

Exploring the Quantitative Impact of Medical Marijuana Dispensaries On Residential Sale Prices in Oklahoma: Supplemental Appendix

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Abstract

Medical marijuana was legalized in Oklahoma as recently as 2018, and since then Oklahoma has rapidly grown to have the largest number of medical marijuana dispensaries of any states in the United States. What have been the impacts of this rapid proliferation of legalized medical marijuana? We use a hedonic pricing model to assess how legalized marijuana dispensary activity (both distance to the nearest dispensary and the number of nearby dispensaries) have impacted residential property values. The dataset spans six different counties from across the State of Oklahoma, and we explore a variety of different regression specifications to rigorously explore the effects of dispensary activity on local residents. While we find evidence of some heterogeneity in the dispensary effects, one broad finding is that residents prefer not to live in immediate proximity to a dispensary but prefer access to dispensaries moderately distanced from their home. Understanding these broad trends and the localized heterogeneity in effects are important for residents and policymakers alike in Oklahoma and in other states that may be considering similar legislation.

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Appendix: Additional Tables and Figures

Table A.1 contains detailed descriptive statistics for the benchmark sample of four counties (Comanche, Wagoner, Washington, and Oklahoma counties). Tables A.2 - A.5 show the descriptive statistics for these four counties included in the benchmark data, and Tables A.6 and A.7 show detailed descriptive statistics for Tulsa and Payne counties.

Table A.1: Detailed descriptive statistics for the benchmark data sample ($n = 28,429$)

Statistic	Mean	St. Dev.	Min	Max
<i>Property Price</i>				
Sale Price	253,060.30	243,574.30	50,000.00	6,600,000.00
<i>Property Characteristics</i>				
Beds	3.196	0.666	1.000	9.000
Baths	2.215	0.898	1.000	7.000
Age	40.296	23.885	0	127
SQFT	1,904.987	895.220	224	12,007
Dist to CBD (<i>km</i>)	39.787	44.451	0.116	156.024
Neighborhood	203,309.40	155,612.00	51,000.00	2,800,000.00
Density	24.801	18.367	1	165
<i>Dispensary Exposure</i>				
minDist	1,409.414	1,385.480	13.544	17,276.500
Count500	0.340	0.894	0	9
Count1000	1.527	2.387	0	22
Count2000	5.657	6.614	0	42
<i>Year Indicators</i>				
Year2020	0.248	0.432	0	1
Year2021	0.468	0.499	0	1
Year2022	0.236	0.424	0	1
Year2023	0.049	0.215	0	1
<i>County Indicators</i>				
Comanche	0.209	0.407	0	1
Washington	0.010	0.100	0	1
Wagoner	0.014	0.117	0	1
Oklahoma	0.767	0.423	0	1

Table A.2: Detailed descriptive statistics for Comanche County ($n = 5,941$)

Statistic	Mean	St. Dev.	Min	Max
<i>Property Price</i>				
Sale Price	209,286.10	284,027.50	50,000.00	3,200,000.00
<i>Property Characteristics</i>				
Beds	3.079	0.599	1.000	8.000
Baths	1.775	0.578	1.000	6.000
Age	43.301	24.852	0	122
SQFT	1,643.816	599.074	280	8,164
Garage Area	388.317	245.387	0	1,863
Garage Dummy	0.787	0.410	0	1
Dist to CBD (<i>km</i>)	124.586	8.678	93.537	156.024
Neighborhood	139,660.60	58,822.90	51,000.00	575,000.00
Density	25.176	15.728	1	83
<i>Dispensary Exposure</i>				
minDist	1,726.025	1,866.693	13.544	17,276.500
Count500	0.309	0.923	0	6
Count1000	1.197	2.282	0	14
Count2000	4.152	6.106	0	23
<i>Year Indicators</i>				
Year2020	0.131	0.338	0	1
Year2022	0.323	0.468	0	1
Year2022	0.325	0.468	0	1
Year2023	0.220	0.414	0	1
<i>Town Indicators</i>				
Town1	0.087	0.282	0	1
Town2	0.772	0.420	0	1
Town3	0.047	0.212	0	1
Town4	0.094	0.292	0	1

Table A.3: Detailed descriptive statistics for Wagoner County ($n = 396$)

Statistic	Mean	St. Dev.	Min	Max
<i>Property Price</i>				
Sale Price	232,053.00	150,395.20	55,000.00	1,900,000.00
<i>Property Characteristics</i>				
Beds	3.354	0.629	2	6
Baths	2.182	0.702	1.000	6.000
Age	37.346	13.651	2	123
SQFT	2,107.545	854.591	826	7,928
Garage Area	521.715	161.457	0	1,443
Garage Dummy	0.997	0.050	0	1
Non-Ag Acres	0.557	0.700	0.143	6.520
Depreciation Loss	-51,702.830	33,454.040	-269,955	-3,648
Dist to CBD (km)	33.039	15.225	1.326	78.575
Neighborhood	177,009.70	101,887.20	58,000.00	902,000.00
Density	3.407	4.823	1	32
<i>Dispensary Exposure</i>				
minDist	2,624.329	1,893.913	107.162	8,244.600
Count500	0.131	0.567	0	6
Count1000	0.444	1.857	0	22
Count2000	1.472	3.714	0	36
<i>Year Indicators</i>				
Year2020	0.169	0.375	0	1
Year2021	0.412	0.493	0	1
Year2022	0.290	0.455	0	1
Year2023	0.129	0.335	0	1

Table A.4: Detailed descriptive statistics for Washington County ($n = 286$)

Statistic	Mean	St. Dev.	Min	Max
<i>Property Price</i>				
Sale Price	182,763.20	106,298.60	52,000.00	835,000.00
<i>Property Characteristics</i>				
Beds	3.395	0.755	1	6
Baths	1.944	0.742	1	4
Age	60.699	19.337	13	117
SQFT	2,020.227	968.378	788	6,252
Stories	1.154	0.260	1.000	2.500
Garage Area	403.213	246.642	0	1,134
Garage Dummy	0.825	0.380	0	1
Dist to CBD (<i>km</i>)	65.149	3.227	27.335	81.485
Neighborhood	139,379.10	60,546.30	62,000.00	443,000.00
Density	3.703	2.259	1	14
<i>Dispensary Exposure</i>				
minDist	1,260.135	983.981	16.121	9,549.207
Count500	0.245	0.612	0	4
Count1000	1.171	2.101	0	9
Count2000	3.413	3.208	0	10
<i>Year Indicators</i>				
Year2020	0.154	0.361	0	1
Year2021	0.350	0.478	0	1
Year2022	0.409	0.493	0	1
Year2023	0.087	0.283	0	1

Table A.5: Detailed descriptive statistics for Oklahoma County ($n = 21,806$)

Statistic	Mean	St. Dev.	Min	Max
<i>Property Price</i>				
Sale Price	266,290.00	232,476.20	50,500.00	6,600,000.00
<i>Property Characteristics</i>				
Beds	3.223	0.679	1	9
Baths	2.339	0.936	1	7
Age	39.264	23.625	1	127
SQFT	1,970.952	947.487	224	12,007
Stories	1.149	0.287	1.000	3.000
DistCBDKm	16.473	6.255	0.116	104.250
Neighborhood	221,966.40	169,922.10	51,000.00	2,800,000.00
Density	25.364	18.906	1	165
<i>Dispensary Exposure</i>				
minDist	1,303.049	1,187.434	21.157	16,799.120
Count500	0.353	0.893	0	9
Count1000	1.642	2.414	0	18
Count2000	6.172	6.725	0	42
<i>Year Indicators</i>				
Year2020	0.283	0.450	0	1
Year2021	0.509	0.500	0	1
Year2022	0.208	0.406	0	1
Year2023	0.000	0.000	0	0

Table A.6: Detailed descriptive statistics for Tulsa County ($n = 27,374$)

Statistic	Mean	St. Dev.	Min	Max
<i>Property Price</i>				
Sale Price	302,299.50	450,721.40	50,500.00	13,000,000.00
<i>Property Characteristics</i>				
Baths	1.820	0.764	1.000	7.500
Age	50.042	24.564	3	132
SQFT				
Stories	1.181	0.321	1.000	3.000
Acres	0.278	0.628	0.029	40.000
Density	13.497	8.618	1	69
Dist to CBD (km)	14.524	6.886	1.084	37.743
Neighborhood	241,517.80	250,292.60	51,000.00	4,776,547.00
<i>Dispensary Exposure</i>				
minDist	1,224.962	1,064.254	4.288	13,859.800
Count500	0.319	0.776	0	7
Count1000	1.451	2.103	0	24
Count2000	5.564	5.954	0	38
<i>Year Indicators</i>				
Year2020	0.223	0.417	0	1
Year2021	0.444	0.497	0	1
Year2022	0.333	0.471	0	1

Table A.7: Detailed descriptive statistics for Payne County ($n = 676$)

Statistic	Mean	St. Dev.	Min	Max
<i>Property Price</i>				
Sale Price	325,171.10	466,785.50	50,500.00	4,108,500.00
<i>Property Characteristics</i>				
Beds	3.038	0.968	0	6
Baths	2.052	0.874	0	7
Density	36.544	42.698	1	214
Dist to CBD (km)	77.832	6.199	62.042	89.966
Neighborhood	173,123.90	135,425.30	52,000.00	1,480,000.00
<i>Dispensary Exposure</i>				
minDist	3,209.315	2,953.432	126.841	15,509.200
Count500	0.109	0.525	0	4
Count1000	0.361	0.941	0	7
Count2000	1.370	3.155	0	14
<i>Year Indicators</i>				
Year2020	0.392	0.489	0	1
Year2021	0.229	0.421	0	1
Year2022	0.272	0.445	0	1
Year2023	0.107	0.309	0	1

Figures A.1, A.2, and A.3 show detailed maps of property sales and dispensary locations for Comanche County, the City of Lawton (in Comanche County), and Wagoner County, respectively. In Figure A.2, we show the City of Lawton specifically given the unique (at least, in Oklahoma) distribution of properties and dispensaries. In Lawton, the dispensaries are located linearly on a single main street, and are not dispersed throughout the city as is the case in other areas of Oklahoma.

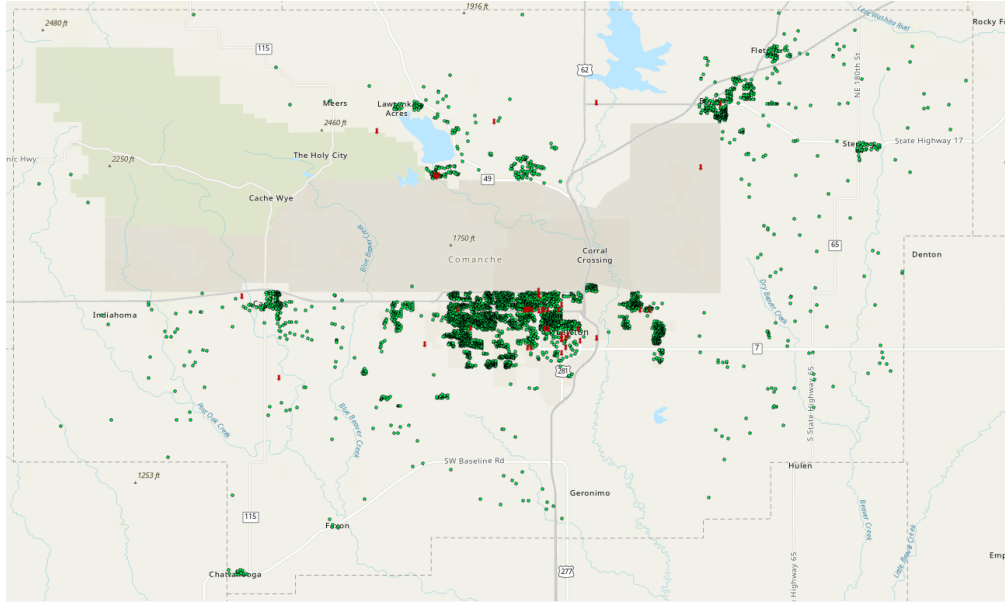


Figure A.1: Property sales and dispensary locations in Comanche County

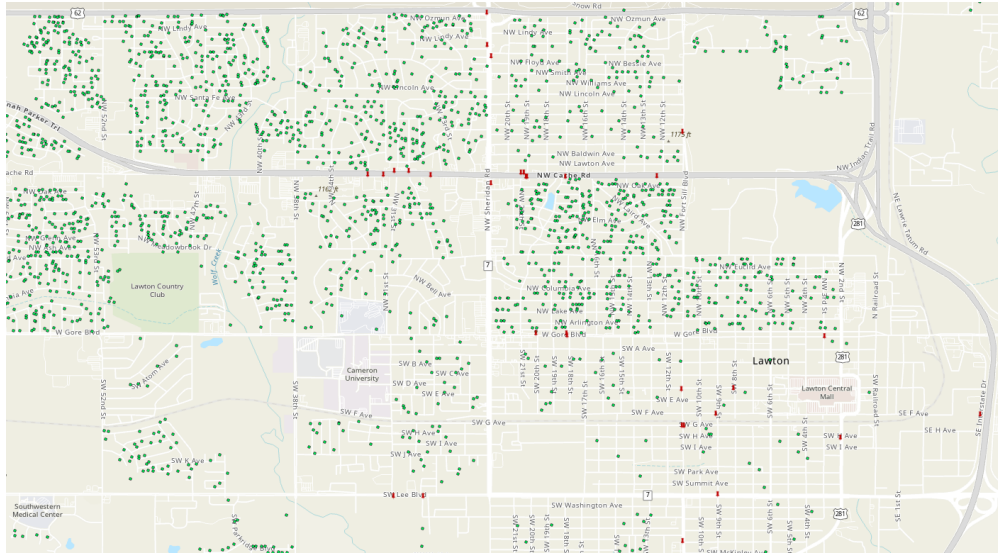


Figure A.2: Property sales and dispensary locations in the City of Lawton (Comanche County)

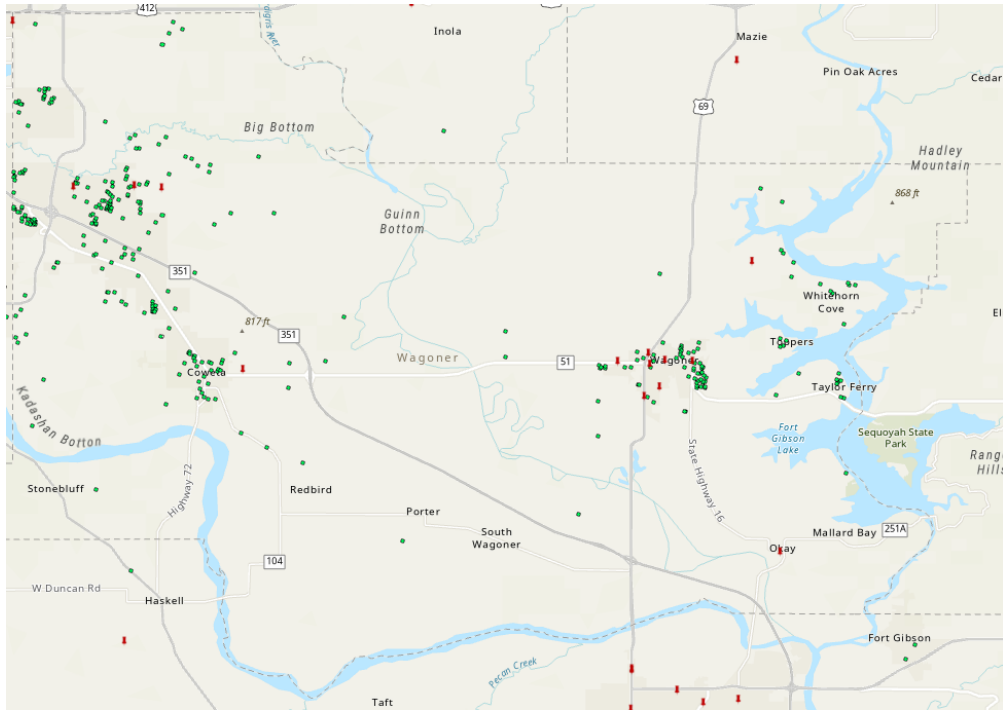


Figure A.3: Property sales and dispensary locations in Wagoner County