

What is Recession?

- A recession is an economic situation that arrives when the circulation of money in the economy is low for two consecutive quarters.
- When the circulation of money is low, it means people are not spending money in the market.
- When people don't spend money, businesses face losses, which results in an economic slowdown and layoffs, which you must have already heard about in 2023.

Recession Analysis

- Recession is calculated and analyzed according to the growth in GDP, the growth in the unemployment rate, and the growth in consumer spending rate.
- But the most common way of measuring recession is by analyzing the monthly GDP growth data.
- So, for the task of Recession analysis, we need to have a dataset of the monthly GDP growth of a country. I found an ideal dataset for this task that is based on the monthly GDP growth rate of the United Kingdom on Kaagle.

Let's start this task of Recession analysis by importing the necessary Python libraries and the dataset:

```
In [1]: import pandas as pd
import plotly.graph_objs as go
import plotly.express as px
import plotly.io as pio
pio.templates.default = "plotly_white"

data = pd.read_csv(r'C:\Users\SHREE\Downloads\Python CODES\Recession Analysis\UK_monthly_gdp_growth.csv')
print(data.head())
```

	Time Period	GDP Growth
0	/01/2020	0.3
1	/02/2020	-0.5
2	/03/2020	-7.0
3	/04/2020	-20.9
4	/05/2020	3.2

Let's have a look at the GDP growth over time:

```
In [2]: fig = go.Figure(data=go.Heatmap(
    z=[data['GDP Growth']],
    x=data.index,
    y=['GDP Growth'],
    colorscale='Viridis'))

fig.update_layout(title='GDP Growth over Time',
    xaxis_title='Time Period',
    yaxis_title='')

fig.show()
```

GDP Growth over Time


```

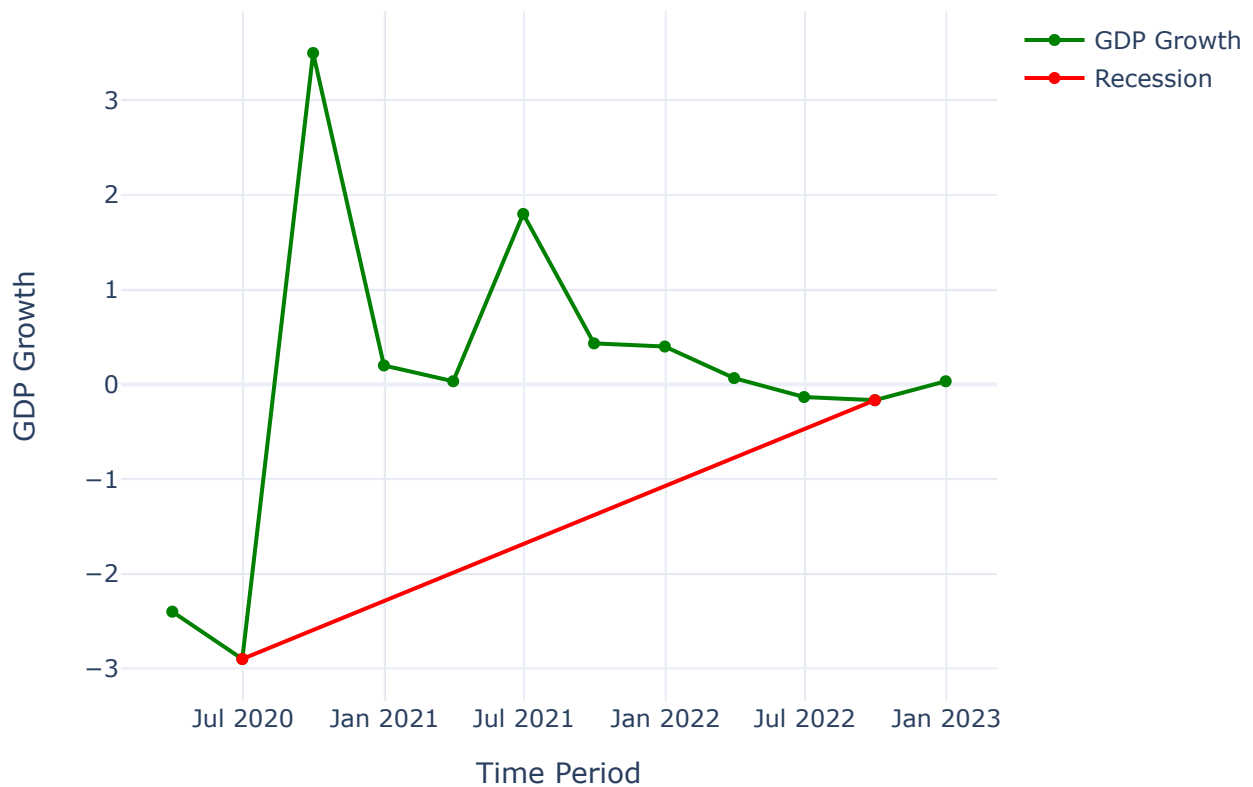
name='Recession', line=dict(color='red', width=2))

fig.update_layout(title='GDP Growth and Recession over Time (Quarterly Data)',
                  xaxis_title='Time Period',
                  yaxis_title='GDP Growth')

fig.show()

```

GDP Growth and Recession over Time (Quarterly Data)



- The red line shows the periods of negative GDP growth (considered recessions), and the green line shows the overall trend in GDP growth over time.

Let us now analyze the severity of the recession:

- The severity of a recession refers to the extent to which the economy contracts during a recession.
- A severe recession involves a deeper and more prolonged decline in economic activity, resulting in negative effects on employment, incomes and other economic indicators.

```

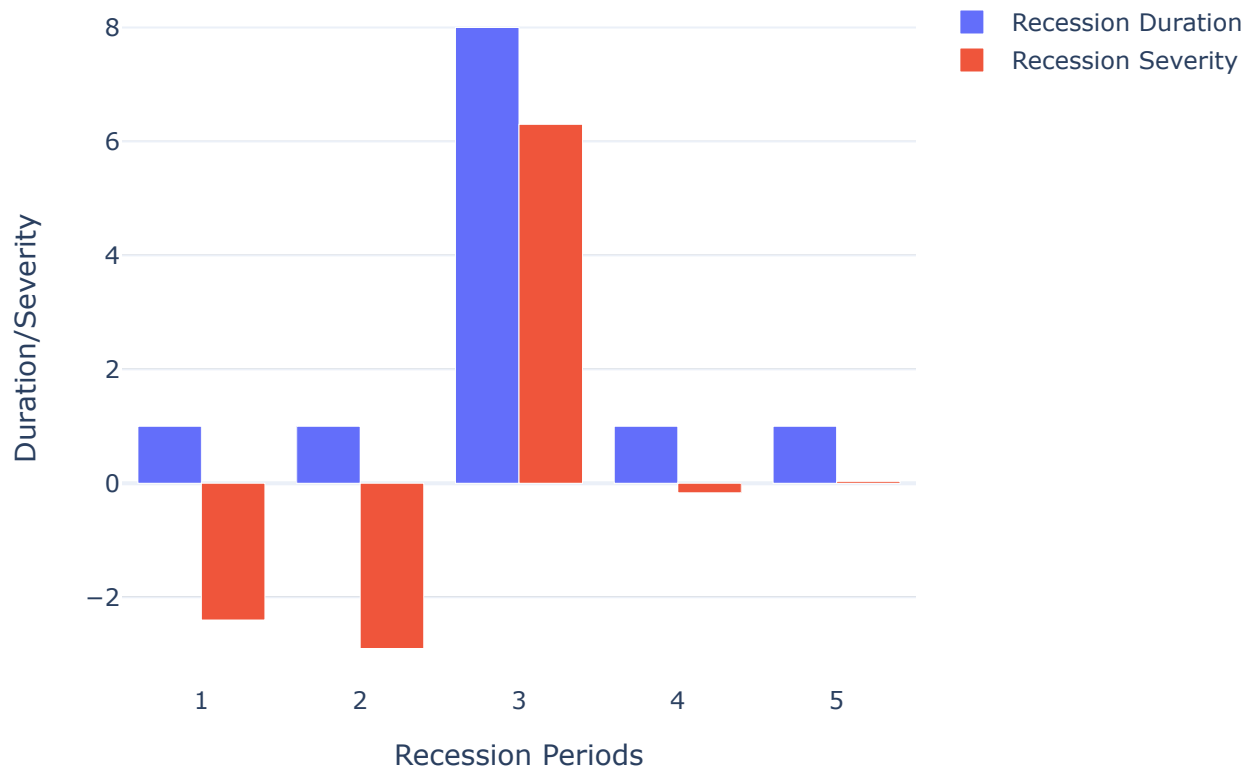
In [6]: quarterly_data['Recession Start'] = quarterly_data['Recession'].ne(quarterly_data['Recession'].shift(1))
recession_periods = quarterly_data.groupby('Recession Start')
recession_duration = recession_periods.size()
recession_severity = recession_periods['GDP Growth'].sum()

fig = go.Figure()
fig.add_trace(go.Bar(x=recession_duration.index, y=recession_duration,
                    name='Recession Duration'))
fig.add_trace(go.Bar(x=recession_severity.index, y=recession_severity,
                    name='Recession Severity'))

```

```
fig.update_layout(title='Duration and Severity of Recession',  
                  xaxis_title='Recession Periods',  
                  yaxis_title='Duration/Severity')  
  
fig.show()
```

Duration and Severity of Recession



By

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