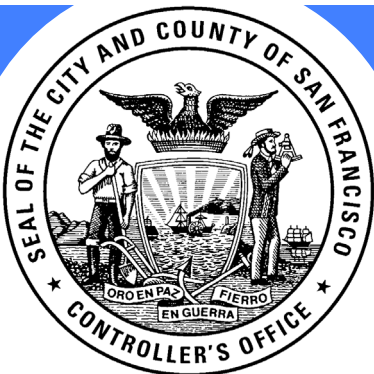


Valencia Economic Context: Statistical Detail



CITY & COUNTY OF SAN FRANCISCO

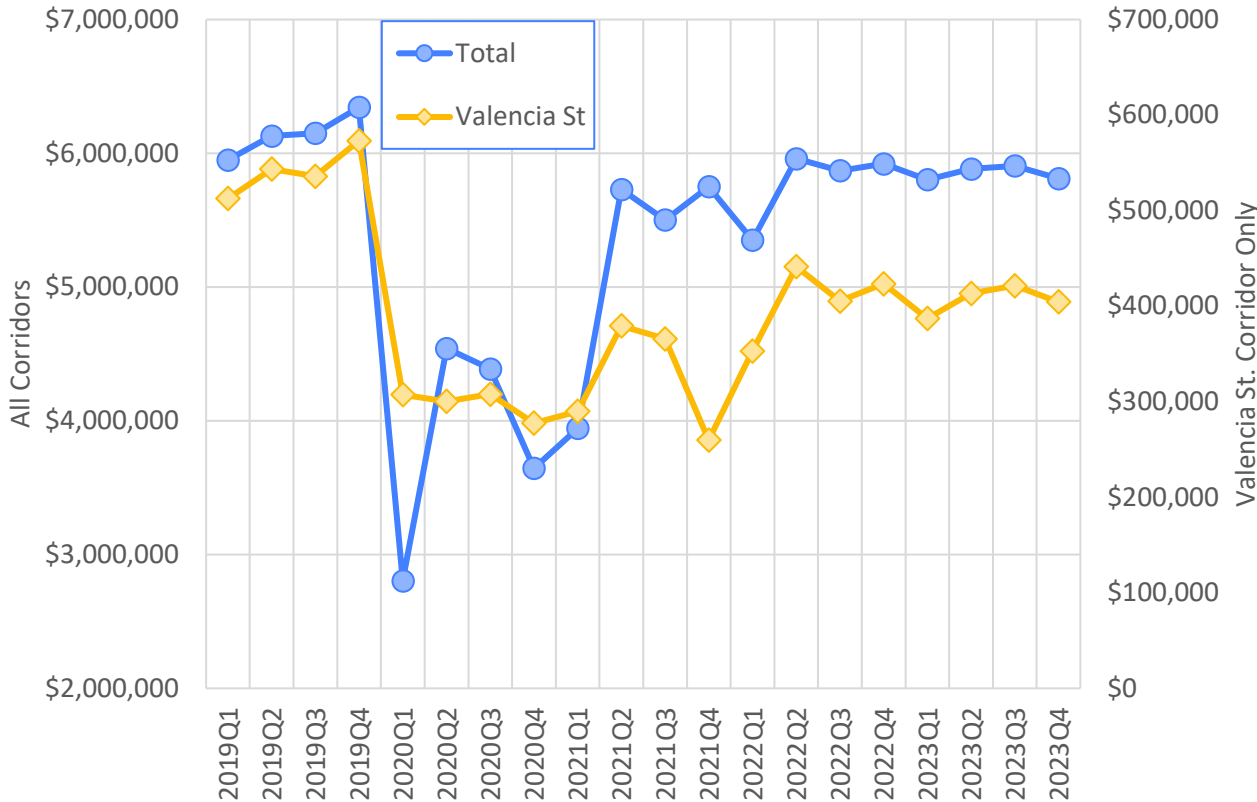
Office of the Controller
Office of Economic Analysis

June 19, 2024

- At the request of the SFMTA, the Controller's Office has conducted an assessment of the impact of the improvements on taxable sales along the Valencia Street Corridor, using sales tax information.
- Controller's Office staff used our sales tax database to build statistical models. Because the City's General Fund share of sales tax is 1% of total sales, sales tax is an accurate indicator of business sales.
- To account for other factors that could explain sales trends in the area, the models used sales tax information from 28 other neighborhood commercial corridors in the city, over the 2019-2023 period. The database includes sales tax remittances by individual businesses.
- Several major sales-tax generating areas of the city were not included in this analysis, including downtown areas, retail districts of citywide importance like Van Ness Blvd, and tourism areas such as Chinatown, Fisherman's Wharf, and Japantown. The full list and definitions list of blocks is provided in the Appendix.

Context: Sales Tax Trend: Valencia and All-Corridor Total

Quarterly Sales Tax Remittances from Businesses on the Valencia St. Corridor, and the 29 Corridors Total, 2019Q1 - 2023Q4



As a whole, the 29 Commercial Corridors considered in this analysis had not fully recovered to 2019 levels by the end of 2023.

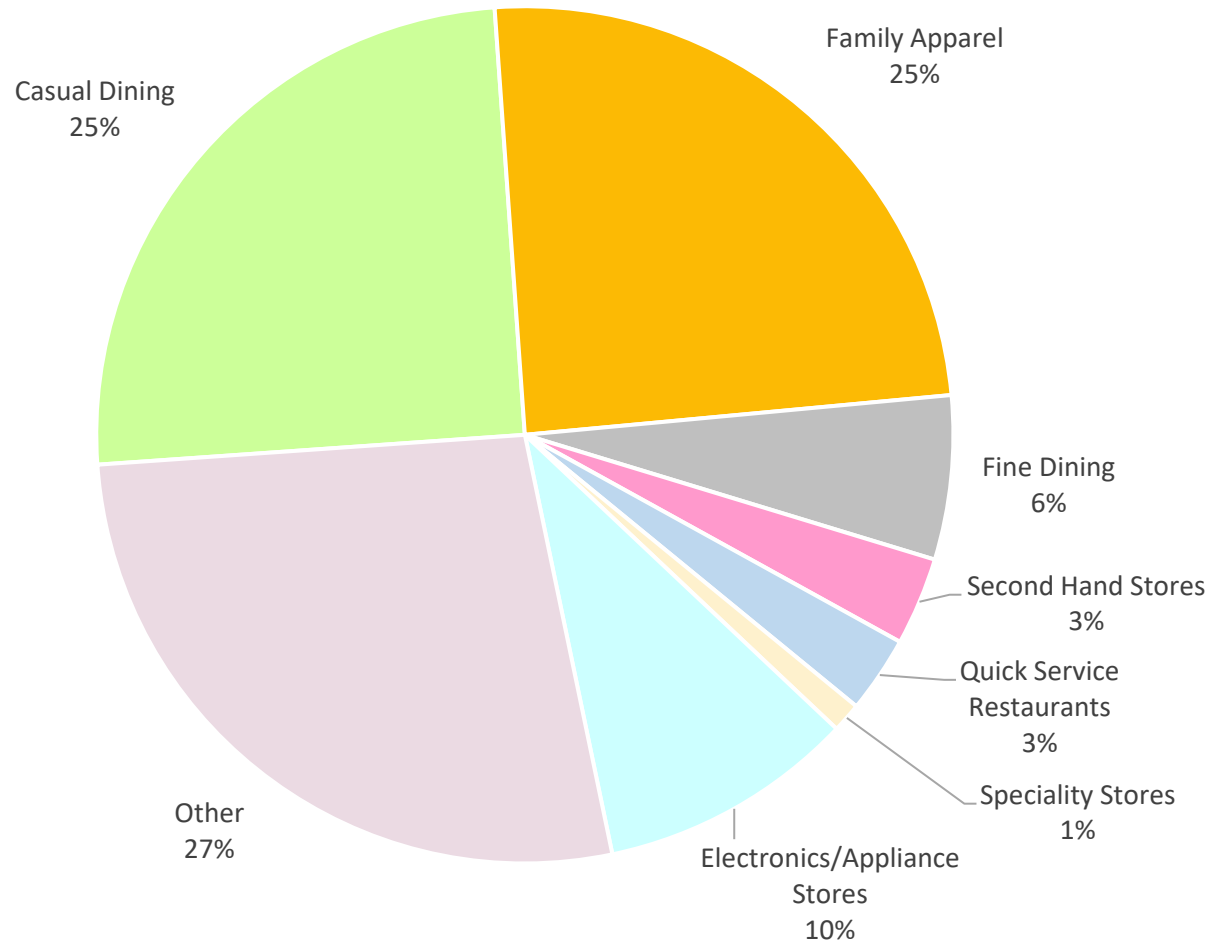
After a re-opening period in 2021, sales tax in these areas was relatively flat during most of 2022 and 2023.

The Valencia St. Corridor (between 15th and 23rd streets) has performed worse than average since 2021. It had a much weaker 2021 recovery than other areas, but, like them, remained largely flat during most of 2022 and 2023.

Context: Valencia St. Business Mix, Pre-Pandemic

4

Valencia St. Corridor Sales Tax by Business Type, 2019

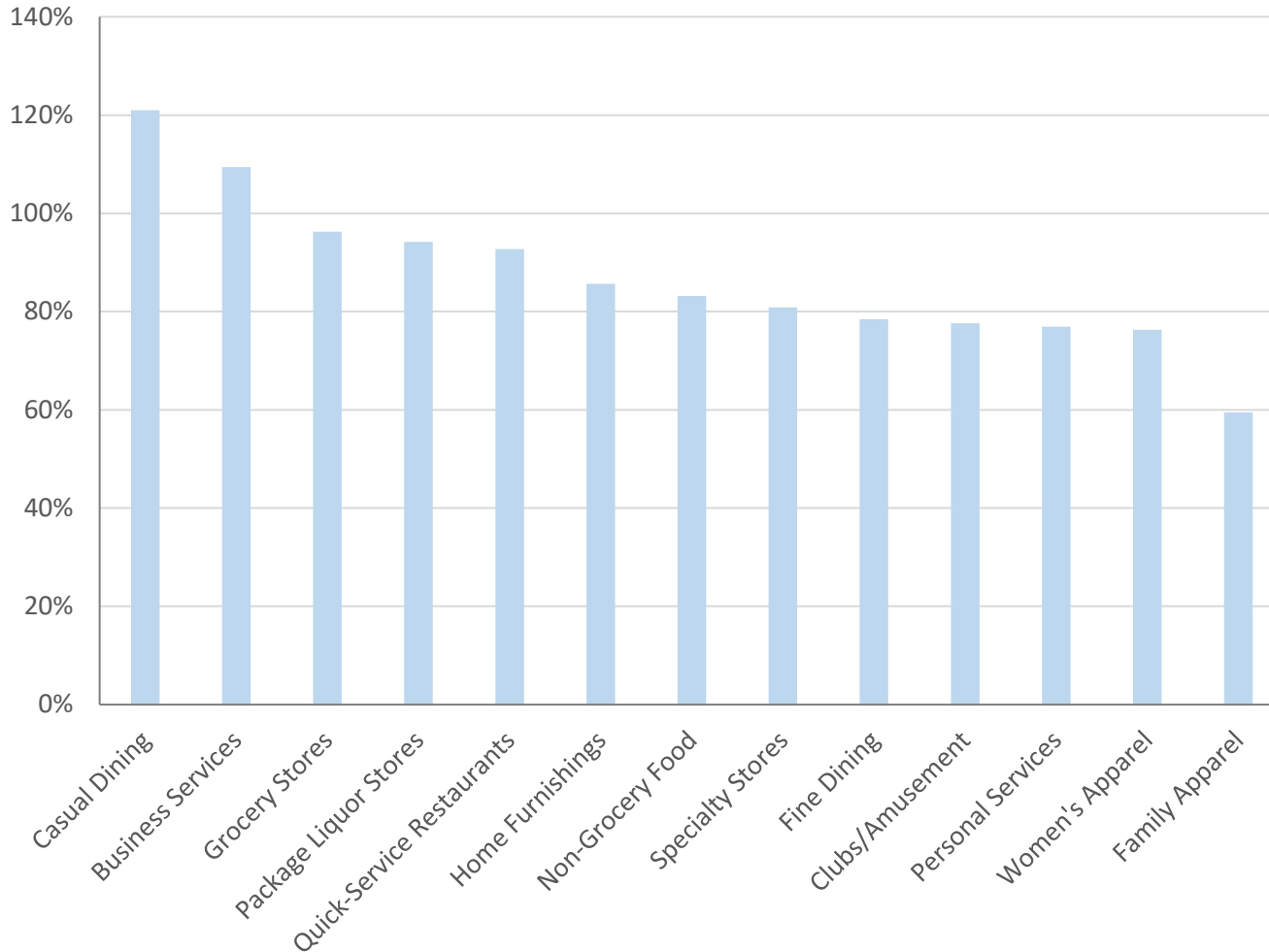


In 2019, before the pandemic, sales tax on the Valencia St. corridor was heavily weighted businesses engaged in Casual Dining and Family Apparel. These two activities accounted for 50% of sales in the area in 2019.

The corridor's concentration in Family Apparel was unusual. Across all corridors, Family Apparel accounted for only 5% of sales, while Casual Dining accounted for 19%.

Sales Tax Recovery by Business Type, All Corridors

2023 Sales Tax as % of 2019 Sales Tax, Selected Business Types

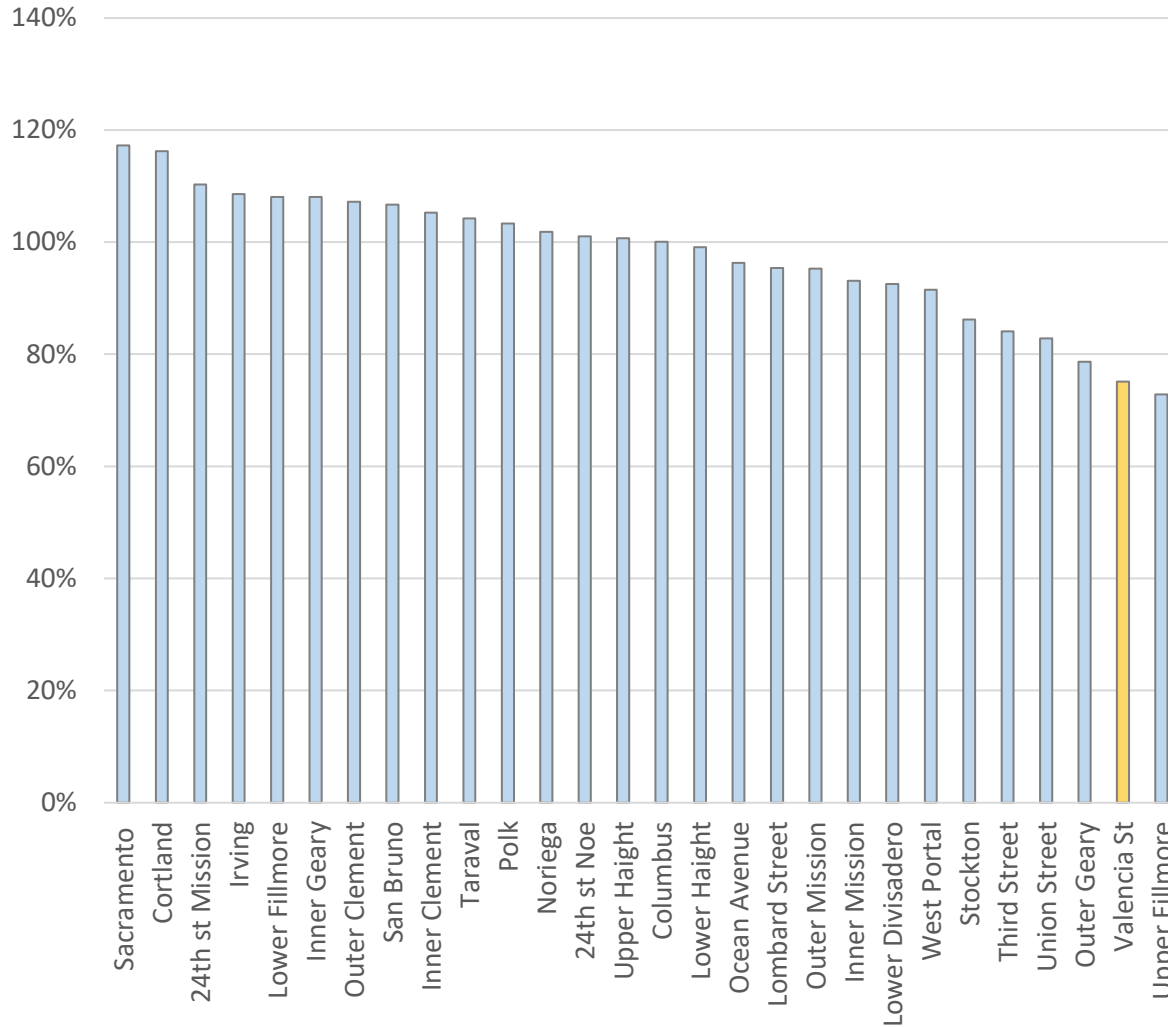


Sales tax recovery has been highly uneven, both geographically and by type of business. The chart to the left shows 2023 sales tax as a % of 2019 sales tax, by business activity across all commercial corridors in the analysis.

Only casual dining and business services have a number above 100%, indicating more sales tax in 2023 than was generated in 2019. Family Apparel, which as noted is particularly important to Valencia Street, was only 60% of 2019 levels by 2023.

Sales Tax Recovery by Commercial Corridor

2023 Sales Tax as % of 2019 Sales Tax, 28 Commercial Corridors



Of the corridors considered in this analysis, slightly more than half have generated more sales tax in 2023 than in 2019*. Valencia St. has had one of the weakest recoveries from 2020 through 2023, with 2023 sales only 75% of 2019 sales.

Source: CDTFA / HDL Companies / Office of the Controller

* - Numbers are not adjusted for inflation.

- The data clearly indicates that businesses along the Valencia Street corridor have experienced a weaker economic recovery from the pandemic than almost every other neighborhood in the city. But was this more pronounced at the second half of 2023?
- Statistically, we can try to explain some of the changes in business sales in terms of a series of systemic or structural factors, such as:
 - Time – business sales tend to grow or contract depending on the business cycle and the state of the city's economy, which can be represented by a time variable.
 - Neighborhood – because of surrounding neighborhood and its accessibility characteristics, some areas support business growth better than others over the long term. This can be represented by neighborhood variables.
 - Line of business – because of the structure of the city's economy, some types of businesses grow faster than others over the long term, regardless of the business cycle or the area. This can be represented by business type variables (the types are shown in the chart on the previous page).

Statistical Model and Results

8

- We want to test a further hypothesis: after correcting for the business cycle, the underlying effect of the neighborhood, and the type of business: did the presence of the Valencia bike improvements have a statistically significant impact on business sales?
- Specifically, we created a statistical model that aimed to predict a business's sales for a given quarter, based on variables representing that quarter, the business's commercial corridor, its business type, and a variable indicating if it was located on Valencia Street during the bikeway improvement period, or not.
- Two bikeway improvement models were run. The first considered the potential impact of the construction and post-construction periods (Q3 and Q4 of 2023), and the second considered only the post-construction period (Q4 of 2023).
- The model was applied to every business that remitted sales tax from premises on the 28 commercial corridors listed in the appendix, during the 2019Q1 to 2023Q4 time period (or 20 quarters in all).
- More details about the statistical model, and the full model results, are included in the appendix.

Results and Conclusions

- In two statistical models, covering both the construction and post-construction period, and the post-construction period alone, the coefficients were not statistically different from zero.
- This indicates that there was no particular impact in the second half of 2023 on business sales on the corridor of a whole.
- While businesses along Valencia Street have clearly suffered more than in other parts of the city since the pandemic, the challenges facing the corridor pre-date the construction of the bike improvements, and there is no statistical basis for linking the two.
- This finding does not mean that no business was adversely affected by the bike improvements. It simply means that any negative impacts on individual businesses were offset by positive impacts on others, and there is no net effect on the corridor as a whole.

Appendix: Commercial Corridors Used in this Analysis

ID	Street	From St	To St
1	24th Street	Valencia	San Bruno
2	24th Street	Dolores	Douglass
3	Columbus	Francisco	Washington
4	Cortland	Elsie	Banks
5	Clement	Arguello	Funston
6	Geary	Masonic	Funston
7	Mission	14th st	Randall
8	Irving	5th ave	27th ave
9	Lombard	Lyon	Van Ness
10	Divisadero	Waller	O'Farrell
11	Fillmore	Fulton	Geary
12	Haight	Webster	Scott
13	Noriega	19th ave	33rd ave
14	Ocean Avenue	Frida Kahlo	19th ave
15	Clement	18th ave	28th ave
16	Geary	14th ave	28th ave
17	Mission	Trumbell	Huron
18	Polk	Geary	Filbert
19	Sacramento	Lyon	Maple
20	San Bruno	Silver	Olmstead
21	Stockton	California	Vallejo
22	Taraval	12th ave	36th ave
23	Third Street	Innes	Bayshore
24	Union Street	Pierce	Van Ness
25	Divisadero	Geary	Sacramento
26	Fillmore	Geary	Pacific
27	Haight	Central	Stanyan
28	Valencia	15th	23rd
29	West Portal	Ulloa	15th ave

Appendix: Details of the Statistical Models

- The hypothesis was tested using the statistical technique of multiple regression, which allows us to focus on the bikeway variables of interest while adjusting for the other factors (time period, neighborhood, and business type) that affect a business's sales.
- Multiple regression tries to explain a dependent variable (in this case, business sales) in terms of a series of independent variables (the time period, the neighborhood corridor, business type, and the bikeway improvement variables).
- The model results include a series of coefficients that estimate the impact of an increase in the value of each independent variable, on the dependent variable. If this coefficient is statistically different from zero, then we can conclude that the independent variable has an effect – either positive or negative – on the dependent variable.
- In these models, the bikeway improvement variables are set to 1 for businesses on Valencia St. during the periods considered (Q3/Q4 of 2023), or 0 otherwise. The coefficient on the bikeway improvement variable represents the specific impact of being on Valencia during those periods, independent of the other variables.

- The variables in the model are:
 - IsTreatment1 (used in Model 1 only) – the variable equal to 1 if the business was operating on the Valencia St corridor during the 3rd or 4th quarter of 2023, or 0 otherwise.
 - IsTreatment2 – (used in Model 2 only) the variable equal to 1 if the business was operating on the Valencia St. corridor during the 4th quarter of 2023, or 0 otherwise.
 - Corridor<number> - a series of 0/1 variables indicating the commercial corridor, using the Corridor IDs shown on page 11. All coefficients are relative to Corridor #1, 24th Street in the Mission.
 - Type<type> - a series of 0/1 variables indicating the business's type. All coefficients are relative to the alphabetically-first business type, Art/Gift/Novelty Stores.
 - Quarter<quarter> - a series of 0/1 variables indicating the quarter of the sales tax data. All coefficients are relative to Q1 of 2019.

Appendix: Understanding the Results

13

- The results of the two models show each variable's impact on business sales as a row, and the following columns:
 - Estimate: the estimate of how business sales tax changes with an increase of one in each variable. Because all of the independent variables are either 0 or 1, these estimates show the relative impact of each corridor, business type, quarter, or the impact of the bikeway improvements.
 - Std. Error – the standard error of the estimate.
 - T-value – the statistical t-value of the estimate.
 - $\text{Pr}(> |t|)$ – the probability that the true impact (as opposed to the statistical estimate) of the variable is zero, given the data.
 - Significance – a indication of how statistically significant the variable's impact on sales tax is. Three asterisks indicate that the variable's impact is significant at the 99% level, meaning there is a less than 1% of there being no impact. Two asterisks indicate significance at the 95% level, and one asterisk indicates significance at the 90% level. No asterisks indicates no statistically-significant effect of the variable.

Appendix: Results of Model 1

14

Variable	Estimate	Std. Error	t value	Pr(> t)	Significance
(Intercept)	261.816	89.1	2.938	0.003299	**
Corridor2	166.417	59.927	2.777	0.005488	**
Corridor3	274.62	68.143	4.03	5.58E-05	***
Corridor4	258.625	92.484	2.796	0.005168	**
Corridor5	216.094	62.338	3.467	0.000527	***
Corridor6	755.684	61.507	12.286	< 2e-16	***
Corridor7	255.76	51.888	4.929	8.27E-07	***
Corridor8	91.386	58.87	1.552	0.120589	
Corridor9	-170.226	77.153	-2.206	0.027363	*
Corridor10	948.727	71.68	13.236	< 2e-16	***
Corridor11	330.038	85.518	3.859	0.000114	***
Corridor12	-11.036	77.734	-0.142	0.887106	
Corridor13	113.154	69.175	1.636	0.101894	
Corridor14	-93.955	66.078	-1.422	0.155061	
Corridor15	94.1	80.214	1.173	0.24075	
Corridor16	276.47	61.897	4.467	7.95E-06	***
Corridor17	271.642	57.452	4.728	2.27E-06	***
Corridor18	244.878	58.267	4.203	2.64E-05	***
Corridor19	807.558	69.446	11.629	< 2e-16	***
Corridor20	-189.511	73.004	-2.596	0.009436	**
Corridor21	-151.686	75.149	-2.018	0.043545	*
Corridor22	118.889	62.961	1.888	0.058989	.
Corridor23	30.177	76.662	0.394	0.693845	
Corridor24	362.581	56.726	6.392	1.65E-10	***
Corridor25	492.459	96.757	5.09	3.59E-07	***
Corridor26	728.842	61.31	11.888	< 2e-16	***
Corridor27	472.874	65.197	7.253	4.10E-13	***
Corridor28	894.061	61.435	14.553	< 2e-16	***
Corridor29	275.618	66.989	4.114	3.88E-05	***

Appendix: Results of Model 1 (continued)

15

Variable	Estimate	Std. Error	t value	Pr(> t)	Significance
TypeAuctioneers	300.75	671.814	0.448	0.654394	
TypeAuto Lease	-260.558	390.684	-0.667	0.50482	
TypeAuto Repair Shops	151.689	112.745	1.345	0.178493	
TypeAutomotive Supply Stores	1083.295	150.286	7.208	5.70E-13	***
TypeBoats/Motorcycles	4050.149	305.474	13.259	< 2e-16	***
TypeBusiness Services	-401.875	81.338	-4.941	7.79E-07	***
TypeCandy/Nut Stores	-422.914	339.981	-1.244	0.213526	
TypeCannabis Related	5568.955	125.629	44.329	< 2e-16	***
TypeCasual Dining	864.203	71.778	12.04	< 2e-16	***
TypeCigar Stores	355.464	129.271	2.75	0.005965	**
TypeClubs/Amusement Places	-137.294	91.669	-1.498	0.134213	
TypeContractors	-99.024	143.679	-0.689	0.490699	
TypeDiscount Dept Stores	24423.04	390.686	62.513	< 2e-16	***
TypeDrug Stores	2507.409	117.147	21.404	< 2e-16	***
TypeDrugs/Chemicals	260.274	180.109	1.445	0.148435	
TypeElectrical Equipment	1937.939	204.094	9.495	< 2e-16	***
TypeElectronics/Appliance Stores	815.574	97.786	8.34	< 2e-16	***
TypeEnergy/Utilities	-922.944	669.789	-1.378	0.168217	
TypeFamily Apparel	302.101	81.275	3.717	0.000202	***
TypeFarm Products/Equipment	-151.109	95.344	-1.585	0.112997	
TypeFast-Casual Restaurants	2366.749	145.29	16.29	< 2e-16	***
TypeFine Dining	865.318	75.836	11.41	< 2e-16	***
TypeFlorist Shops	-56.13	114.254	-0.491	0.623231	
TypeFood Delivery/Catering	297.839	280.35	1.062	0.288063	
TypeFood Stores Non-Grocery	-99.453	90.273	-1.102	0.2706	
TypeFulfillment Centers	-785.859	669.756	-1.173	0.240657	
TypeGarden/Agricultural Supplies	162.445	280.71	0.579	0.562795	
TypeGeneral Merchandise	-438.973	167.438	-2.622	0.00875	**
TypeGovernment/Social Org.	-401.424	134.576	-2.983	0.002856	**
TypeGrocery Stores Liquor	727.62	83.916	8.671	< 2e-16	***
TypeHealth/Medical	-275.101	89.089	-3.088	0.002016	**
TypeHeavy Industrial	-297.65	221.586	-1.343	0.179186	
TypeHome Furnishings	965.056	91.661	10.529	< 2e-16	***
TypeHotels/Motels	-315.375	341.167	-0.924	0.35528	
TypeJewelry Stores	-44.276	100.967	-0.439	0.66101	
TypeLight Industrial/Printers	-156.328	91.892	-1.701	0.088906	.
TypeLumber/Building Materials	1182.416	167.327	7.067	1.60E-12	***

Appendix: Results of Model 1 (continued)

16

Variable	Estimate	Std. Error	t value	Pr(> t)	Significance
TypeMen's Apparel	-286.503	152.434	-1.88	0.060174	.
TypeMorticians And Undertakers	-223.686	246.65	-0.907	0.364463	
TypeMotion Pictures/Equipment	-448.89	340.004	-1.32	0.186753	
TypeMusic Stores	556.425	161.116	3.454	0.000553	***
TypeNew Motor Vehicle Dealers	108752.5	476.645	228.162	< 2e-16	***
TypeNewspaper Stands	-158.738	476.387	-0.333	0.738975	
TypeNon-Store Retailers	-387.012	87.807	-4.408	1.05E-05	***
TypeOffice Equipment	-385.135	212.056	-1.816	0.069343	.
TypeOffice Supplies/Furniture	181.54	171.143	1.061	0.288806	
TypePackage Liquor Stores	864.114	85.797	10.072	< 2e-16	***
TypePaint/Glass/Wallpaper	3537.919	204.312	17.316	< 2e-16	***
TypePart Time Permittees	-508.987	154.966	-3.285	0.001022	**
TypePersonal Service-No Liquor	-436.1	77.947	-5.595	2.21E-08	***
TypePhotographic Equipment	-337.241	475.986	-0.709	0.47863	
TypePlumbing/Electrical Supplies	5085.759	232.901	21.837	< 2e-16	***
TypePortrait Studios	-355.969	245.466	-1.45	0.147011	
TypeQuick-Service Restaurants	399.201	73.359	5.442	5.29E-08	***
TypeReceivables/Master Outlets	-345.083	77.94	-4.428	9.54E-06	***
TypeRepair Shop/Hand Tool Rentals	-93.946	109.328	-0.859	0.390174	
TypeSecond-Hand Stores	124.443	100.66	1.236	0.21636	
TypeService Stations	8876.417	133.969	66.257	< 2e-16	***
TypeShoe Repair Shops	-341.667	180.257	-1.895	0.058036	.
TypeShoe Stores	1207.732	134.882	8.954	< 2e-16	***
TypeSpecialty Stores	-185.33	74.53	-2.487	0.012896	*
TypeSporting Goods/Bike Stores	307.034	123.373	2.489	0.012824	*
TypeStationery/Book Stores	87.731	106.958	0.82	0.412085	
TypeTextiles/Furnishings	-358.682	100.16	-3.581	0.000342	***
TypeTrailers/Auto Parts	-307.045	476.11	-0.645	0.518991	
TypeTransportation-Non-Auto	-526.537	669.365	-0.787	0.431505	
TypeTransportation/Rentals	-50.595	204.646	-0.247	0.804728	
TypeUsed Automotive Dealers	114.031	212.859	0.536	0.592157	
TypeVariety Stores	-32.306	147.315	-0.219	0.826417	
TypeVending Machine Routes	-402.072	391.156	-1.028	0.303996	
TypeWineries	-525.904	340.637	-1.544	0.122619	
TypeWomen's Apparel	240.638	90.998	2.644	0.008184	**

Appendix: Results of Model 1 (continued)

17

Variable	Estimate	Std. Error	t value	Pr(> t)	Significance
Quarter2019Q2	29.3	53.662	0.546	0.585063	
Quarter2019Q3	32.42	53.662	0.604	0.54574	
Quarter2019Q4	64.073	53.662	1.194	0.232477	
Quarter2020Q1	-512.102	53.662	-9.543	< 2e-16	***
Quarter2020Q2	-229.163	53.662	-4.27	1.95E-05	***
Quarter2020Q3	-253.302	53.662	-4.72	2.36E-06	***
Quarter2020Q4	-375.387	53.662	-6.995	2.66E-12	***
Quarter2021Q1	-326.449	53.662	-6.083	1.18E-09	***
Quarter2021Q2	-35.342	53.662	-0.659	0.510153	
Quarter2021Q3	-73.663	53.662	-1.373	0.169841	
Quarter2021Q4	-32.223	53.662	-0.6	0.548185	
Quarter2022Q1	-97.036	53.662	-1.808	0.070565	.
Quarter2022Q2	-1.154	53.662	-0.021	0.982848	
Quarter2022Q3	-13.195	53.662	-0.246	0.805763	
Quarter2022Q4	-4.805	53.662	-0.09	0.928656	
Quarter2023Q1	-23.995	53.662	-0.447	0.654766	
Quarter2023Q2	-10.953	53.662	-0.204	0.838274	
Quarter2023Q3	-6.332	54.017	-0.117	0.906686	
Quarter2023Q4	-21.822	54.017	-0.404	0.686226	
IsTreatment1	-18.819	135.589	-0.139	0.889615	

Appendix: Results of Model 2

18

Variable	Estimate	Std. Error	t value	Pr(> t)	Significance
(Intercept)	261.806	89.099	2.938	0.0033	**
Corridor2	166.417	59.927	2.777	0.005488	**
Corridor3	274.62	68.143	4.03	5.58E-05	***
Corridor4	258.625	92.484	2.796	0.005168	**
Corridor5	216.094	62.338	3.467	0.000527	***
Corridor6	755.684	61.507	12.286	< 2e-16	***
Corridor7	255.76	51.888	4.929	8.27E-07	***
Corridor8	91.386	58.87	1.552	0.120589	
Corridor9	-170.226	77.153	-2.206	0.027362	*
Corridor10	948.727	71.68	13.236	< 2e-16	***
Corridor11	330.038	85.518	3.859	0.000114	***
Corridor12	-11.036	77.734	-0.142	0.887106	
Corridor13	113.154	69.175	1.636	0.101894	
Corridor14	-93.955	66.078	-1.422	0.155061	
Corridor15	94.1	80.214	1.173	0.24075	
Corridor16	276.47	61.897	4.467	7.95E-06	***
Corridor17	271.642	57.452	4.728	2.27E-06	***
Corridor18	244.878	58.267	4.203	2.64E-05	***
Corridor19	807.558	69.446	11.629	< 2e-16	***
Corridor20	-189.511	73.004	-2.596	0.009436	**
Corridor21	-151.686	75.149	-2.018	0.043545	*
Corridor22	118.889	62.961	1.888	0.058989	.
Corridor23	30.177	76.662	0.394	0.693845	
Corridor24	362.581	56.726	6.392	1.65E-10	***
Corridor25	492.459	96.757	5.09	3.59E-07	***
Corridor26	728.842	61.31	11.888	< 2e-16	***
Corridor27	472.874	65.197	7.253	4.10E-13	***
Corridor28	894.302	60.642	14.747	< 2e-16	***
Corridor29	275.618	66.989	4.114	3.88E-05	***

Appendix: Results of Model 2 (continued)

19

Variable	Estimate	Std. Error	t value	Pr(> t)	Significance
TypeAuctioneers	300.75	671.814	0.448	0.654394	
TypeAuto Lease	-260.558	390.683	-0.667	0.504819	
TypeAuto Repair Shops	151.689	112.745	1.345	0.178493	
TypeAutomotive Supply Stores	1083.295	150.286	7.208	5.70E-13	***
TypeBoats/Motorcycles	4050.149	305.474	13.259	< 2e-16	***
TypeBusiness Services	-401.875	81.338	-4.941	7.79E-07	***
TypeCandy/Nut Stores	-422.914	339.981	-1.244	0.213526	
TypeCannabis Related	5568.955	125.629	44.329	< 2e-16	***
TypeCasual Dining	864.203	71.778	12.04	< 2e-16	***
TypeCigar Stores	355.464	129.271	2.75	0.005965	**
TypeClubs/Amusement Places	-137.294	91.669	-1.498	0.134213	
TypeContractors	-99.024	143.679	-0.689	0.490698	
TypeDiscount Dept Stores	24423.04	390.685	62.513	< 2e-16	***
TypeDrug Stores	2507.409	117.147	21.404	< 2e-16	***
TypeDrugs/Chemicals	260.274	180.109	1.445	0.148435	
TypeElectrical Equipment	1937.939	204.094	9.495	< 2e-16	***
TypeElectronics/Appliance Stores	815.574	97.786	8.34	< 2e-16	***
TypeEnergy/Utilities	-922.944	669.789	-1.378	0.168217	
TypeFamily Apparel	302.101	81.275	3.717	0.000202	***
TypeFarm Products/Equipment	-151.109	95.344	-1.585	0.112997	
TypeFast-Casual Restaurants	2366.749	145.29	16.29	< 2e-16	***
TypeFine Dining	865.318	75.836	11.41	< 2e-16	***
TypeFlorist Shops	-56.13	114.254	-0.491	0.623231	
TypeFood Delivery/Catering	297.839	280.35	1.062	0.288063	
TypeFood Stores Non-Grocery	-99.453	90.273	-1.102	0.2706	
TypeFulfillment Centers	-785.859	669.756	-1.173	0.240657	
TypeGarden/Agricultural Supplies	162.445	280.71	0.579	0.562795	
TypeGeneral Merchandise	-438.973	167.438	-2.622	0.00875	**
TypeGovernment/Social Org.	-401.424	134.576	-2.983	0.002856	**
TypeGrocery Stores Liquor	727.62	83.916	8.671	< 2e-16	***
TypeHealth/Medical	-275.101	89.089	-3.088	0.002016	**
TypeHeavy Industrial	-297.65	221.586	-1.343	0.179186	
TypeHome Furnishings	965.056	91.661	10.529	< 2e-16	***
TypeHotels/Motels	-315.375	341.167	-0.924	0.35528	
TypeJewelry Stores	-44.276	100.967	-0.439	0.661009	
TypeLight Industrial/Printers	-156.328	91.892	-1.701	0.088906	.
TypeLumber/Building Materials	1182.416	167.327	7.067	1.60E-12	***

Appendix: Results of Model 2 (continued)

Variable	Estimate	Std. Error	t value	Pr(> t)	Significance
TypeMen's Apparel	-286.503	152.434	-1.88	0.060174	.
TypeMorticians And Undertakers	-223.686	246.65	-0.907	0.364463	
TypeMotion Pictures/Equipment	-448.89	340.003	-1.32	0.186753	
TypeMusic Stores	556.425	161.116	3.454	0.000553	***
TypeNew Motor Vehicle Dealers	108752.5	476.645	228.162	< 2e-16	***
TypeNewspaper Stands	-158.738	476.387	-0.333	0.738975	
TypeNon-Store Retailers	-387.012	87.807	-4.408	1.05E-05	***
TypeOffice Equipment	-385.135	212.056	-1.816	0.069343	.
TypeOffice Supplies/Furniture	181.54	171.143	1.061	0.288806	
TypePackage Liquor Stores	864.114	85.797	10.072	< 2e-16	***
TypePaint/Glass/Wallpaper	3537.919	204.312	17.316	< 2e-16	***
TypePart Time Permittees	-508.987	154.966	-3.285	0.001022	**
TypePersonal Service-No Liquor	-436.1	77.947	-5.595	2.21E-08	***
TypePhotographic Equipment	-337.241	475.986	-0.709	0.47863	
TypePlumbing/Electrical Supplies	5085.759	232.901	21.837	< 2e-16	***
TypePortrait Studios	-355.969	245.466	-1.45	0.147011	
TypeQuick-Service Restaurants	399.201	73.359	5.442	5.29E-08	***
TypeReceivables/Master Outlets	-345.083	77.94	-4.428	9.54E-06	***
TypeRepair Shop/Hand Tool Rentals	-93.946	109.328	-0.859	0.390174	
TypeSecond-Hand Stores	124.443	100.66	1.236	0.21636	
TypeService Stations	8876.417	133.969	66.257	< 2e-16	***
TypeShoe Repair Shops	-341.667	180.257	-1.895	0.058036	.
TypeShoe Stores	1207.732	134.882	8.954	< 2e-16	***
TypeSpecialty Stores	-185.33	74.53	-2.487	0.012896	*
TypeSporting Goods/Bike Stores	307.034	123.373	2.489	0.012824	*
TypeStationery/Book Stores	87.731	106.958	0.82	0.412085	
TypeTextiles/Furnishings	-358.682	100.16	-3.581	0.000342	***
TypeTrailers/Auto Parts	-307.045	476.11	-0.645	0.518991	
TypeTransportation-Non-Auto	-526.537	669.365	-0.787	0.431505	
TypeTransportation/Rentals	-50.595	204.646	-0.247	0.804728	
TypeUsed Automotive Dealers	114.031	212.859	0.536	0.592157	
TypeVariety Stores	-32.306	147.315	-0.219	0.826417	
TypeVending Machine Routes	-402.072	391.156	-1.028	0.303996	
TypeWineries	-525.904	340.637	-1.544	0.122619	
TypeWomen's Apparel	240.638	90.998	2.644	0.008184	**

Appendix: Results of Model 2 (continued)

21

Variable	Estimate	Std. Error	t value	Pr(> t)	Significance
Quarter2019Q2	29.3	53.662	0.546	0.585063	
Quarter2019Q3	32.42	53.662	0.604	0.54574	
Quarter2019Q4	64.073	53.662	1.194	0.232477	
Quarter2020Q1	-512.102	53.662	-9.543	< 2e-16	***
Quarter2020Q2	-229.163	53.662	-4.27	1.95E-05	***
Quarter2020Q3	-253.302	53.662	-4.72	2.36E-06	***
Quarter2020Q4	-375.387	53.662	-6.995	2.66E-12	***
Quarter2021Q1	-326.449	53.662	-6.083	1.18E-09	***
Quarter2021Q2	-35.342	53.662	-0.659	0.510152	
Quarter2021Q3	-73.663	53.662	-1.373	0.169841	
Quarter2021Q4	-32.223	53.662	-0.6	0.548185	
Quarter2022Q1	-97.036	53.662	-1.808	0.070565	.
Quarter2022Q2	-1.154	53.662	-0.021	0.982848	
Quarter2022Q3	-13.195	53.662	-0.246	0.805763	
Quarter2022Q4	-4.805	53.662	-0.09	0.928656	
Quarter2023Q1	-23.995	53.662	-0.447	0.654766	
Quarter2023Q2	-10.953	53.662	-0.204	0.838274	
Quarter2023Q3	-7.19	53.662	-0.134	0.893417	
Quarter2023Q4	-20.745	54.332	-0.382	0.702597	
IsTreatment2	-42.44	186.637	-0.227	0.820119	

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