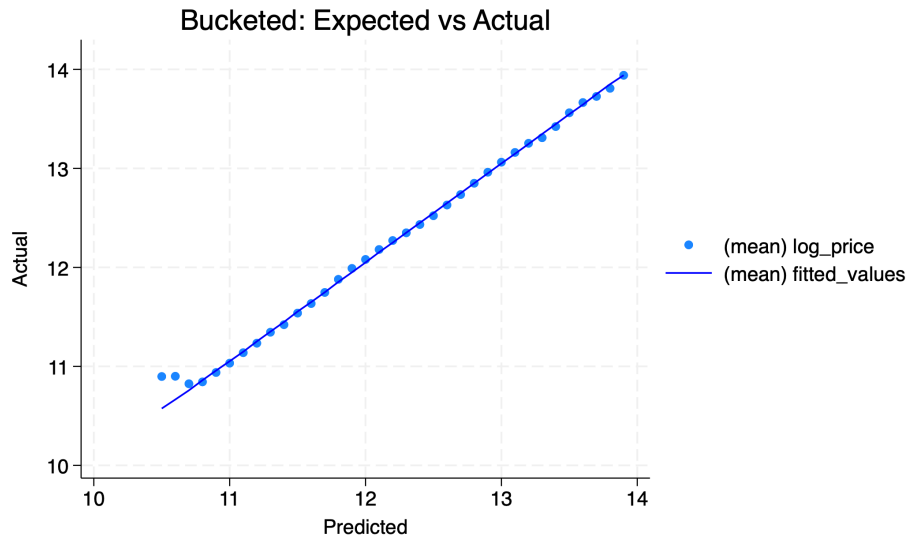


Figure 5: Bucketed Expected vs Actual plot for the multivariate regression. The expected values are bucketed into 10 bins and the actual values are averaged within each bin we do this because with over 340000 observations the plots otherwise are difficult to interpret. Results are from the regression in Specification 3.

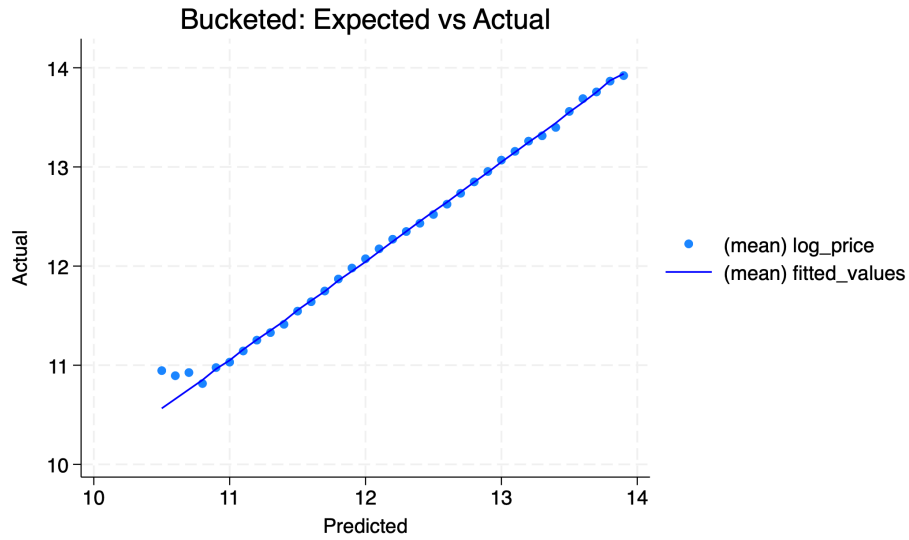


Figure 6: Bucketed Expected vs Actual plot for the multivariate regression with dummy. The expected values are bucketed into 10 bins and the actual values are averaged within each bin we do this because with over 340000 observations the plots otherwise are difficult to interpret. Results are from the regression in Specification 4.

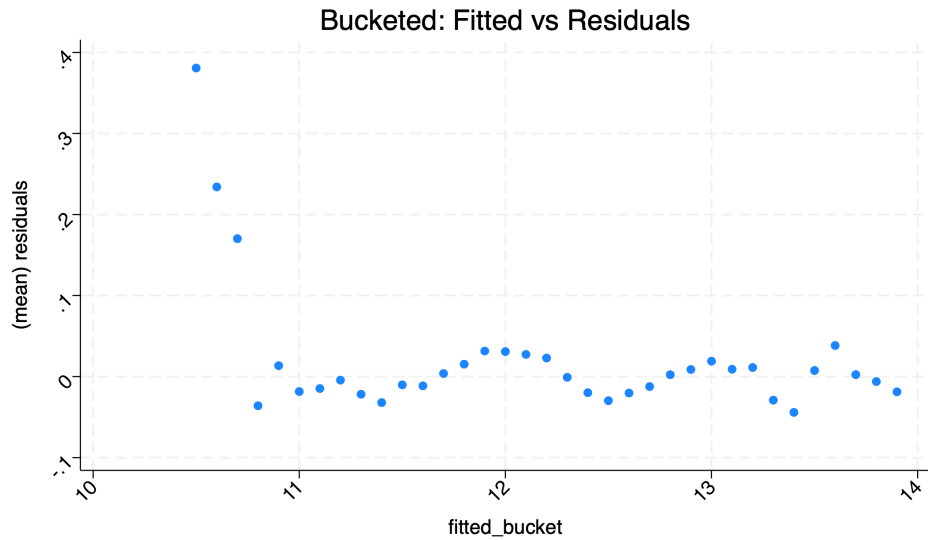


Figure 7: Fitted vs Residuals plot for the multivariate regression with dummy. The residuals are distributed randomly around 0 apart from at the lower tail where they break down. Results are after bucketing predicted into bins for easier interpretation. Results are from the regression in Specification 4.

### A.3 Data Summary Statistics

Table 2: Numeric Variables Summary Statistics

| (1)              |          |          |          |          |          |
|------------------|----------|----------|----------|----------|----------|
|                  | mean     | sd       | Var      | min      | max      |
| Min_dist         | 2821.537 | 2915.578 | 8500594  | 5.747817 | 10141.07 |
| min_dist_squared | 1.65e+07 | 2.83e+07 | 8.00e+14 | 33.0374  | 1.03e+08 |
| log_price        | 12.3983  | .8569691 | .734396  | 9.25913  | 18.76283 |
| Observations     | 347373   |          |          |          |          |

Table 3: Old/New Summary Statistics

| (1)          |        |          |
|--------------|--------|----------|
| Old/New      |        |          |
|              | b      | pct      |
| N            | 334362 | 96.25446 |
| Y            | 13011  | 3.745542 |
| Total        | 347373 | 100      |
| Observations | 347373 |          |

Table 4: District Summary Statistics

| (1)                  |       |          |
|----------------------|-------|----------|
| District             |       |          |
|                      | b     | pct      |
| BARKING AND DAGENHAM | 6773  | 1.949777 |
| BARNET               | 13020 | 3.748132 |
| BEXLEY               | 11626 | 3.346835 |

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|                        |       |          |
|------------------------|-------|----------|
| BRENT                  | 8631  | 2.484649 |
| BROMLEY                | 17304 | 4.981389 |
| CAMDEN                 | 8276  | 2.382453 |
| CITY OF LONDON         | 434   | .1249377 |
| CITY OF WESTMINSTER    | 9881  | 2.844493 |
| CROYDON                | 17283 | 4.975344 |
| EALING                 | 11824 | 3.403834 |
| ENFIELD                | 13130 | 3.779799 |
| GREENWICH              | 10877 | 3.131216 |
| HACKNEY                | 7398  | 2.129699 |
| HAMMERSMITH AND FULHAM | 7949  | 2.288318 |
| HARINGEY               | 9809  | 2.823766 |
| HARROW                 | 7131  | 2.052837 |
| HAVERING               | 11603 | 3.340214 |
| HILLINGDON             | 12621 | 3.63327  |
| HOUNSLOW               | 9267  | 2.667738 |
| ISLINGTON              | 7174  | 2.065215 |
| KENSINGTON AND CHELSEA | 8030  | 2.311636 |
| KINGSTON UPON THAMES   | 8255  | 2.376408 |
| LAMBETH                | 14930 | 4.297974 |
| LEWISHAM               | 13391 | 3.854934 |
| MERTON                 | 10079 | 2.901492 |
| NEWHAM                 | 9985  | 2.874432 |
| REDBRIDGE              | 10658 | 3.068172 |
| RICHMOND UPON THAMES   | 11298 | 3.252412 |
| SOUTHWARK              | 10059 | 2.895735 |
| SUTTON                 | 10342 | 2.977203 |
| TOWER HAMLETS          | 6635  | 1.910051 |
| WALTHAM FOREST         | 12275 | 3.533666 |
| WANDSWORTH             | 19425 | 5.591972 |

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|              |        |     |
|--------------|--------|-----|
| Total        | 347373 | 100 |
| Observations | 347373 |     |

Table 5: Year Summary Statistics

|      | (1)   |          |
|------|-------|----------|
|      | Year  |          |
|      | b     | pct      |
| 1995 | 11273 | 3.245215 |
| 1996 | 13798 | 3.972099 |
| 1997 | 15791 | 4.545834 |
| 1998 | 14966 | 4.308337 |
| 1999 | 17317 | 4.985131 |
| 2000 | 15518 | 4.467244 |
| 2001 | 17110 | 4.925541 |
| 2002 | 18197 | 5.238461 |
| 2003 | 15726 | 4.527122 |
| 2004 | 16029 | 4.614348 |
| 2005 | 13882 | 3.996281 |
| 2006 | 17206 | 4.953177 |
| 2007 | 16474 | 4.742453 |
| 2008 | 7402  | 2.130851 |
| 2009 | 6962  | 2.004186 |
| 2010 | 8703  | 2.505376 |
| 2011 | 8340  | 2.400877 |
| 2012 | 8537  | 2.457589 |
| 2013 | 10055 | 2.894583 |
| 2014 | 11275 | 3.245791 |
| 2015 | 10621 | 3.05752  |
| 2016 | 9442  | 2.718116 |



|              |        |          |
|--------------|--------|----------|
| 2017         | 8588   | 2.47227  |
| 2018         | 8278   | 2.383029 |
| 2019         | 7836   | 2.255788 |
| 2020         | 7420   | 2.136032 |
| 2021         | 11412  | 3.285229 |
| 2022         | 9337   | 2.687889 |
| 2023         | 6825   | 1.964747 |
| 2024         | 3053   | .8788824 |
| Total        | 347373 | 100      |
| Observations | 347373 |          |

## A.4 Extensive Regression Results

Table 6: Regression Results

|  | (1)                            |
|--|--------------------------------|
|  | log_price                      |
| Min_dist                                       | -0.0000441***<br>(0.000000470) |
| Constant                                       | 12.52***<br>(0.00208)          |
| R-squared                                      | 0.0225                         |
| Observations                                   | 347373                         |
| Standard errors in parentheses                 |                                |
| * $p < 0.05$ , ** $p < 0.01$ , *** $p < 0.001$ |                                |

Table 7: Regression results for the close/far dummy variable.  
Shows us the relationship is economically piece wise.

|  | (1)                   |
|--|-----------------------|
|  | log_price             |
| Min_dist                                       | 0.314***<br>(0.00283) |
| Constant                                       | 12.22***<br>(0.00202) |
| R-squared                                      | 0.0326                |
| Observations                                   | 347373                |
| Standard errors in parentheses                 |                       |
| * $p < 0.05$ , ** $p < 0.01$ , *** $p < 0.001$ |                       |

Table 8: Multivariate regression results, min\_dist is a polynomial and in-context with district, year, house age, and district-year interaction fixed effects.

|                  | (1)                          |
|------------------|------------------------------|
|                  | log_price                    |
| Min_dist         | -0.000126***<br>(0.00000145) |
| min_dist_squared | 1.09e-08***<br>(1.35e-10)    |
| N                | 0<br>(.)                     |
| Y                | 0.115***<br>(0.00475)        |
| Year=1995        | 0<br>(.)                     |
| Year=1996        | 0.0600***<br>(0.00653)       |
| Year=1997        | 0.192***<br>(0.00648)        |
| Year=1998        | 0.320***<br>(0.00663)        |
| Year=1999        | 0.483***<br>(0.00652)        |
| Year=2000        | 0.662***<br>(0.00685)        |
| Year=2001        | 0.783***<br>(0.00684)        |

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|           |                       |
|-----------|-----------------------|
| Year=2002 | 0.940***<br>(0.00698) |
| Year=2003 | 1.061***<br>(0.00729) |
| Year=2004 | 1.136***<br>(0.00756) |
| Year=2005 | 1.183***<br>(0.00804) |
| Year=2006 | 1.255***<br>(0.00826) |
| Year=2007 | 1.381***<br>(0.00870) |
| Year=2008 | 1.383***<br>(0.00997) |
| Year=2009 | 1.358***<br>(0.0106)  |
| Year=2010 | 1.435***<br>(0.0108)  |
| Year=2011 | 1.454***<br>(0.0113)  |
| Year=2012 | 1.501***<br>(0.0116)  |
| Year=2013 | 1.552***<br>(0.0118)  |
| Year=2014 | 1.672***<br>(0.0123)  |
| Year=2015 | 1.770***              |

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|                      |           |
|----------------------|-----------|
|                      | (0.0127)  |
| Year=2016            | 1.844***  |
|                      | (0.0134)  |
| Year=2017            | 1.874***  |
|                      | (0.0143)  |
| Year=2018            | 1.895***  |
|                      | (0.0147)  |
| Year=2019            | 1.899***  |
|                      | (0.0154)  |
| Year=2020            | 1.954***  |
|                      | (0.0158)  |
| Year=2021            | 1.975***  |
|                      | (0.0154)  |
| Year=2022            | 2.032***  |
|                      | (0.0164)  |
| Year=2023            | 2.006***  |
|                      | (0.0171)  |
| Year=2024            | 2.001***  |
|                      | (0.0189)  |
| BARKING AND DAGENHAM | 0         |
|                      | (.)       |
| BARNET               | 2.765     |
|                      | (1.732)   |
| BEXLEY               | 5.589***  |
|                      | (1.409)   |
| BRENT                | -18.80*** |
|                      | (1.985)   |

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|                        |                      |
|------------------------|----------------------|
| BROMLEY                | 5.656***<br>(1.398)  |
| CAMDEN                 | -6.014**<br>(2.238)  |
| CITY OF LONDON         | -23.00<br>(15.16)    |
| CITY OF WESTMINSTER    | -17.20***<br>(2.563) |
| CROYDON                | 5.677***<br>(1.403)  |
| EALING                 | -1.319<br>(1.711)    |
| ENFIELD                | 2.589<br>(1.548)     |
| GREENWICH              | -3.600*<br>(1.594)   |
| HACKNEY                | -29.40***<br>(1.884) |
| HAMMERSMITH AND FULHAM | -4.303*<br>(2.087)   |
| HARINGEY               | -11.89***<br>(1.858) |
| HARROW                 | 5.828**<br>(1.884)   |
| HAVERING               | 11.91***<br>(1.403)  |
| HILLINGDON             | 7.313***             |

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|                        |           |
|------------------------|-----------|
|                        | (1.485)   |
| HOUNSLOW               | 5.766**   |
|                        | (1.857)   |
| ISLINGTON              | -5.135*   |
|                        | (2.103)   |
| KENSINGTON AND CHELSEA | -12.13*** |
|                        | (2.716)   |
| KINGSTON UPON THAMES   | 4.581**   |
|                        | (1.757)   |
| LAMBETH                | -9.541*** |
|                        | (1.563)   |
| LEWISHAM               | -17.67*** |
|                        | (1.465)   |
| MERTON                 | -0.689    |
|                        | (1.881)   |
| NEWHAM                 | -13.05*** |
|                        | (1.550)   |
| REDBRIDGE              | 1.208     |
|                        | (1.579)   |
| RICHMOND UPON THAMES   | 9.189***  |
|                        | (1.756)   |
| SOUTHWARK              | -17.08*** |
|                        | (1.809)   |
| SUTTON                 | 8.695***  |
|                        | (1.509)   |
| TOWER HAMLETS          | 2.964     |
|                        | (1.962)   |

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|                                    |                           |
|------------------------------------|---------------------------|
| WALTHAM FOREST                     | -22.81***<br>(1.452)      |
| WANDSWORTH                         | -2.433<br>(1.529)         |
| BARKING AND DAGENHAM $\times$ Year | -0.00161*<br>(0.000762)   |
| BARNET $\times$ Year               | -0.00268**<br>(0.000863)  |
| BEXLEY $\times$ Year               | -0.00424***<br>(0.000702) |
| BRENT $\times$ Year                | 0.00799***<br>(0.000990)  |
| BROMLEY $\times$ Year              | -0.00416***<br>(0.000696) |
| CAMDEN $\times$ Year               | 0.00186<br>(0.00111)      |
| CITY OF LONDON $\times$ Year       | 0.0102<br>(0.00756)       |
| CITY OF WESTMINSTER $\times$ Year  | 0.00753***<br>(0.00128)   |
| CROYDON $\times$ Year              | -0.00424***<br>(0.000699) |
| EALING $\times$ Year               | -0.000691<br>(0.000852)   |
| ENFIELD $\times$ Year              | -0.00268***<br>(0.000771) |
| GREENWICH $\times$ Year            | 0.000413                  |

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|                                      |             |
|--------------------------------------|-------------|
|                                      | (0.000795)  |
| HACKNEY $\times$ Year                | 0.0133***   |
|                                      | (0.000939)  |
| HAMMERSMITH AND FULHAM $\times$ Year | 0.000992    |
|                                      | (0.00104)   |
| HARINGEY $\times$ Year               | 0.00456***  |
|                                      | (0.000926)  |
| HARROW $\times$ Year                 | -0.00429*** |
|                                      | (0.000938)  |
| HAVERING $\times$ Year               | -0.00737*** |
|                                      | (0.000699)  |
| HILLINGDON $\times$ Year             | -0.00506*** |
|                                      | (0.000740)  |
| HOUNSLOW $\times$ Year               | -0.00425*** |
|                                      | (0.000926)  |
| ISLINGTON $\times$ Year              | 0.00134     |
|                                      | (0.00105)   |
| KENSINGTON AND CHELSEA $\times$ Year | 0.00515***  |
|                                      | (0.00135)   |
| KINGSTON UPON THAMES $\times$ Year   | -0.00350*** |
|                                      | (0.000875)  |
| LAMBETH $\times$ Year                | 0.00345***  |
|                                      | (0.000778)  |
| LEWISHAM $\times$ Year               | 0.00744***  |
|                                      | (0.000730)  |
| MERTON $\times$ Year                 | -0.000965   |
|                                      | (0.000937)  |

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|                                    |                           |
|------------------------------------|---------------------------|
| NEWHAM $\times$ Year               | 0.00496***<br>(0.000772)  |
| REDBRIDGE $\times$ Year            | -0.00205**<br>(0.000787)  |
| RICHMOND UPON THAMES $\times$ Year | -0.00569***<br>(0.000874) |
| SOUTHWARK $\times$ Year            | 0.00720***<br>(0.000902)  |
| SUTTON $\times$ Year               | -0.00568***<br>(0.000752) |
| TOWER HAMLETS $\times$ Year        | -0.00282**<br>(0.000979)  |
| WALTHAM FOREST $\times$ Year       | 0.00988***<br>(0.000723)  |
| WANDSWORTH $\times$ Year           | 0<br>(.)                  |
| Constant                           | 14.07***<br>(1.525)       |
| R-squared                          | 0.633                     |
| Observations                       | 347373                    |

Standard errors in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

Table 9: Regression results using the close/far dummy  
Min\_dist is either 0 or 1. Shows us that the dummy effect is  
still economically and statistically significant in-context with  
our controls.

|            | (1)                    |
|------------|------------------------|
|            | log_price              |
| Min_dist=0 | 0<br>(.)               |
| Min_dist=1 | 0.189***<br>(0.00290)  |
| N          | 0<br>(.)               |
| Y          | 0.119***<br>(0.00476)  |
| Year=1995  | 0<br>(.)               |
| Year=1996  | 0.0605***<br>(0.00663) |
| Year=1997  | 0.192***<br>(0.00649)  |
| Year=1998  | 0.321***<br>(0.00663)  |
| Year=1999  | 0.482***<br>(0.00655)  |
| Year=2000  | 0.661***<br>(0.00681)  |
| Year=2001  | 0.782***               |

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|           |           |
|-----------|-----------|
|           | (0.00684) |
| Year=2002 | 0.939***  |
|           | (0.00696) |
| Year=2003 | 1.060***  |
|           | (0.00732) |
| Year=2004 | 1.135***  |
|           | (0.00752) |
| Year=2005 | 1.182***  |
|           | (0.00793) |
| Year=2006 | 1.255***  |
|           | (0.00795) |
| Year=2007 | 1.380***  |
|           | (0.00827) |
| Year=2008 | 1.384***  |
|           | (0.00966) |
| Year=2009 | 1.360***  |
|           | (0.0100)  |
| Year=2010 | 1.438***  |
|           | (0.00992) |
| Year=2011 | 1.457***  |
|           | (0.0103)  |
| Year=2012 | 1.502***  |
|           | (0.0105)  |
| Year=2013 | 1.554***  |
|           | (0.0106)  |
| Year=2014 | 1.673***  |
|           | (0.0109)  |

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|                      |                      |
|----------------------|----------------------|
| Year=2015            | 1.771***<br>(0.0113) |
| Year=2016            | 1.846***<br>(0.0117) |
| Year=2017            | 1.877***<br>(0.0122) |
| Year=2018            | 1.899***<br>(0.0126) |
| Year=2019            | 1.903***<br>(0.0130) |
| Year=2020            | 1.957***<br>(0.0134) |
| Year=2021            | 1.979***<br>(0.0133) |
| Year=2022            | 2.035***<br>(0.0139) |
| Year=2023            | 2.010***<br>(0.0146) |
| Year=2024            | 2.005***<br>(0.0166) |
| BARKING AND DAGENHAM | 0<br>(.)             |
| BARNET               | 2.225<br>(1.945)     |
| BEXLEY               | 5.123**<br>(1.974)   |
| BRENT                | -19.32***            |

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|                        |           |
|------------------------|-----------|
|                        | (2.103)   |
| BROMLEY                | 5.577**   |
|                        | (1.858)   |
| CAMDEN                 | -6.402**  |
|                        | (2.130)   |
| CITY OF LONDON         | -23.19**  |
|                        | (7.644)   |
| CITY OF WESTMINSTER    | -17.68*** |
|                        | (2.043)   |
| CROYDON                | 4.450*    |
|                        | (1.851)   |
| EALING                 | -2.391    |
|                        | (1.985)   |
| ENFIELD                | 2.017     |
|                        | (1.944)   |
| GREENWICH              | -4.107*   |
|                        | (2.007)   |
| HACKNEY                | -29.34*** |
|                        | (2.163)   |
| HAMMERSMITH AND FULHAM | -4.642*   |
|                        | (2.135)   |
| HARINGEY               | -12.52*** |
|                        | (2.030)   |
| HARROW                 | 5.490*    |
|                        | (2.198)   |
| HAVERING               | 10.56***  |
|                        | (1.962)   |

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|                        |                      |
|------------------------|----------------------|
| HILLINGDON             | 6.397**<br>(1.954)   |
| HOUNSLOW               | 5.913**<br>(2.080)   |
| ISLINGTON              | -5.364*<br>(2.195)   |
| KENSINGTON AND CHELSEA | -12.54***<br>(2.152) |
| KINGSTON UPON THAMES   | 3.984<br>(2.123)     |
| LAMBETH                | -9.866***<br>(1.897) |
| LEWISHAM               | -17.46***<br>(1.927) |
| MERTON                 | -1.193<br>(2.029)    |
| NEWHAM                 | -14.91***<br>(2.059) |
| REDBRIDGE              | -0.242<br>(2.023)    |
| RICHMOND UPON THAMES   | 8.947***<br>(1.985)  |
| SOUTHWARK              | -18.27***<br>(2.031) |
| SUTTON                 | 8.082***<br>(2.017)  |
| TOWER HAMLETS          | 1.581                |

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|                                    |             |
|------------------------------------|-------------|
|                                    | (2.261)     |
| WALTHAM FOREST                     | -23.41***   |
|                                    | (1.948)     |
| WANDSWORTH                         | -3.230      |
|                                    | (1.829)     |
| BARKING AND DAGENHAM $\times$ Year | -0.00201*   |
|                                    | (0.000911)  |
| BARNET $\times$ Year               | -0.00281*** |
|                                    | (0.000719)  |
| BEXLEY $\times$ Year               | -0.00439*** |
|                                    | (0.000738)  |
| BRENT $\times$ Year                | 0.00788***  |
|                                    | (0.000822)  |
| BROMLEY $\times$ Year              | -0.00447*** |
|                                    | (0.000659)  |
| CAMDEN $\times$ Year               | 0.00168*    |
|                                    | (0.000839)  |
| CITY OF LONDON $\times$ Year       | 0.00998**   |
|                                    | (0.00375)   |
| CITY OF WESTMINSTER $\times$ Year  | 0.00740***  |
|                                    | (0.000783)  |
| CROYDON $\times$ Year              | -0.00402*** |
|                                    | (0.000654)  |
| EALING $\times$ Year               | -0.000548   |
|                                    | (0.000746)  |
| ENFIELD $\times$ Year              | -0.00280*** |
|                                    | (0.000718)  |

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|                                      |                           |
|--------------------------------------|---------------------------|
| GREENWICH $\times$ Year              | 0.000254<br>(0.000760)    |
| HACKNEY $\times$ Year                | 0.0129***<br>(0.000860)   |
| HAMMERSMITH AND FULHAM $\times$ Year | 0.000783<br>(0.000842)    |
| HARINGEY $\times$ Year               | 0.00448***<br>(0.000775)  |
| HARROW $\times$ Year                 | -0.00451***<br>(0.000882) |
| HAVERING $\times$ Year               | -0.00709***<br>(0.000731) |
| HILLINGDON $\times$ Year             | -0.00500***<br>(0.000726) |
| HOUNSLOW $\times$ Year               | -0.00472***<br>(0.000808) |
| ISLINGTON $\times$ Year              | 0.00107<br>(0.000880)     |
| KENSINGTON AND CHELSEA $\times$ Year | 0.00498***<br>(0.000853)  |
| KINGSTON UPON THAMES $\times$ Year   | -0.00362***<br>(0.000834) |
| LAMBETH $\times$ Year                | 0.00322***<br>(0.000686)  |
| LEWISHAM $\times$ Year               | 0.00692***<br>(0.000707)  |
| MERTON $\times$ Year                 | -0.00110                  |

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|                                    |             |
|------------------------------------|-------------|
|                                    | (0.000774)  |
| NEWHAM $\times$ Year               | 0.00549***  |
|                                    | (0.000795)  |
| REDBRIDGE $\times$ Year            | -0.00172*   |
|                                    | (0.000771)  |
| RICHMOND UPON THAMES $\times$ Year | -0.00597*** |
|                                    | (0.000745)  |
| SOUTHWARK $\times$ Year            | 0.00740***  |
|                                    | (0.000776)  |
| SUTTON $\times$ Year               | -0.00579*** |
|                                    | (0.000767)  |
| TOWER HAMLETS $\times$ Year        | -0.00252**  |
|                                    | (0.000921)  |
| WALTHAM FOREST $\times$ Year       | 0.00979***  |
|                                    | (0.000721)  |
| WANDSWORTH $\times$ Year           | 0           |
|                                    | (.)         |
| Constant                           | 14.57***    |
|                                    | (1.826)     |
| R-squared                          | 0.631       |
| Observations                       | 347373      |

Standard errors in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$