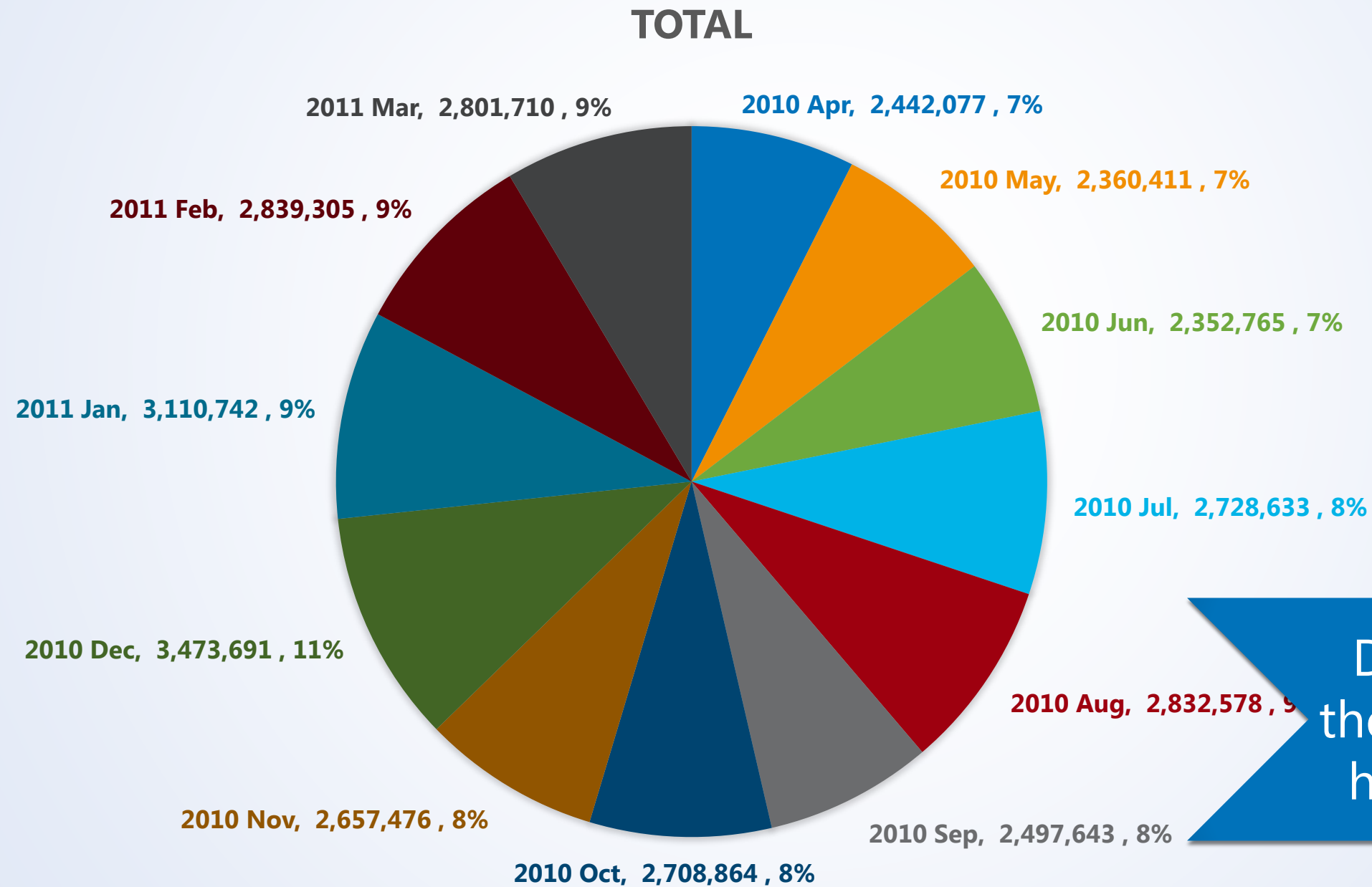# Assignment Snapshot

- **Background**
  - The data set provided constitutes the data of a Café Chain for one of its restaurants. We need to do a thorough analysis of the data and come up with the following analysis:
    - Exploratory Analysis
    - Menu Analysis
    - Price Analysis
- **Exploratory Analysis**
  - What kind of trends do you notice in terms of consumer behavior over different times of the day and different days of the week? Can you give concrete recommendations based on the same?
  - Are there certain menu items that can be taken off the menu?
  - Are there trends across months that you are able to notice?

- **Menu Analysis**
  - Identify the most popular combos that can be suggested to the restaurant chain after a thorough analysis of the most commonly occurring sets of menu items in the customer orders
  - The restaurant doesn't have any combo meals. Can we suggest the best combo meals?

- **Pricing Analysis**
  - Identify pricing changes and menu items which saw a positive impact and / or  negative impact of the price changes?
  - Show a price analysis chart with four quadrant price analysis as below, along with quantification of the volume increase and decrease in relation to the price changes
    - Price increased – sales volume decreased in post period of 2-4 weeks ( take a pre period window of sales of 1-2 weeks)
    - Price increased – Sales volume increased
    - Price decreased – Sales volume increased
    - Price decreased – Sales volume decreased

Exploratory Analysis

# Revenue Share || Month-wise

## TOTAL



2011 Mar,  2,801,710 , 9%

2010 Apr,  2,442,077 , 7%

2011 Feb,  2,839,305 , 9%

2010 May,  2,360,411 , 7%

2011 Jan,  3,110,742 , 9%

2010 Jun,  2,352,765 , 7%

2010 Jul,  2,728,633 , 8%

2010 Dec,  3,473,691 , 11%

2010 Aug,  2,832,578 , 9

2010 Sep,  2,497,643 , 8%

2010 Nov,  2,657,476 , 8%

2010 Oct,  2,708,864 , 8%

December is the month with highest sales

# Revenue Share Vs. Quantity Share

**Share of Quantity**



BEVERAGE
31%

TOBACCO
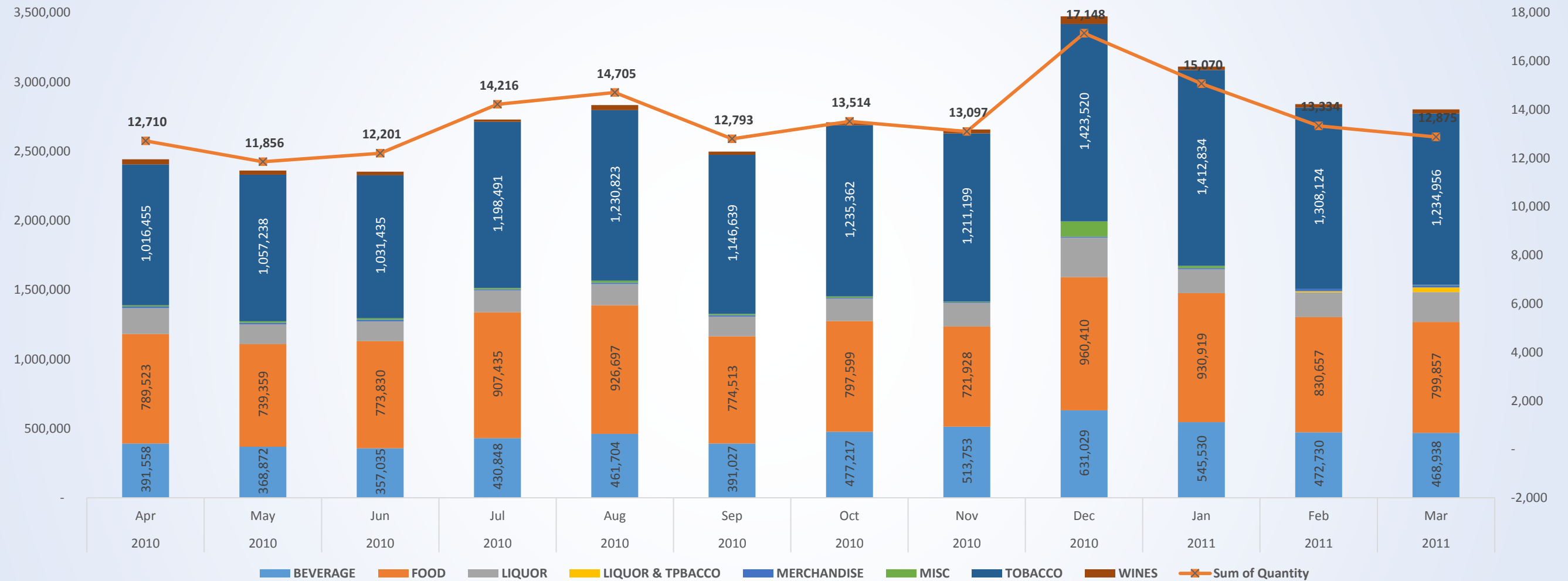23%

FOOD
38%

**Share of Revenue**
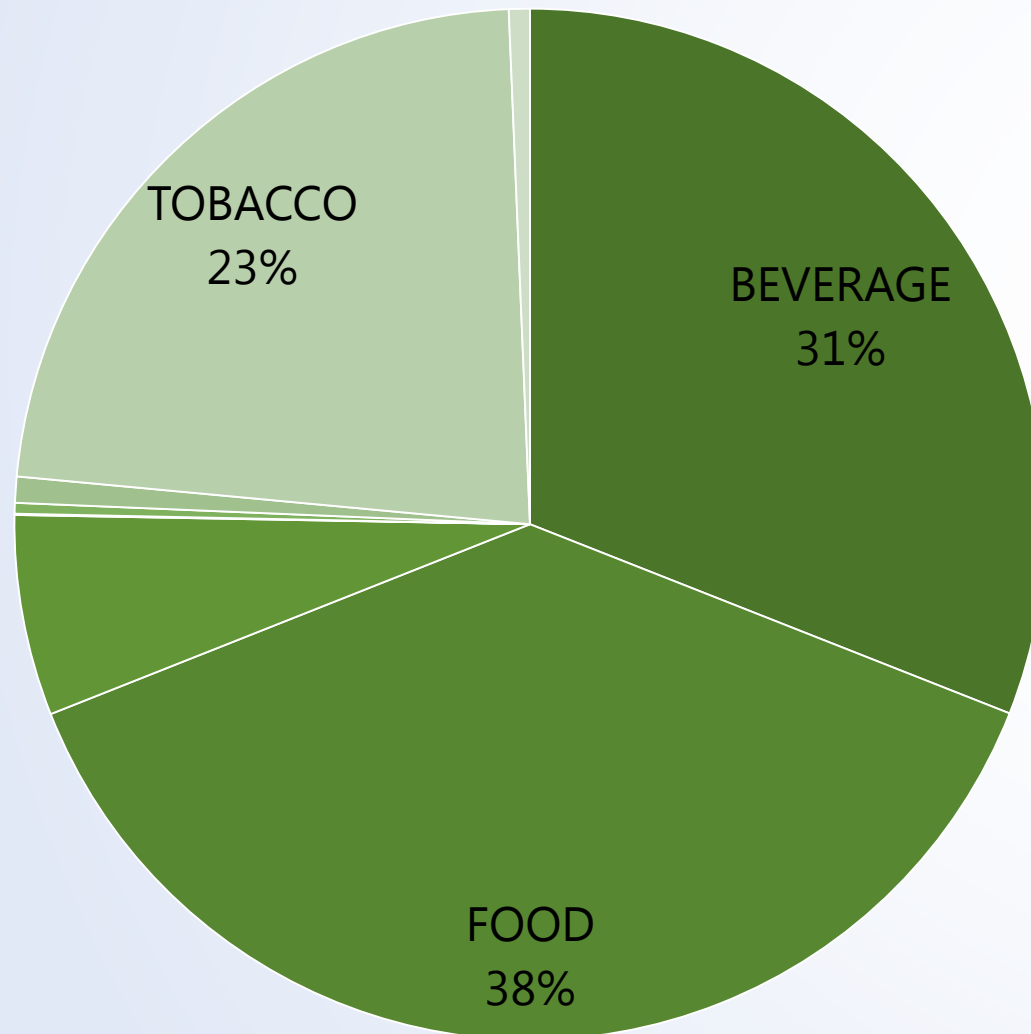


BEVERAGE
17%
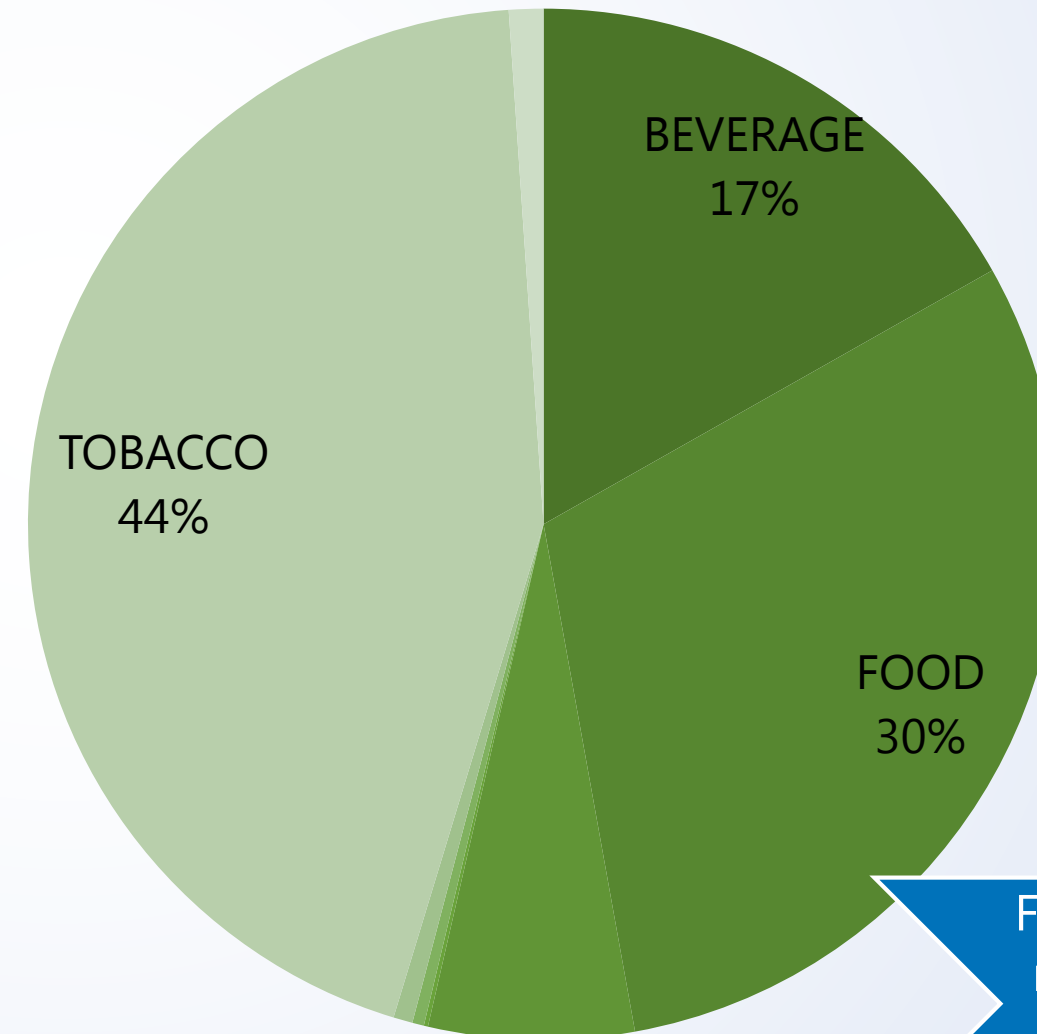
TOBACCO
44%

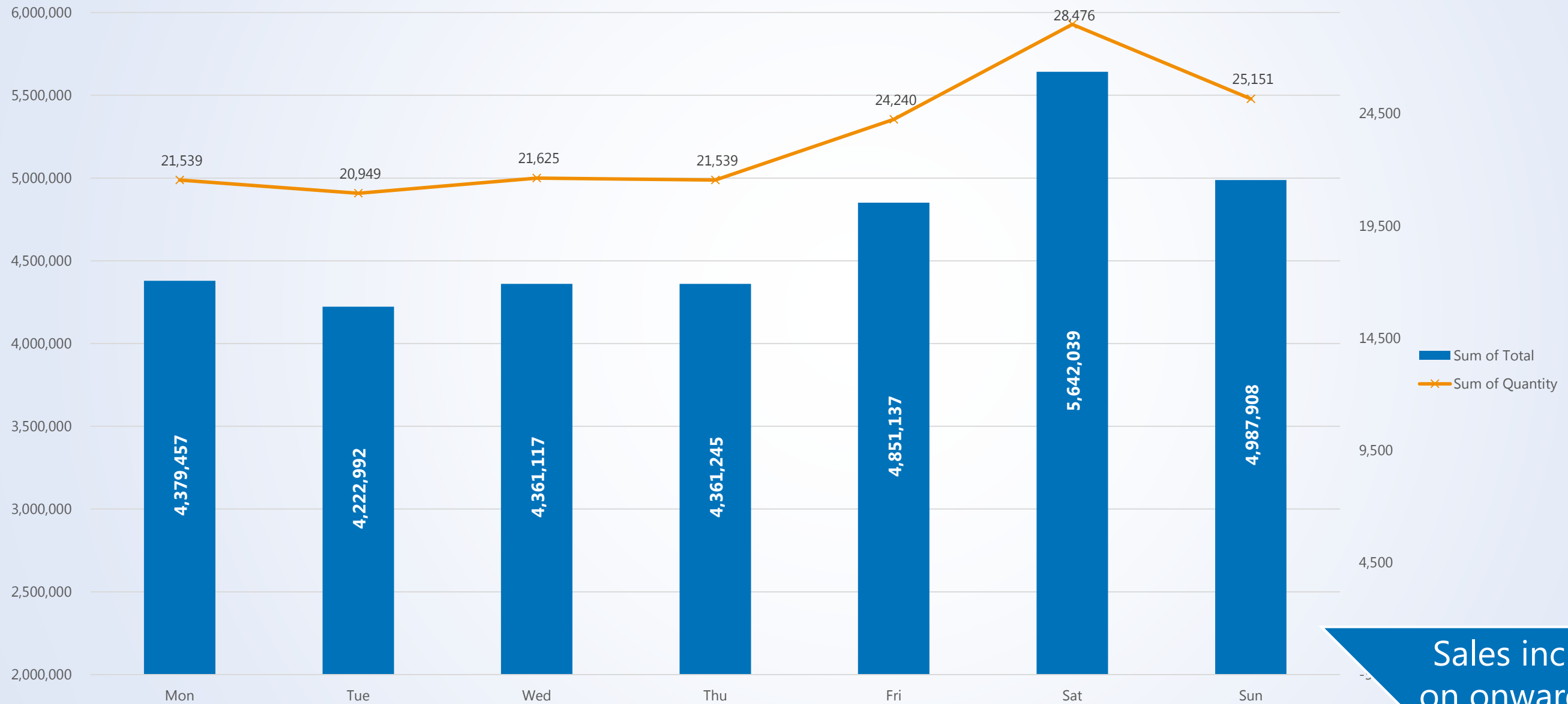FOOD
30%

Food is sold the most. Tobacco holds the top revenue share

# Revenue Contribution ||Category-wise



Tobacco, Food and Beverages are top contributors
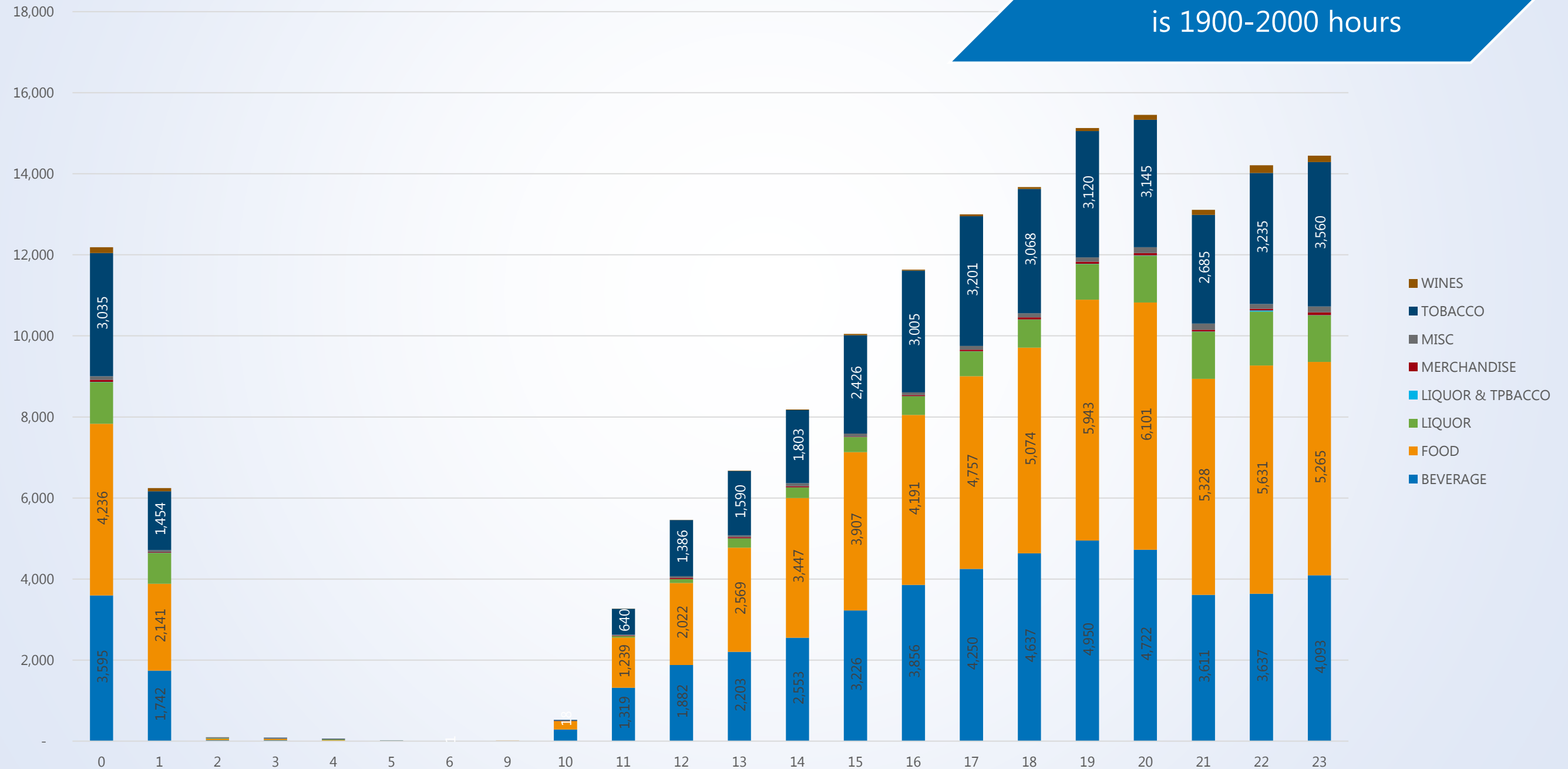
# Hour of the day Sales trend



Sales shows steady progress from 1100 hours onwards. Restaurant makes max sales in the evenings between 1900-2300 hours. Peak time is 1900-2000 hours

# Consumer Preference based on Time of Day



Color shows details about Category.
Size shows sum of Total quantity

Category
- BEVERAGE
- FOOD
- LIQUOR
- LIQUOR & TPBACCO
- MERCHANDISE
- MISC
- TOBACCO
- WINES

Peak time of selling Beverages are from 4PM to 8PM

Peak time for selling Food items is from 4PM to midnight

Peak time for selling Liquor is from 8AM till midnight

Peak time for selling Tobacco is from 8PM to midnight

Tobacco and Wine are sold throughout the day but increases up in night.

Merchandise, Miscellaneous and Liquor and tobacco are the categories of product sold mostly in night.

# Consumer Preference based on Day of Week



Consumer preference based on week day
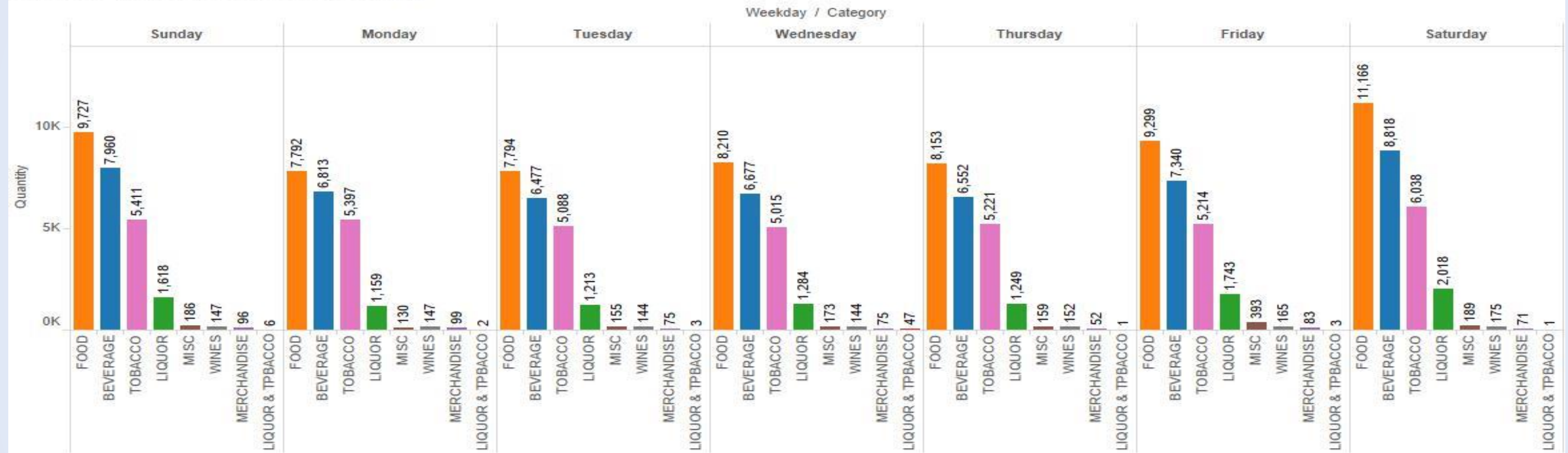
Food along with Tobacco has the highest preference on Saturday

# Items To Be Discontinued

- There are 399 different Items which have sold less than 100 quantity in entire year across all categories.
- These items can be taken off the menu after a discussion with business.

| 1+1 VLN CAB SAUV (BTL) | CAPONATA | GOLDEN DELIGHT 1.1 | M & M SHAKE |
| 1+1 VLN SAUV BLANC (BTL) | CH TIN SMALL | GOSSIPS CHARD AUS (BTL) | MANDALA VALLEY CHENIN BLANC(GL |
| 2 AXE TWIST | CHAIRMAN COOL | GRAPPO SHEESHA | MANGO FLAVOUR SINGLE |
| 2 OCEAN PINOTAGE (BTL) | CLASSIC REGULAR | GREAT LAKES MUG SINGLE | MATEUS ROSE PORTUGAL(BTL) |
| 4 SEASONS CLAS SYRAH(BTL) | COUNTRY LEMONADE GLASS(HANSA) | GUERILLA COOL | MIXED FLAVOUR SINGLE |
| ADD BUTTERED TOAST | DECAFFINATE COFFEE FRAPPE | HOEGAARDEN GLS (2+1) | MOCAFE HOT CHOCOLATE(SF) |
| AL SIKANDARI HOOKAH DOUBLE | DHARMATEA LIGHT HOLDER | HOEGAARDEN LTR MUGS (2+1) | MODEL-P (IRON ASHTRAY) |
| ASH TRAYS | DIP BOWL | INDIA KINGS OCEAN BLUE | MUGS - PLAIN COLOUR |
| B1G1 4SEASON CLAS SAUV(BTL) | ETCHED LEAF TLIGHT HOLDER | JAPANESE YAKITORI WRAP | RED BULL 2+1 |
| B1G1 4SEASON CLAS SAUV(GLS) | FLAVOR 1000 GMS | KITSCH BLUE | ROCK THE BOAT TEA LIGHT HOLDER |
| BEACH GREEN | GNOCCHI CON POMMODORO | KITSCH PINK | ROMA TOMATO & JALAPENO CROQUE |
| BENARAS BLUE | GOLD FLAKE ULTRA LIGHTS(20) | KONKAN STRIPE | SHAKE GLASS |
| SILVER STYLER 1.0 | SULA CHENIN BLANC (BTL) | UDAIPUR LILY | ZEN ROCK SQUARE VASE |
| ZINZI WHITE (BTL) | | | |

| Category | Item Desc | Year 2010 | 2011 |
|---|---|---|---|
| MERCHANDISE | PLAYING CARDS | 8 | 3 |
| | PROFESSOR COOL | 4 | |
| | RECESSION BEER MUG SHO.. | 6 | 2 |
| | ROCK THE BOAT TEA LIGHT.. | | 1 |
| | ROCKSTAR TOOTHPICK HO.. | 12 | 4 |
| | RULER DIARY | 7 | 3 |
| | SANDASS | 14 | 5 |
| | SHAKE GLASS | 1 | |
| | SILVER STYLER 1.0 | | 1 |
| | THUNDER THIGH(JUICE GLS.. | 2 | 1 |
| | THUNDER THIGH(JUICE GLS.. | 1 | 1 |
| | TIFFIN DABBA CD RACK (S.. | 3 | |
| | TINS RECT & SMALL CIRCU.. | 3 | 7 |
| | TREE DIARY | 6 | 7 |
| | UDAIPUR LILY | | |
| | ZEN ROCK SQUARE VASE | 1 | |
| | ZERO SIZE SHOT GLS | 6 | 3 |
| | 1 AXE TWIST | 6 | |
| | ADD CHICKEN BACON | 4 | |
| | ADD GROUND MEAT | 3 | |
| | ADD HERB ROAST CHICKEN | | 6 |
| | ADD ON S | | 15 |
| | ADD POTATO WEDGES | 36 | 4 |
| | ADD TRADITIONAL MEAT F.. | 9 | |
| | DARK RUM (SM) | 3 | |

# Trends Across Months

Monthly Consumption Pattern for different categories

Month of Date



The trend of Quantity on Monthly basis.
Color shows details about Category.

Category
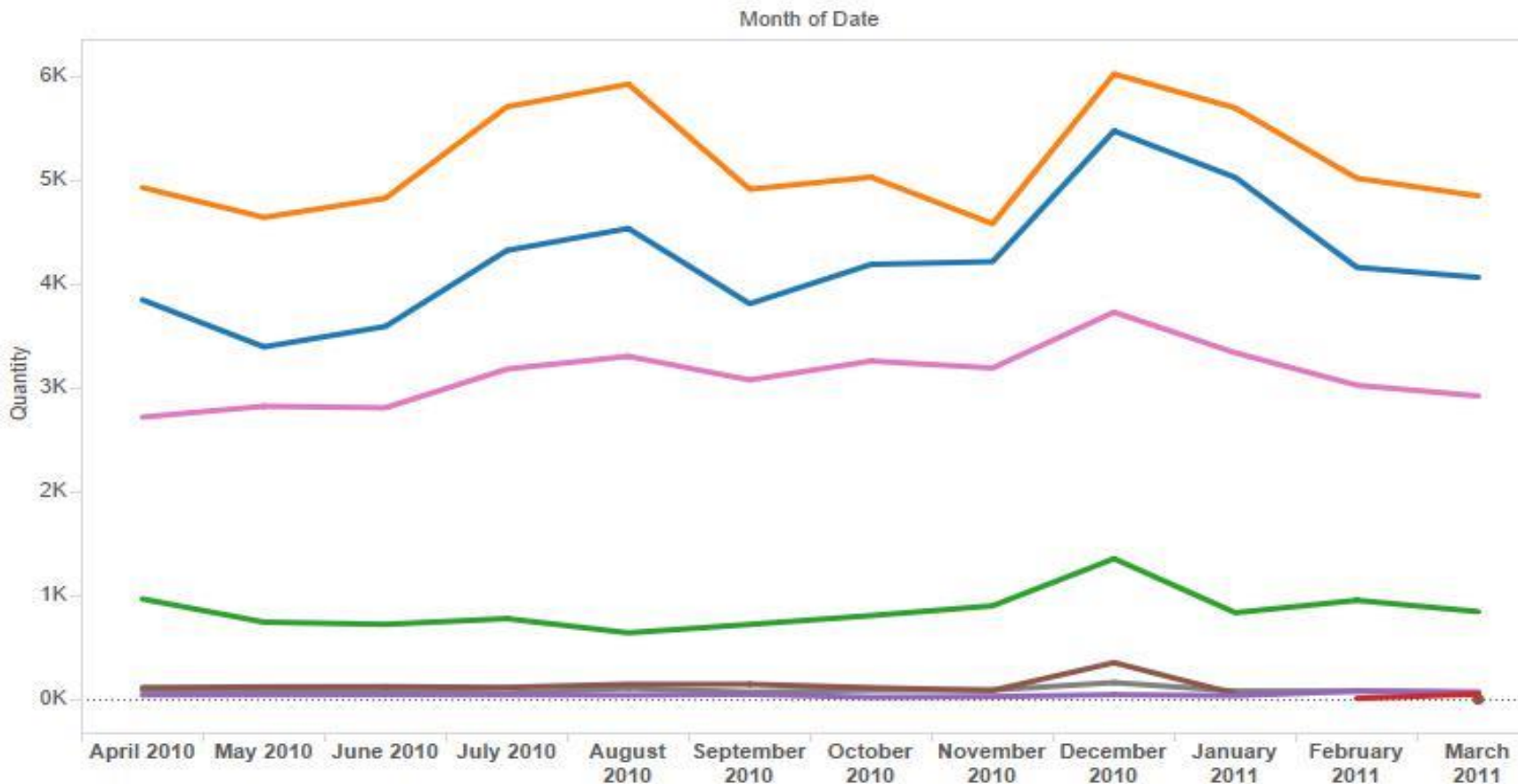- BEVERAGE
- FOOD
- LIQUOR
- LIQUOR & TPBACCO
- MERCHANDISE
- MISC
- TOBACCO
- WINES

Sales of products increases from June and peak up in Dec month.

From Jan till June sales usually is low for all the products.

The months of July and August notice sharp increase in sales for Food and Bevereage

Liquor and Tobacco shows contrasting trends for other months except December when the sale peaks up for both alike.

# Menu Analysis

# Suggestion For Best Combo Meals



**Best Combo Meals**

| Item List Consequent | Item List Antecedent |
|---|---|
| B.M.T. PANINI | MAGGI NDL ARRABIATA & POUTINE WITH FRIES & SAMBUCA |
| | MAGGI NDL ARRABIATA & QUA MINERAL WATER(1000ML) & SAMBUCA |
| | MAGGI NDL ARRABIATA & RED BULL ENERGY DRINK & SAMBUCA |
| BERRY BLAST | MEZE PLATTER & RABAT HOOKAH SINGLE |
| CAFFE LATTE | ADD CARAMEL FLAVOUR |
| | ADD CINNAMON FLAVOUR |
| | ADD HAZELNUT FLAVOUR |
| | ADD HAZELNUT FLAVOUR & GREAT LAKES SHAKE |
| | ADD HAZELNUT FLAVOUR & NIRVANA HOOKAH SINGLE |
| | ADD IRISH CREAM FLAVOUR |
| | ADD VANILLA FLAVOUR |
| KHEEMA GHOTALA | TOAST BUTTER |
| N R G HOOKAH | 2 RED BULL |
| NIRVANA HOOKAH SINGLE | MOROCCAN MINT TEA & QUA MINERAL WATER(500ML) |
| QUA MINERAL WATER(100.. | B.M.T. PANINI & SCRAMBLED EGGS |
| SAIGON NOODLES | ADD CHICKEN |
| SAMBUCA | B.M.T. PANINI & GREAT LAKES SHAKE & RED BULL 2+1 |
| | B.M.T. PANINI & GREAT LAKES SHAKE & RED BULL ENERGY DRINK |
| | B.M.T. PANINI & MAGGI NDL ARRABIATA & POUTINE WITH FRIES |
| | B.M.T. PANINI & MAGGI NDL ARRABIATA & QUA MINERAL WATER(1000ML) |
| | B.M.T. PANINI & MAGGI NDL ARRABIATA & RED BULL ENERGY DRINK |
| | B.M.T. PANINI & QUA MINERAL WATER(1000ML) & RED BULL 2+1 |
| | CHEESE FONDUE & MOROCCAN MINT TEA |
| | GREAT LAKES SHAKE & MAGGI NDL ARRABIATA & QUA MINERAL WATER(100.. |
| | GREAT LAKES SHAKE & QUA MINERAL WATER(1000ML) & RED BULL 2+1 |
| | GREAT LAKES SHAKE & QUA MINERAL WATER(1000ML) & RED BULL ENERGY .. |
| | GREAT LAKES SHAKE & RED BULL 2+1 |
| | MAGGI NDL ARRABIATA & QUA MINERAL WATER(500ML) |
| | MAGGI NDL ARRABIATA & RED BULL 2+1 |
| | QUA MINERAL WATER(1000ML) & RED BULL 2+1 |

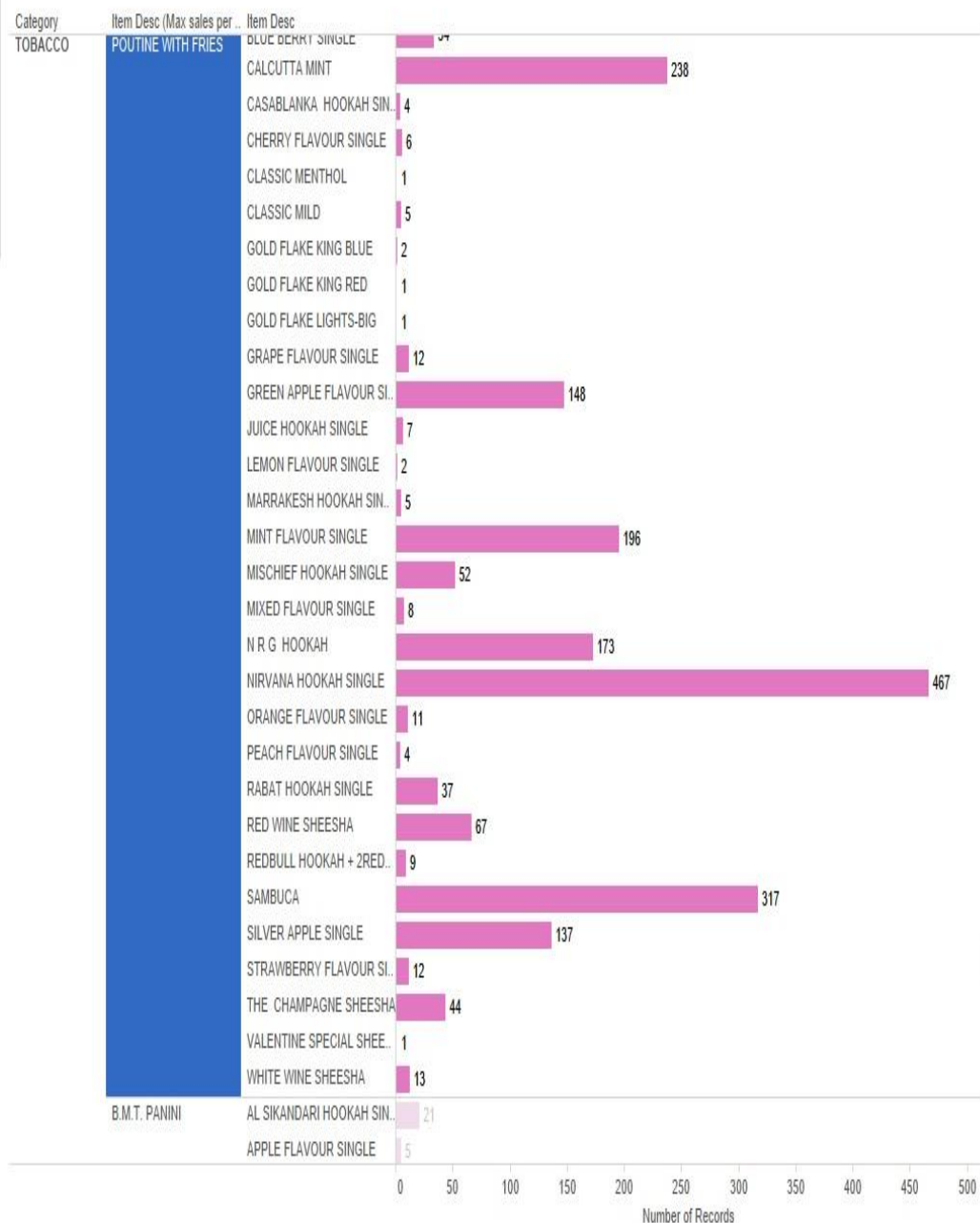The view is broken down by Item List Consequent and Item List Antecedent.

**Microsoft Excel Worksheet**

Combo menu items across categories

# Top 10 Items in terms of Quantity Sold

| Row Labels | Sum of Quantity | Average of Rate |
|---|---|---|
| NIRVANA HOOKAH SINGLE | 8,686 | 258 |
| CAPPUCCINO | 7,144 | 62 |
| MINT FLAVOUR SINGLE | 6,019 | 232 |
| GREAT LAKES SHAKE | 5,914 | 115 |
| SAMBUCA | 4,765 | 365 |
| POUTINE WITH FRIES | 3,741 | 125 |
| QUA  MINERAL WATER(1000ML) | 3,633 | 50 |
| JR.CHL AVALANCHE | 3,446 | 167 |
| CARLSBERG | 3,380 | 121 |
| CALCUTTA MINT | 3,339 | 372 |

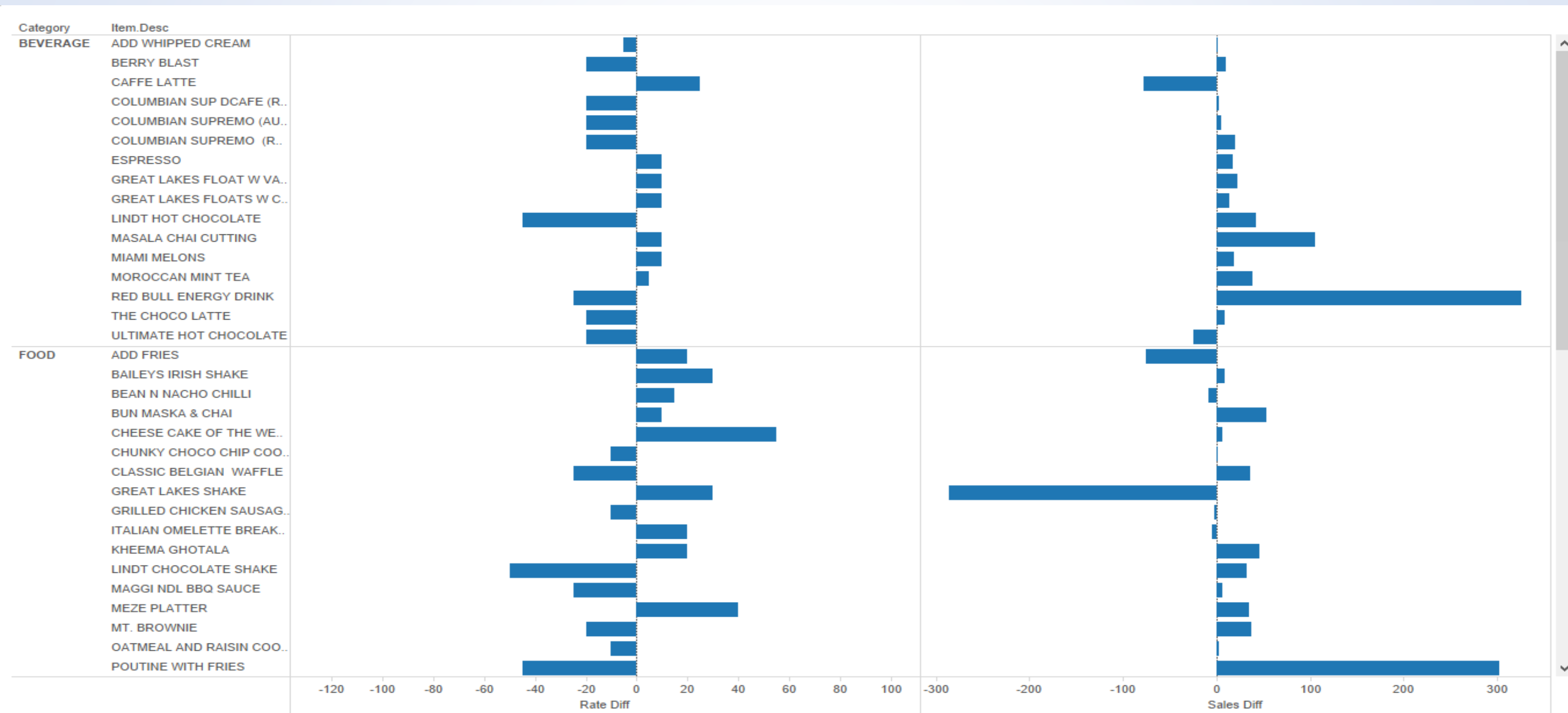# Pricing Analysis

# Items with Positive Price Change
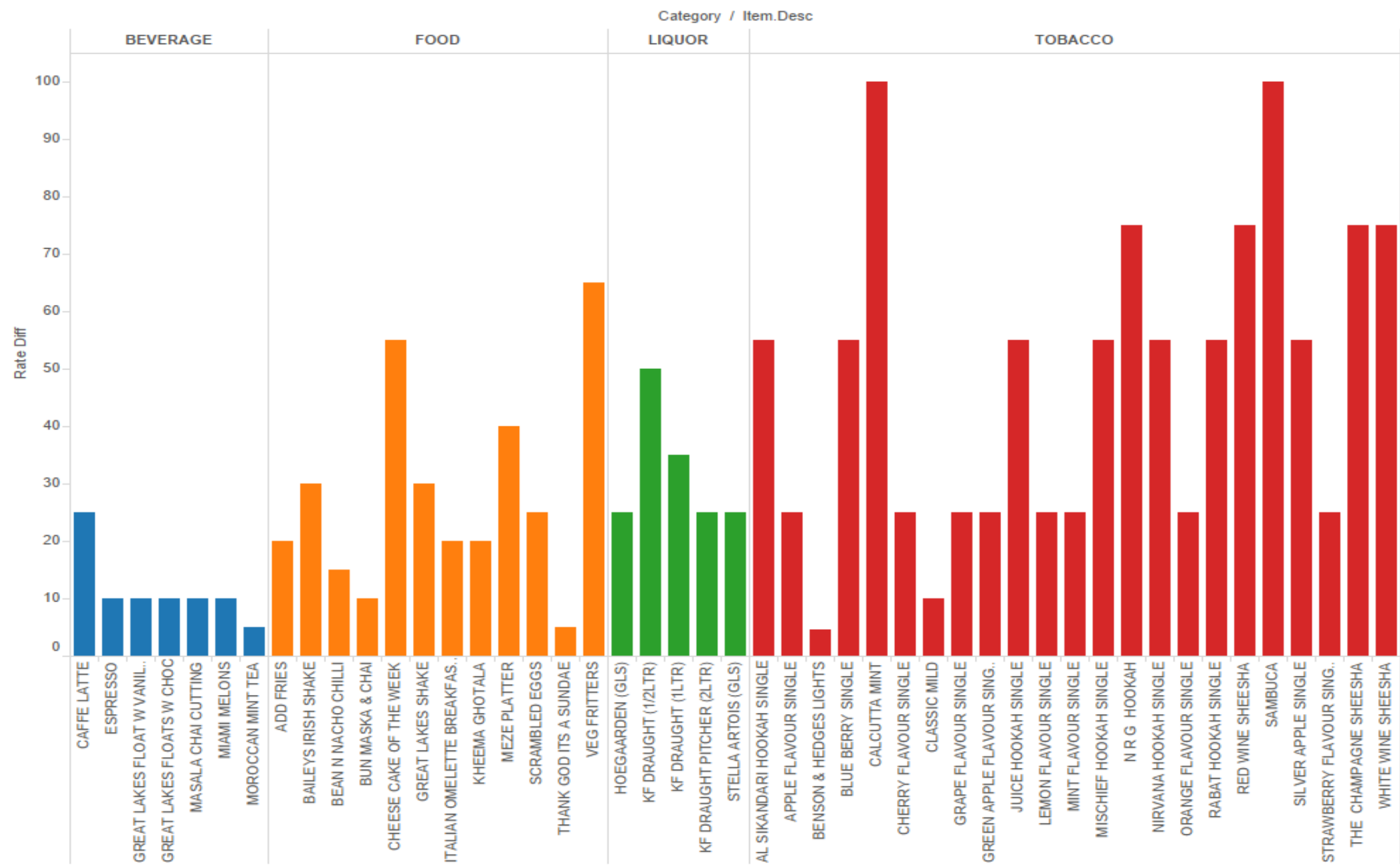


The positive price change ranges from 4.5 to 100
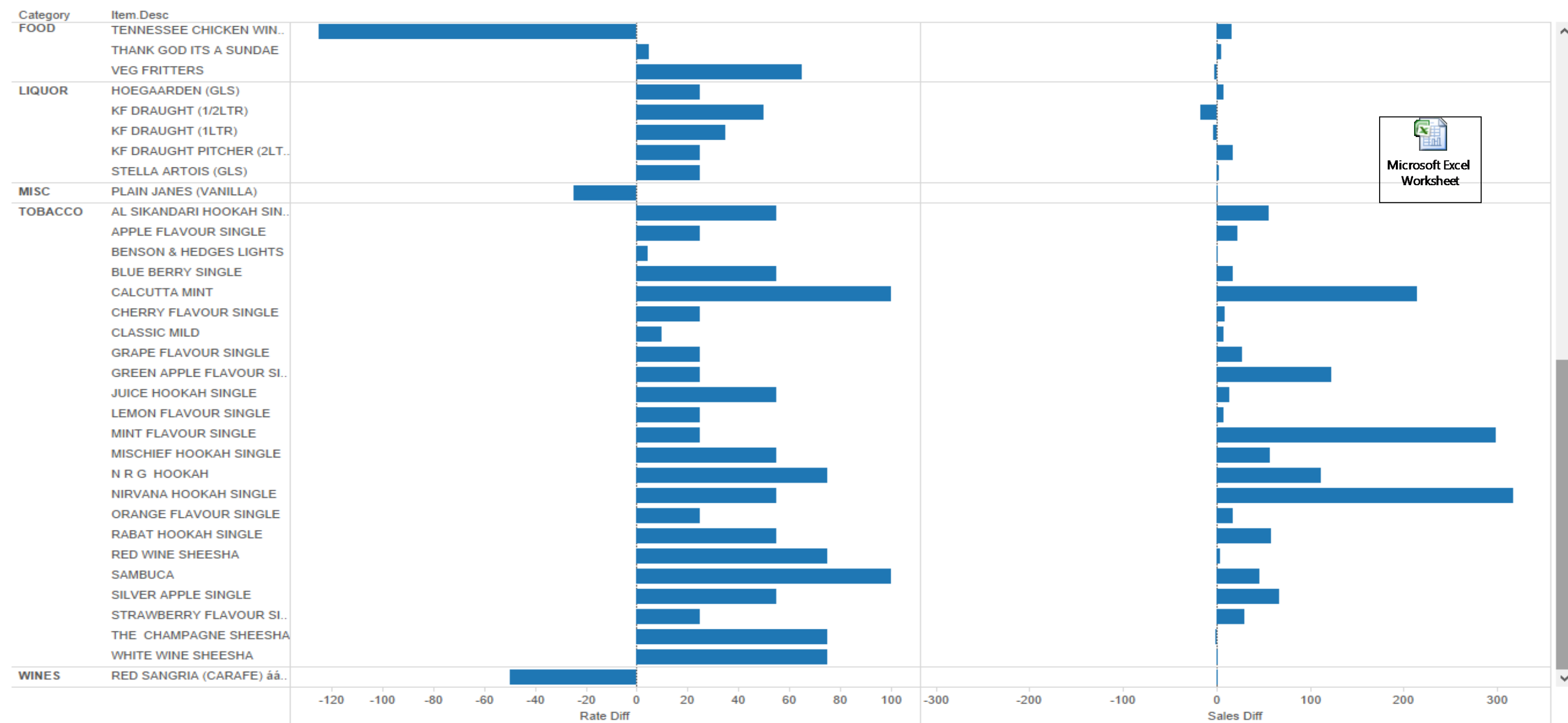
# Items With Negative Price Change
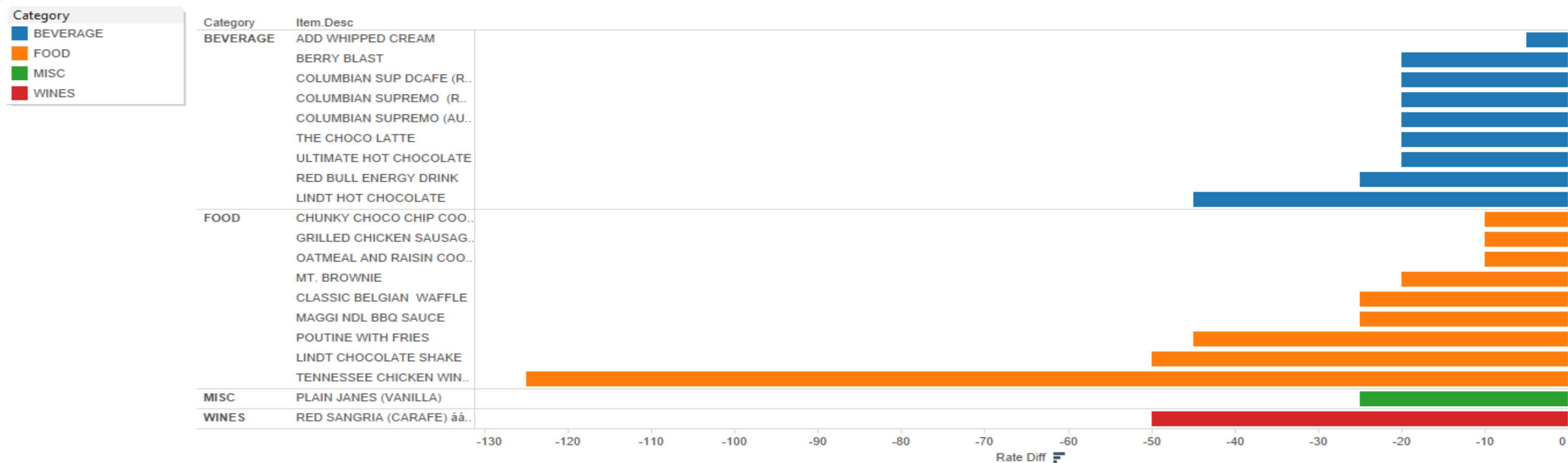


The negative price change ranges from 5 to 125

# Price Change Vs. Sales volume Change



| Category | Item.Desc |
|----------|-----------|
| BEVERAGE | ADD WHIPPED CREAM |
| | BERRY BLAST |
| | CAFFE LATTE |
| | COLUMBIAN SUP DCAFE (R.. |
| | COLUMBIAN SUPREMO (AU.. |
| | COLUMBIAN SUPREMO (R.. |
| | ESPRESSO |
| | GREAT LAKES FLOAT W VA.. |
| | GREAT LAKES FLOATS W C.. |
| | LINDT HOT CHOCOLATE |
| | MASALA CHAI CUTTING |
| | MIAMI MELONS |
| | MOROCCAN MINT TEA |
| | RED BULL ENERGY DRINK |
| | THE CHOCO LATTE |
| | ULTIMATE HOT CHOCOLATE |
| FOOD | ADD FRIES |
| | BAILEYS IRISH SHAKE |
| | BEAN N NACHO CHILLI |
| | BUN MASKA & CHAI |
| | CHEESE CAKE OF THE WE.. |
| | CHUNKY CHOCO CHIP COO.. |
| | CLASSIC BELGIAN WAFFLE |
| | GREAT LAKES SHAKE |
| | GRILLED CHICKEN SAUSAG.. |
| | ITALIAN OMELETTE BREAK.. |
| | KHEEMA GHOTALA |
| | LINDT CHOCOLATE SHAKE |
| | MAGGI NDL BBQ SAUCE |
| | MEZE PLATTER |
| | MT. BROWNIE |
| | OATMEAL AND RAISIN COO.. |
| | POUTINE WITH FRIES |

# Price Change Vs. Sales volume Change

# Recommendations

Based on our analysis, below are the findings:-

•Top selling Category of the product for the Café is Tobacco, Food, Beverage, Liquor.

•Sales of most products starts increasing on Friday and reaches a peak on Saturday .

•Sales show steady progress from 1100 hours onwards. Restaurant makes max sales in the evenings between 1900-2300 hours. Peak time is 1900-2000 hours.

•Merchandise, Miscellaneous and Liquor and tobacco are the categories of product sold mostly in night.
•Tobacco and Wine are sold throughout the day but increases up in night.

•Sales of products increases  from June and peak up in Dec month.

Sufficient resources ,inventory and staff should be available to cater the peak in demand at different times  of day and different days of week . The findings from analysis of monthly trends can be used as a basis to compute forecasted quantities for next fiscal year .

noticed that during the month of May , Tobacco has a brighter consumption pattern than most other categories . Hence , the promotion of Tobacco can be increased to tap this trend.

Inclusion of combo meals will help in boosting the revenue during  the lean period and overall since Food is a versatile  category here .

As discussed, There are couple of items which constitute for a small portion of revenue for a  category  , hence these should be discontinued

Some  items have taken a dip in sales after an increase in price. Details of this increase/decrease in  sales w.r.t price should be monitored to strategize the pricing of popular items .