



Avocados Galore!

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W200 Project 2

13 Dec 2018

Introduction and background

- **Relevance:** Avocados have become very popular in the United States.
Total sales reached 1.9 billion units in 2017!
- **Audience:** Our analysis is aimed at food distributors interested in selling avocados in the United States
- **Research Question:** which regions offer the best opportunities for market entry in the US?

Data

Variable	Description
Date	The date of the observation (week ending)
AveragePrice	The average price of a single avocado
type	Conventional or organic
year	The year
region	The city or region of the observation
Total Volume	Total number of avocados sold
4046	Total number of avocados with PLU 4046 sold (small)
4225	Total number of avocados with PLU 4225 sold (large)
4770	Total number of avocados with PLU 4770 sol (extra large)
Total Bags	Total number of avocados sold in bags
Small Bags	Total number of avocados sold in small bags
Large Bags	Total number of avocados sold in large bags
XLarge Bags	Total number of avocados sold in extra large bags

CALIFORNIA Los Angeles Sacramento San Diego San Francisco	WEST Denver Phoenix Portland Salt Lake City Seattle West Texas/New Mexico	PLAINS St. Louis	SOUTH CENTRAL Dallas Houston New Orleans
GREAT LAKES Chicago Cincinnati Columbus Detroit Grand Rapids Indianapolis	MIDSOUTH Baltimore Charlotte Louisville Nashville Raleigh Richmond Roanoke	SOUTHEAST Atlanta Jacksonville Miami Orlando South Carolina Tampa	NORTHEAST Albany Boston Buffalo Harrisburg/Scranton Hartford/Springfield New England New York Philadelphia Pittsburgh Syracuse

Sources: <https://www.hassavocadoboard.com> &
<https://www.kaggle.com/neuromusic/avocado-prices/version/1>

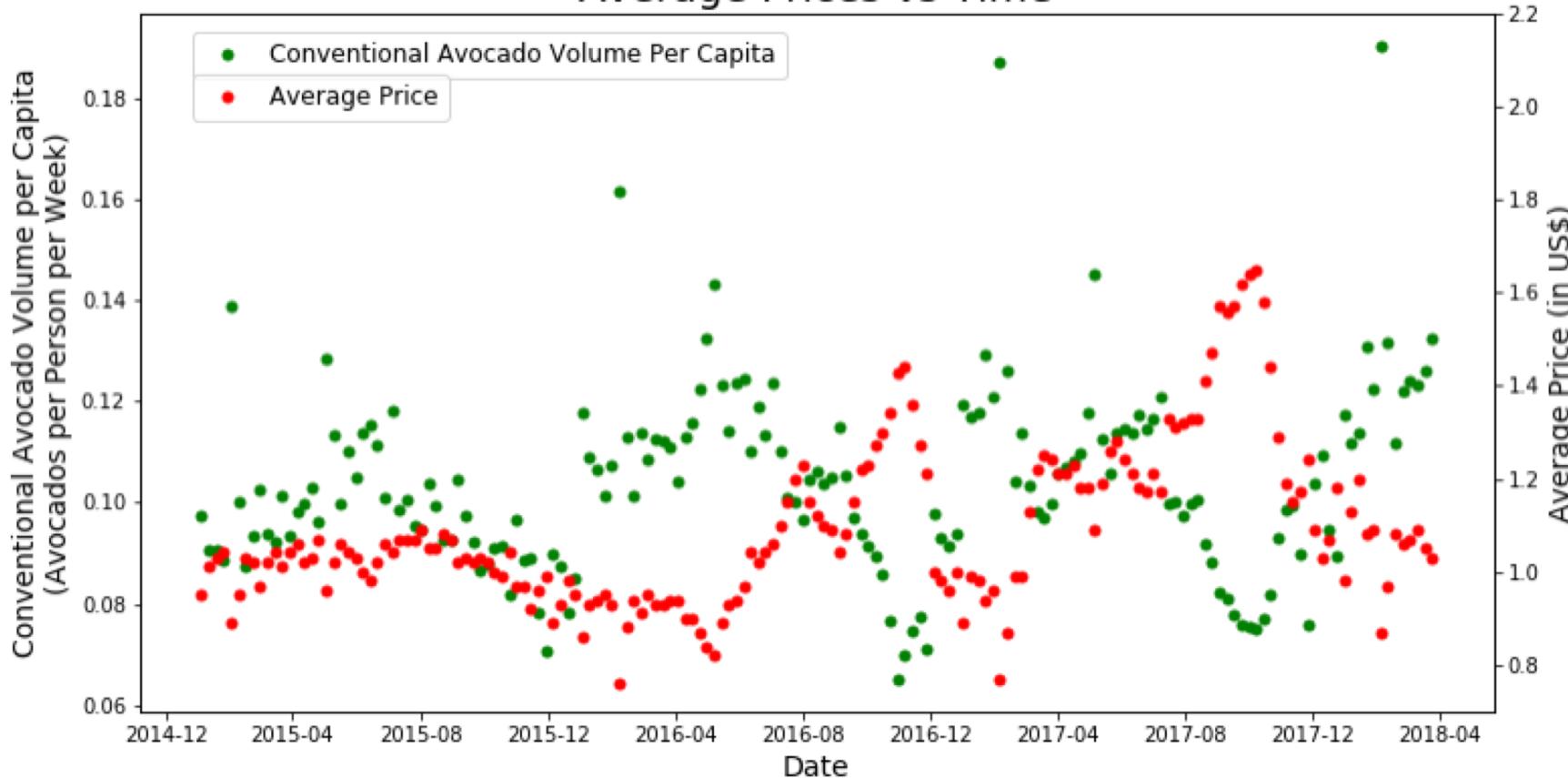
Analysis and assumptions

- **Sanity Check**
 - Check for inconsistencies
 - Missing values
- **Analysis**
 - Trends in U.S. total and per-capita avocado sales
 - Trends in regional total and per-capita avocado sales
 - Trends in average unit prices by city
- **Assumptions**
 - Database is a good representation of avocado demand in the country

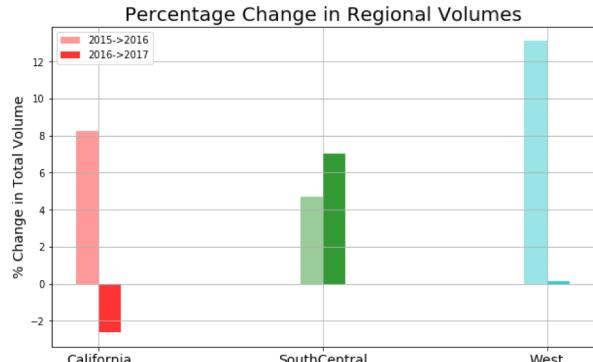
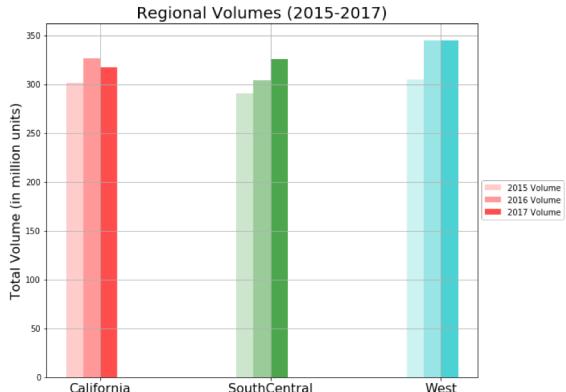
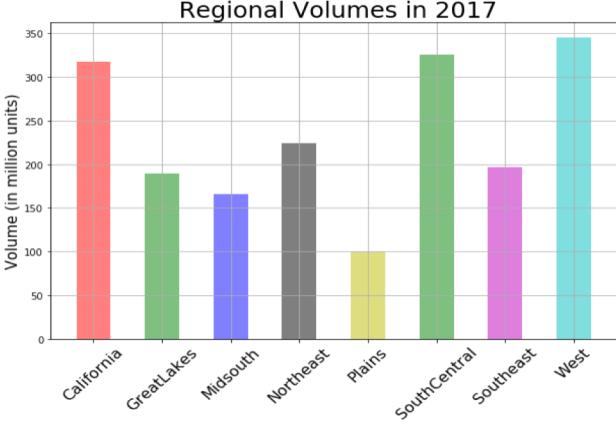
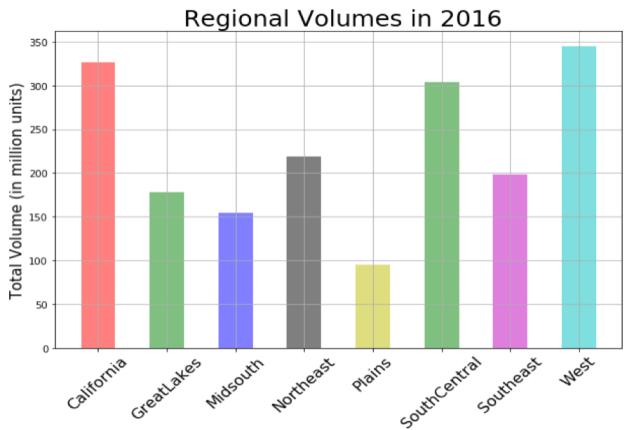
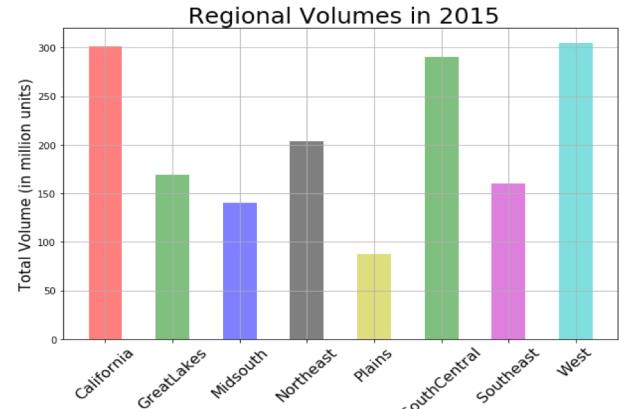
Nationwide avocado consumption

Year	Conventional Avocado Volume (% growth from previous year)	Organic Avocado Volume (% growth from previous year)	Total Avocado Volume (% growth from previous year)	% Organic Avocados
2015	1,623,685,890	33,569,270	1,657,255,160	2.03
2016	1,770,259,362 (+9.0%)	48,899,727 (+45.7%)	1,819,159,089 (+9.8%)	2.69
2017	1,801,769,849 (+1.8%)	62,912,327 (+28.7%)	1,864,682,176 (+2.5%)	3.37
2018 (up to Mar)	505,506,395	18,120,774	523,627,169	3.46

Conventional Avocado Volume Per Capita and Average Prices vs Time

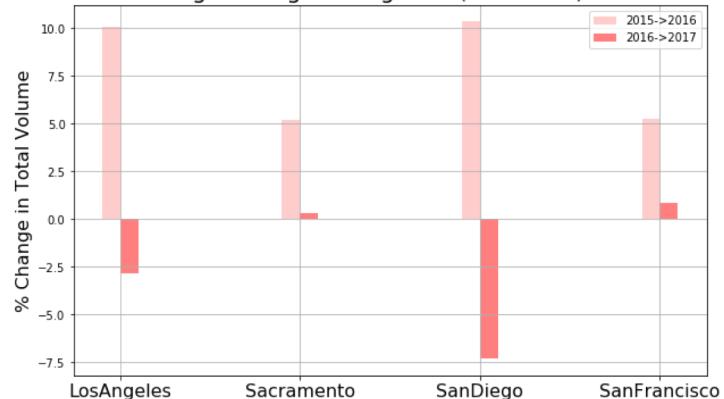


Level 1 Analysis - Regional trends - top 3

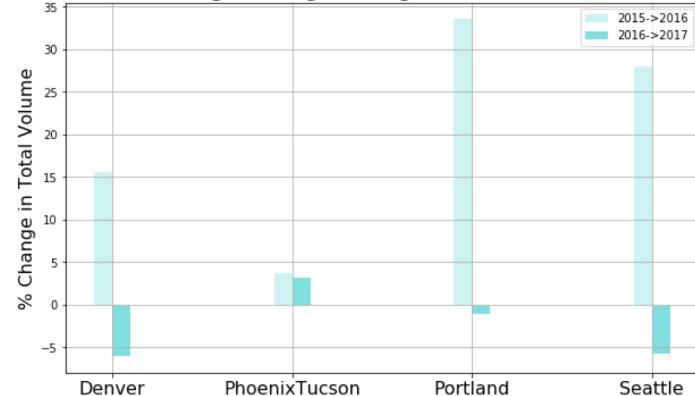


Level 2 Analysis - Trends in city markets

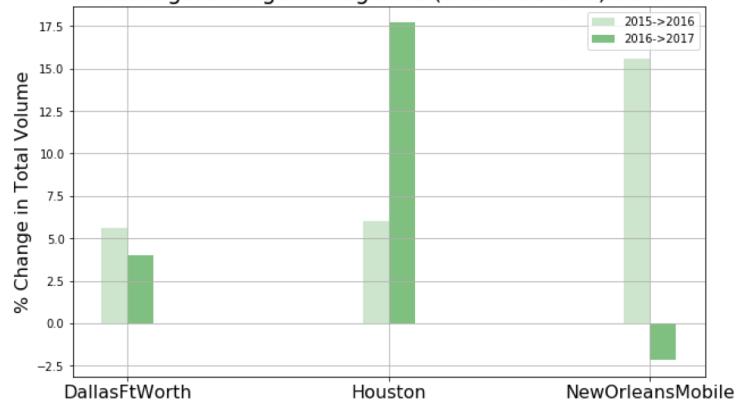
Percentage Change in Region 1 (California) Volumes



Percentage Change in Region 3 (West) Volumes



Percentage Change in Region 2 (South Central) Volumes

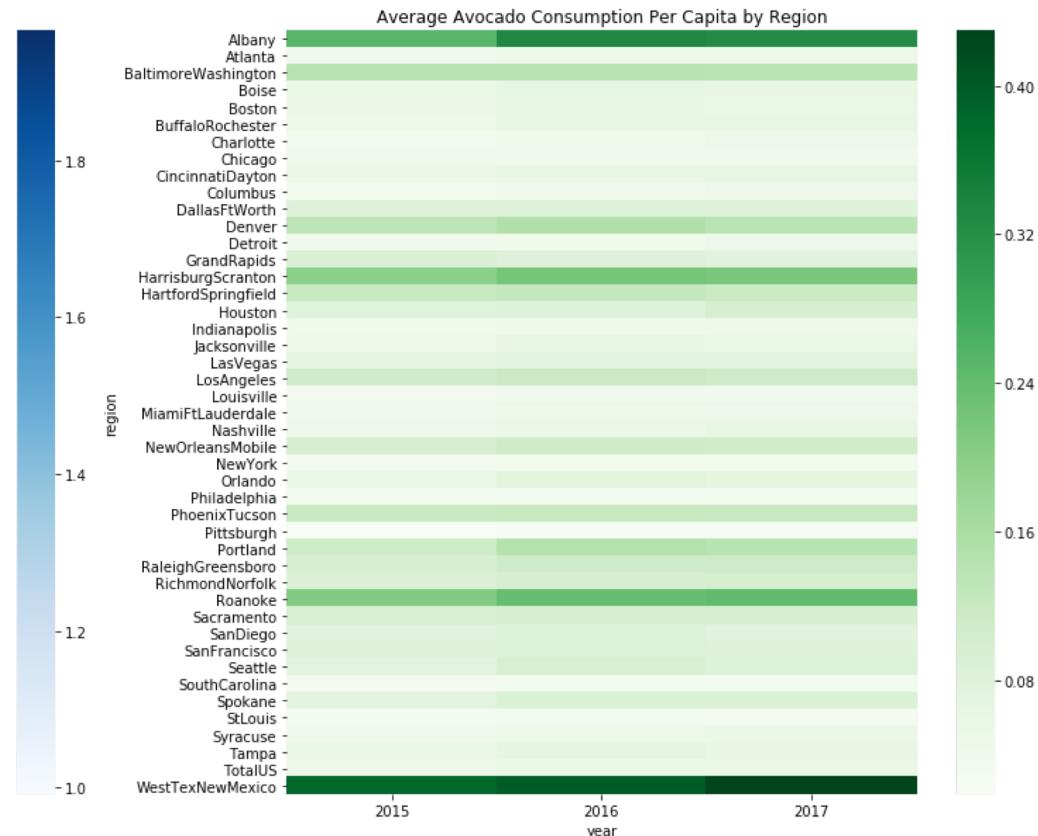
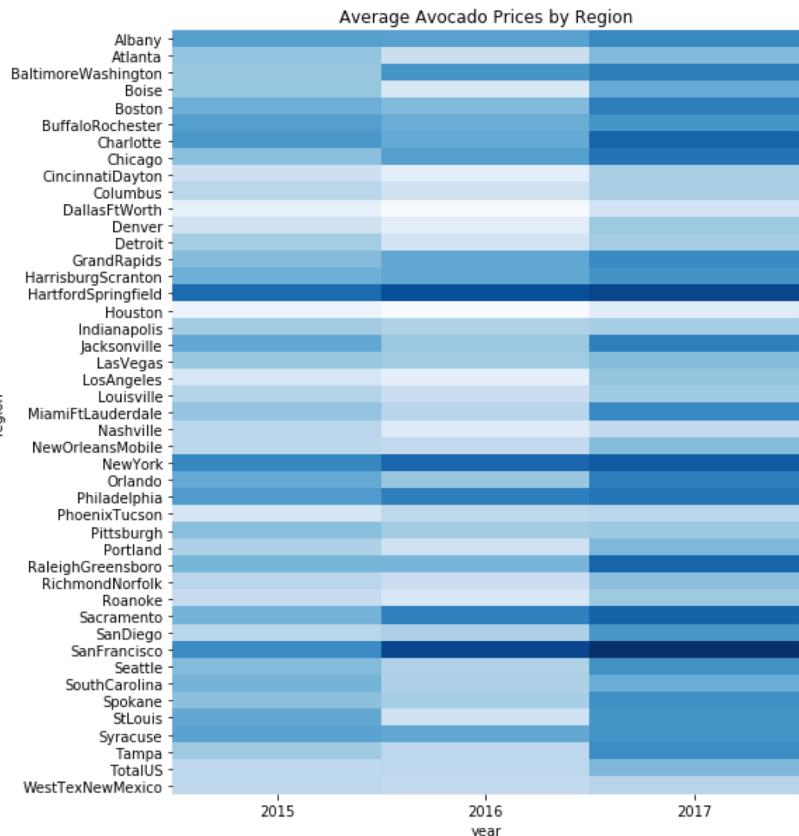


Level 3 Analysis - Growing vs Slowing markets

GROWING MARKETS	2015	2016	2017
Dallas	1.08	1.08 (+0.0%)	1.18 (+9.3%)
Houston	1.05	0.99 (- 5.7%)	1.10 (+11.1%)
Phoenix-Tucson	1.16	1.26 (+8.6%)	1.27 (+0.8%)
Sacramento	1.45	1.67 (+15.7%)	1.77 (+6.0%)
San Francisco	1.42	1.88 (+32.4%)	1.97 (+4.8%)
Total US	1.26	1.26 (+0.0%)	1.44 (+12.5%)

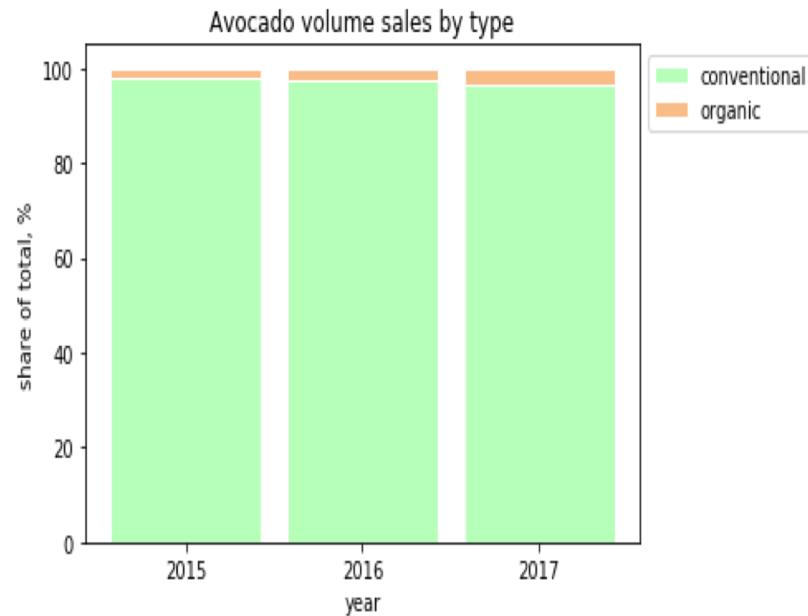
SLOWING MARKETS	2015	2016	2017
Denver	1.19	1.09 (-9.7%)	1.36 (+19.9%)
Los Angeles	1.15	1.08 (- 6.5%)	1.38 (+21.7%)
New Orleans - Mobile	1.27	1.25 (- 1.6%)	1.42 (+12.0%)
San Diego	1.27	1.31 (+3.1%)	1.58 (+17.1%)
Seattle	1.42	1.30 (- 9.2%)	1.60 (+18.8%)

Price and consumption disparities across cities



Organic vs. conventional

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Final conclusions / Recommendations

- The South Central region presents the best opportunities
- Avocado markets are price sensitive- prices should be maintained near the national average
- Growth of organic avocado consumption is a growing niche

For Further Study

- Avocado sizes
- Seasonal variation of average prices
- Organics market
- Relationship between location and proximity to production centers
- Avocados and demographics

References

1. [https://en.wikipedia.org/wiki/IRI_\(company\)](https://en.wikipedia.org/wiki/IRI_(company))
2. <https://en.wikipedia.org/wiki/Avocado>
3. <https://www.bonappetit.com/test-kitchen/ingredients/article/why-avocados-always-in-season>
4. <https://fruitsfromchile.com/fruit/avocados/>
5. <https://www.bbcgoodfood.com/howto/guide/health-benefits-avocado>