

WALMART SALES ANALYSIS

ABOUT THE DATASET

7,000+ row dataset of Walmart stores, exploring how holidays, fuel prices, temperature, CPI, and unemployment impacted weekly sales across 45 stores from 5th feb 2010 to 26th oct 2012.

KEY POINTS

- 1 Data cleaning & preparation
- 2 Store-wise weekly sales analysis
- 3 Yearly & monthly sales trend analysis
- 4 Identified top 10 and bottom 10 performing stores
- 5 Deep-dive into monthly metrics (sales, CPI, fuel, etc.) for top & bottom stores during best and worst years
- 6 Performed trend analysis using linear line charts
- 7 Ran correlation analysis on top & bottom stores
- 8 Forecasted sales for all 45 stores using Excel's Forecast Sheet
- 9 Predicted upcoming monthwise sales
- 10 Provided KPIs, trend summaries & business insights

📌 Tools Used: Microsoft Excel (PivotTables, Charts, Slicers, Forecast Sheet, Conditional Formatting.etc)

YEARLY ANALYSIS OF WEEKLY SALES

| Row Labels | Sum of Weekly_Sales |
|--------------------|---------------------|
| 2010 | 2288886120 |
| 2011 | 2448200007 |
| 2012 | 2000132859 |
| Grand Total | 6737218987 |

MONTHLY ANALYSIS OF WEEKLY SALES

| Row Labels | Sum of Weekly_Sales |
|--------------------|---------------------|
| jan | 332598438.5 |
| feb | 568727890.4 |
| mar | 592785901.3 |
| apr | 646859785 |
| may | 557125572 |
| jun | 622629886.8 |
| jul | 650000977.3 |
| aug | 613090208.8 |
| sep | 578761179.3 |
| oct | 584784787.6 |
| nov | 413015725 |
| dec | 576838635.2 |
| Grand Total | 6737218987 |

KEY TAKEAWAYS

- A total of **6737218987\$** weekly sales was recorded over 45 stores of Walmart from 5th February 2010 to 26th October 2012.
- **2011** was the best year for Walmart stores making **2448200007\$** in weekly sales , whereas **2012** was the worst year making total of **2000132589\$** in weekly sales.
- **April, June, July, August** were the top 4 months with maximum weekly sales and **January, February, May, November** were the bottom 4 months with lowest weekly sales recorded.

STOREWISE ANALYSIS OF WEEKLY SALES

| Row Labels | Sum of Weekly_Sales |
|--------------------|---------------------|
| 1 | 222402808.9 |
| 2 | 275382441 |
| 3 | 57586735.07 |
| 4 | 299543953.4 |
| 5 | 45475688.9 |
| 6 | 223756130.6 |
| 7 | 81598275.14 |
| 8 | 1299511811 |
| 9 | 77789218.99 |
| 10 | 271617713.9 |
| 11 | 193962786.8 |
| 12 | 144287230.2 |
| 13 | 288517703.8 |
| 14 | 288999911.3 |
| 15 | 89133683.92 |
| 16 | 74252425.4 |
| 17 | 127782138.8 |
| 18 | 155114734.2 |
| 19 | 206634862.1 |
| 20 | 301397792.5 |
| 21 | 108117878.9 |
| 22 | 147075648.6 |
| 23 | 198750617.9 |
| 24 | 194016021.3 |
| 25 | 101061179.2 |
| 26 | 143416393.8 |
| 27 | 253855916.9 |
| 28 | 189263680.6 |
| 29 | 77141554.31 |
| 30 | 62716885.12 |
| 31 | 199613905.5 |
| 32 | 166819246.2 |
| 33 | 37160221.96 |
| 34 | 138249763 |
| 35 | 131520672.1 |
| 36 | 53412214.97 |
| 37 | 74202740.32 |
| 38 | 55159626.42 |
| 39 | 207445542.5 |
| 40 | 137870309.8 |
| 41 | 181341934.9 |
| 42 | 79565752.43 |
| 43 | 90565435.41 |
| 44 | 43293087.84 |
| 45 | 112395341.4 |
| Grand Total | 6737218987 |

KEY TAKEAWAYS

Store no. **1, 2, 4, 6, 10, 13, 14, 20, 27, 39** were the top 10 stores based on their performance in weekly sales, whereas, Store no. **3, 5, 16, 29, 30, 33, 36, 37, 38, 44** were the bottom 10 stores based on their performance in weekly sales from 5th February 2010 to 26th October 2012.

MONTHWISE ANALYSIS OF TOP 10 STORES IN WEEKLY SALES, HOLIDAY FLAG, TEMPERATURE, FUEL PRICE, CPI AND UNEMPLOYMENT IN THE BEST YEAR

| Row Labels | Sum of Weekly_Sales | Sum of Holiday_Flag | Average of Temperature | Average of Fuel_Price | Average of CPI | Average of Unemployment |
|-------------|---------------------|---------------------|------------------------|-----------------------|----------------|-------------------------|
| jan | 63761520.25 | 0 | 37.2645 | 3.1011 | 175.3603749 | 7.7466 |
| feb | 73337500.34 | 10 | 42.6465 | 3.151775 | 176.3229879 | 7.7466 |
| mar | 70517496.74 | 0 | 53.283 | 3.509675 | 177.1859784 | 7.7466 |
| apr | 89347321.7 | 0 | 60.623 | 3.76204 | 177.9563467 | 7.5934 |
| may | 70622863.34 | 0 | 67.08775 | 3.946275 | 178.3408939 | 7.5934 |
| jun | 73645653.34 | 0 | 78.2625 | 3.756 | 178.0380981 | 7.5934 |
| Jul | 89081670.19 | 0 | 83.0268 | 3.67104 | 178.3008483 | 7.5443 |
| aug | 73534615.83 | 0 | 83.22 | 3.684325 | 178.555917 | 7.5443 |
| sep | 85607801.09 | 10 | 75.6882 | 3.61764 | 178.9376547 | 7.5443 |
| oct | 71366707.98 | 0 | 63.82675 | 3.487875 | 179.7415989 | 7.2494 |
| nov | 82708111.65 | 10 | 53.437 | 3.445175 | 180.1590239 | 7.2494 |
| dec | 114707562.7 | 10 | 43.6404 | 3.29826 | 180.7645746 | 7.2494 |
| Grand Total | 958238825.2 | 40 | 62.13469231 | 3.539878846 | 178.3580118 | 7.529534615 |

MONTHWISE ANALYSIS OF TOP 10 STORES IN WEEKLY SALES, HOLIDAY FLAG, TEMPERATURE, FUEL PRICE, CPI AND UNEMPLOYMENT IN THE WORST YEAR

| Row Labels | Sum of Weekly_Sales | Sum of Holiday_Flag | Average of Temperature | Average of Fuel_Price | Average of CPI | Average of Unemployment |
|-------------|---------------------|---------------------|------------------------|-----------------------|----------------|-------------------------|
| jan | 65720591.98 | 0 | 44.166 | 3.353675 | 181.3245761 | 6.9431 |
| feb | 75852216.37 | 10 | 45.57175 | 3.534575 | 181.6910354 | 6.9431 |
| mar | 91230876.46 | 0 | 56.627 | 3.80846 | 182.2923111 | 6.9431 |
| apr | 74544738.44 | 0 | 63.215 | 3.9541 | 182.6335115 | 6.8601 |
| may | 73915532.96 | 0 | 70.136 | 3.80505 | 182.7695019 | 6.8601 |
| jun | 93287817.44 | 0 | 77.7072 | 3.5828 | 182.7360846 | 6.8601 |
| Jul | 72387677.44 | 0 | 80.828 | 3.45525 | 182.7840464 | 6.6979 |
| aug | 91167358.76 | 0 | 80.6002 | 3.6635 | 182.9078724 | 6.6979 |
| sep | 69526804.47 | 10 | 73.54025 | 3.8428 | 183.3575686 | 6.6979 |
| oct | 71162273.88 | 0 | 64.026 | 3.80875 | 183.7979155 | 6.4703 |
| Grand Total | 778795888.2 | 20 | 66.06055814 | 3.681176744 | 182.6305572 | 6.799895349 |

NOTE: DATA RECORDED TILL OCTOBER 2012 IS ONLY AVAILABLE.

DATA HIGHLIGHTED IN RED SHOWS THE TOP CONTENTS AND THE ONES HIGHLIGHTED IN BLUE SHOWS BOTTOM CONTENTS.

KEY TAKEAWAYS ABOUT TOP 10 STORES

Key Performance Indicators (KPIs) and Trends for 2011:

- **Total Annual Sales:** The stores generated **\$958,238,825.20** in total weekly sales for 2011.
- **Top Sales Months:**
 - **December** had the highest weekly sales at **\$114,707,562.70**. This is likely influenced by holiday shopping.
 - **April** (\$89,347,321.70) and **July** (\$89,081,670.19) also showed strong sales.
- **Bottom Sales Months:**
 - **January** recorded the lowest weekly sales at **\$63,761,520.25**.
 - **May** (\$70,622,863.34) was also among the lower-performing months.
- **Holiday Impact:**
 - Holidays occurred in

February, September, November, and December.

- December, a holiday month, had the highest sales, suggesting a positive correlation between holidays and sales.
- **Temperature:** Average temperatures steadily increased from January (37.26 F to August(83.22 F)and then gradually decreased towards December(43.64 F).
- **Fuel Price:** Fuel prices generally increased from January (\$3.10) to May (\$3.95) and then showed a decreasing trend towards December (\$3.30).
- **CPI (Consumer Price Index):** The CPI showed a consistent increasing trend throughout the year, from 175.36 in January to 180.76 in December, indicating rising prices of goods and services.
- **Unemployment:** Unemployment remained stable for several months (Jan-Mar, Apr-Jun, Jul-Sep, Oct-Dec) with a slight overall decrease from 7.75% in January to 7.25% in December.

Key Performance Indicators (KPIs) and Trends for 2012 (Partial Year - until October):

- **Total Sales (Partial Year):** The stores generated **\$778,795,888.20** in weekly sales up to October 2012.
- **Top Sales Months:**
 - **June** (\$93,287,817.44) and **March** (\$91,230,876.46) had the highest weekly sales.
- **Bottom Sales Months:**
 - **September** (\$69,526,804.47) and **January** (\$65,720,591.98) were among the months with lower sales.
- **Holiday Impact:** Holidays occurred in **February and September**. Sales in September were lower despite a holiday, suggesting other factors at play or that this particular holiday did not significantly boost sales for this store.
- **Temperature:** Temperatures generally increased from January (44.17 F) to July(80.83 F) and then started to decrease.
- **Fuel Price:** Fuel prices fluctuated, peaking in April (\$3.95) and September (\$3.84) and dipping in July (\$3.46).
- **CPI:** The CPI continued its upward trend from 181.32 in January to 183.80 in October.
- **Unemployment:** Unemployment showed a continuous decline from 6.94% in January to 6.47% in October.

Overall Observations (top 10 stores):

- **Sales Seasonality:** Both years show a pattern of higher sales in the spring/early summer months and towards the end of the year, particularly December.
- **CPI Influence:** The consistent increase in CPI across both years suggests inflationary pressures.
- **Unemployment Trend:** A positive trend is observed with decreasing unemployment rates.
- **Holiday Sales Variability:** While December holidays boosted sales in 2011, the holiday impact in other months and in 2012 (September) seems less consistent, indicating that the type of holiday or other factors may play a role.

MONTHWISE ANALYSIS OF BOTTOM 10 STORES IN WEEKLY SALES, HOLIDAY FLAG, TEMPERATURE, FUEL PRICE, CPI AND UNEMPLOYMENT IN THE BEST YEAR

| Row Labels | Sum of Weekly_sales | Sum of Holiday_flag | Average of Temperature | Average of Fuel_price | Average of CPI | Average of Unemployment |
|-------------|---------------------|---------------------|------------------------|-----------------------|----------------|-------------------------|
| jan | 15280388.17 | 0 | 40.53575 | 3.062575 | 176.6319736 | 8.6069 |
| feb | 16246928.14 | 10 | 44.68975 | 3.13045 | 177.5406301 | 8.6069 |
| mar | 15766876.12 | 0 | 55.67825 | 3.491975 | 178.3423154 | 8.6069 |
| apr | 19425194.51 | 0 | 62.3396 | 3.74514 | 179.0710011 | 8.4228 |
| may | 15672601.07 | 0 | 67.389 | 3.9259 | 179.4468825 | 8.4228 |
| jun | 16283999.24 | 0 | 77.73475 | 3.799925 | 179.1661108 | 8.4228 |
| Jul | 19959473.49 | 0 | 83.639 | 3.63826 | 179.4300349 | 8.3008 |
| aug | 16035983.14 | 0 | 85.10675 | 3.642725 | 179.7264027 | 8.3008 |
| sep | 19327439.27 | 10 | 78.017 | 3.59982 | 180.1251925 | 8.3008 |
| oct | 15754228.33 | 0 | 65.6245 | 3.487175 | 180.8965148 | 7.8937 |
| nov | 17125245.35 | 10 | 54.59675 | 3.44695 | 181.3322342 | 7.8937 |
| dec | 22414105.19 | 10 | 44.587 | 3.28252 | 181.9220012 | 7.8937 |
| Grand Total | 209292462 | 40 | 63.62182692 | 3.519988462 | 179.5206424 | 8.300163462 |

MONTHWISE ANALYSIS OF BOTTOM 10 STORES IN WEEKLY SALES, HOLIDAY FLAG, TEMPERATURE, FUEL PRICE, CPI AND UNEMPLOYMENT IN THE WORST YEAR

| Row Labels | Sum of Weekly_sales | Sum of Holiday_flag | Average of Temperature | Average of Fuel_price | Average of CPI | Average of Unemployment |
|-------------|---------------------|---------------------|------------------------|-----------------------|----------------|-------------------------|
| jan | 15664138.63 | 0 | 47.11375 | 3.307475 | 182.4960939 | 7.5035 |
| feb | 16433367.44 | 10 | 48.552 | 3.47495 | 182.8401079 | 7.5035 |
| mar | 20238194.33 | 0 | 57.1386 | 3.78974 | 183.4011032 | 7.5035 |
| apr | 16483708.7 | 0 | 65.26825 | 3.95145 | 183.7633508 | 7.3287 |
| may | 16543243.8 | 0 | 71.855 | 3.831225 | 183.8670831 | 7.3287 |
| jun | 20961551.39 | 0 | 79.5908 | 3.63366 | 183.8385204 | 7.3287 |
| Jul | 16419758.33 | 0 | 82.312 | 3.47115 | 183.8957973 | 7.0708 |
| aug | 20355844.41 | 0 | 82.9042 | 3.64426 | 184.0249148 | 7.0708 |
| sep | 16083785.14 | 10 | 75.61575 | 3.812375 | 184.4466499 | 7.0708 |
| oct | 16305385.9 | 0 | 66.231 | 3.803825 | 184.9181904 | 6.7391 |
| Grand Total | 175488978.1 | 20 | 68.04555814 | 3.673211628 | 183.7495764 | 7.248730233 |

NOTE: DATA RECORDED TILL OCTOBER 2012 IS ONLY AVAILABLE.

DATA HIGHLIGHTED IN RED SHOWS THE TOP CONTENTS AND THE ONES HIGHLIGHTED IN BLUE SHOWS BOTTOM CONTENTS.

KEY TAKEAWAYS ABOUT BOTTOM 10 STORES

Key Performance Indicators (KPIs) and Trends for 2011:

- **Total Annual Sales:** This stores generated **\$209,292,462.00** in total weekly sales for 2011.
- **Top Sales Months:**
 - **December** again stands out with the highest weekly sales at **\$22,414,105.19**.
 - **July** (\$19,959,473.45) and **April** (\$19,425,194.51) also showed strong sales.
- **Bottom Sales Months:**
 - **January** had the lowest weekly sales at **\$15,280,388.17**.
 - **May** (\$15,672,601.07) was also a lower-performing month.
- **Holiday Impact:** Similar to Store 1, holidays in **February, September, November, and December**. December's high sales suggest a strong holiday season.
- **Temperature:** Follows a similar seasonal pattern, increasing from January (40.54 F) to August(85.11 F) and then decreasing.
- **Fuel Price:** Generally increased from January (\$3.06) to May (\$3.93) and then showed a decreasing trend towards December (\$3.28).
- **CPI:** Consistent upward trend from 176.63 in January to 181.92 in December.
- **Unemployment:** Showed a gradual decrease from 8.61% in January to 7.89% in December.

Key Performance Indicators (KPIs) and Trends for 2012 (Partial Year - until October):

- **Total Sales (Partial Year):** This stores generated **\$175,488,978.10** in weekly sales up to October 2012.
- **Top Sales Months:**
 - **June** (\$20,961,551.39), **August** (\$20,355,844.41), and **March** (\$20,238,194.33) were the highest-selling months.
- **Bottom Sales Months:**
 - **January** (\$15,664,138.63) and **September** (\$16,083,785.14) had lower sales.

- **Holiday Impact:** Holidays occurred in **February and September**. Similar to Store 1, September's sales were not exceptionally high despite a holiday.
- **Temperature:** Generally increased from January (47.11°F) to August (82.90°F) before starting to decline.
- **Fuel Price:** Fluctuated, with a peak in April (\$3.95) and September (\$3.81).
- **CPI:** Continued its increasing trend from 182.50 in January to 184.92 in October.
- **Unemployment:** Showed a consistent decrease from 7.50% in January to 6.74% in October.

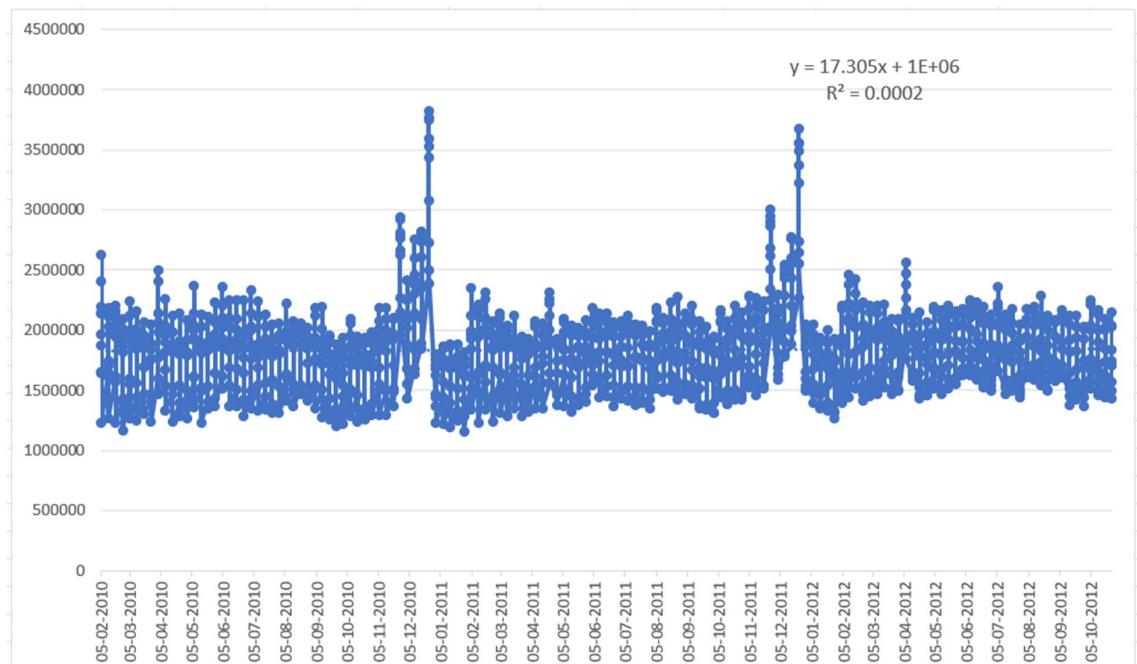
Overall Observations (bottom 10 stores):

- **Sales Pattern:** Similar to top stores , there's a clear seasonal pattern with higher sales during certain periods, particularly in the spring/summer and end of the year (December 2011).
- **CPI:** Consistent inflation is observed.
- **Unemployment:** A positive trend of decreasing unemployment is evident.
- **Sales Volume Difference:** Store 2 has significantly lower sales volumes compared to Store 1, as evidenced by the "Grand Total" weekly sales figures for both years. This is crucial for comparing store performance.
- **Holiday Impact:** While December holidays are a clear sales driver, the impact of other holidays is less pronounced.

CORRELATION ANALYSIS OF TOP 10 STORES

| | <i>weekly_sales</i> | <i>holiday_flag</i> | <i>temperature</i> | <i>fuel_price</i> | <i>CPI</i> | <i>unemployment</i> |
|---------------------|---------------------|---------------------|--------------------|-------------------|------------|---------------------|
| <i>weekly_sales</i> | 1 | | | | | |
| <i>holiday_flag</i> | 0.105733254 | 1 | | | | |
| <i>temperature</i> | -0.290187062 | -0.169781861 | 1 | | | |
| <i>fuel price</i> | 0.020887173 | -0.077688976 | 0.147961311 | 1 | | |
| <i>CPI</i> | -0.325278106 | -0.00243252 | 0.150373884 | -0.0899689 | 1 | |
| <i>unemployment</i> | -0.107525274 | 0.01930743 | -0.054996443 | -0.236704 | 0.03654194 | 1 |

TREND ANALYSIS VIA LINEAR LINE CHART OF TOP 10 STORES



KEY TAKEAWAYS

Here's what the correlations suggest for top stores :

- **Weekly Sales & Holiday Flag (0.10573):** There is a **very weak positive correlation** between weekly sales and the holiday flag. This suggests that while holidays might slightly increase sales, their linear impact isn't very strong across all holiday instances. Other factors or specific types of holidays might have a more significant influence.
- **Weekly Sales & Temperature (-0.29019):** There is a **weak negative correlation** between weekly sales and temperature. This indicates that as temperature increases, weekly sales tend to slightly decrease, and vice-versa. This might suggest higher sales during colder months (e.g., winter holidays) or lower sales during very hot periods.
- **Weekly Sales & Fuel Price (0.02089):** There is a **very weak positive correlation** between weekly sales and fuel price. This correlation is close to zero, suggesting almost no linear relationship. Changes in fuel price seem to have little direct linear impact on weekly sales for this store.
- **Weekly Sales & CPI (-0.32528):** There is a **weak negative correlation** between weekly sales and CPI (Consumer Price Index). This suggests that as the cost of living (CPI) increases, weekly sales tend to slightly decrease. This could indicate that higher prices for goods and services generally put downward pressure on consumer spending at this store.
- **Weekly Sales & Unemployment (-0.10753):** There is a **very weak negative correlation** between weekly sales and unemployment. This is also close to zero, suggesting a negligible linear relationship. Lower unemployment rates don't strongly correlate with higher sales in a linear fashion for this store based on this data.

Trend Analysis via Linear Line Chart

The chart displays weekly sales for top stores from February 2010 to October 2012.

- **Overall Trend Line ($y=17.305x+1E+06$):** The linear trend line equation shows a very slight upward slope (17.305x). This suggests a minimal long-term increase in weekly sales over the observed period.
- **R-squared Value ($R^2=0.0002$):** The R² value is extremely low (0.0002). This is a crucial indicator. It means that the linear trend line explains only 0.02% of the variance in weekly sales. In practical terms, this linear trend line is a very poor fit for the data and does not effectively represent the patterns in weekly sales.
- **Visual Observation of Peaks:** The chart clearly shows significant spikes in weekly sales, particularly around **late 2010 (December 2010)** and **late 2011 (December**

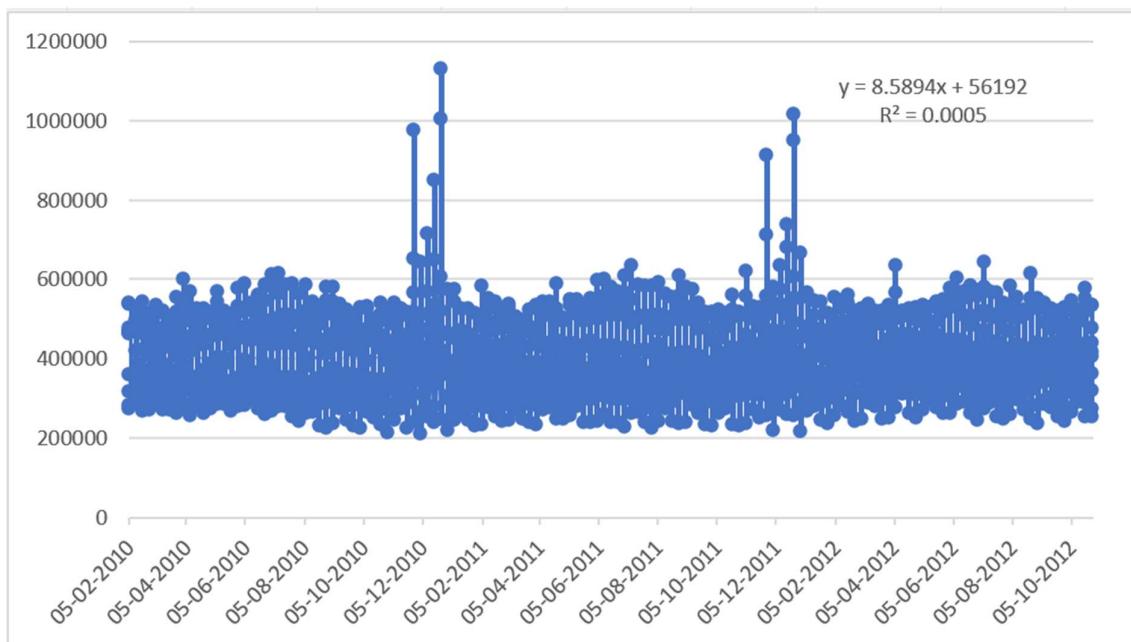
2011). These spikes are characteristic of holiday shopping seasons (e.g., Thanksgiving, Christmas, New Year). There's also a smaller peak in early 2012.

- **Seasonality:** Despite the poor linear trend, the visual pattern indicates clear seasonality. Sales fluctuate significantly throughout the year, with notable peaks towards the end of each year and lower periods in between. This confirms the previously identified seasonality.
- **Lack of Strong Linear Growth:** The chart shows that weekly sales generally hover around a similar range, with the occasional sharp increases due to seasonal events, rather than a consistent upward or downward linear progression over the three years.

CORRELATION ANALYSIS OF BOTTOM 10 STORES

| | <i>weekly sales</i> | <i>holiday flag</i> | <i>temperature</i> | <i>fuel price</i> | <i>CPI</i> | <i>unemployment</i> |
|---------------------|---------------------|---------------------|--------------------|-------------------|------------|---------------------|
| <i>weekly sales</i> | 1 | | | | | |
| <i>holiday flag</i> | 0.04223675 | 1 | | | | |
| <i>temperature</i> | -0.2324789 | -0.1521085 | 1 | | | |
| <i>fuel price</i> | -0.0741618 | -0.0844624 | 0.213438178 | 1 | | |
| <i>CPI</i> | 0.22820721 | -0.0021625 | 0.12870923 | -0.214497 | 1 | |
| <i>unemployment</i> | 0.05476399 | 0.01334546 | 0.072681652 | 0.0294615 | -0.54714 | 1 |

TREND ANALYSIS VIA LINEAR LINE CHART OF BOTTOM 10 STORES



KEY TAKEAWAYS

Here's what the correlations suggest for bottom stores :

Weekly Sales & Holiday Flag (0.04224): Similar to Store 1, there is a **very weak positive correlation**. The impact of a holiday flag on weekly sales is minimal in a linear sense.

Weekly Sales & Temperature (-0.23248): There is a **weak negative correlation**. As temperature rises, weekly sales tend to slightly decrease. This mirrors the trend in Store 1.

Weekly Sales & Fuel Price (-0.07416): There is a **very weak negative correlation**. Again, this is close to zero, suggesting little linear impact. Unlike Store 1, this is slightly negative, indicating that as fuel price increases, weekly sales might very slightly decrease.

Weekly Sales & CPI (0.22821): There is a **weak positive correlation** between weekly sales and CPI. This is an interesting contrast to Store 1. For Store 2, it suggests that as CPI increases, weekly sales tend to slightly increase. This could imply different consumer behavior or product mix at this store, where rising prices might not deter spending as much, or that high-inflation periods correspond to other factors that boost sales.

Weekly Sales & Unemployment (0.05476): There is a **very weak positive correlation**. This is also close to zero, indicating a negligible linear relationship. As unemployment decreases, sales don't show a strong linear increase.

Trend Analysis via Linear Line Chart

The chart displays weekly sales for bottom stores from February 2010 to October 2012.

Overall Trend Line ($y=8.5894x+56192$): The linear trend line shows a very slight upward slope (8.5894x). This suggests a minimal long-term increase in weekly sales for Store 2 over the observed period.

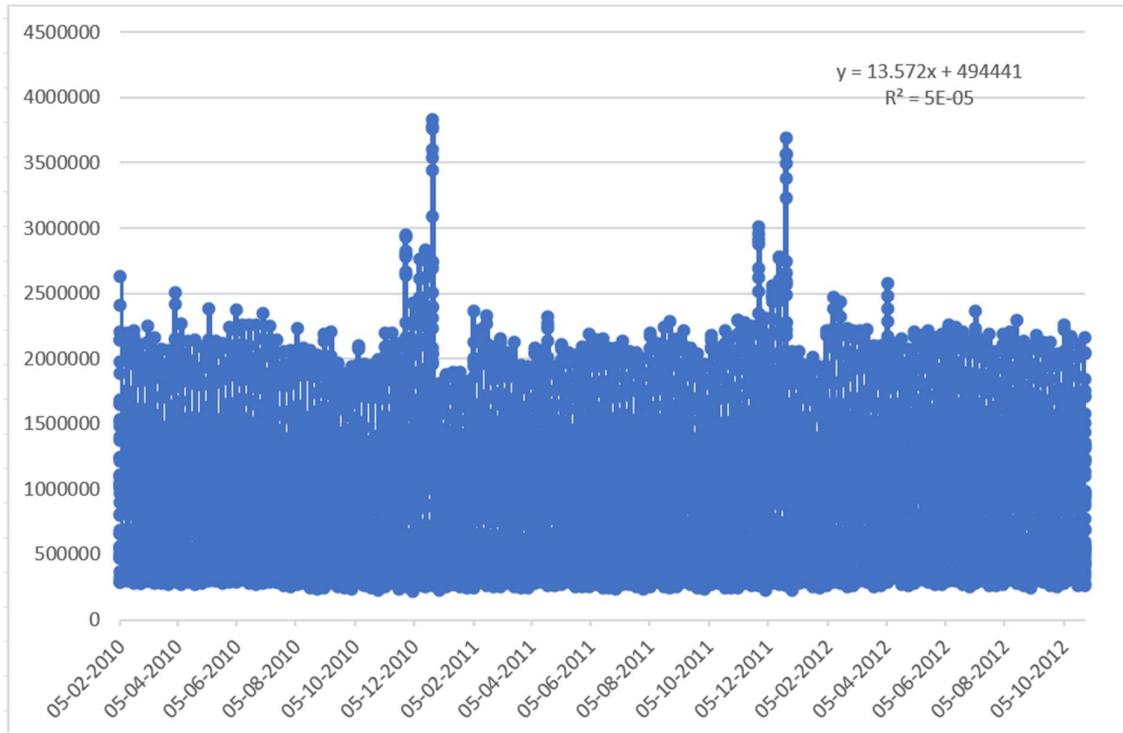
R-squared Value ($R^2=0.0005$): The R² value is extremely low (0.0005). Similar to Store 1, this indicates that the linear trend line explains only 0.05% of the variance in weekly sales, making it a very poor fit for the data.

Visual Observation of Peaks: Similar to Store 1, the chart clearly shows significant spikes in weekly sales around **late 2010 (December 2010)** and **late 2011 (December 2011)**. These are again indicative of strong holiday season sales.

Seasonality: The visual pattern confirms strong seasonality, with consistent year-end peaks and fluctuating sales throughout the rest of the year.

Lower Sales Volume: It's immediately apparent that the weekly sales figures for Store 2 (ranging up to approx. 1,200,000) are significantly lower than those for Store 1 (ranging up to approx. 4,500,000). This reinforces the previous observation about the difference in scale between the stores

TREND ANALYSIS VIA LINEAR LINE CHART OF WEEKLY SALES OF ALL 45 STORES



The chart provides a linear trend analysis of weekly sales data.

Linear Trend Line Equation: $y=13.572x+494441$

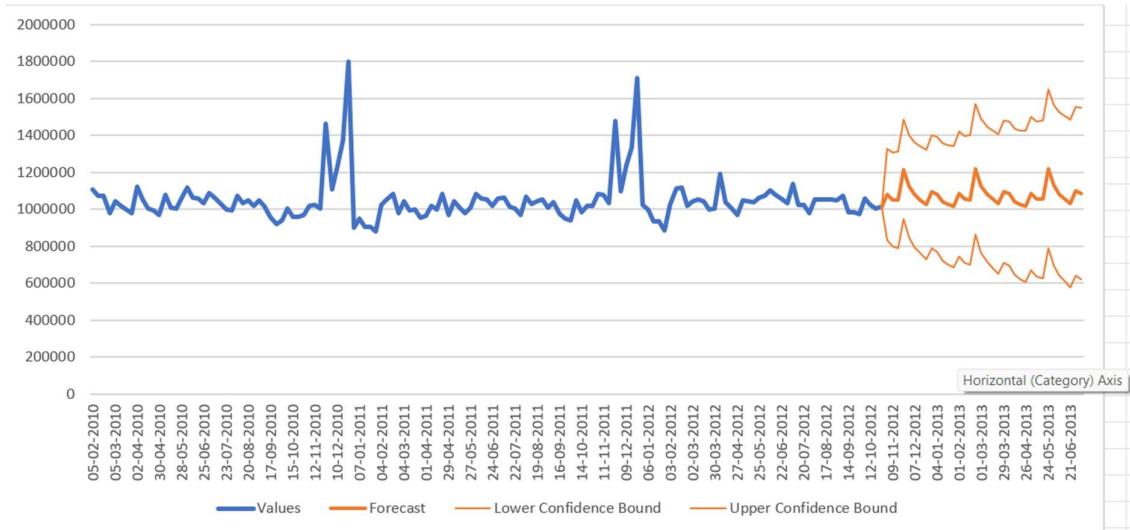
The slope (13.572) indicates a very slight upward trend over the observed period.

R-squared Value (R²=5E-05): This value is extremely low (0.00005).

An R-squared value close to zero means that the linear trend line explains almost none of the variability in the weekly sales data. This confirms that a linear model is not suitable for predicting or explaining the sales trends in this dataset.

Visual Observation: While the trend line suggests a slight increase, the chart itself shows significant fluctuations in weekly sales over time, dominated by pronounced seasonality rather than a steady linear increase.

WEEKLY SALES FORECAST AND PREDICTION OF SALES



| Row Labels | Sum of Forecast Column Labels | |
|--------------------|-------------------------------|-------------------|
| | 2012 | 2013 |
| Jan | | 4158521.785 |
| Feb | | 4404981.527 |
| Mar | | 5387835.337 |
| Apr | | 4166092.46 |
| May | | 5541495.102 |
| Jun | | 4268355.78 |
| Jul | | 1085686.613 |
| Aug | | |
| Sep | | |
| Oct | | 1012091.473 |
| Nov | | 5522568.416 |
| Dec | | 4253214.431 |
| Grand Total | 10787874.32 | 29012968.6 |

KEY TAKEAWAYS

Weekly Sales Forecast Analysis

The second chart shows a forecast of weekly sales data, including historical values, the forecast line, and confidence bounds.

- **Historical Data:** The historical sales data (represented by "Values") spans from February 2010 to October 2012.
- **Forecast Period:** The forecast starts in November 2012 and extends until June 2013.
- **Seasonal Pattern:** The chart highlights the strong seasonal pattern in the historical data, with significant peaks consistently occurring towards the end of each year (e.g., December 2010 and December 2011).
- **Forecasted Seasonality:** The forecast line clearly predicts a continuation of this seasonal pattern, with a sharp spike anticipated in late 2012/early 2013, followed by a decline and then fluctuations consistent with previous years.
- **Confidence Bounds:** The forecast includes "Lower Confidence Bound" and "Upper Confidence Bound" lines, which visually represent the range within which the actual sales are expected to fall. This indicates the level of uncertainty in the prediction.

Prediction of Sales

The table provided shows the sum of the weekly sales forecast by month for 2013.

- **Total Predicted Sales (2013):** The grand total forecasted sales for the months of 2013 listed (Jan, Feb, Mar, Apr, May, Jun, Jul, Oct, Nov, Dec) is approximately **\$29,012,968.60**.
- **Key Forecasts for 2013:**
 - **Highest Forecasted Month:** May is forecasted to have the highest sales at **\$5,541,495.10**.
 - **Lowest Forecasted Months:** July is forecasted to have **\$1,085,686.61** in sales, and October is forecasted to have **\$1,012,091.47** in sales.