

# Consumer Price Index analysis for Organizing a Furniture Event at 2022



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# outline:

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# Problem statement & business objective

The goal of this project was to use exploratory data analysis approach to predict the best month to organize furnishings, household equipment event in Saudi Arabia that has the highest consumer prices for furniture and highest arithmetic average over two years in order to help improve event revenues.



# What is the best month to hold the event?



Highest consumer prices for furniture



Highest arithmetic average over two years

# Tools and Libraries

-Statistics

-Jupyter notebook

-Pandas

-NumPy

-Matplotlib

-Python

-Mean () Max () Min ()

-SQLite and DB browser for SQLite

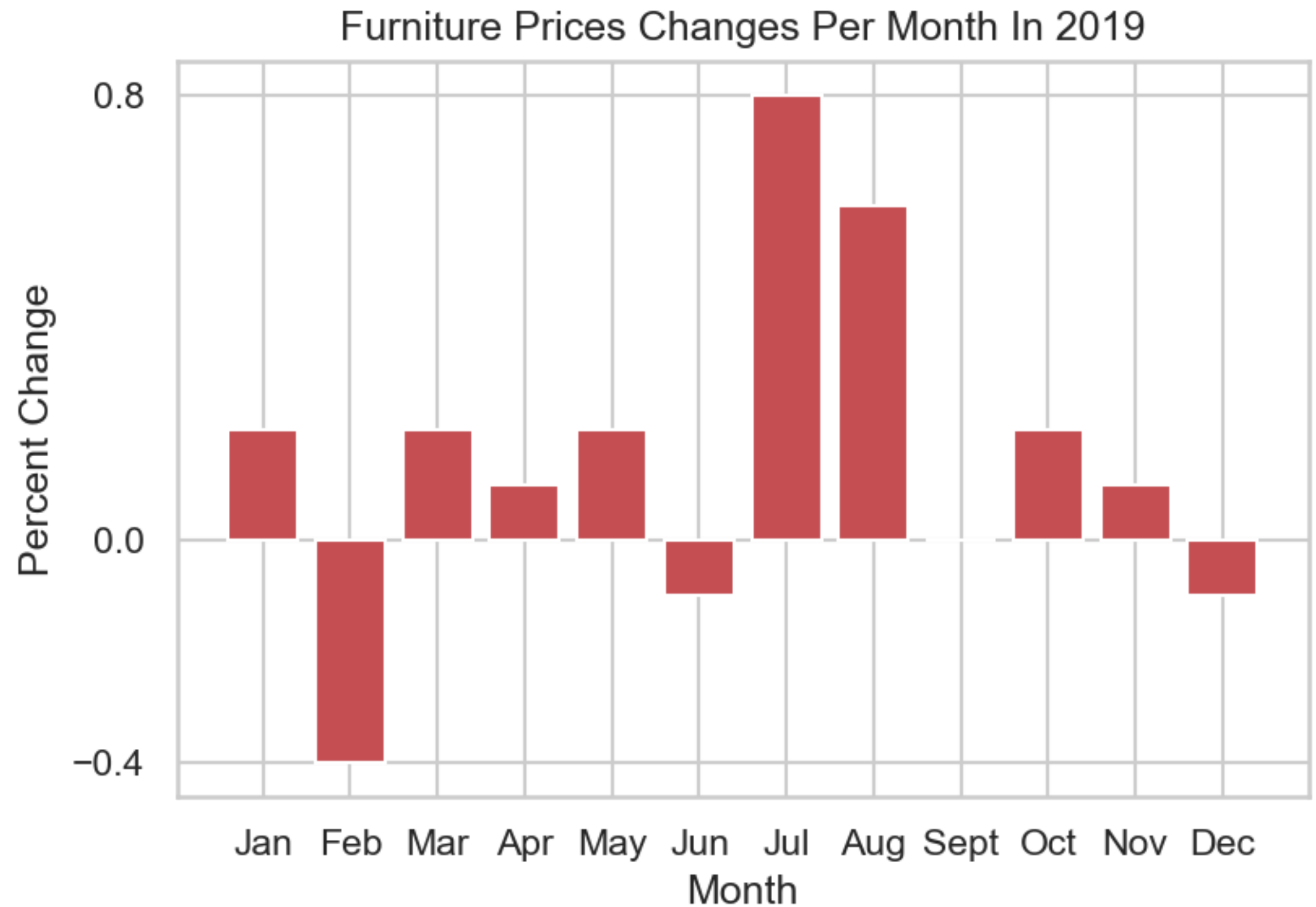


# Cleaning Data And EDA Approach

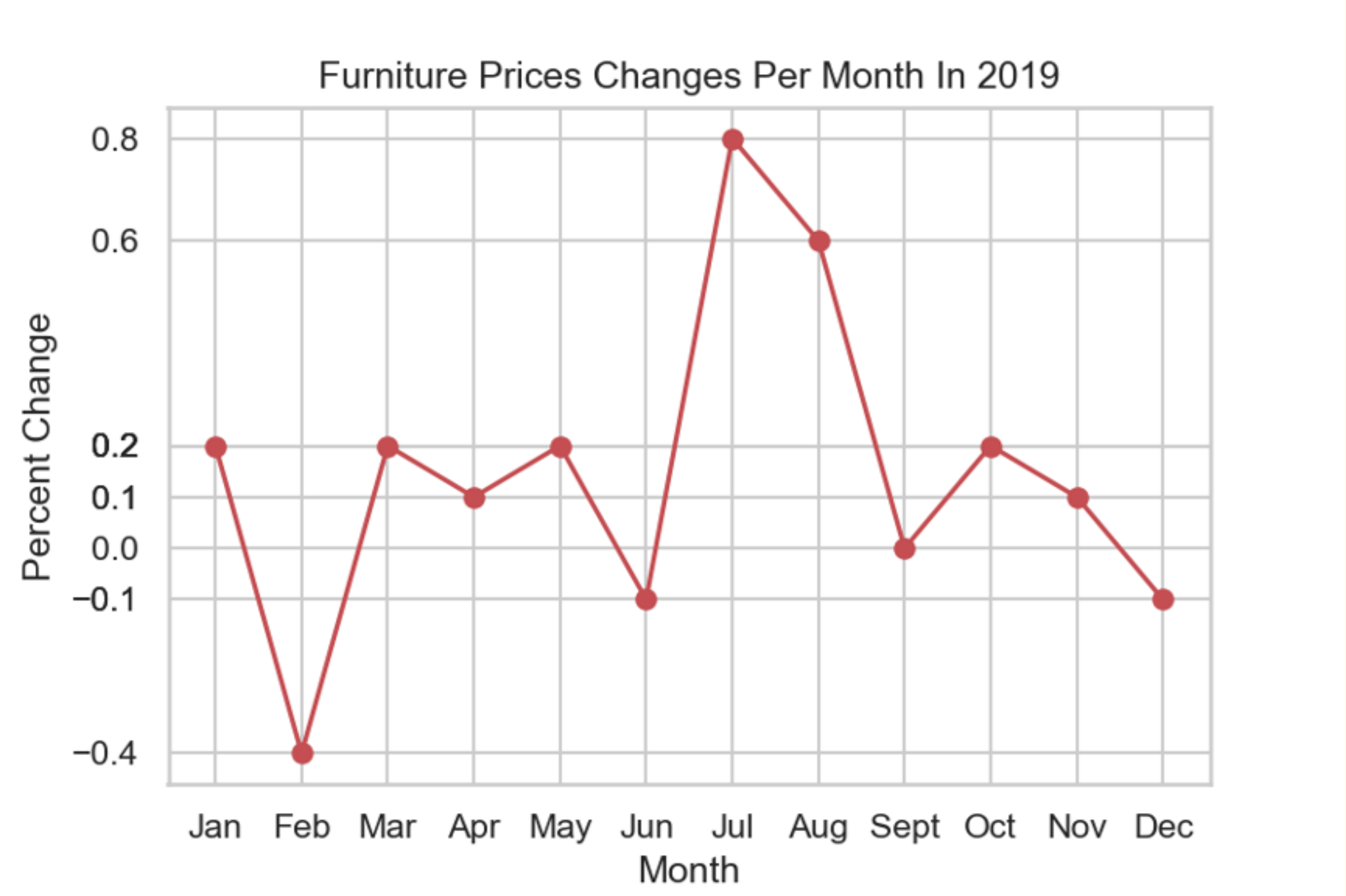
1. Collecting data from multiple excel sheets
2. Exploratory data analysis in pandas
3. Delete duplicated and unnecessary data
4. Checking if there is inconsistent text
5. Checking if there is missing data and handle it
6. Filtering data
7. Determining max value of Furniture Prices  
Changes per month
8. Determining Average of Furniture Prices  
Changes During 2019-2020
9. Visualizing data and result

# Analysis

**Figure 1:**  
Bar Chart of  
Furniture Prices  
Changes Per  
Month In 2019 In  
Saudi Arabia

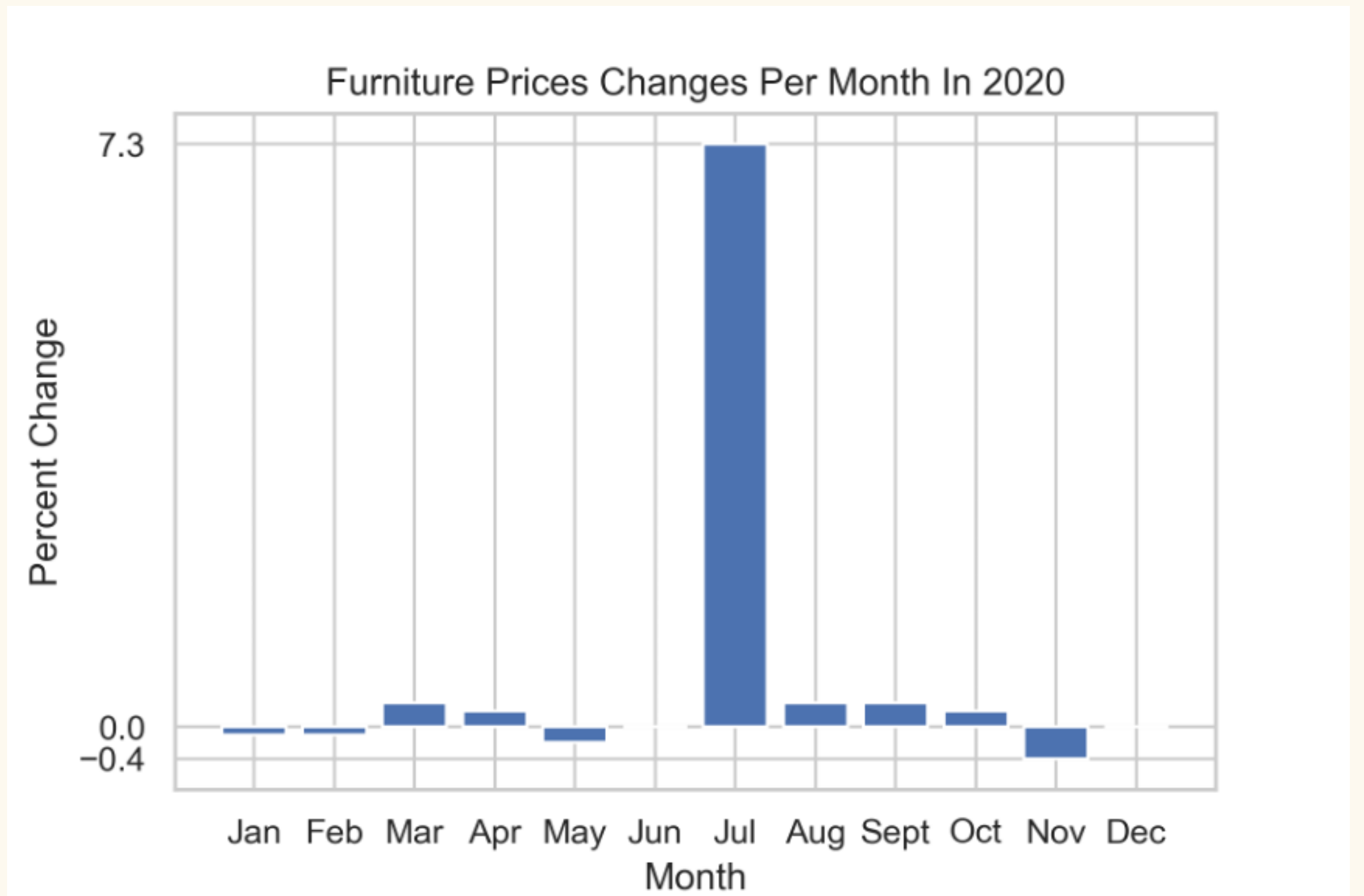


**Figure 2:**  
Plot and Scatter  
Charts of  
Furniture Prices  
Changes Per  
Month In 2019 In  
Saudi Arabia

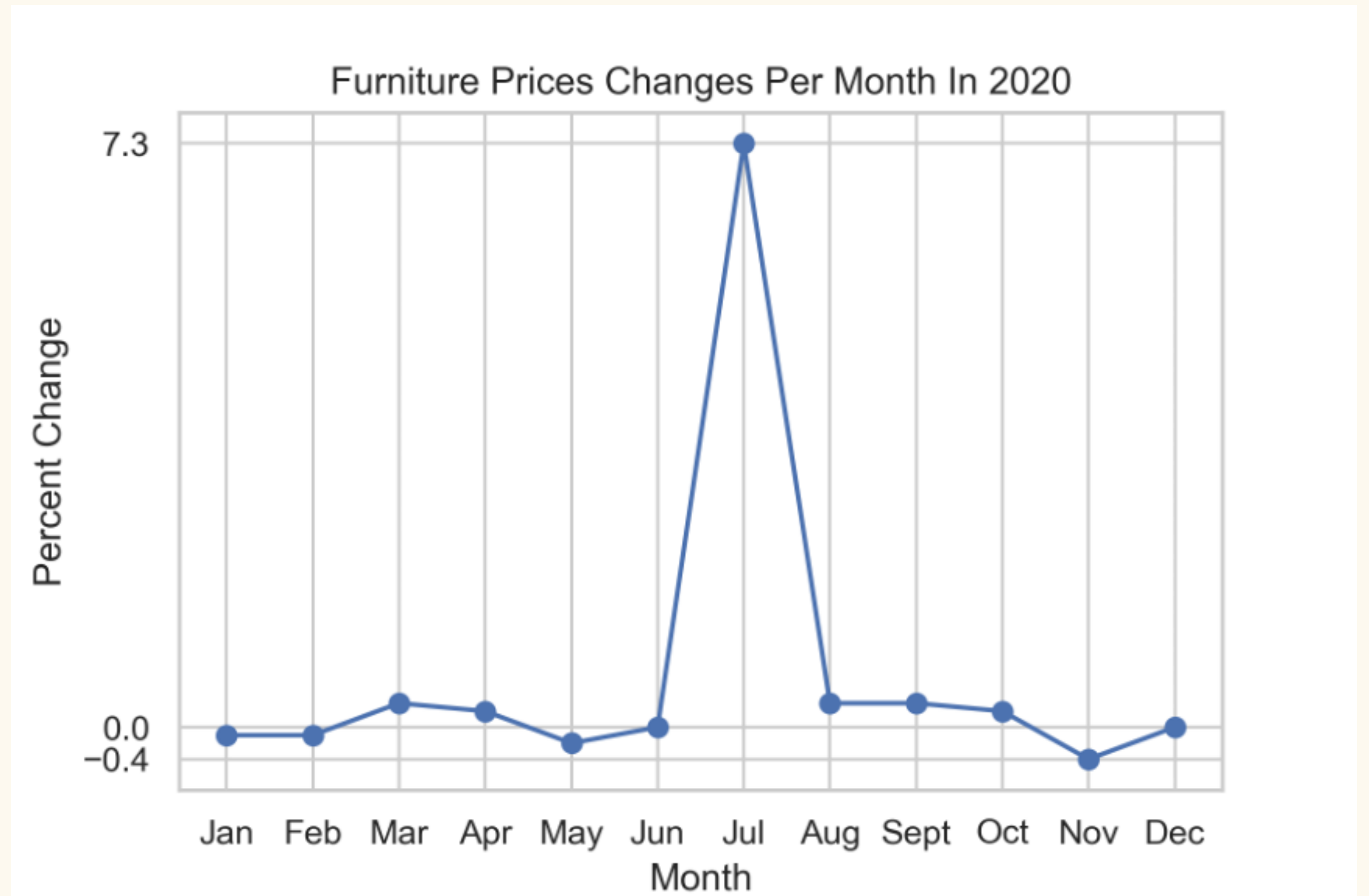




**Figure 3:**  
Bar Chart of  
Furniture Prices  
Changes Per  
Month In 2020 In  
Saudi Arabia



**Figure 4:**  
Plot and Scatter  
Charts of  
Furniture Prices  
Changes Per  
Month In 2020 In  
Saudi Arabia



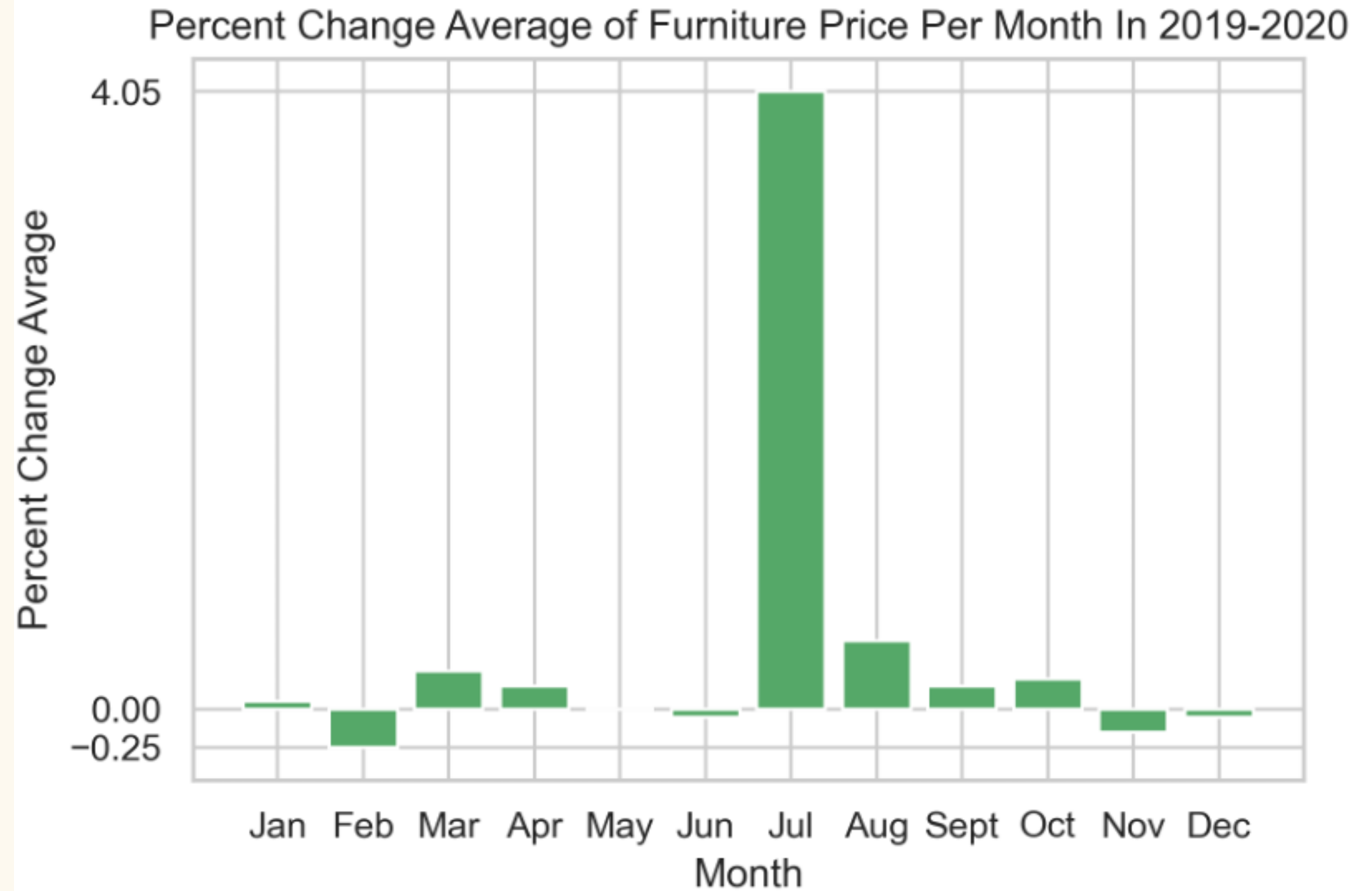
# Average of prices change monthly

```
1 # MPC_mean function to store and print monthly prices changes avgs per 2 month since 2019-2020
2 mean_per_month = []
3 def MPC_mean ():
4     Months_list = ['Jan', 'Feb', 'Mar', 'Apr', 'May', 'Jun', 'Jul', 'Aug', 'Sept', 'Oct', 'Nov', 'Dec']
5     for m in Months_list:
6         months_mean = df[df.Month == m]
7         mean_MPC = statistics.mean(months_mean.MPC)
8         mean_per_month.append(mean_MPC)
9         print("Avrage",m,"prices changes in 2 years is", mean_MPC)
10 MPC_mean ()
```

```
Avrage Jan prices changes in 2 years is 0.05
Avrage Feb prices changes in 2 years is -0.25
Avrage Mar prices changes in 2 years is 0.25
Avrage Apr prices changes in 2 years is 0.150000000000000002
Avrage May prices changes in 2 years is 0.0
Avrage Jun prices changes in 2 years is -0.05
Avrage Jul prices changes in 2 years is 4.05
Avrage Aug prices changes in 2 years is 0.44999999999999996
Avrage Sept prices changes in 2 years is 0.15
Avrage Oct prices changes in 2 years is 0.2
Avrage Nov prices changes in 2 years is -0.150000000000000002
Avrage Dec prices changes in 2 years is -0.05
```



**Figure 5:**  
Bar Chart of  
Prices Phanges  
Averages Per  
Month During  
2019-2020



# Challenges



## **unique data**

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Choosing different data from your peers does not give you the opportunity to ask them and share them when there is a problem.



## **Collect data from multiple sources**

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The Ministry of Finance provided separate data in an excel format, so I collected them, and creating a database is a challenge.



## **Understanding data and domain**

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Understanding the financial sector and general number and MPC



# in conclusion

What is the best month to hold the event?

July achieved :

- ✓ Highest consumer prices for furniture in 2019
- ✓ Highest consumer prices for furniture in 2020
- ✓ Highest arithmetic average over two years





# THANK YOU

*Any Question ?*

