

# AVOCADO PRICES



SAKSHAM JAISWAL

# PROBLEM STATEMENT

**ANALYZE AND FORECAST AVOCADO PRICE TRENDS ACROSS US REGIONS—USING TIME SERIES AND STATISTICAL TOOLS TO REVEAL KEY PRICE AND VOLUME DRIVERS THAT EMPOWER SMARTER MARKET DECISIONS.**

## **DATASET SOURCE:**

**KAGGLE/DATASETS/NEUROMUSIC/AVOCADO-PRICES/CODE BY JUSTIN KIGGINS (2018)**

**HISTORICAL WEEKLY DATA ON AVOCADO PRICES AND SALES VOLUME FROM MAJOR US MARKETS, SOURCED FROM THE HASS AVOCADO BOARD. THE DATASET COVERS RETAIL TRANSACTIONS BY REGION, PRODUCT TYPE, AND VOLUME, AND CAN BE ADAPTED FOR PRICE AND SALES ANALYSIS OF OTHER PRODUCE ACROSS GEOGRAPHIES.**

### **Completeness · 100%**

- ✓ Subtitle
- ✓ Tag
- ✓ Description
- ✓ Cover Image

### **Credibility · 100%**

- ✓ Source/Provenance
- ✓ Public Notebook
- ✓ Update Frequency

### **Compatibility · 100%**

- ✓ License
- ✓ File Format
- ✓ File Description
- ✓ Column Description

**COLUMNS 14**

**ROWS 18250**

**DATAPOINTS 255500**

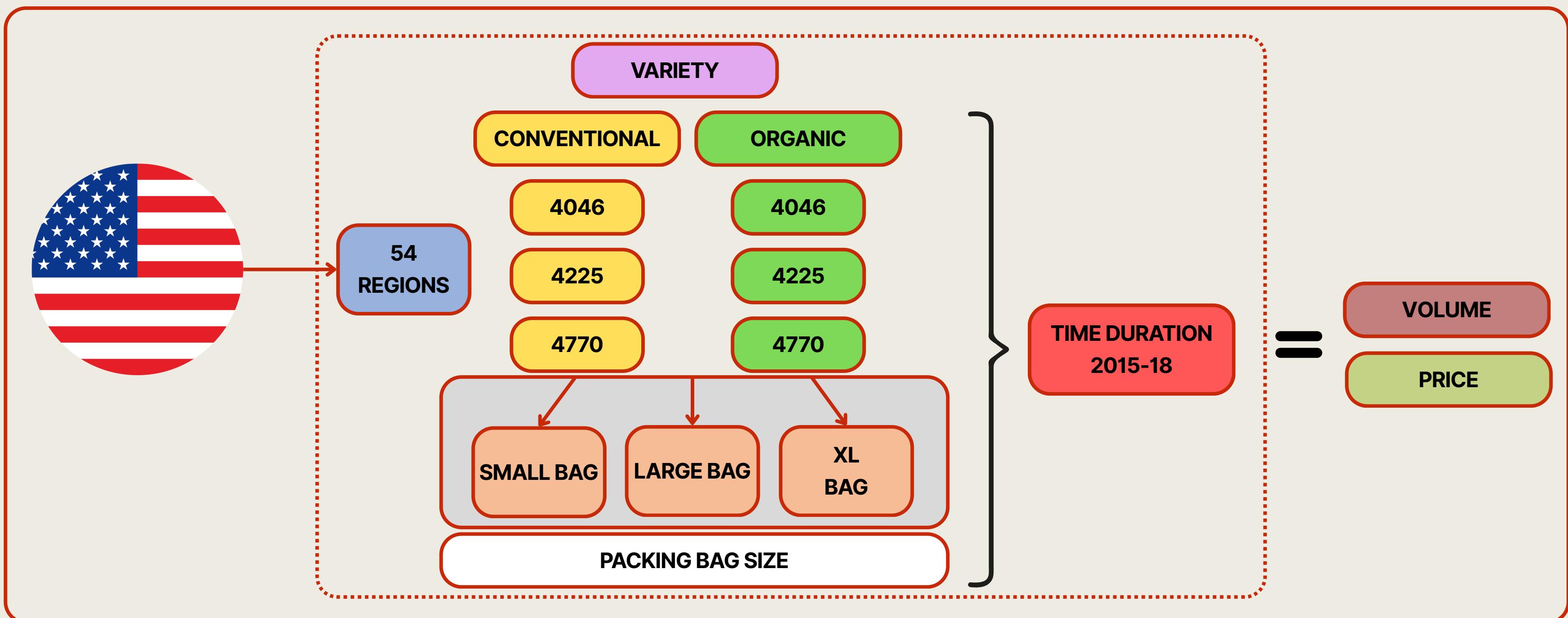
	Date	AveragePrice	Total Volume	4046	4225	4770	Total Bags	Small Bags	Large Bags	XLarge Bags	type	year	region
0	27-12-2015	1.33	64236.62	1036.74	54454.85	48.16	8696.87	8603.62	93.25	0 conventional	0	2015 Albany	
1	20-12-2015	1.35	54876.98	674.28	44638.81	58.33	9505.56	9408.07	97.49	0 conventional	0	2015 Albany	
2	13-12-2015	0.93	118220.22	794.7	109149.7	130.5	8145.35	8042.21	103.14	0 conventional	0	2015 Albany	
3	06-12-2015	1.08	78992.15	1132	71976.41	72.58	5811.16	5677.4	133.76	0 conventional	0	2015 Albany	
4	29-11-2015	1.28	51039.6	941.48	43838.39	75.78	6183.95	5986.26	197.69	0 conventional	0	2015 Albany	
5	22-11-2015	1.26	55979.78	1184.27	48067.99	43.61	6683.91	6556.47	127.44	0 conventional	0	2015 Albany	
6	15-11-2015	0.99	83453.76	1368.92	73672.72	93.26	8318.86	8196.81	122.05	0 conventional	0	2015 Albany	
7	08-11-2015	0.98	109428.33	703.75	101815.4	80	6829.22	6266.85	562.37	0 conventional	0	2015 Albany	
8	01-11-2015	1.02	99811.42	1022.15	87315.57	85.34	11388.36	11104.53	283.83	0 conventional	0	2015 Albany	
9	25-10-2015	1.07	74338.76	842.4	64757.44	113	8625.92	8061.47	564.45	0 conventional	0	2015 Albany	
10	18-10-2015	1.12	84843.44	924.86	75595.85	117.07	8205.66	7877.86	327.8	0 conventional	0	2015 Albany	
11	11-10-2015	1.28	64489.17	1582.03	52677.92	105.32	10123.9	9866.27	257.63	0 conventional	0	2015 Albany	
12	04-10-2015	1.31	61007.1	2268.32	49880.67	101.36	8756.75	8379.98	376.77	0 conventional	0	2015 Albany	
13	27-09-2015	0.99	106803.39	1204.88	99409.21	154.84	6034.46	5888.87	145.59	0 conventional	0	2015 Albany	
14	20-09-2015	1.33	69759.01	1028.03	59313.12	150.5	9267.36	8489.1	778.26	0 conventional	0	2015 Albany	
15	13-09-2015	1.28	76111.27	985.73	65696.86	142	9286.68	8665.19	621.49	0 conventional	0	2015 Albany	
16	06-09-2015	1.11	99172.96	879.45	90062.62	240.79	7990.1	7762.87	227.23	0 conventional	0	2015 Albany	
17	30-08-2015	1.07	105693.84	689.01	94362.67	335.43	10306.73	10218.93	87.8	0 conventional	0	2015 Albany	
18	23-08-2015	1.34	79992.09	733.16	67933.79	444.78	10880.36	10745.79	134.57	0 conventional	0	2015 Albany	
19	16-08-2015	1.33	80043.78	539.65	68666.01	394.9	10443.22	10297.68	145.54	0 conventional	0	2015 Albany	
20	09-08-2015	1.12	111140.93	584.63	100961.5	368.95	9225.89	9116.34	109.55	0 conventional	0	2015 Albany	
21	02-08-2015	1.45	75133.1	509.94	62035.06	741.08	11847.02	11768.52	78.5	0 conventional	0	2015 Albany	
22	26-07-2015	1.11	106757.1	648.75	91949.05	966.61	13192.69	13061.53	131.16	0 conventional	0	2015 Albany	

### **ANALYTICAL QUESTIONS/HYPOTHESES**

WHAT ARE THE SEASONAL PRICE TRENDS FOR AVOCADOS IN VERSUS MARKETS?  
IS THERE ANY PLACOR REGION FROM WHERE WE CAN SOURCE MOT AFFORDABILY?  
CAN WE RELIABLY FORECAST AVOCADO PRICES TO GUIDE INVENTORY PLANNING?

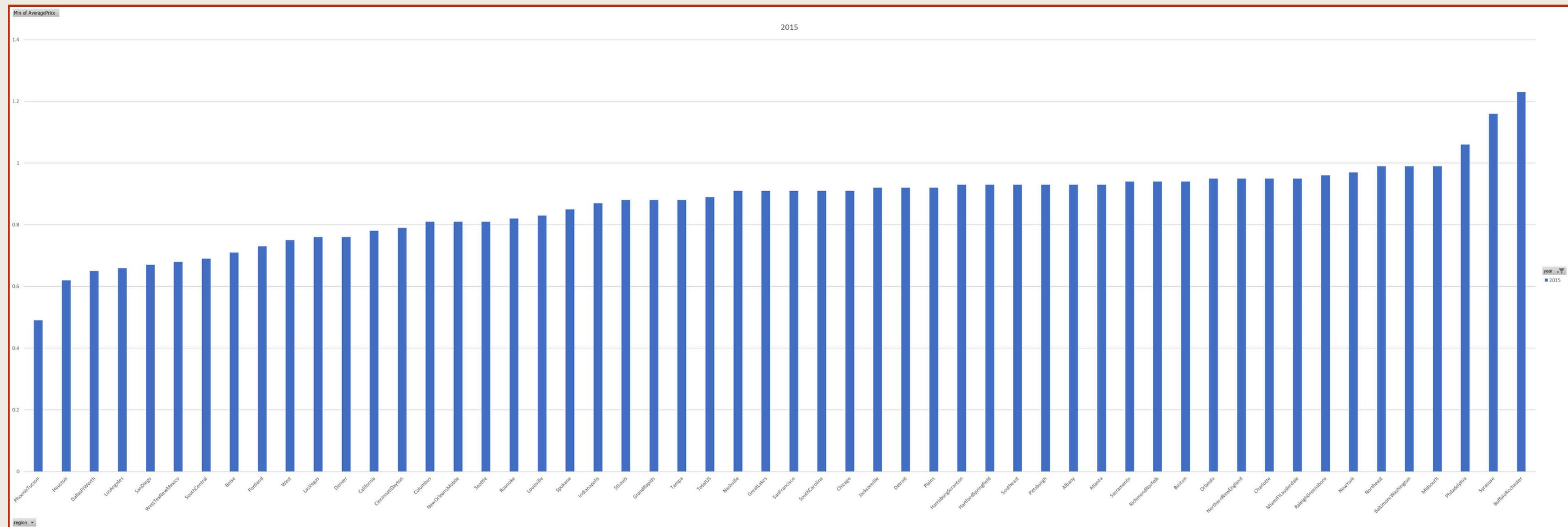
# UNDERSTANDING DATASET

A WEEKLY PANEL OF AVOCADO PRICES AND VOLUMES BY REGION, VARIETY, AND PACK IN THE US (2015-18).



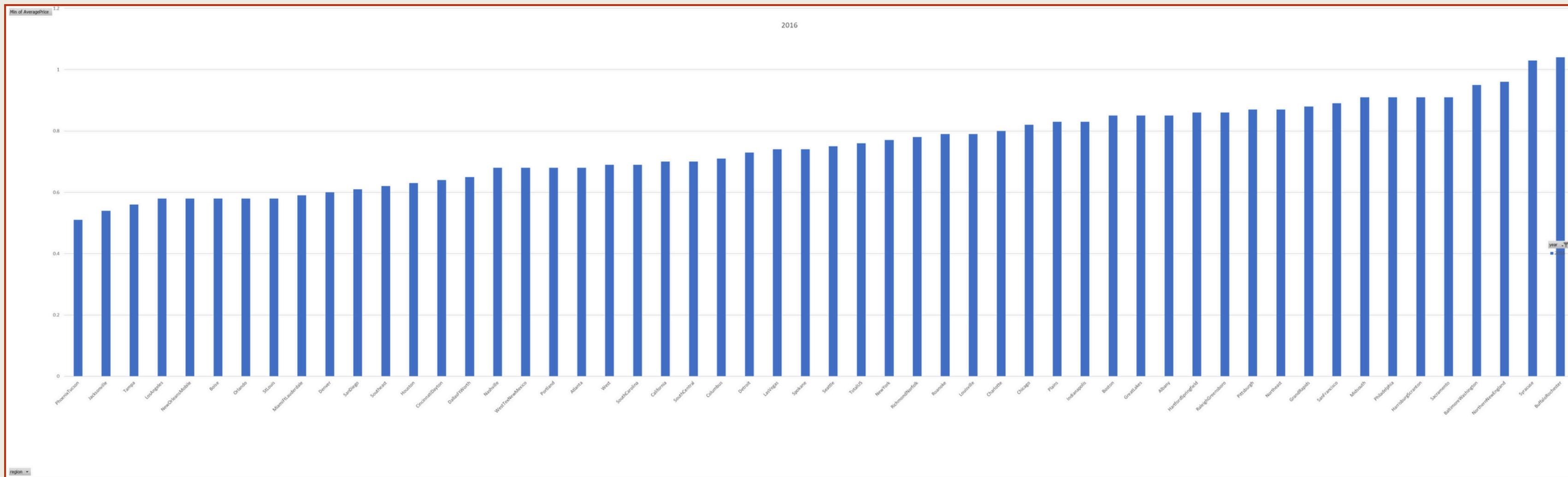
# AVERAGE PRICE / REGION (2015)

THIS BAR CHART DISPLAYS THE MINIMUM AVERAGE AVOCADO PRICES ACROSS US REGIONS FOR 2015, HIGHLIGHTING STRONG PRICE DIFFERENCES BETWEEN CITIES. REGIONS LIKE **SYRACUSE AND BUFFALO/ROCHESTER** SEE THE HIGHEST MINIMUM PRICES, WHILE PROVIDENCE POSTS THE LOWEST.



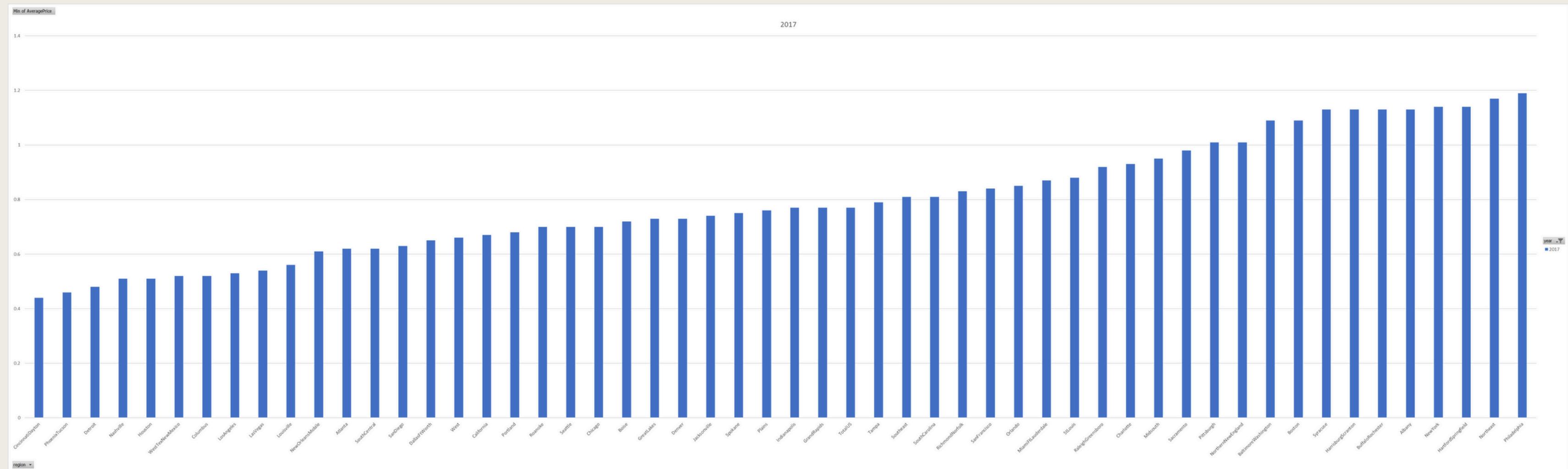
# AVERAGE PRICE / REGION (2016)

THIS CHART PRESENTS THE MINIMUM AVERAGE PRICE OF AVOCADOS IN 2016, SORTED BY REGION ACROSS THE US. THERE IS A CLEAR UPWARD TREND, WITH **BUFFALO/ROCHESTER AND SYRACUSE** EXPERIENCING THE HIGHEST BASELINE PRICES, AND PROVIDENCE THE LOWEST.



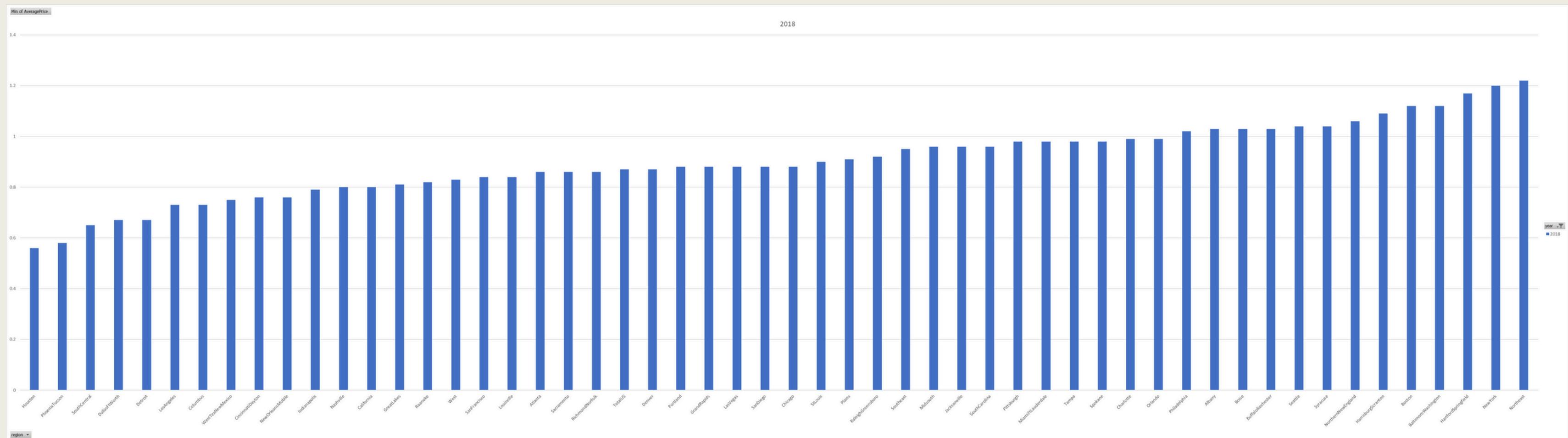
# AVERAGE PRICE / REGION (2017)

THIS CHART PRESENTS THE MINIMUM AVERAGE PRICE OF AVOCADOS IN 2016, SORTED BY REGION ACROSS THE US. THERE IS A CLEAR UPWARD TREND, WITH **BUFFALO/ROCHESTER AND SYRACUSE** EXPERIENCING THE HIGHEST BASELINE PRICES, AND PROVIDENCE THE LOWEST.



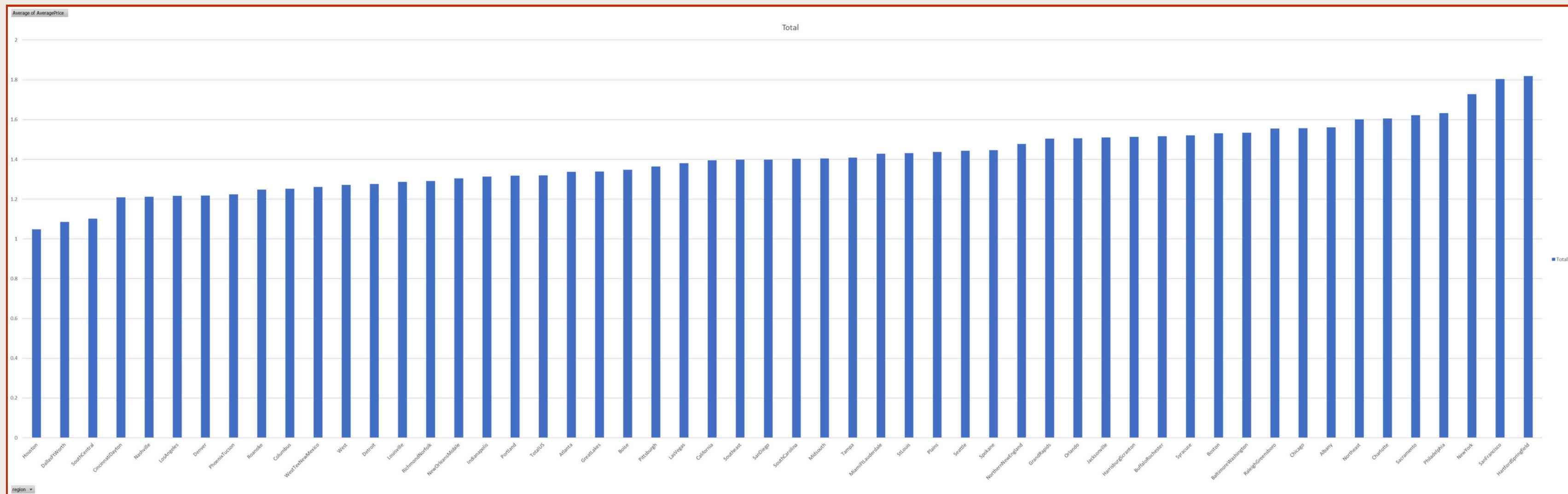
# AVERAGE PRICE / REGION (2018)

THE MINIMUM AVERAGE AVOCADO PRICE BY REGION IN 2018 DISPLAYS A STEADY CLIMB FROM CITIES LIKE ALBANY AND PROVIDENCE UP TO **NEWARK** AND **HARTFORD/SPRINGFIELD**. THIS DEMONSTRATES PERSISTENT REGIONAL PRICE GAPS AND A CONTINUED UPWARD SHIFT IN BASELINE PRICING.



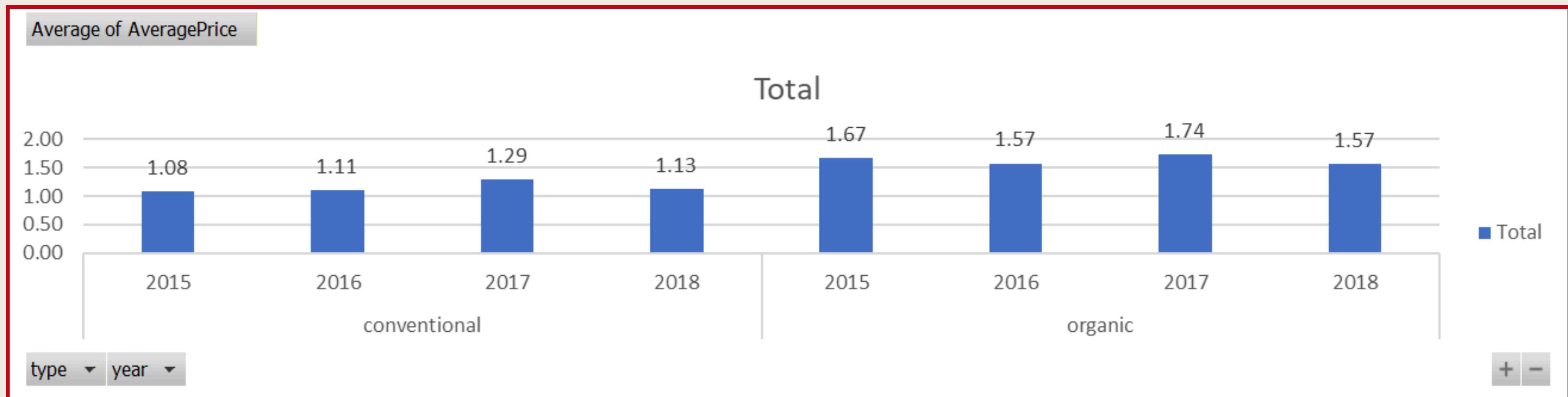
# AVERAGE PRICE / REGION

THE CHART SHOWS HOW THE AVERAGE RETAIL PRICE OF AVOCADOS VARIES BY REGION ACROSS THE US, WITH **SAN FRANCISCO AND HARTFORD/SPRINGFIELD** TOPPING THE PRICE RANKINGS. PRICES ARE LOWEST IN **HOUSTON**, SUGGESTING SIGNIFICANT GEOGRAPHIC DIFFERENCES IN AVOCADO PRICING.



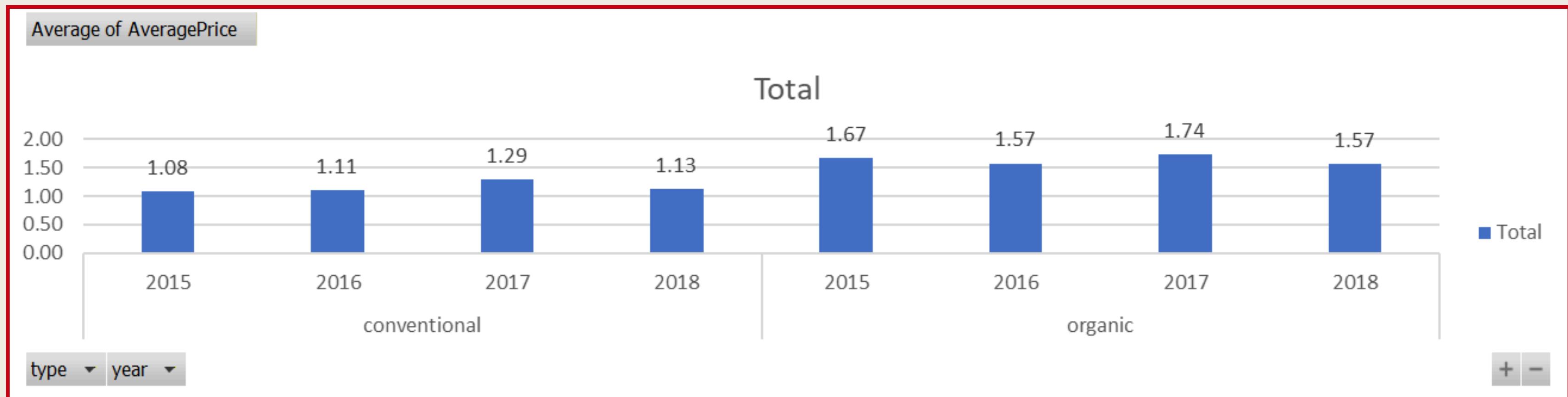
# AVERAGE PRICE/CATEGORY

ORGANIC AVOCADOS CONSISTENTLY COST MORE THAN CONVENTIONAL ONES, WITH A PRICE GAP VISIBLE EVERY YEAR FROM 2015 TO 2018. THE HIGHEST AVERAGE PRICE FOR ORGANICS OCCURS IN 2017, WHILE CONVENTIONAL PRICES PEAK IN THE SAME YEAR BUT REMAIN MUCH LOWER OVERALL.



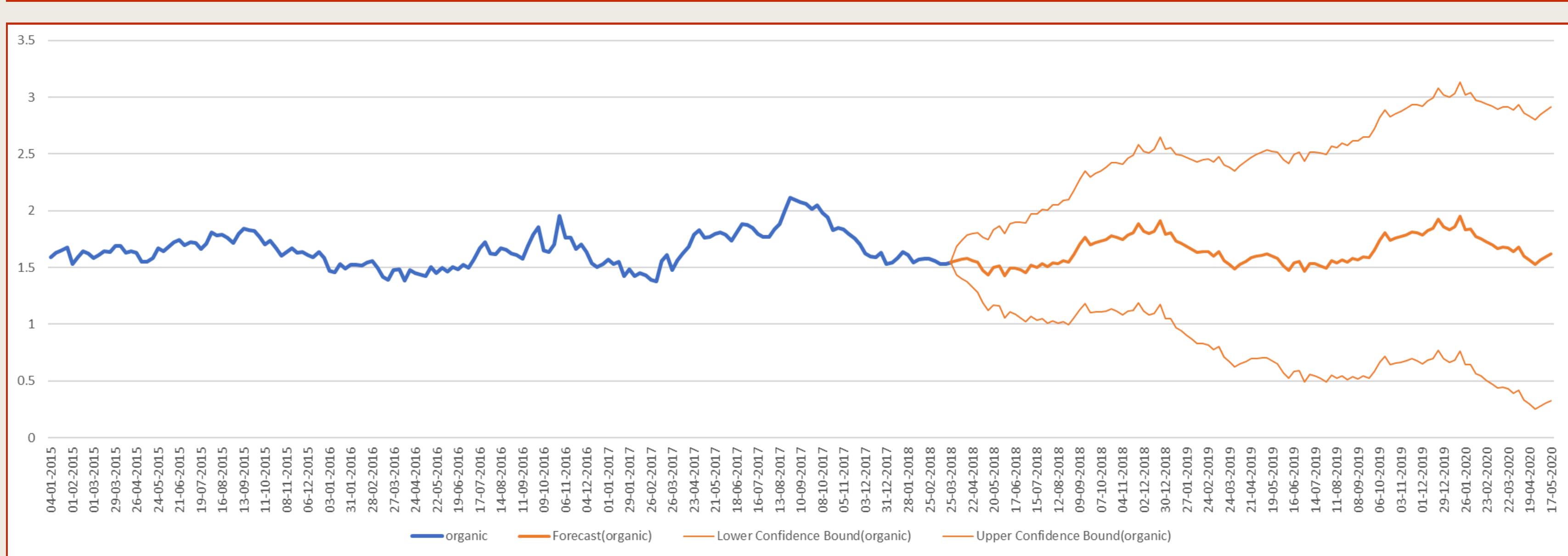
# AVERAGE PRICE/CATEGORY

ORGANIC AVOCADOS CONSISTENTLY COST MORE THAN CONVENTIONAL ONES, WITH A PRICE GAP VISIBLE EVERY YEAR FROM 2015 TO 2018. THE HIGHEST AVERAGE PRICE FOR ORGANICS OCCURS IN 2017, WHILE CONVENTIONAL PRICES PEAK IN THE SAME YEAR BUT REMAIN MUCH LOWER OVERALL.



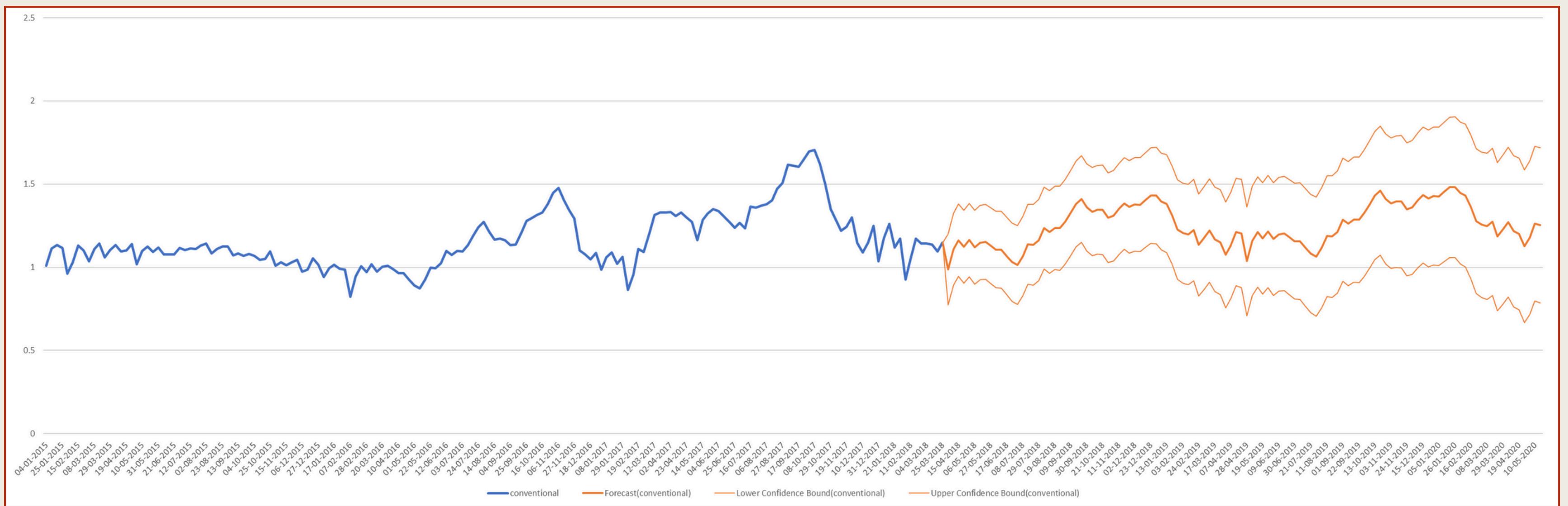
# FORECASTING (ORGANIC)

THE TIME SERIES AND FORECAST CHART FOR ORGANIC AVOCADO PRICES SHOWS HISTORICAL FLUCTUATIONS FOLLOWED BY PROJECTED GROWTH AND INCREASED VOLATILITY. CONFIDENCE BOUNDS INDICATE POTENTIAL FUTURE SWINGS, WITH PRICES EXPECTED TO REMAIN ABOVE HISTORICAL AVERAGES.



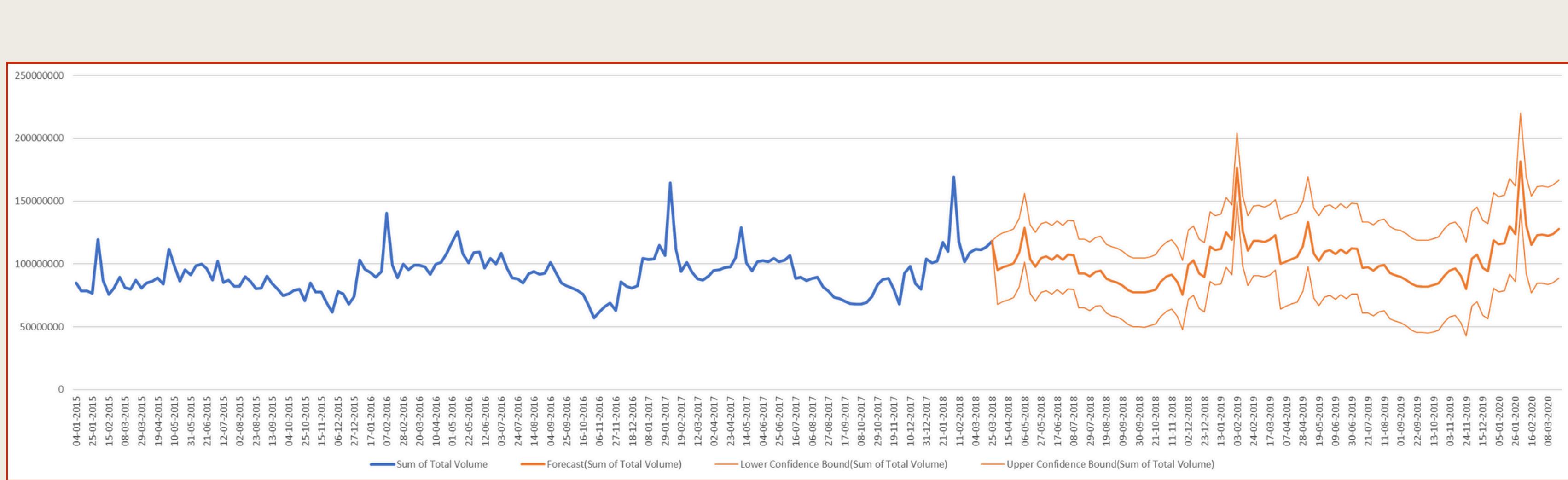
# FORECASTING (CONVENTIONAL)

THIS CHART SHOWS HISTORICAL AND FORECASTED CONVENTIONAL AVOCADO PRICES, WITH FUTURE PROJECTIONS REVEALING BOTH POSSIBLE GROWTH AND PRICE VOLATILITY. THE CONFIDENCE BOUNDS HIGHLIGHT UNCERTAINTY, SUGGESTING PRICE SWINGS ABOVE AND BELOW CURRENT LEVELS ARE LIKELY.



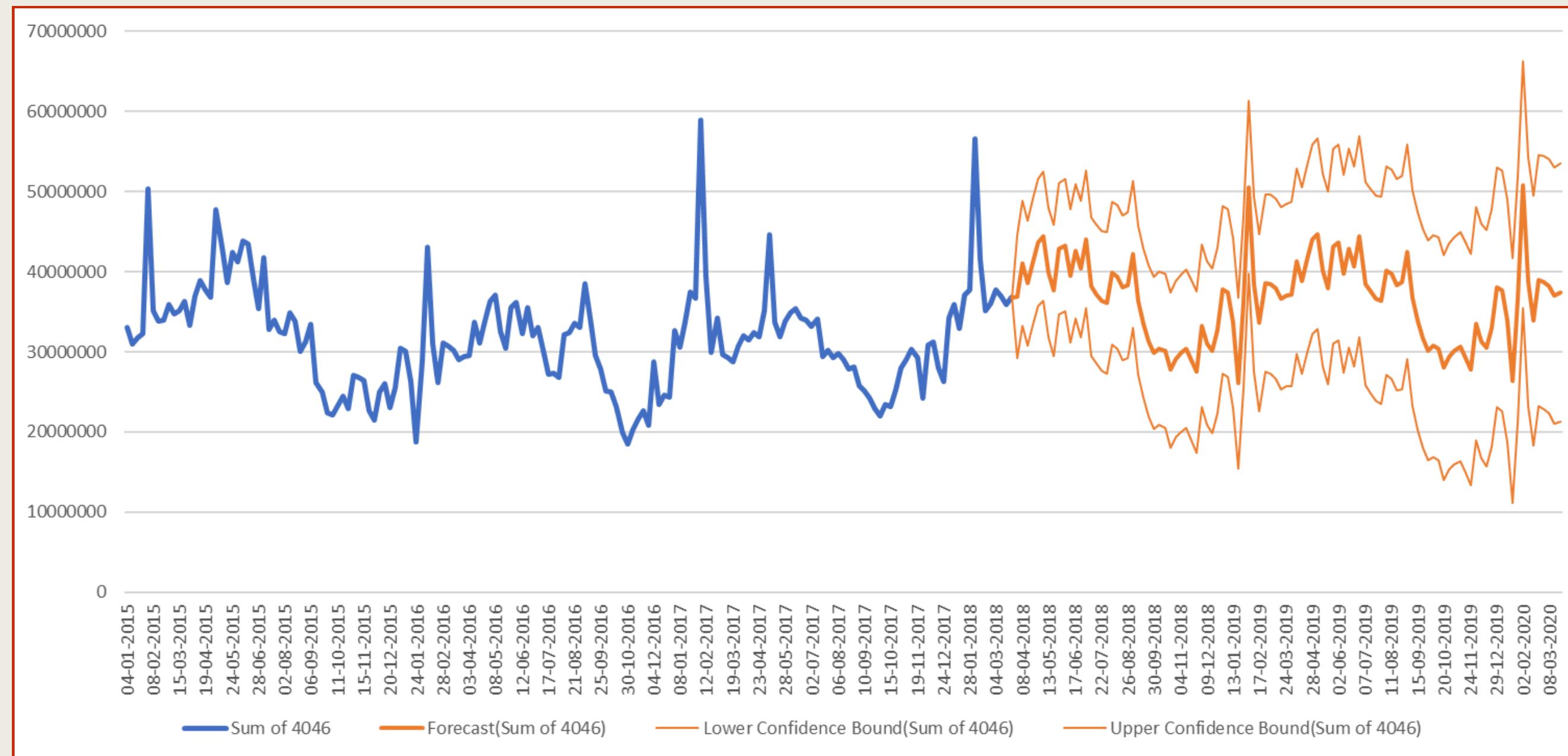
# FORECASTING (TOTAL VOLUME)

THE CHART DISPLAYS HISTORICAL AND FORECASTED CONVENTIONAL AVOCADO SALES VOLUME IN MILLIONS, REVEALING SEASONAL SPIKES AND STRONG FLUCTUATIONS OVER THE YEARS. FORECAST BANDS SUGGEST FUTURE VOLUMES MAY REMAIN VOLATILE, WITH THE POTENTIAL FOR HIGH PEAKS AHEAD.



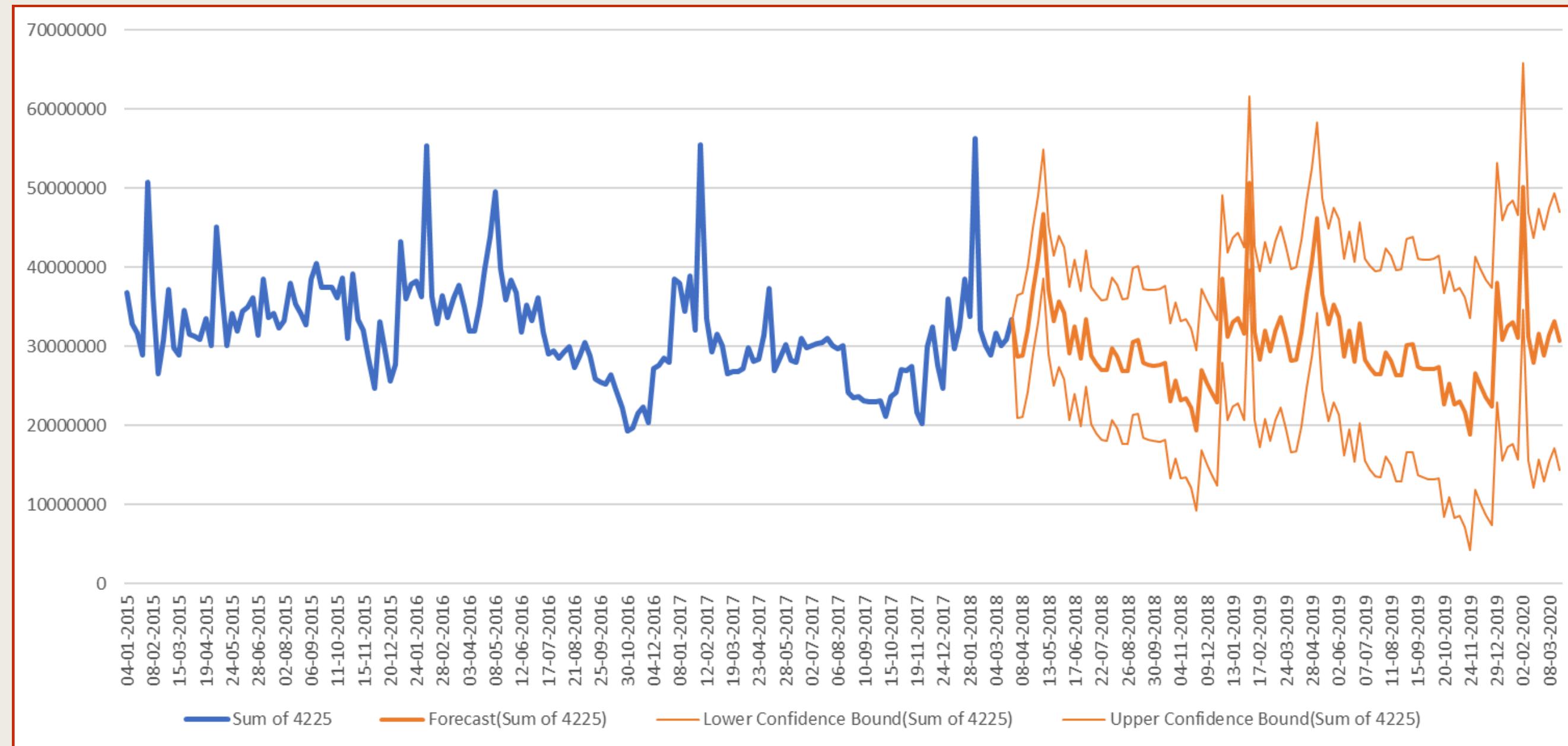
# FORECASTING (4046)

THE CHART DISPLAYS HISTORICAL AND FORECASTED CONVENTIONAL AVOCADO SALES VOLUME IN MILLIONS, REVEALING SEASONAL SPIKES AND STRONG FLUCTUATIONS OVER THE YEARS. FORECAST BANDS SUGGEST FUTURE VOLUMES MAY REMAIN VOLATILE, WITH THE POTENTIAL FOR HIGH PEAKS AHEAD.



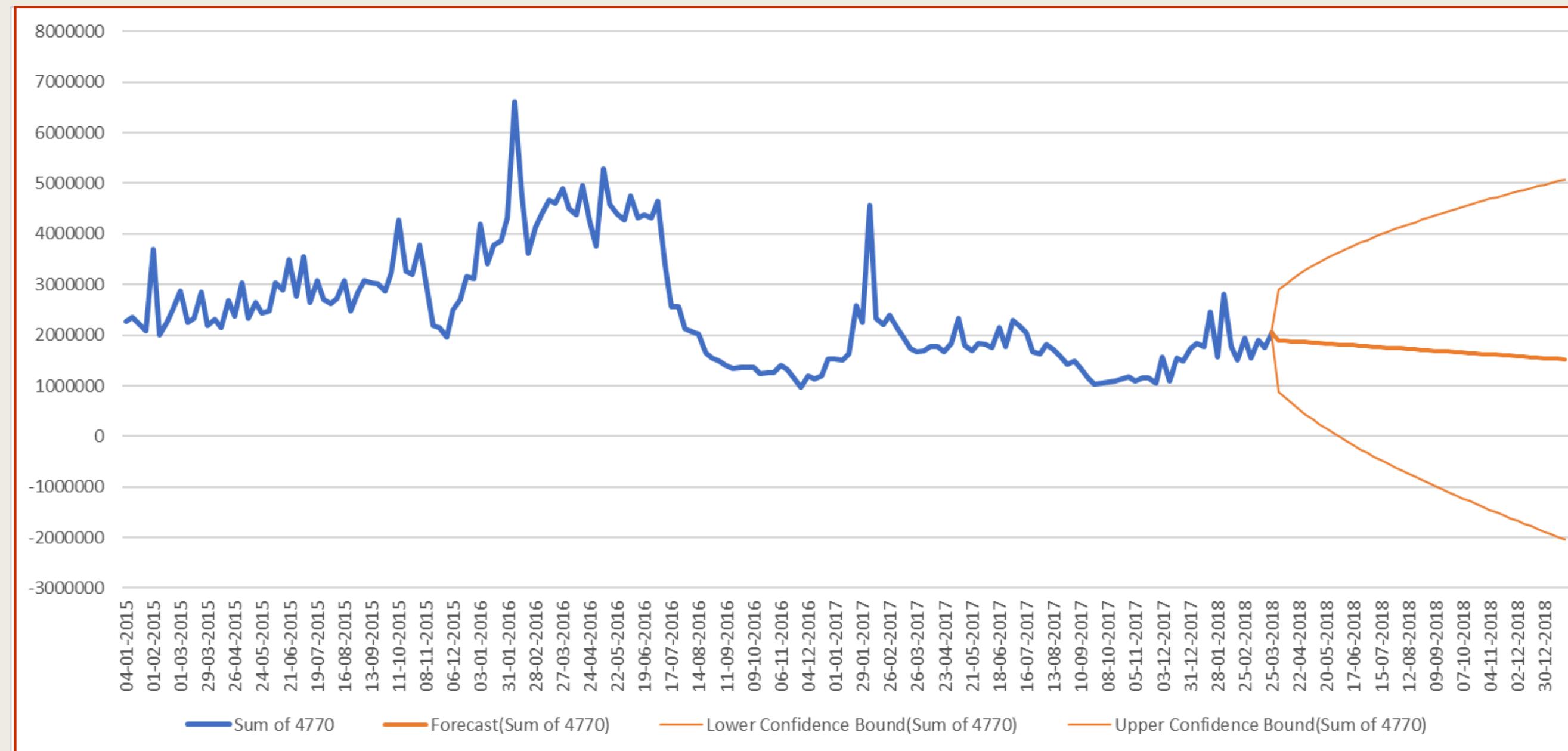
# FORECASTING (4225)

THE CHART SHOWS HISTORICAL AND FORECASTED SALES VOLUME FOR A SPECIFIC AVOCADO PRODUCT CODE, REVEALING FREQUENT SPIKES AND ONGOING VOLATILITY IN MILLIONS OF UNITS. FORECAST TRENDS SUGGEST SIGNIFICANT UNCERTAINTY AHEAD, WITH PROJECTED VALUES OSCILLATING WIDELY AROUND THE MEAN.



# FORECASTING (4770)

THIS CHART ILLUSTRATES HISTORICAL AND FORECASTED SALES VOLUME FOR A SPECIFIC AVOCADO SEGMENT, MEASURED IN MILLIONS, WITH PERIODS OF SHARP SPIKES AND SUBSEQUENT STABILIZATION. FORECAST LINES DIVERGE WIDELY, REFLECTING HIGH UNCERTAINTY ABOUT FUTURE SALES DIRECTIONS.



# ANOVA SINGLE FACTOR

THE ANOVA RESULTS SHOW A STATISTICALLY SIGNIFICANT INCREASE IN AVERAGE SALES VOLUME AND A SIGNIFICANT DECREASE IN AVERAGE PRICE BETWEEN TWO TIME PERIODS. THIS MEANS THE MARKET IS SELLING MORE AVOCADOS OVER TIME, EVEN AS PRICES DROP, CONFIRMING MAJOR SHIFTS IN BUYING AND PRICING PATTERNS.

Anova: Single Factor						
SUMMARY						
Groups	Count	Sum	Average	Varianc		
Column	17	715088	42064	1249.5		
Column	17	13365280	786193	8350000		
ANOVA						
Source of	SS	df	MS	F	P-value	F crit
Between	471000000000	1	4710000	1127.554	0.00000	4.149097
Within Groups	134000000000	32	4170000			
Total	484000000000	33				

Anova: Single Factor						
SUMMARY						
Groups	Count	Sum	Average	Varianc		
Column	17	715088	42064	1249.5		
Column	17	23.11167	1.35951	0.001902		
ANOVA						
Source of	SS	df	MS	F	P-value	F crit
Between	15000000000	1	1500000	2407160	0.00000	4.149097
Within Groups	19992.03	32	624.751			
Total	15000000000	33				

# COORELATIONS

CORRELATIONS NEAR ZERO (0.01, 0.14, -0.19, 0.01, 0.14, -0.19) SHOW ONLY WEAK RELATIONSHIPS IN YOUR DATA, WITH THE STRONGEST BEING A SLIGHT TENDENCY FOR HIGHER PRICES TO REDUCE SALES VOLUME. MOST OF YOUR KEY MARKET INDICATORS HAVE NOT STRONGLY SHIFTED IN PREDICTABLE PATTERNS OVER TIME, BASED ON THESE CORRELATION VALUES.

VARIETIES ARE NOT MOVING INDEPENDENTLY—ANY FACTOR AFFECTING ONE (LIKE PROMOTIONS, SEASONALITY, OR SUPPLY SHOCKS) IS LIKELY INFLUENCING THE OTHERS IN THE SAME DIRECTION.

---

	<i>Date</i>	<i>Avg Price</i>	<i>Volume</i>
<i>Date</i>	1		
<i>Avg Price</i>	0.145514	1	
<i>Volume</i>	0.009263	-0.19275	1

	7046	7225	4770
7046	1		
7225	0.92611	1	
4770	0.833389	0.887855	1

# SOLUTION STATEMENT

LOWEST AVERAGE PRICE OF AVOCADO					HIGHEST PRODUCTION OF AVOCADO					LOWEST AVG PRICE WITH HIGHEST PRODUCTION REGIONS (TOP 3)			
YEAR	2015	2016	2017	2018	YEAR	2015	2016	2017	2018	REGION	SOUTH CENTRAL	LOS ANGELES	HOUSTON
AVERAGE PRICE	0.49	0.51	0.44	0.56	PRODUCTION	1053997	1198679	1637554	1272039	REGION	WEST TEXAS NEW MEXICO	WEST TEXAS NEW MEXICO	WEST TEXAS NEW MEXICO
REGION	PHOENIX TUCSON	PHOENIX TUCSON	CINCINNATI DAYTON	HOUSTON	REGION	WEST TEXAS NEW MEXICO	WEST TEXAS NEW MEXICO	WEST TEXAS NEW MEXICO	WEST TEXAS NEW MEXICO	REGION	WEST TEXAS NEW MEXICO	WEST TEXAS NEW MEXICO	WEST TEXAS NEW MEXICO
FORCASTING OF PRICING (CONVENTIONAL)		FORCASTING OF PRICING (ORGANIC)		FORCASTING OF PRODUCTION (4046)		FORCASTING OF PRODUCTION (4225)		FORCASTING OF PRODUCTION (4770)					
YEAR	2019-2020	2019-2020	YEAR	2019-2020	2019-2020	YEAR	2019-2020	2019-2020	YEAR	2019-2020	2019-2020	2019-2020	
AVERAGE PRICE (MIN)	0.98	1.43	MINIMUM VOLUME	26117396	19379053	MAXIMUM VOLUME	50835237	50679864	MAXIMUM VOLUME	1537843	1867234	1867234	
AVERAGE PRICE (MAX)	1.48	1.94	MAXIMUM VOLUME	50835237	MAXIMUM VOLUME	50679864	MAXIMUM VOLUME	1867234	MAXIMUM VOLUME	1537843	1867234	1867234	

TRENDS IN THE AVOCADO INDUSTRY			
VARIETIES ARE NOT MOVING INDEPENDENTLY. ONE IS LIKELY INFLUENCING THE OTHERS IN THE SAME DIRECTION.		CORRELATIONS NEAR ZERO SHOW ONLY WEAK RELATIONSHIPS BETWEEN VOLUME AND AVG PRICE.	
MOST OF KEY MARKET INDICATORS HAVE NOT STRONGLY SHIFTED IN PREDICTABLE PATTERNS OVER TIME, BASED ON CORRELATION VALUES.		THE MARKET IS SELLING MORE AVOCADOS OVER TIME, EVEN AS PRICES DROP, CONFIRMING MAJOR SHIFTS IN BUYING AND PRICING PATTERNS.	