

Data Visualization

The Coffee Chain Analysis

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Outlines

- Introduction
- Research questions
- Opportunities for future work
- Tools and Datasets
- Data Visualization Way
- Data Visualization Presentation
- SWOT Analysis
- Summary
- Appendix



Introduction

- A value chain analysis provides the companies with a view of the activities in their production process. Managers can find out which parts can be optimized for better performance.



Research Questions

- Total Sales by Market and by States
- Which product type has the maximum sales and minimum sales in different market region?
- What is the Market Size for each state with their profit?
- What is the average expenses and profit for each state?
- What is the total sales and total profits trend in 2013,2014,2015,2016 (in total and in average)?
- Which state has the most profit?



Opportunities for future work

- **Collaboration/Partnership**

- A further critical driver, which ties into the industry's focus on growth and product/service innovation, has been collaboration and partnership.

- **Education About Coffee**

- Coffee shop companies should start or continue to educate the consumers about coffee, its ingredients, quality differences, and about the movements in the market, such as “Fair Trade” or “organic coffee”. This could be beneficial for developing a relationship with the customers which in turns leads to greater brand loyalty.

- **Meeting Demand**

- Companies in the coffee shop industry have to make sure that they can meet the increasing future demand.



Tools and Dataset

- Tableau for interactive map
- Dataset named **Tableau Coffee Chain** downloaded from website:
- https://drive.google.com/file/d/1O7u9EHrZhl66ngKRmcTa636V64UlK_KGR/view
- Clean all the data



Research Questions	Data Visualization way	Reasons
Total Sales by Market and by States	Map Circle size	Color shows details about different Markets effectively. Circle size indicates the quantity of total sales.
Which product type has the maximum sales and minimum sales in different market region?	Bar Plot Map Gradient color shading	Easy to compare sets of data between different groups at a glance. Gradient color shading will show the different quantity directly from colors. The map can clearly see the different regions.
What is the average expenses and profit for each state?	Line plot	Shows frequency of data along a number line It is a quick, simple way to organize data.
What are the sales and total profit trend in 2013,2014,2015,2016 (in total)?	Trend Line plot	Trend lines can be used to identify positive and negative trending charts.
Which state has the most sales and profits?	Dual axis bar plot and line plot	Easy to compare sets of data between different groups at a glance.
Which types of product have the most Inventory?	Line plot	See the difference among groups
Difference between Sales and Budget Sales	Dual Horizontal Bar chart	Easy to compare sets of data between different groups at a glance.
Difference between Profits and Budget Profits	Dual horizontal bar chart	Easy to compare sets of data between different groups at a glance.

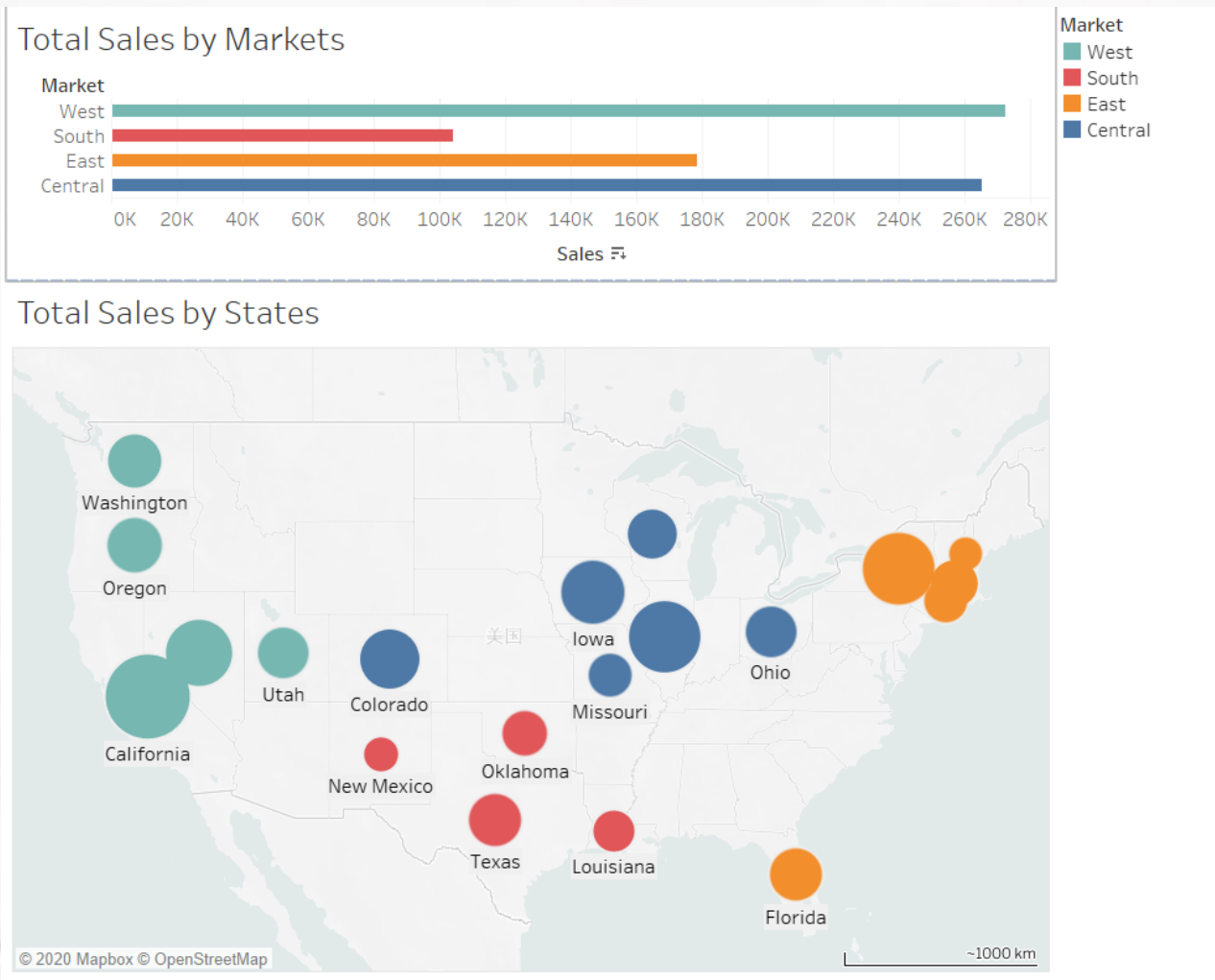


Total Sales by Markets and States

Graph shows that the West has the most sales among the four markets.

California has the biggest sales in the West Market.

This will help managers to decide which region should provide more products.

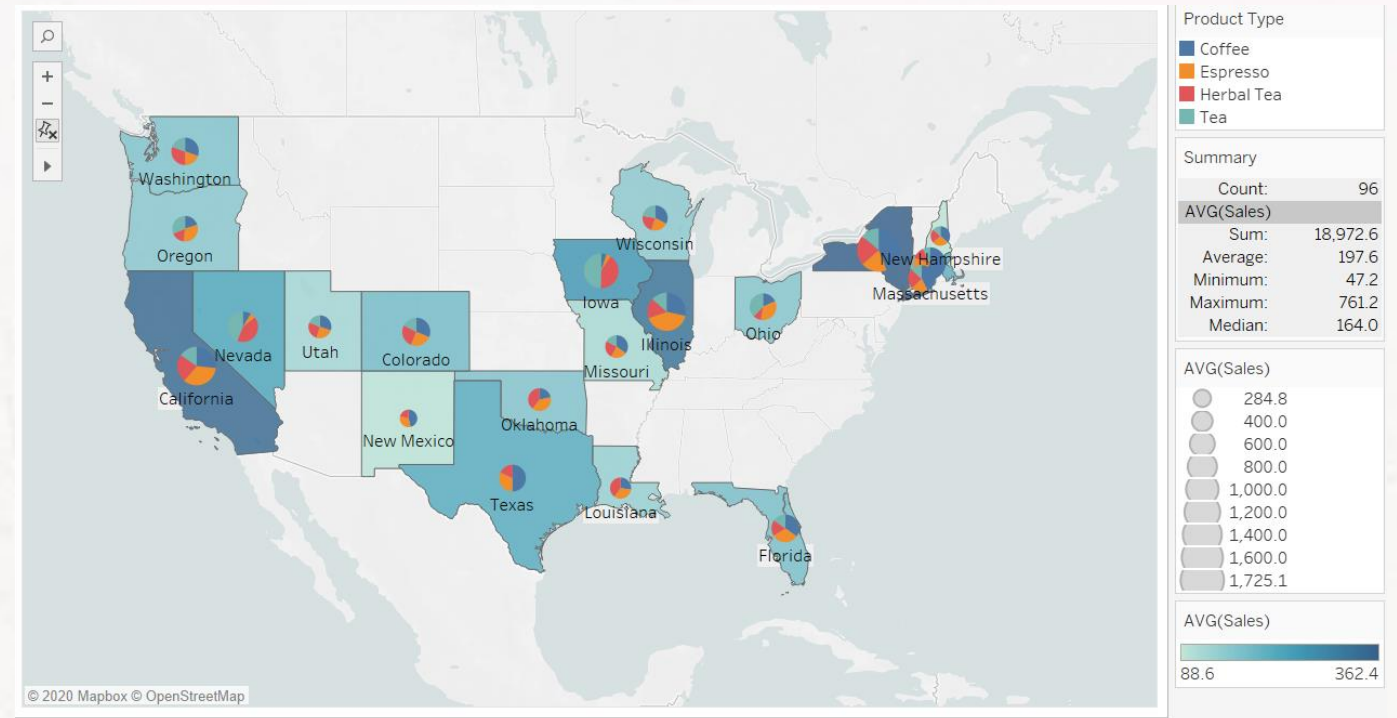


Which product type has the maximum sales and minimum sales in different market region?

Graph shows that at east cost coffee, at the west Herbal Tea and in the middle zone espresso is in high demand.

Pie characteristics sales generated from each product in that particular state.

This will help managers to decide which product can be sold more/sell in which state.



What is the average expenses and profit for each state?

Average expense for Illinois is 63.21 whereas profit is 142.7. This indicates that Illinois is generating more profit at less expense.

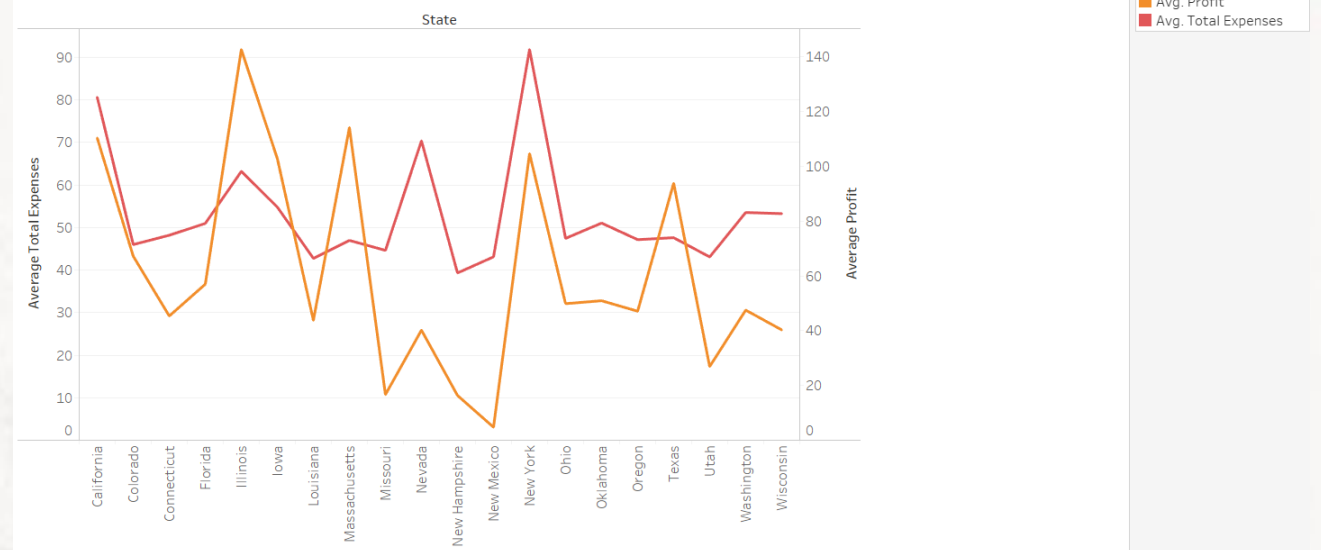
Similarly other states are generating good profit as compare to their expenditure.

States like Missouri, Nevada, New Hampshire, New Mexico, Utah, Washington and Wisconsin are in loss. They are spending more but getting less output.

New York has the largest sales but is not making great differences at cost of expenditure.

Thus this graph tells us to change revenue model for states that are in loss.

Average Expenses VS Profit for Each State

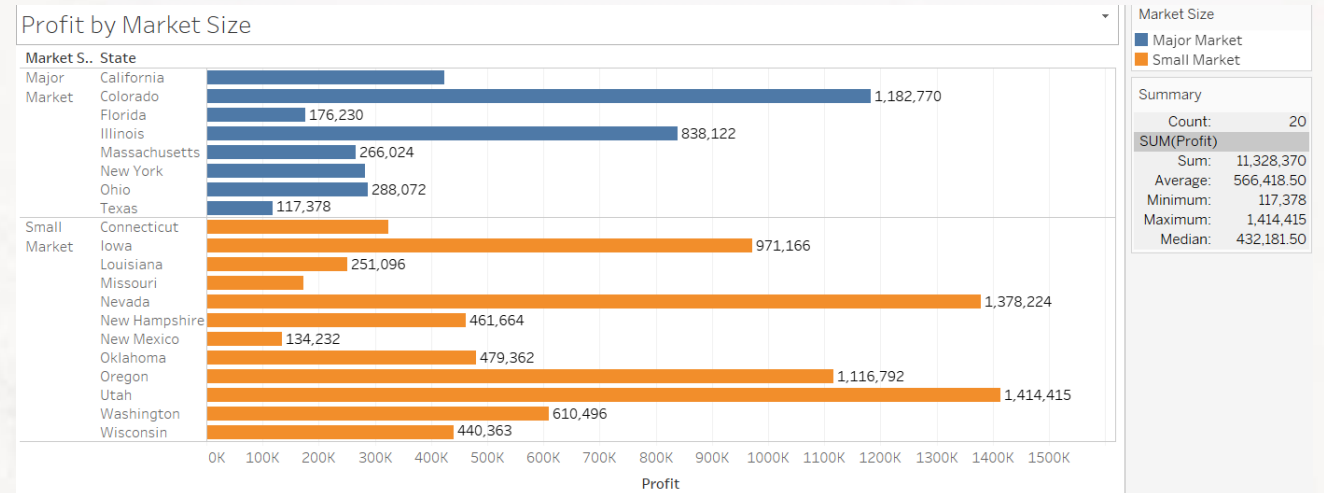


What is the Market Size for each state with their profit?

Managers can identify which state falls under major and minor market.

It will help to decide what should be COGS in future for the major and minor size.

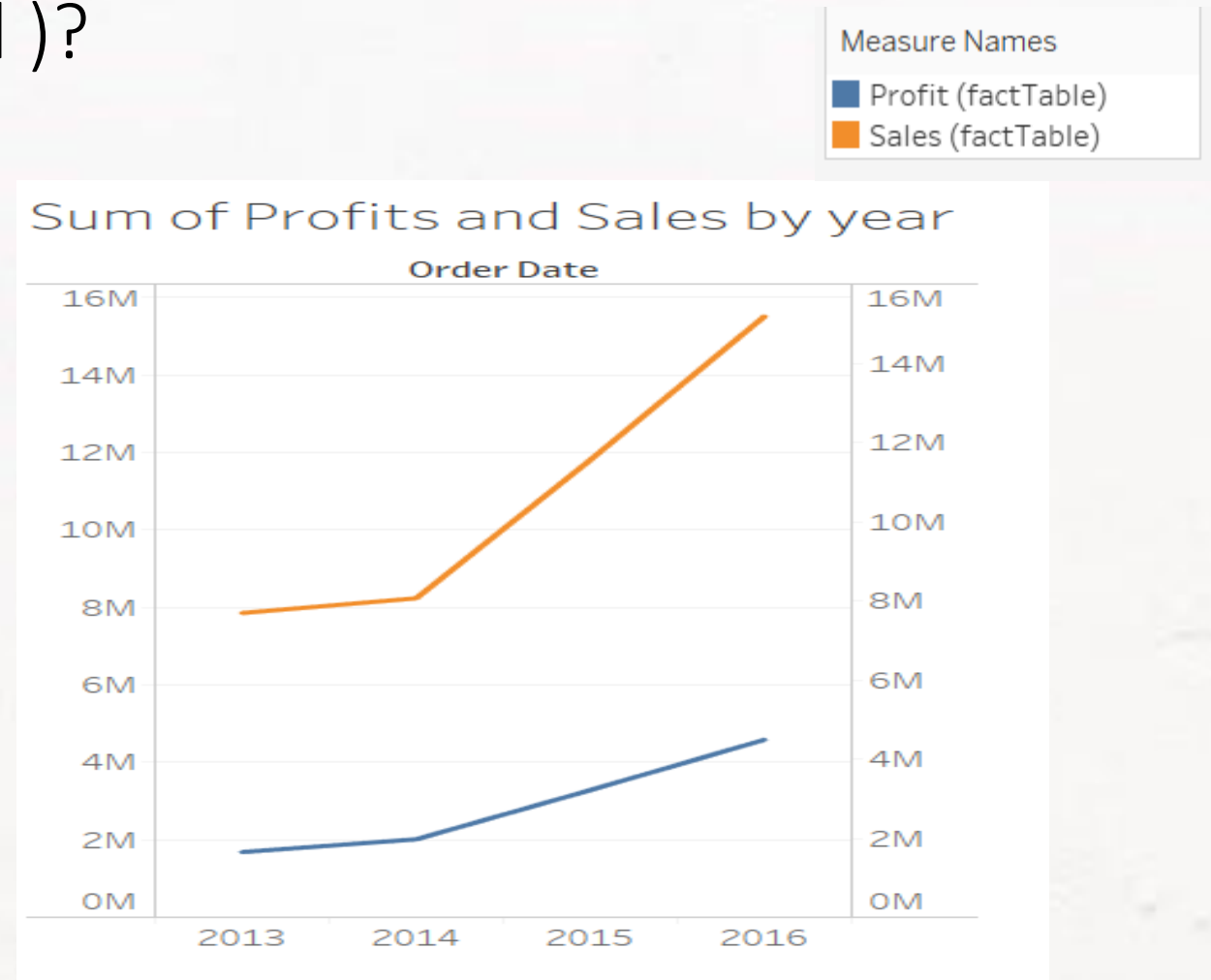
It will help people in predicting the profit based on the market size.



What are the sales and total profit trend in 2013,2014,2015,2016 (in total)?

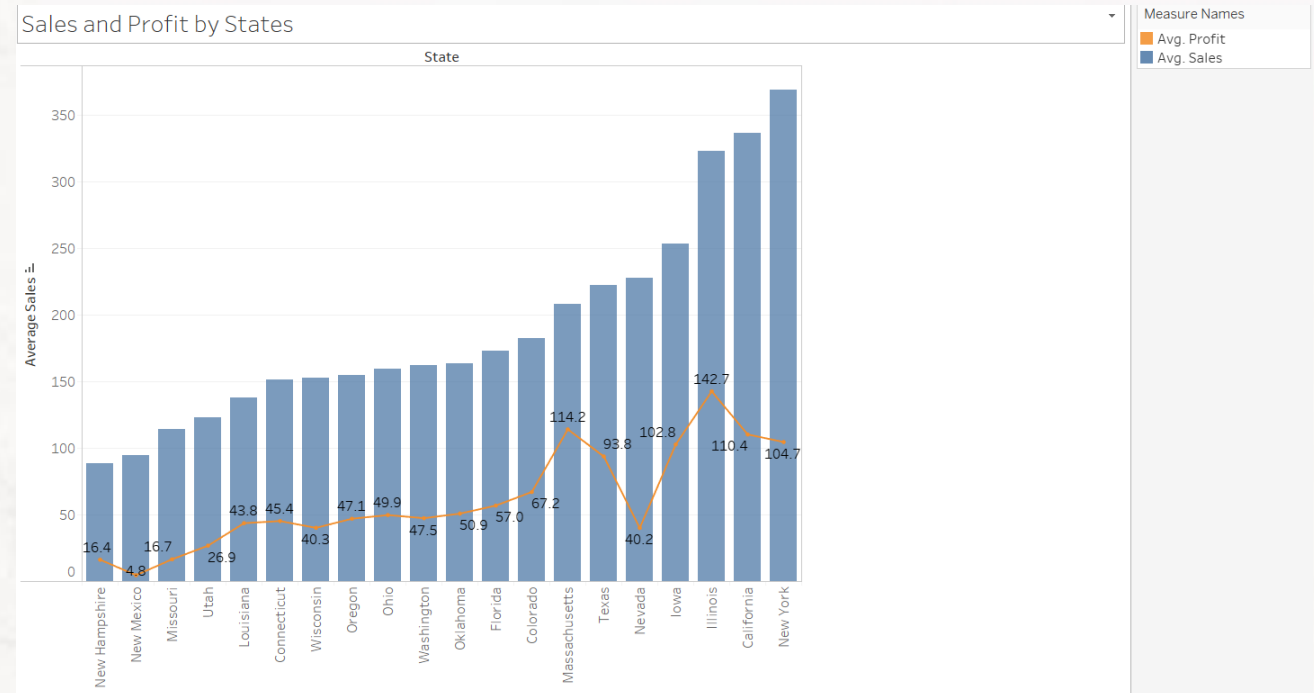
From 2013 to 2014, both the sales and the profits slightly rose, and from 2014 to 2016, the growth of the sales and the profits accelerated.

The increase in sales was quicker than the rise in profits. This reveals that the costs raised faster than the profits. Some unnecessary expenses and increasing human costs lead to the result.



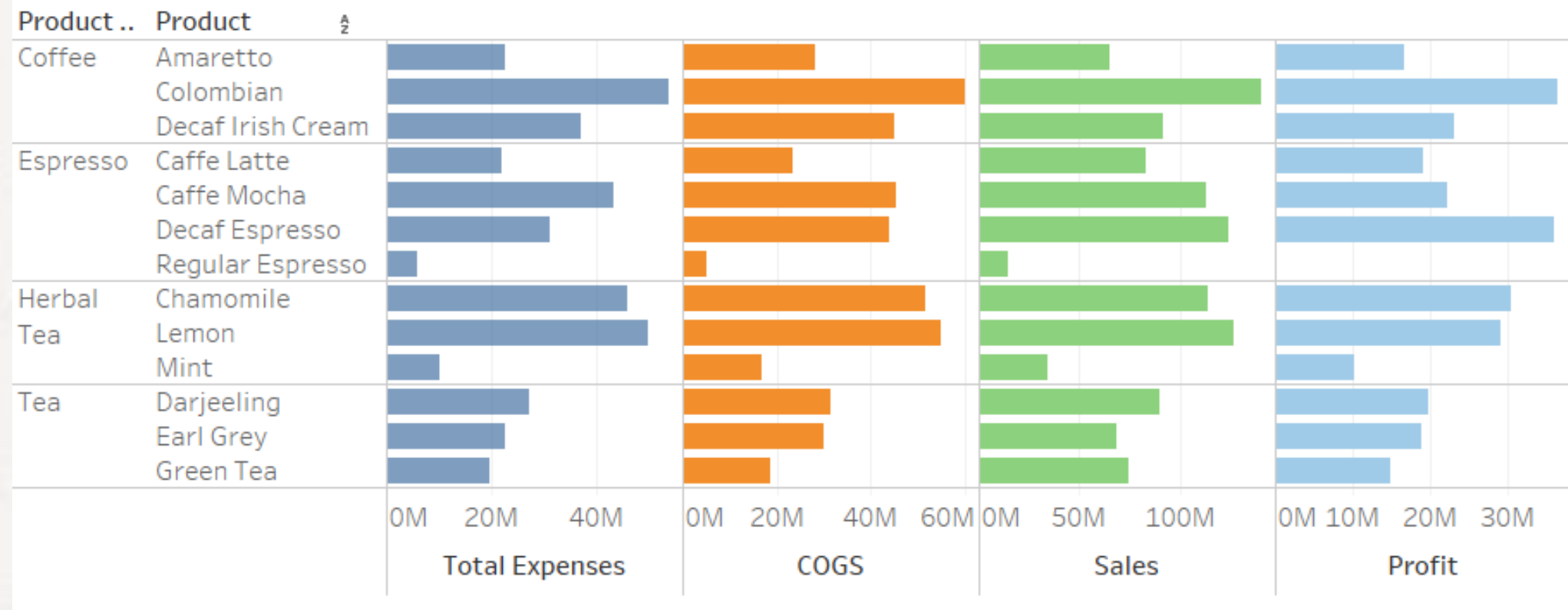
Which state has the highest sales and profits?

New Hampshire had the lowest sales;
New York had the highest sales;
New Mexico had the lowest profits;
Illinois had the highest profits.



Expenses, COGS, Sales, Profits by Product Types

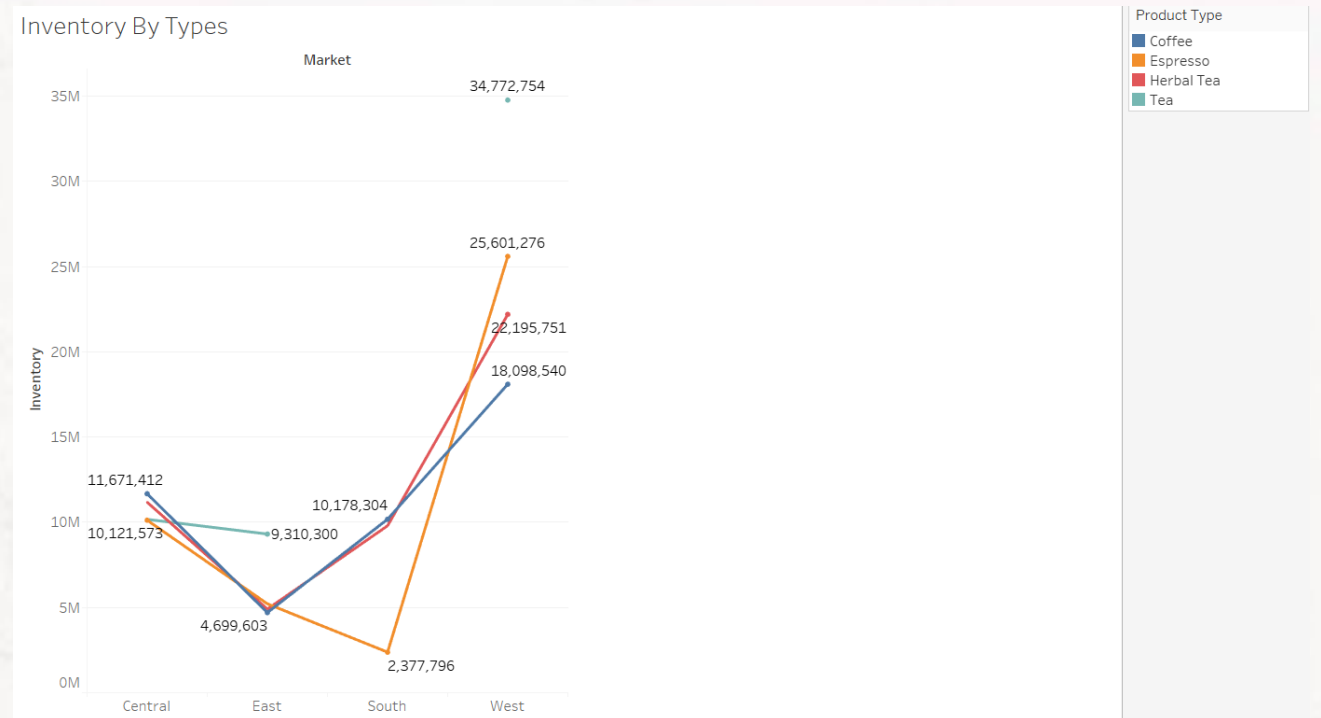
Expenses,COGS,Sales,Profits by Product Types



Inventory By Types

The west market has the highest inventory of all the product types. Central has the second-highest inventory.

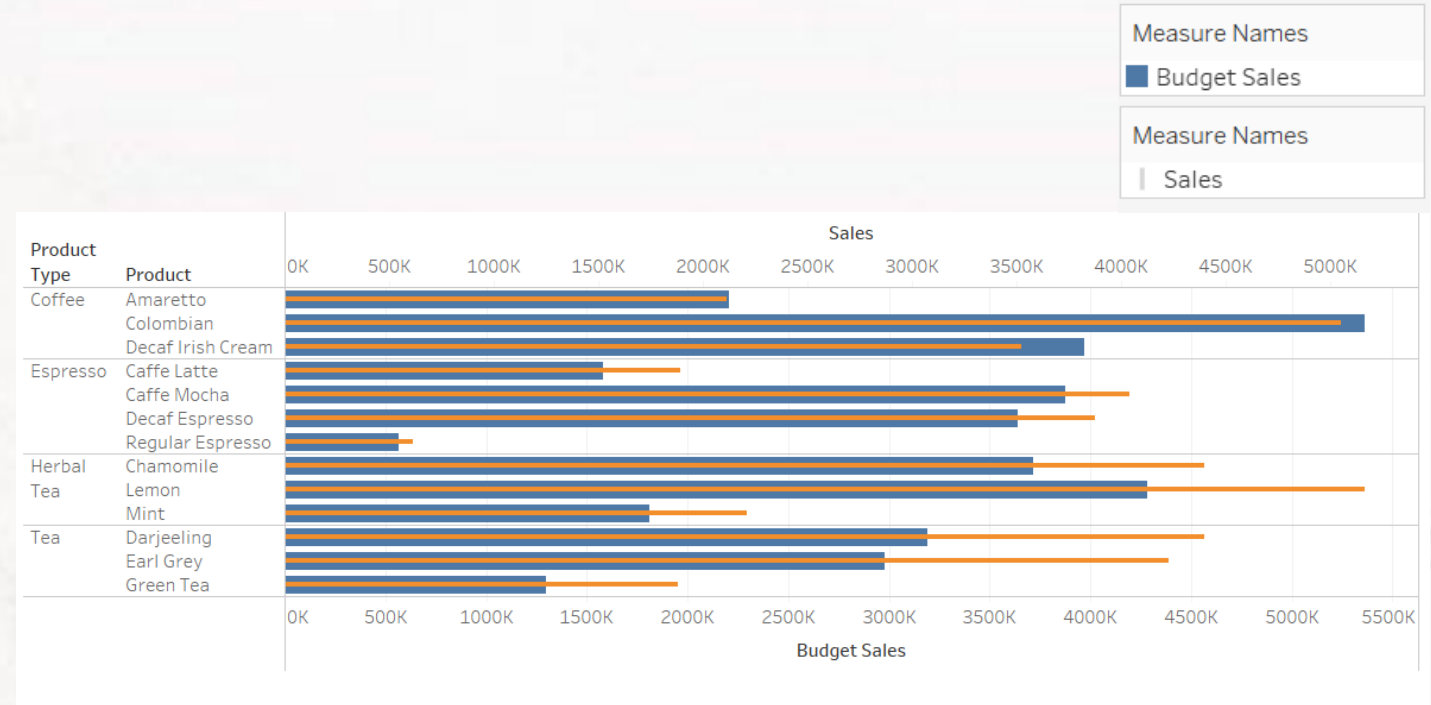
According to the graph, managers can decide how to make some arrangement on the inventory when the product are inflected by bad weather.



Sales by Budget Sales

The actual sales of Lemon herbal tea, Darjeeling tea, and earl grey tea have exceeded the budget sales overly.

The graph suggests managers not only focus on continuing to make more traditional coffee products but also pay attention to the herbal tea portion.

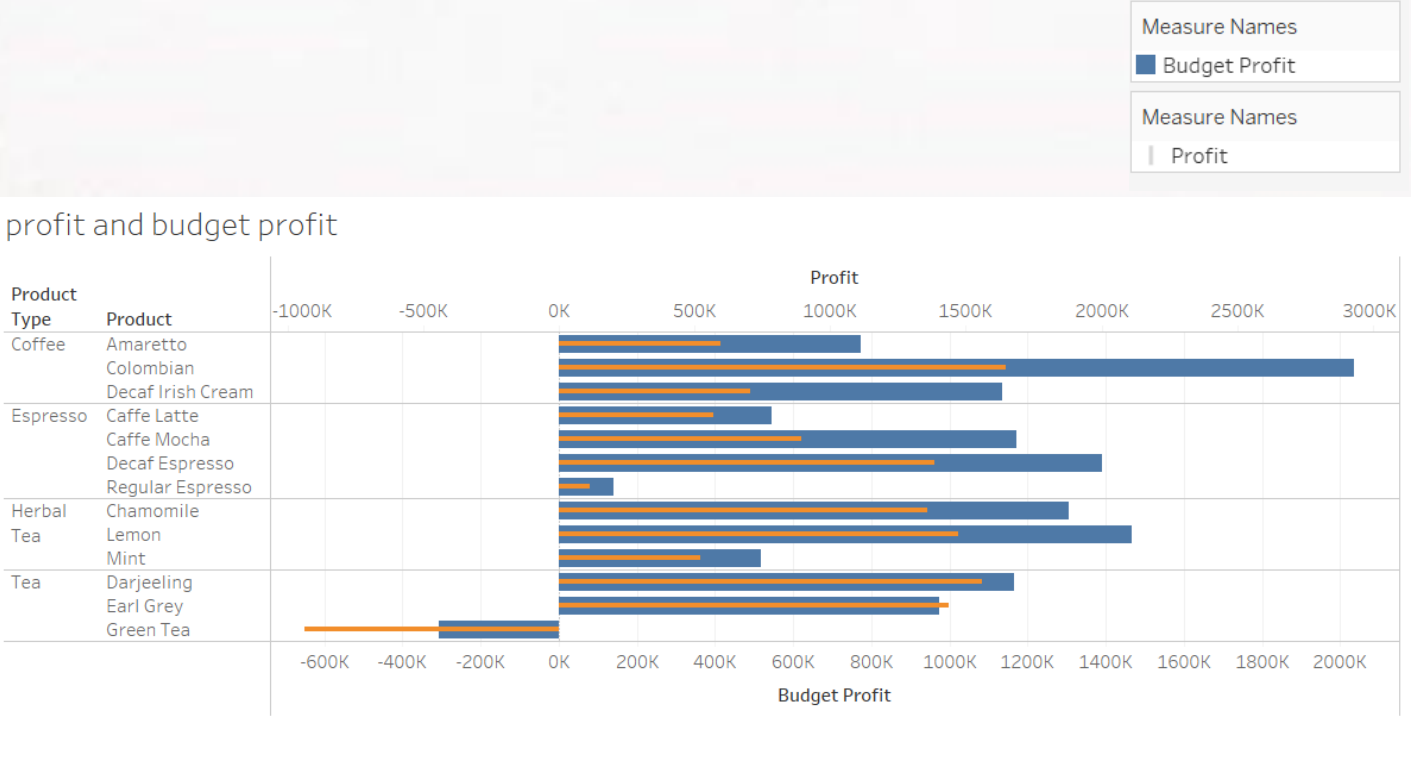


Profits by Budget

Profits

Tea products, especially the green tea, has terrible performance on profit. Managers need to practice some actions to reduce the loss, like lowering costs on unnecessary expenses and increasing the advertisement.

Colombian coffee and decaf Irish cream have very stable business performance. Managers should obtain good experience from these products.



SWOT Analysis



S

STRENGTHS

- Unique flavors
- Beans imported from different places



W

WEAKNESSES

- Prices
- Customer's being willing to purchase depends on weather



O

OPPORTUNITIES

- New styles of drinks



T

THREATS

- Rising Competitors
- Competitor's prices



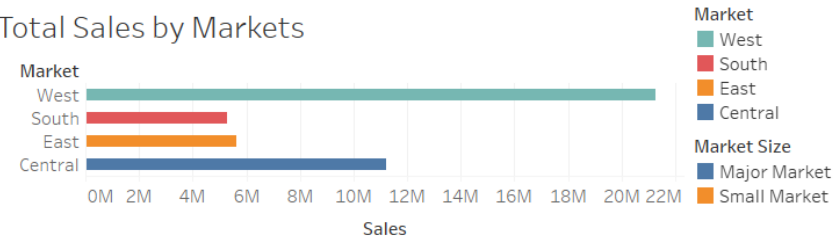
Summary

- At East cost coffee, at the west coast Herbal Tea and in the middle zone Espresso is in high demand. California has the biggest sales in the West Market. This will help managers to decide which region should provide more products and to decide which product can be sold more/sell in which state.
- According to the inventory graph, managers can decide how to make some arrangement on the inventory when the product are inflected by bad weather.
- Managers can identify which state falls under major and minor market, which will help to decide what should be COGS in future for the major and minor size and to predict the profit based on the market size.
- the average expenses and profit for each state tells us to change revenue model for states that are in loss.

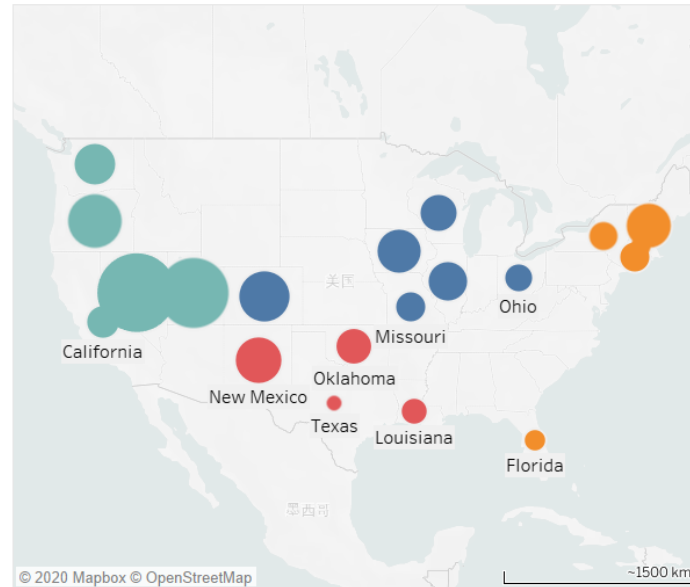


Appendix

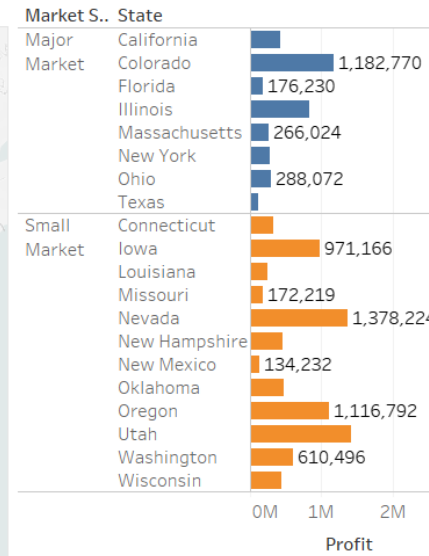
Total Sales by Markets



Total Sales by States

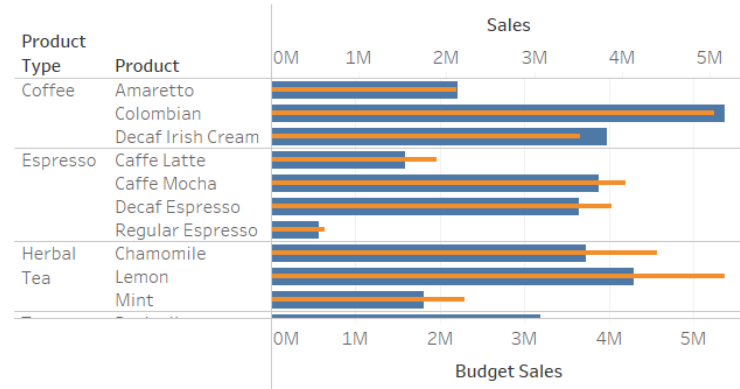


Profit by Market Size



Appendix

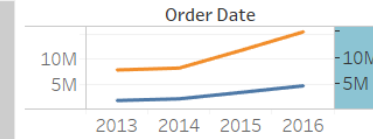
sales and budget sales



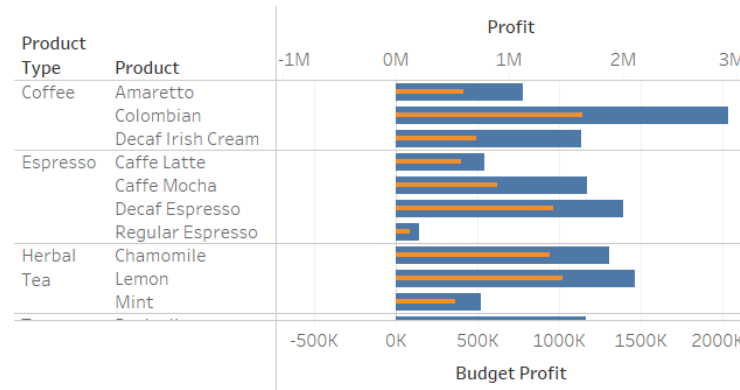
Measure Names

Profit

Sum of Profits and Sales by year



profit and budget profit



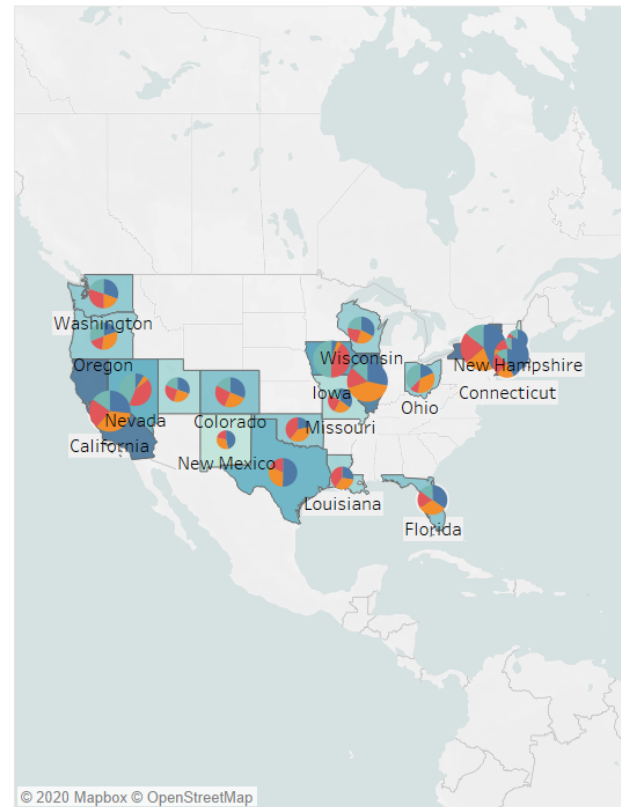
Measure Names

Profit (factTable)

Sales (factTable)

Appendix

Sales by Product Type and by Different Market Region



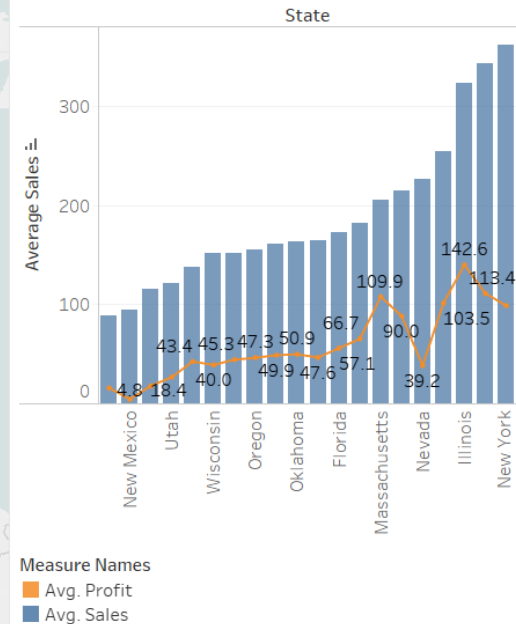
Product Type

- Coffee
- Espresso
- Herbal Tea
- Tea

Avg. Sales

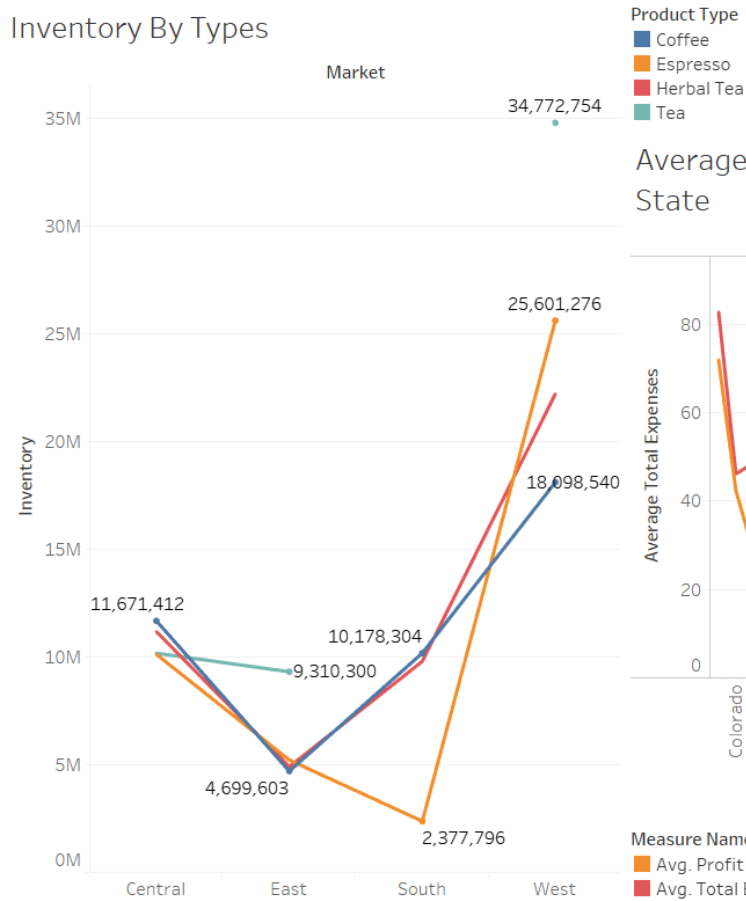
88.6 362.4

Sales and Profit by States

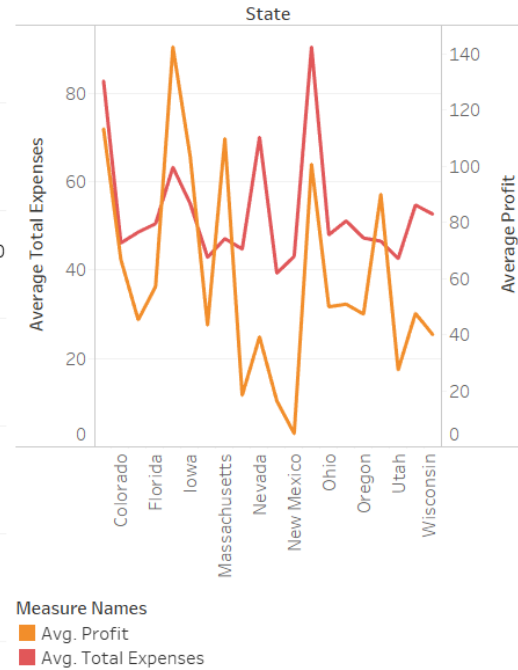


Appendix

Inventory By Types



Average Expenses VS Profit for Each State



THANK YOU !

