

# **Technical Assessment Ventagium**

**Alan Tang  
17/06/2022**

# Analysis Process

**1. Download+Understand Data**

**2. Aggregate+Create Custom CSVs**

**3. Build models+Extract Insights**

# Agenda

- 1. Executive Summary**
- 2. Sales trends**
- 3. Product groups**
- 4. Prices and demand (top SKU)**
- 5. Events vs. Sales**

# Executive Summary

66M

Units sold

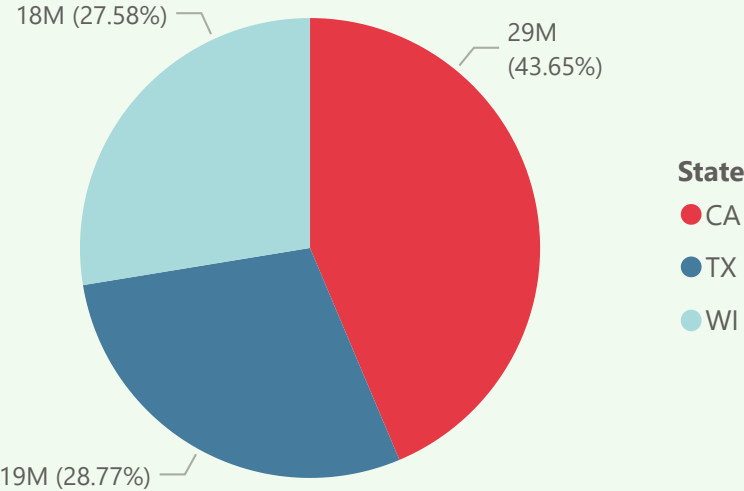
3049

Unique SKUs

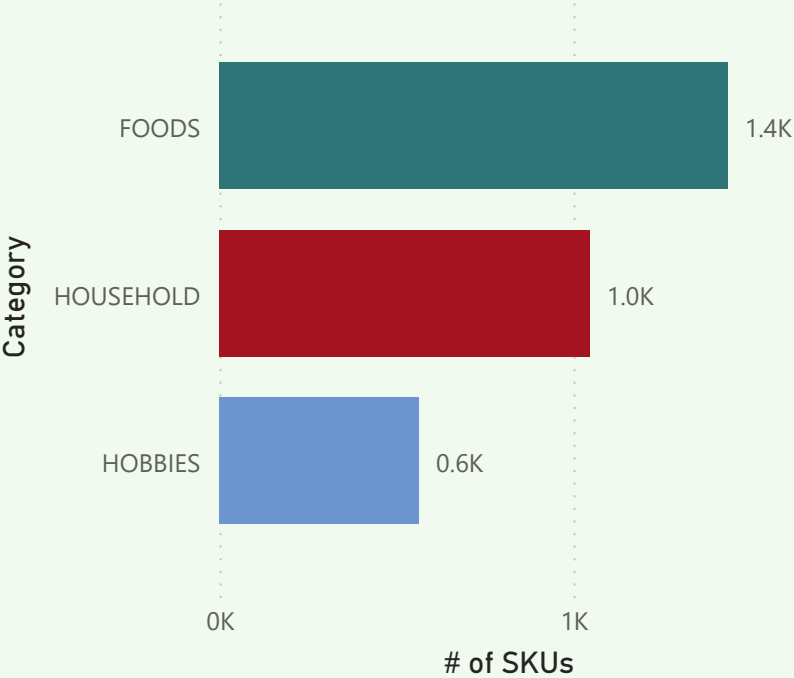
10

Stores

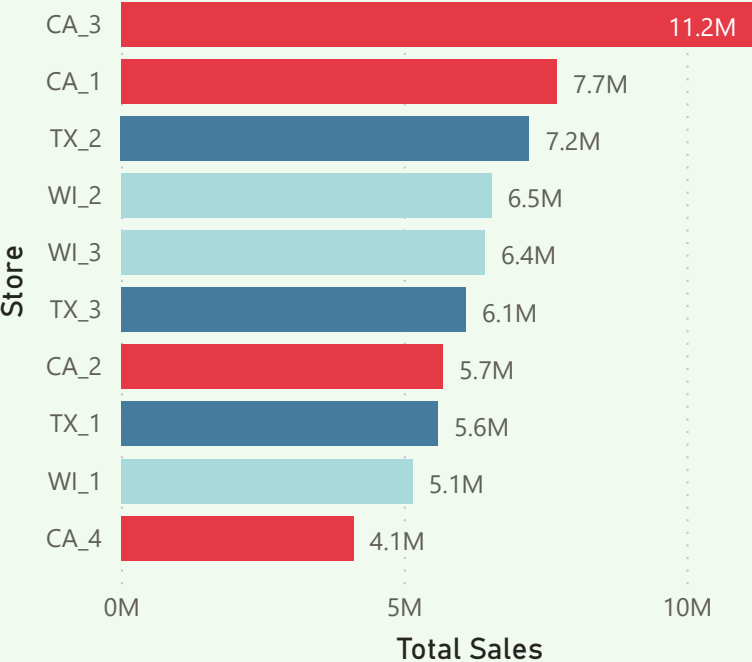
Units Sold by State



# of SKUs by Category

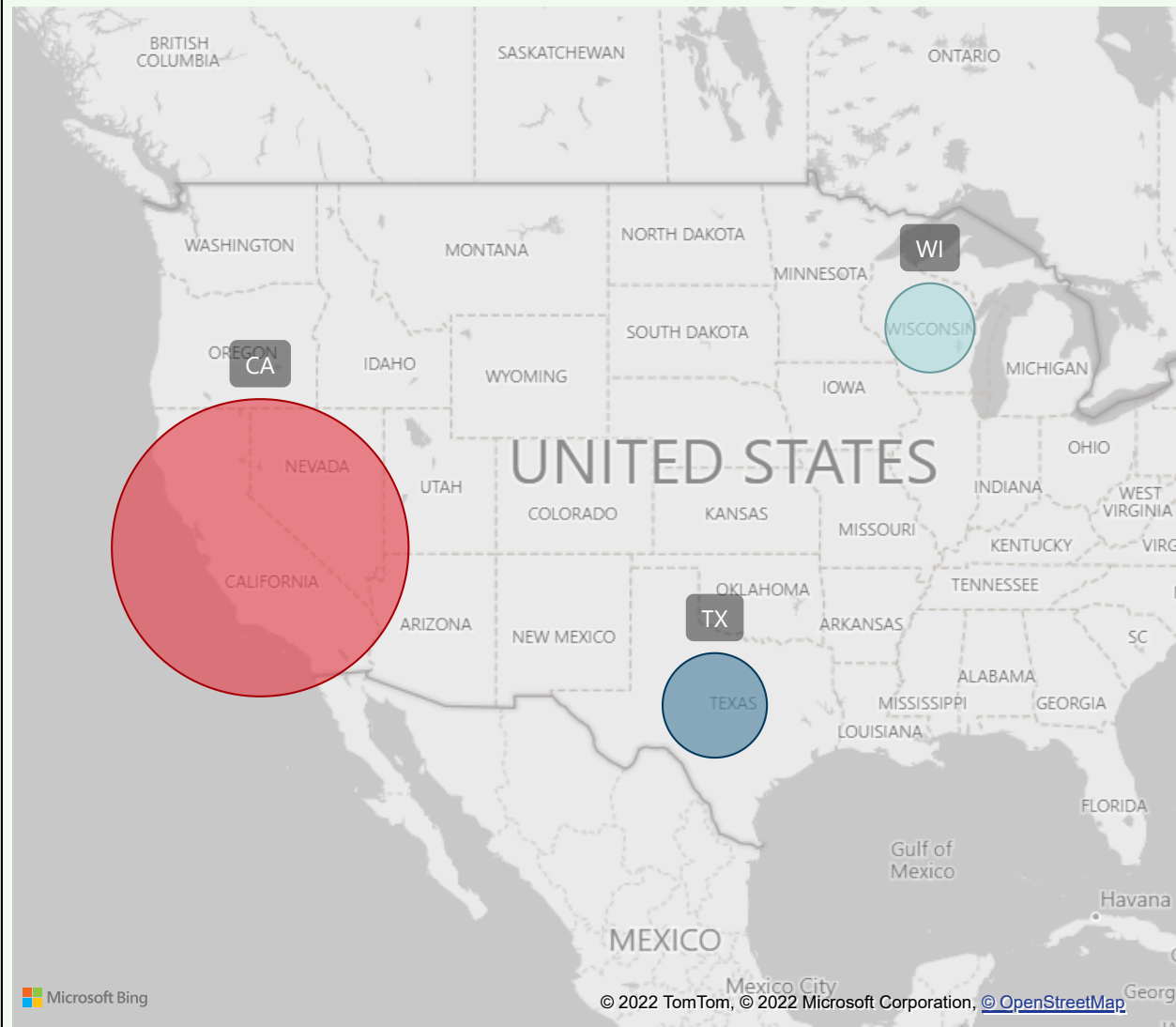


Total Sales by Store



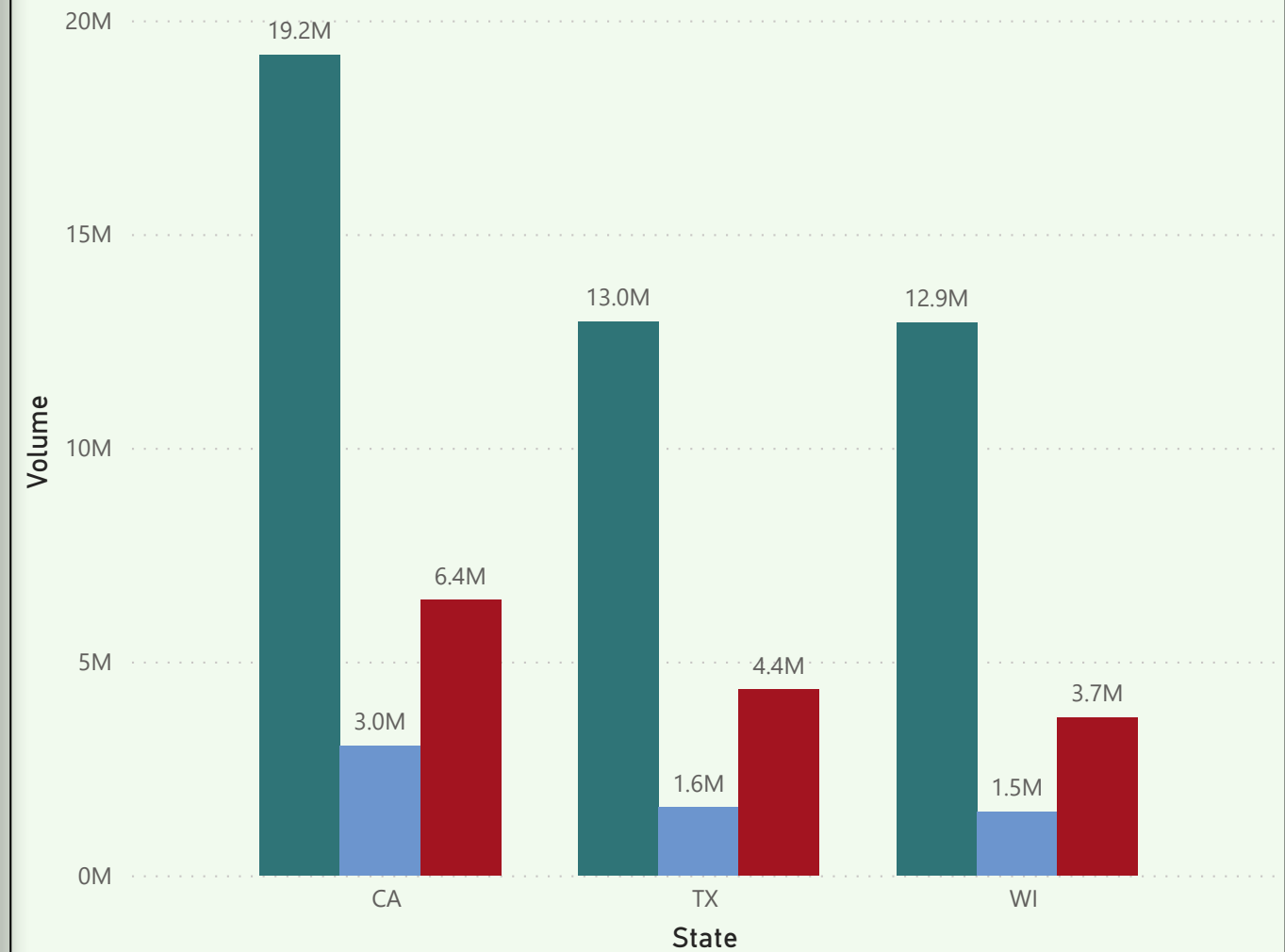
# Sales by State

Volume by State



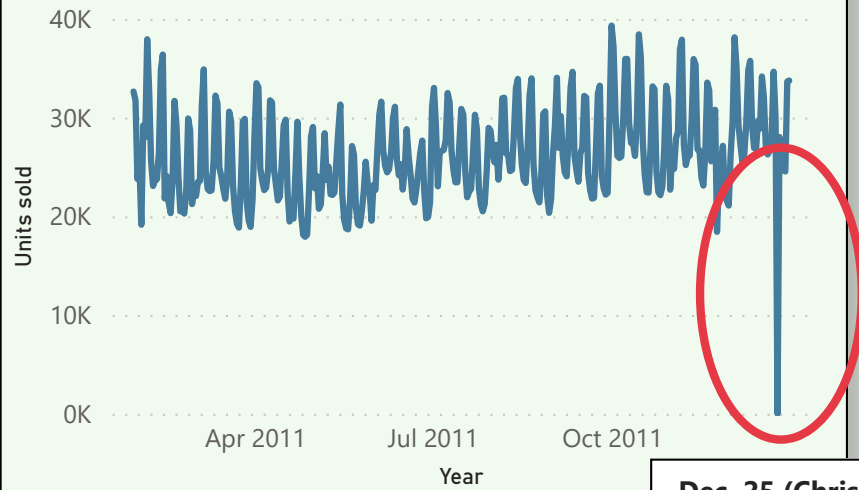
Units Sold by State

Category ● FOODS ● HOBBIES ● HOUSEHOLD



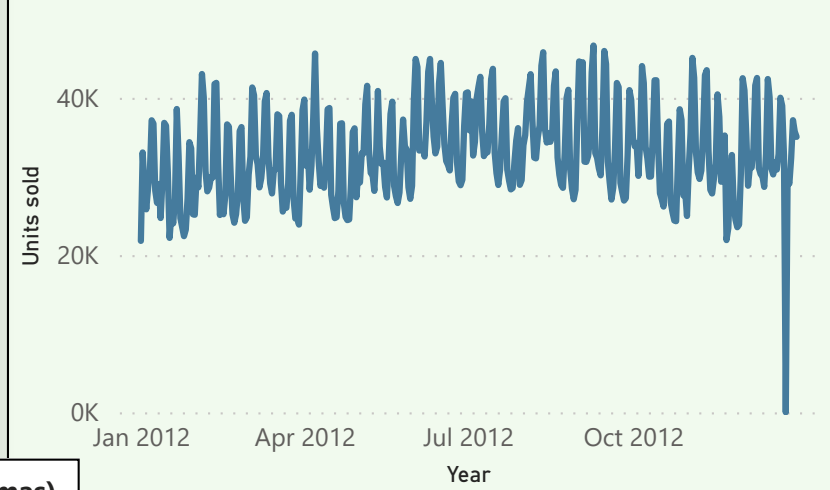
# Sales by Year

Units sold: 2011

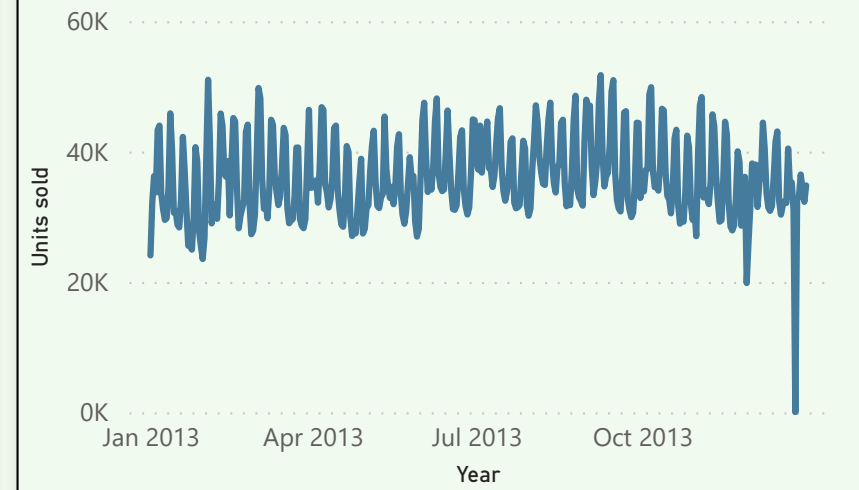


Dec. 25 (Christmas)

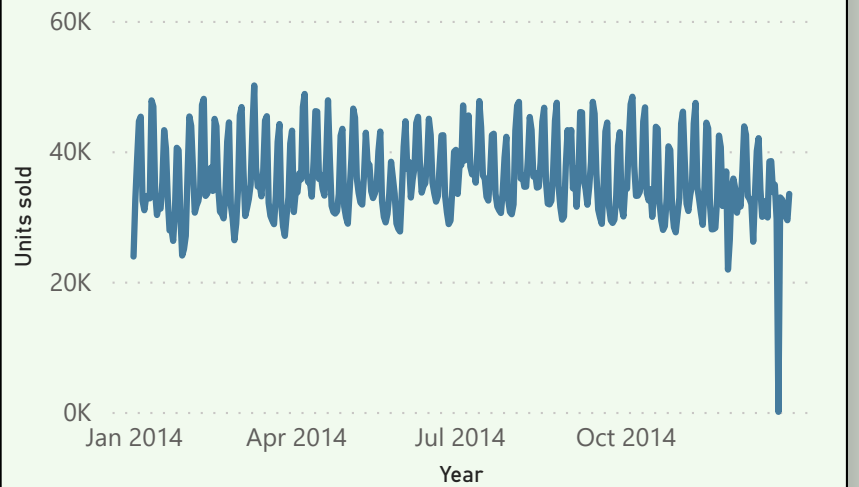
Units sold: 2012



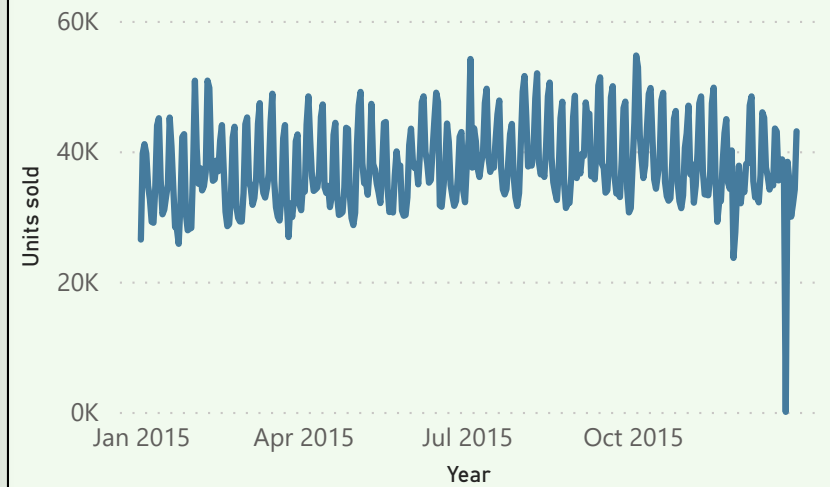
Units sold: 2013



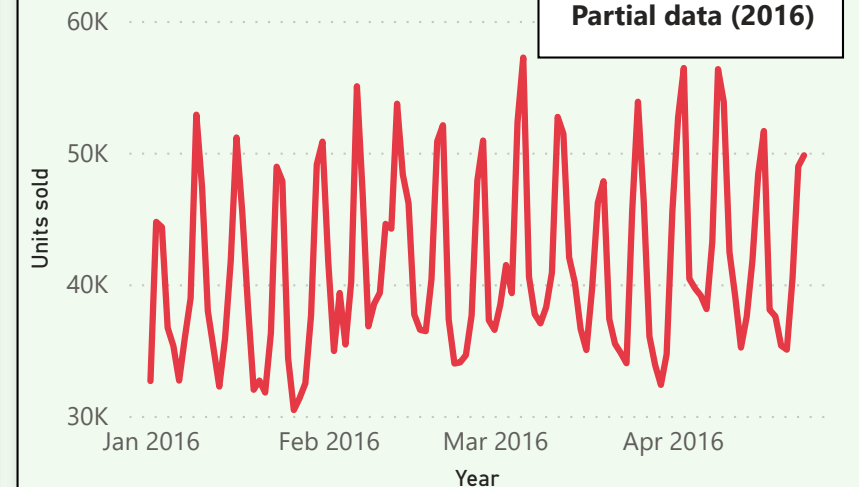
Units sold: 2014



Units sold: 2015

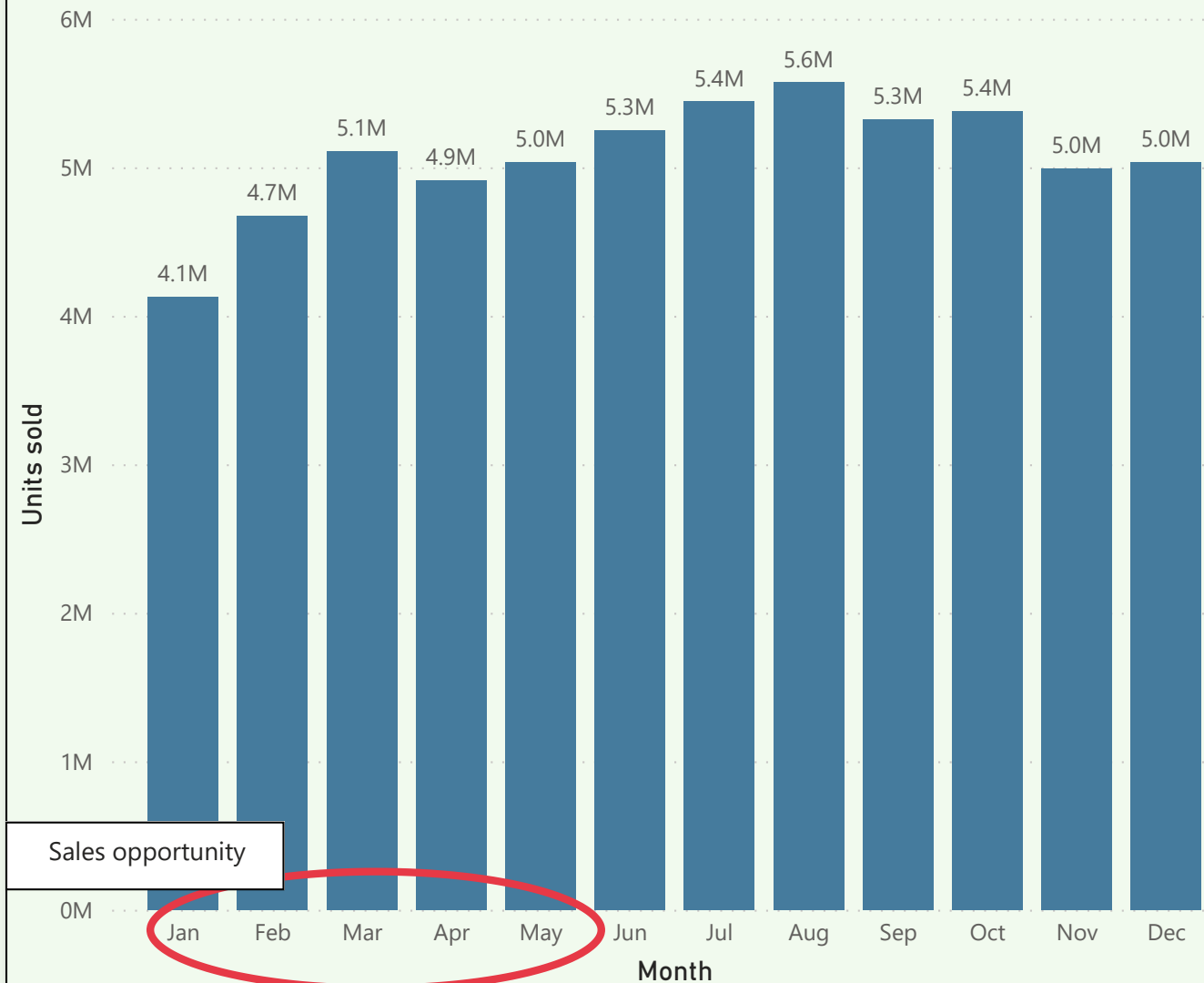


Units sold: 2016P

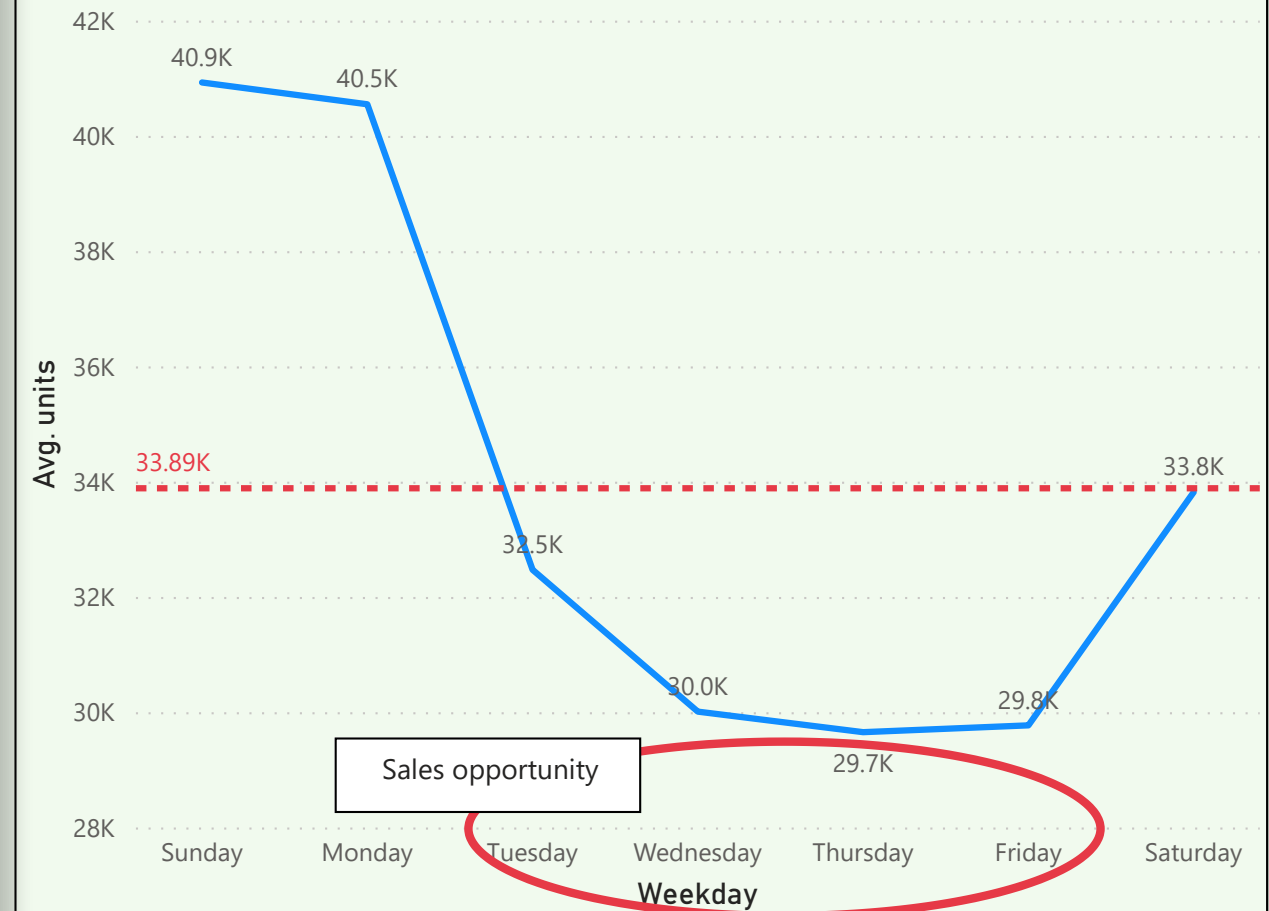


# Sales by Month & Day

Units sold by Month



Avg. units by Weekday



1/29/2011

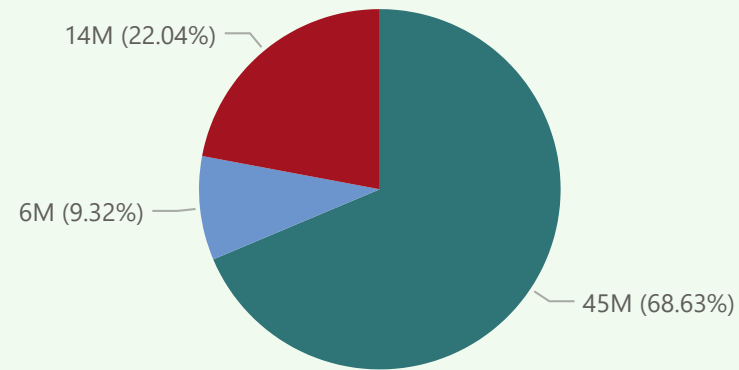
12/29/2015

Excluding 2016

# Product Categories

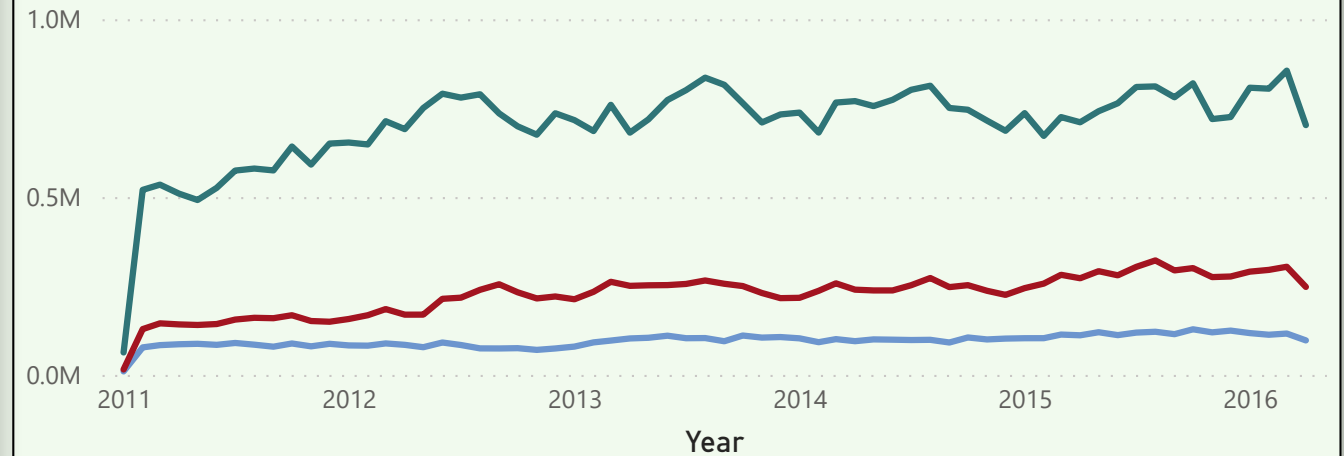
Volume Distribution by Category

FOODS HOBBIES HOUSEHOLD

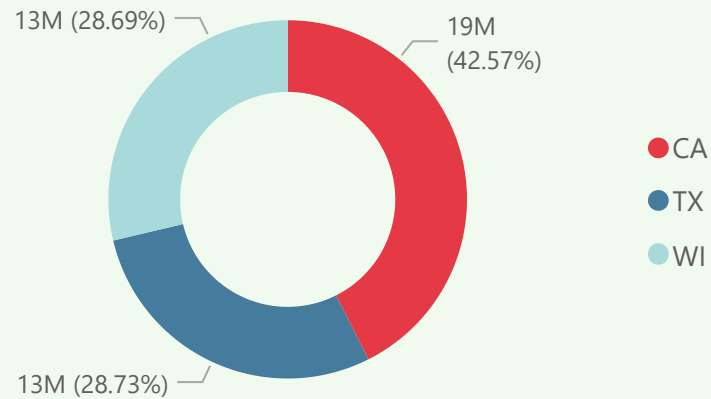


Sales by Category and Month

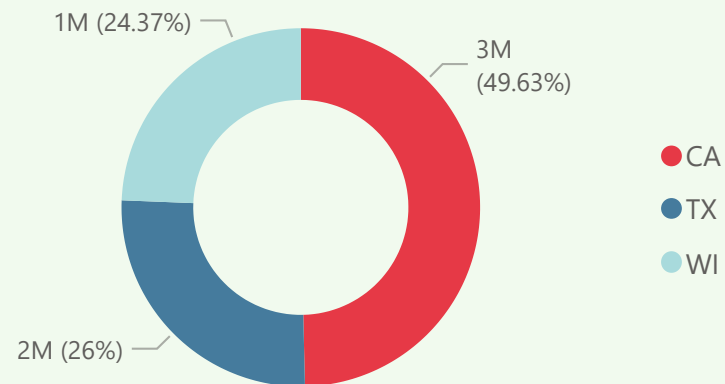
total\_food total\_hobbies total\_household



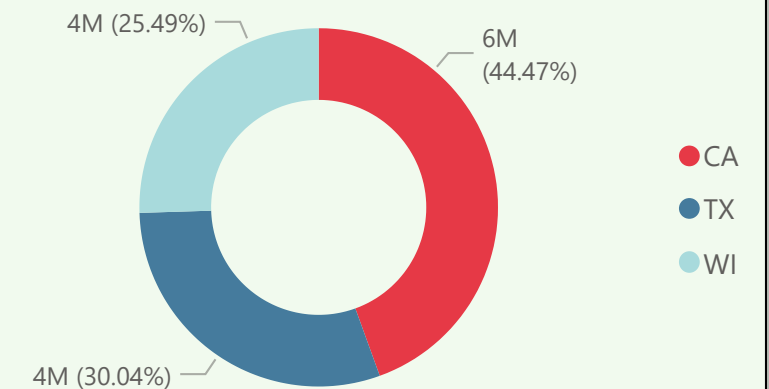
Volume distribution: FOODS



Volume distribution: HOBBIES



Volume distribution: HOUSEHOLD





# Prices

Avg. Price: FOODS

Item ID	Avg. Price
FOODS_3_298	\$18.80
FOODS_3_083	\$18.80
FOODS_2_387	\$12.97
FOODS_2_239	\$12.66
FOODS_2_389	\$12.57
FOODS_2_052	\$12.55
FOODS_2_154	\$12.55
FOODS_2_298	\$12.55
FOODS_2_295	\$12.54
FOODS_2_317	\$12.54
FOODS_1_151	\$11.40
FOODS_3_173	\$11.23
FOODS_2_271	\$10.98
FOODS_2_102	\$10.97
FOODS_2_250	\$10.97
FOODS_2_365	\$10.79
FOODS_2_352	\$10.68
FOODS_2_316	\$10.66
Total	\$3.25

Avg. Price: HOBBIES

Item ID	Avg. Price
HOBBIES_1_225	\$29.67
HOBBIES_1_361	\$29.66
HOBBIES_1_060	\$29.66
HOBBIES_1_410	\$28.57
HOBBIES_1_393	\$28.51
HOBBIES_1_104	\$23.93
HOBBIES_1_354	\$23.16
HOBBIES_1_158	\$22.08
HOBBIES_1_241	\$21.14
HOBBIES_1_027	\$19.97
HOBBIES_1_180	\$19.95
HOBBIES_1_135	\$19.81
HOBBIES_1_093	\$19.77
HOBBIES_1_160	\$19.77
HOBBIES_1_342	\$19.76
HOBBIES_1_155	\$18.98
HOBBIES_1_046	\$18.88
HOBBIES_1_170	\$17.97
Total	\$5.33

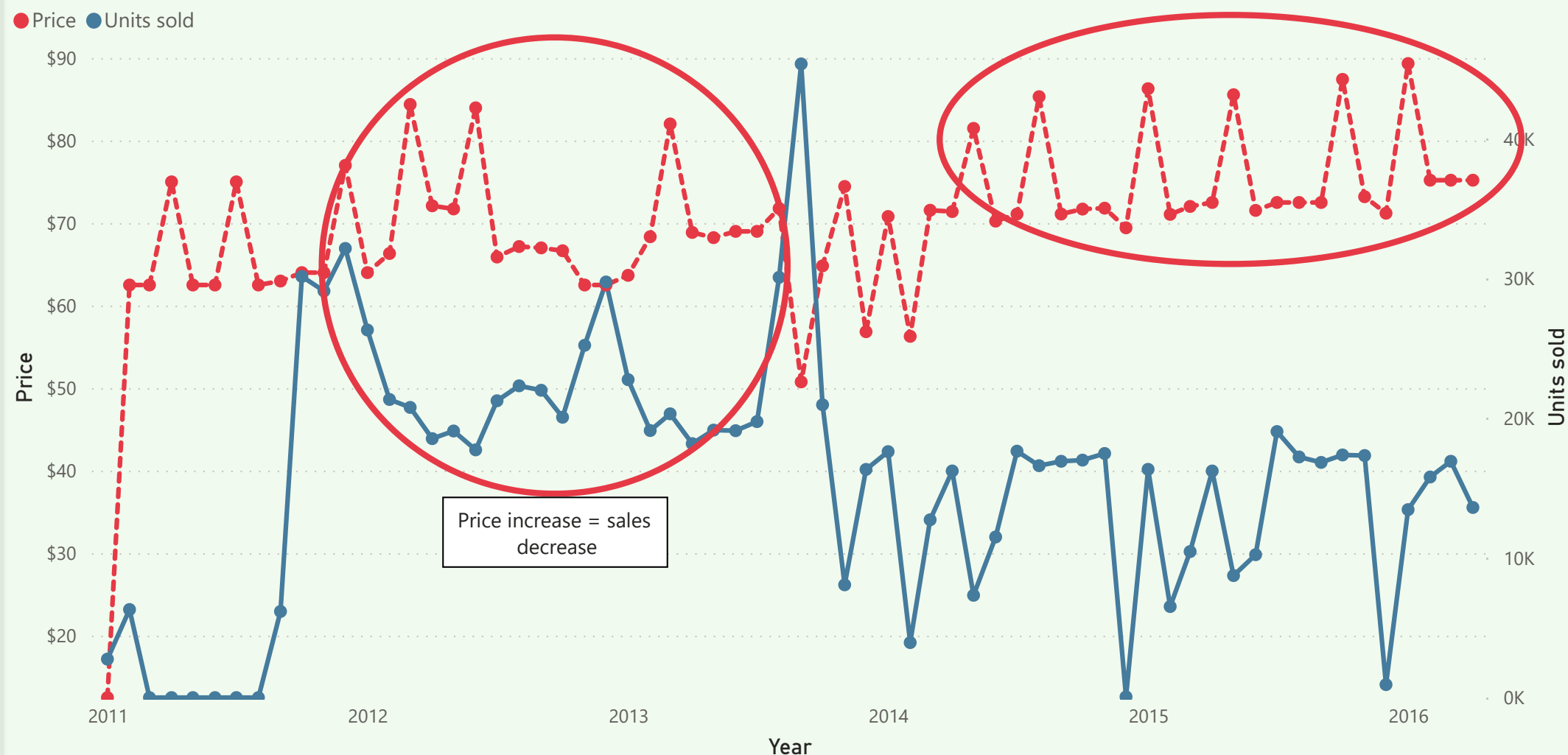
Avg. Price: HOUSEHOLD

Item ID	Avg. Price
HOUSEHOLD_1_060	\$29.94
HOUSEHOLD_2_446	\$25.47
HOUSEHOLD_1_378	\$22.70
HOUSEHOLD_1_523	\$20.47
HOUSEHOLD_2_073	\$20.45
HOUSEHOLD_2_211	\$19.98
HOUSEHOLD_2_459	\$18.84
HOUSEHOLD_2_514	\$18.80
HOUSEHOLD_1_412	\$18.11
HOUSEHOLD_1_486	\$18.08
HOUSEHOLD_1_413	\$18.05
HOUSEHOLD_1_469	\$17.97
HOUSEHOLD_1_044	\$17.97
HOUSEHOLD_1_009	\$17.96
HOUSEHOLD_1_014	\$17.96
HOUSEHOLD_1_165	\$17.95
HOUSEHOLD_1_102	\$17.92
HOUSEHOLD_1_342	\$17.92
Total	\$5.47

# Sales by Item + Top Item (sales vs. price)

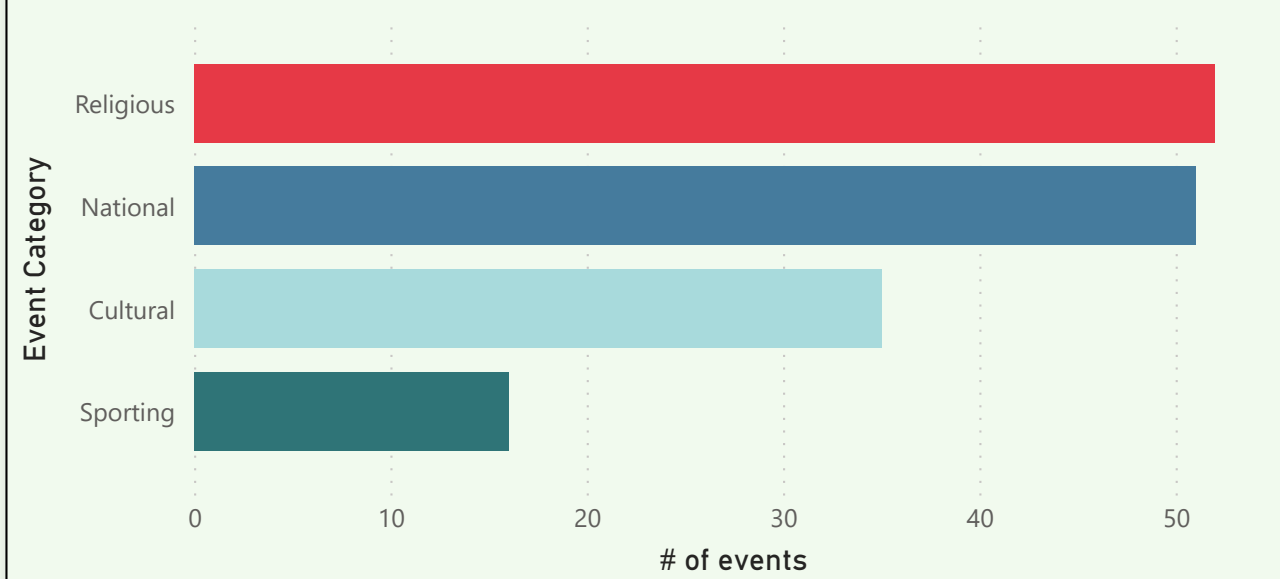
Units sold per item	
Item ID	Units Sold
FOODS_3_090	1,002,529
FOODS_3_586	920,242
FOODS_3_252	565,299
FOODS_3_555	491,287
FOODS_3_714	396,172
FOODS_3_587	396,119
FOODS_3_694	390,001
FOODS_3_226	363,082
FOODS_3_202	295,689
FOODS_3_723	284,333
FOODS_3_120	283,104
FOODS_3_635	282,134
FOODS_3_808	281,879
FOODS_3_377	273,289
FOODS_3_541	272,624
FOODS_3_080	262,650
FOODS_3_318	260,598
FOODS_3_360	257,119
Total	65,695,409

Sales and Price: FOODS\_3\_090



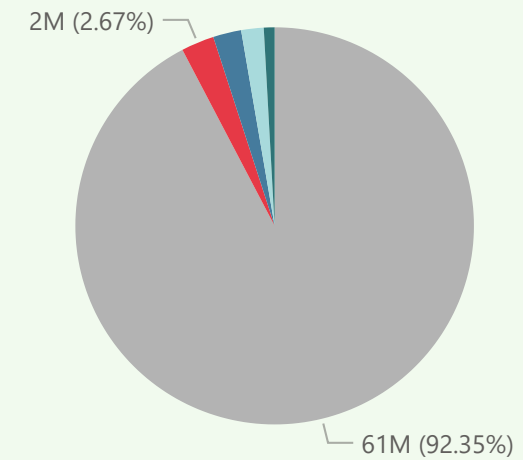
# Events

# of events by Event Category

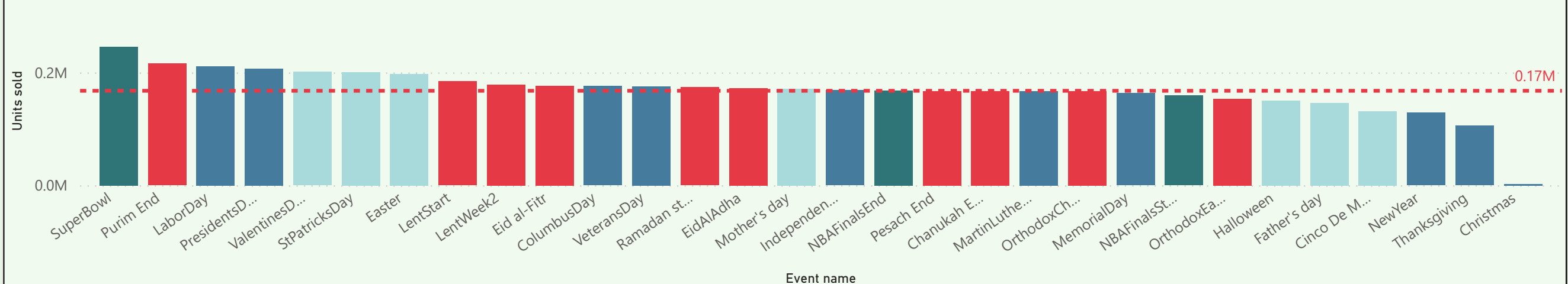


Volume per Event Type

Event Category ● No event ● Religious ● National ● Cultural ● Sporting



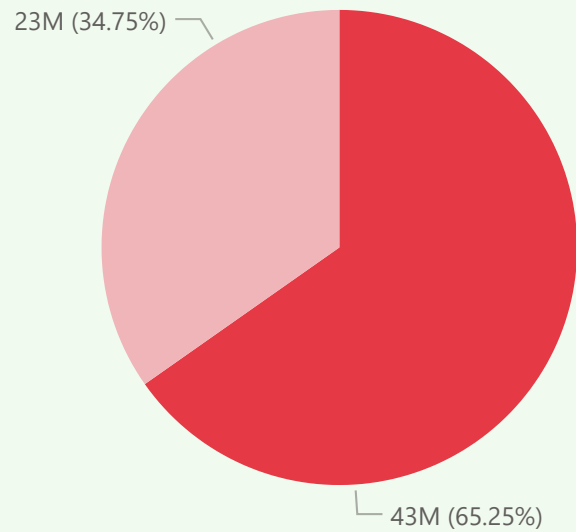
Units sold by Event name



# SNAP (Allowed vs. not allowed sales)

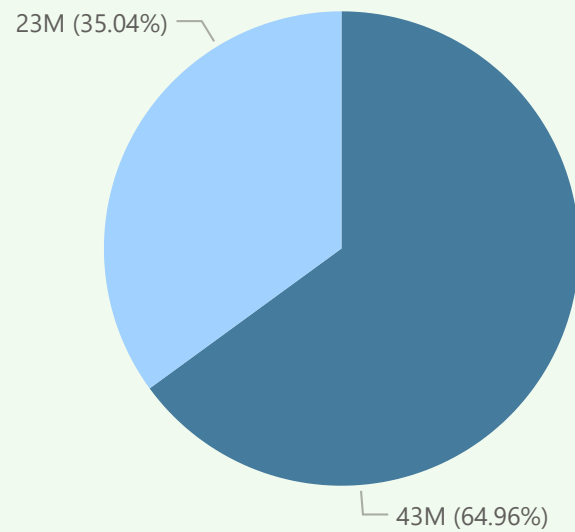
Volume by SNAP CA

**SNAP CA** ● SNAP not allowed ● SNAP allowed



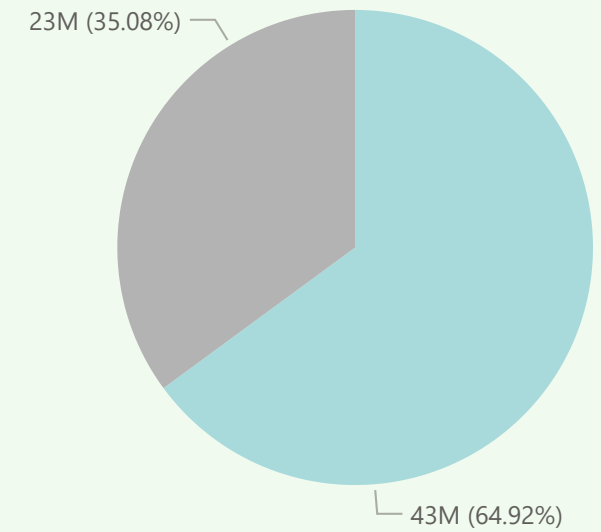
Volume by SNAP TX

**SNAP TX** ● SNAP not allowed ● SNAP allowed



Volume by SNAP WI

**snap\_WI** ● SNAP not allowed ● SNAP allowed



# Conclusions

1. **FOODS grew 41%, HOUSEHOLD 95%, and HOBBIES 32% from 07/2011 to 07/2015**
2. **FOODS have the highest number of SKUs, probably driving up the sales volume.**
3. **Sales are concentrated in the weekends and gradually decrease over the week, giving an area of opportunity to increase sales (Mon-Thu).**
4. **Hobbies and household items have a steady demand through the year; food items peak in summer months (~May - Aug)**
5. **Price increases are correlated to reduction in demand, and inversely, price reductions trigger increase in demand.**
6. **Sales increase during sporting events (mainly Superbowl) and decrease during national holidays.**

# Thank you!

**Alan Tang**  
**17/06/2022**