Insights from Electoral Bond Dataset: Trends and Distribution

This analysis explores trends and distribution in electoral bond purchases, focusing on contributions received by political parties. It examines total denomination amounts over time, reveals distribution patterns, and highlights contributions by political parties. The goal is to provide insights into the dynamics of political financing.

In [27]:

```
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
import numpy as np
import plotly.express as px
```

In [28]:

```
pd.options.display.float_format = '{:.2f}'.format
```

In [29]:

```
df = pd.read_csv(r"C:\Users\sarwat\Electoral_Bond\Electoral_bonds.csv")
```

In [30]:

```
df.head(10)
```

Out[30]:

	Date of\nEncashment	Name of the Political Party	Denomination	Unnamed: 3
0	12/Apr/2019	ALL INDIA ANNA DRAVIDA MUNNETRA KAZHAGAM	1000000	NaN
1	12/Apr/2019	ALL INDIA ANNA DRAVIDA MUNNETRA KAZHAGAM	1000000	NaN
2	12/Apr/2019	ALL INDIA ANNA DRAVIDA MUNNETRA KAZHAGAM	10000000	NaN
3	12/Apr/2019	ALL INDIA ANNA DRAVIDA MUNNETRA KAZHAGAM	1000000	NaN
4	12/Apr/2019	ALL INDIA ANNA DRAVIDA MUNNETRA KAZHAGAM	1000000	NaN
5	12/Apr/2019	ALL INDIA ANNA DRAVIDA MUNNETRA KAZHAGAM	1000000	NaN
6	12/Apr/2019	ALL INDIA ANNA DRAVIDA MUNNETRA KAZHAGAM	1000000	NaN
7	12/Apr/2019	ALL INDIA ANNA DRAVIDA MUNNETRA KAZHAGAM	1000000	NaN
8	12/Apr/2019	ALL INDIA ANNA DRAVIDA MUNNETRA KAZHAGAM	1000000	NaN
9	12/Apr/2019	ALL INDIA ANNA DRAVIDA MUNNETRA KAZHAGAM	1000000	NaN

Droping unwanted column

In [31]:

```
df1 = df
df1.rename(columns = {'Date of\nEncashment' : 'Date of Encashment'} , inplace = True)
```

In [32]:

```
df1
```

Out[32]:

	Date of Encashment	Name of the Political Party	Denomination	Unnamed: 3
0	12/Apr/2019	ALL INDIA ANNA DRAVIDA MUNNETRA KAZHAGAM	1000000	NaN
1	12/Apr/2019	ALL INDIA ANNA DRAVIDA MUNNETRA KAZHAGAM	1000000	NaN
2	12/Apr/2019	ALL INDIA ANNA DRAVIDA MUNNETRA KAZHAGAM	10000000	NaN
3	12/Apr/2019	ALL INDIA ANNA DRAVIDA MUNNETRA KAZHAGAM	1000000	NaN
4	12/Apr/2019	ALL INDIA ANNA DRAVIDA MUNNETRA KAZHAGAM	1000000	NaN
...	...	...	...	...
20416	24/Jan/2024	JANASENA PARTY	1000000	NaN
20417	24/Jan/2024	JANASENA PARTY	1000000	NaN
20418	24/Jan/2024	JANASENA PARTY	1000000	NaN
20419	24/Jan/2024	JANASENA PARTY	1000000	NaN
20420	24/Jan/2024	JANASENA PARTY	1000000	NaN

20421 rows × 4 columns

In [33]:

```python
# Drop the column named 'Unnamed: 3'
df1 = df.drop(columns=['Unnamed: 3'])

# Display the first few rows of the DataFrame to verify the column has been dropped
df1.head()
```

Out[33]:

	Date of Encashment	Name of the Political Party	Denomination
0	12/Apr/2019	ALL INDIA ANNA DRAVIDA MUNNETRA KAZHAGAM	1000000
1	12/Apr/2019	ALL INDIA ANNA DRAVIDA MUNNETRA KAZHAGAM	1000000
2	12/Apr/2019	ALL INDIA ANNA DRAVIDA MUNNETRA KAZHAGAM	10000000
3	12/Apr/2019	ALL INDIA ANNA DRAVIDA MUNNETRA KAZHAGAM	1000000
4	12/Apr/2019	ALL INDIA ANNA DRAVIDA MUNNETRA KAZHAGAM	1000000

Understand the structure and content of dataset

In [34]:

```python
# Check the shape of the DataFrame (number of rows and columns)
print(df1.shape)
```

```
(20421, 3)
```

In [35]:

```python
# Check the data types of each column
print(df1.dtypes)
```

```
Date of Encashment             object
Name of the Political Party    object
Denomination                    int64
dtype: object
```

In [36]:

```python
# Check for missing values
print(df1.isnull().sum())
```

```
Date of Encashment             0
Name of the Political Party    0
Denomination                   0
dtype: int64
```

In [37]:

```python
# Get summary statistics
df1.describe()
```

Out[37]:

	Denomination
count	20421.00
mean	6252920.67
std	4576321.21
min	1000.00
25%	1000000.00
50%	10000000.00
75%	10000000.00
max	10000000.00

Converting into date and Extracting year

In [38]:

```python
# Convert 'Date of Encashment' column to datetime format
df1['Date of Encashment'] = pd.to_datetime(df1['Date of Encashment'])

# Extract year 'from Date of Encashment' column
df1['Year'] = df1['Date of Encashment'].dt.year

# Display the first few rows of the DataFrame with the new 'Year' column
df1[['Date of Encashment', 'Year']].head()

```

Out[38]:

	Date of Encashment	Year
0	2019-04-12	2019
1	2019-04-12	2019
2	2019-04-12	2019
3	2019-04-12	2019
4	2019-04-12	2019

Extracting Month

In [39]:

```python
# Convert 'Date of Encashment' column to datetime format
df1['Date of Encashment'] = pd.to_datetime(df1['Date of Encashment'])

# Extract month name
df1['Month'] = df1['Date of Encashment'].dt.strftime('%B')

# Display the first few rows to verify the changes
print(df1[['Date of Encashment', 'Month']].head())

```

```
  Date of Encashment  Month
0         2019-04-12  April
1         2019-04-12  April
2         2019-04-12  April
3         2019-04-12  April
4         2019-04-12  April
```

Adding two column named Denomination in crore and lakhs

In [40]:

```python
# Add a new column for 'Denomination (Crore)'
df1['Denomination(Crore)'] = df1['Denomination'] / 10000000
df1['Denomination(Lakhs)'] = df1['Denomination'] / 100000
```

In [41]:

```
df1
```

Out[41]:

	Date of Encashment	Name of the Political Party	Denomination	Year	Month	Denomination(Crore)	Denomination(Lakhs)
0	2019-04-12	ALL INDIA ANNA DRAVIDA MUNNETRA KAZHAGAM	1000000	2019	April	0.10	10.00
1	2019-04-12	ALL INDIA ANNA DRAVIDA MUNNETRA KAZHAGAM	1000000	2019	April	0.10	10.00
2	2019-04-12	ALL INDIA ANNA DRAVIDA MUNNETRA KAZHAGAM	10000000	2019	April	1.00	100.00
3	2019-04-12	ALL INDIA ANNA DRAVIDA MUNNETRA KAZHAGAM	1000000	2019	April	0.10	10.00
4	2019-04-12	ALL INDIA ANNA DRAVIDA MUNNETRA KAZHAGAM	1000000	2019	April	0.10	10.00
...	...	...	...	...	...	...	...
20416	2024-01-24	JANASENA PARTY	1000000	2024	January	0.10	10.00
20417	2024-01-24	JANASENA PARTY	1000000	2024	January	0.10	10.00
20418	2024-01-24	JANASENA PARTY	1000000	2024	January	0.10	10.00
20419	2024-01-24	JANASENA PARTY	1000000	2024	January	0.10	10.00
20420	2024-01-24	JANASENA PARTY	1000000	2024	January	0.10	10.00

20421 rows × 7 columns

Extracting acronym from party names

In [42]:

```
# Extracting acronym from party names
df1['Party_Acronym'] = df['Name of the Political Party'].apply(lambda x: ''.join(word[0] for word in x.spl

# Displaying the first few rows to verify the changes
print(df1[['Name of the Political Party', 'Party_Acronym']].head())

```

```
                Name of the Political Party Party_Acronym
0  ALL INDIA ANNA DRAVIDA MUNNETRA KAZHAGAM        AIADMK
1  ALL INDIA ANNA DRAVIDA MUNNETRA KAZHAGAM        AIADMK
2  ALL INDIA ANNA DRAVIDA MUNNETRA KAZHAGAM        AIADMK
3  ALL INDIA ANNA DRAVIDA MUNNETRA KAZHAGAM        AIADMK
4  ALL INDIA ANNA DRAVIDA MUNNETRA KAZHAGAM        AIADMK
```

Total Amount Recived

In [43]:

```
total_amount = df1['Denomination(Crore)'].sum().round(2)
print(total_amount)
```

```
12769.09
```

The total denomination amount received in each year

In [44]:

```
# Group by year and calculate total denomination amount
denomination_by_year = df1.groupby(df1['Year'])['Denomination(Crore)'].sum()

# Display the total denomination amount received in each year
denomination_by_year
```

Out[44]:

```
Year
2019    2385.09
2020     363.96
2021    1502.26
2022    3701.46
2023    4246.27
2024     570.05
Name: Denomination(Crore), dtype: float64
```

In [45]:

```python
# Group by 'Year' and sum the 'Denomination' column
investment_sum = df1.groupby('Year')['Denomination'].sum().reset_index(name='Total Purchase')

# Convert 'Total Investment' to lakhs
investment_sum['Total Purchase (Lakhs)'] = investment_sum['Total Purchase'] / 100000

# Convert 'Total Investment' to crores
investment_sum['Total Purchase (Crore)'] = investment_sum['Total Purchase'] / 10000000


investment_sum['Total Purchase (Crore)'] = investment_sum['Total Purchase (Crore)'].round(2)


# Convert 'Total Investment' to millions
# investment_sum['Total Investment (Millions)'] = investment_sum['Total Investment'] / 1000000



# Display the converted data
print(investment_sum)

```

```
   Year  Total Purchase  Total Purchase (Lakhs)  Total Purchase (Crore)
0  2019     23850886000               238508.86                 2385.09
1  2020      3639600000                36396.00                  363.96
2  2021     15022625000               150226.25                 1502.26
3  2022     37014569000               370145.69                 3701.46
4  2023     42462713000               424627.13                 4246.27
5  2024      5700500000                57005.00                  570.05
```

In [46]:

```python
# Convert the series to a DataFrame
denomination_df = denomination_by_year.reset_index()
denomination_df.columns = ['Year', 'Total Denomination(Crore)']

# Display the DataFrame
denomination_df
```

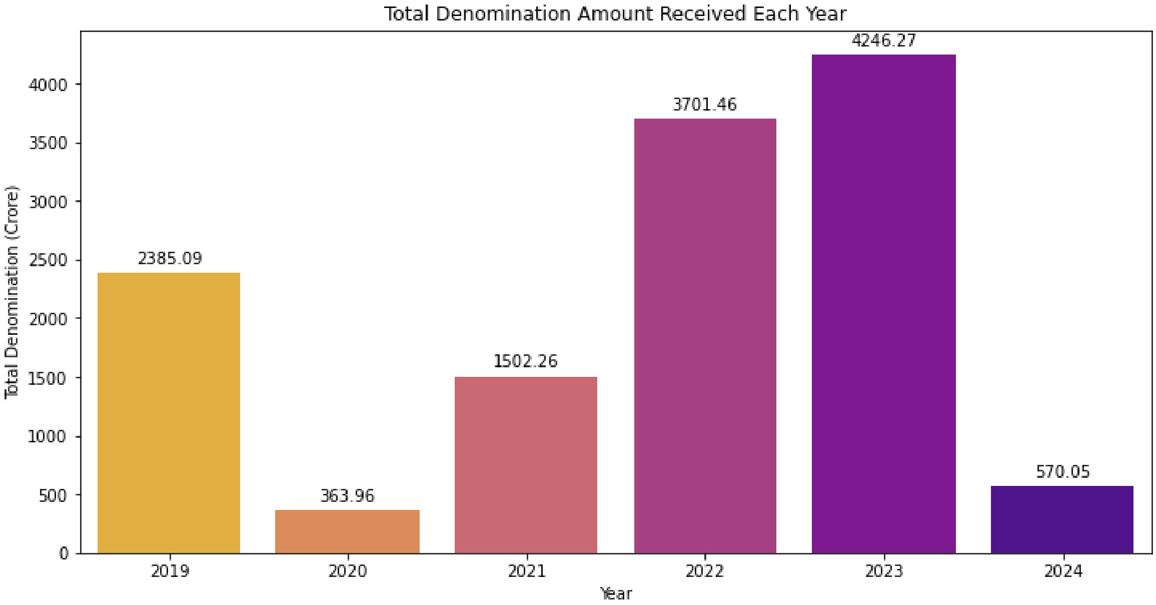
Out[46]:

	Year	Total Denomination(Crore)
0	2019	2385.09
1	2020	363.96
2	2021	1502.26
3	2022	3701.46
4	2023	4246.27
5	2024	570.05

Visualization of the total denomination amount received each year

In [47]:

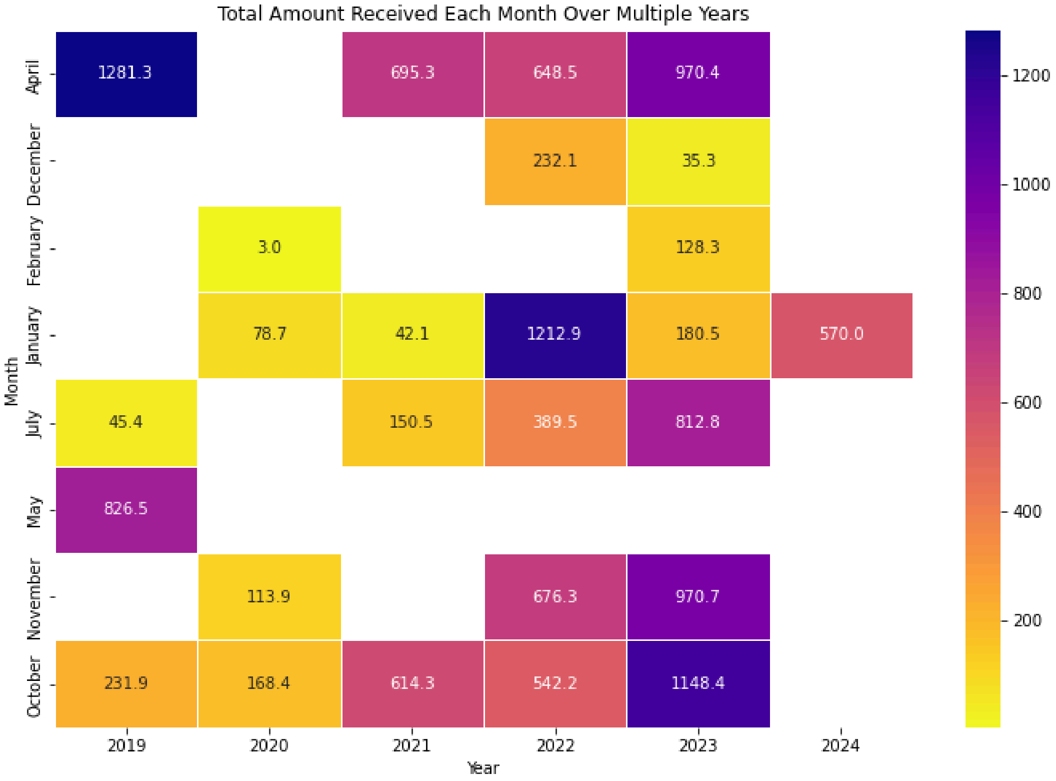
```python
# Visualize the total denomination amount received each year
plt.figure(figsize=(12, 6))
ax = sns.barplot(x='Year', y='Total Denomination(Crore)', data=denomination_df, palette="plasma_r")
plt.xlabel('Year')
plt.ylabel('Total Denomination (Crore)')
plt.title('Total Denomination Amount Received Each Year')

# Annotate each bar with the total denomination amount
for p in ax.patches:
    ax.annotate(format(p.get_height(), '.2f'),
                (p.get_x() + p.get_width() / 2., p.get_height()),
                ha = 'center', va = 'center',
                xytext = (0, 9),
                textcoords = 'offset points')

plt.show()

```



Total Amount Received Each Month Over Multiple Years

In [48]:

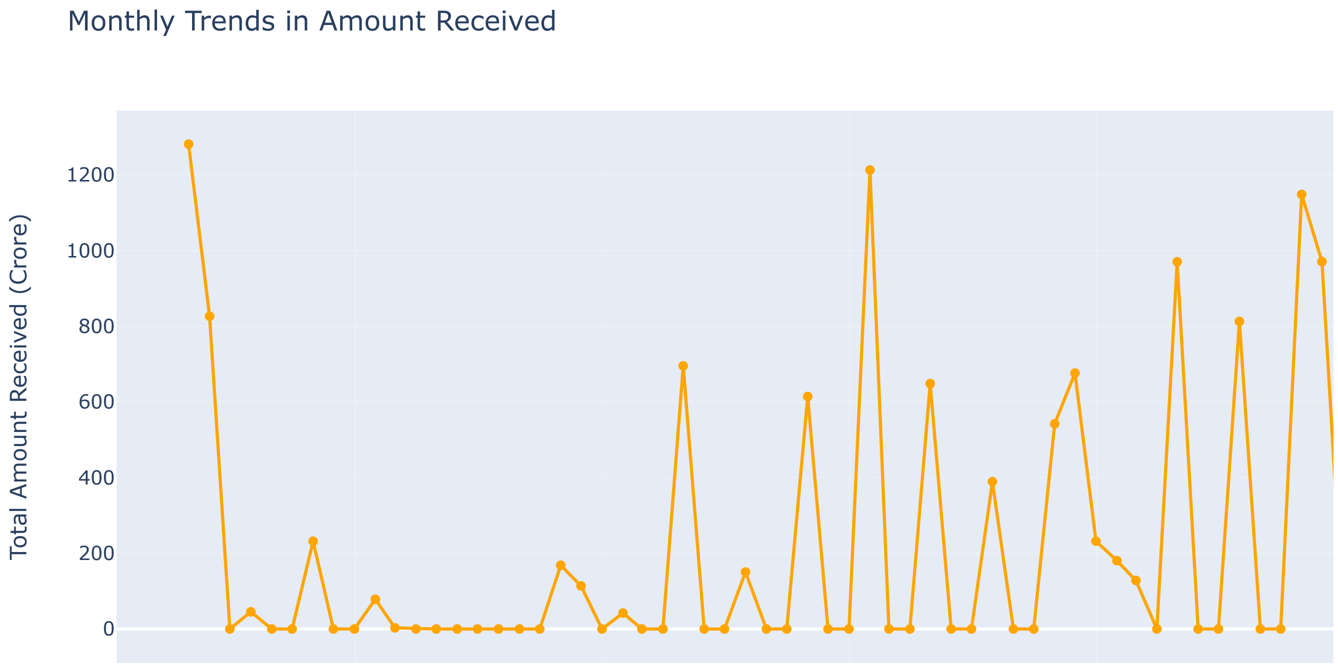
```
# Pivot the data to have 'Month' as the index, 'Year' as the columns, and 'Denomination(Crore)' as the val
pivot_table = df1.pivot_table(index='Month', columns='Year', values='Denomination(Crore)', aggfunc='sum')

# Create a heatmap
plt.figure(figsize=(12, 8))
sns.heatmap(pivot_table, cmap='plasma_r', annot=True, fmt='.1f', linewidths=0.5)
plt.xlabel('Year')
plt.ylabel('Month')
plt.title('Total Amount Received Each Month Over Multiple Years')
plt.show()
```



Monthly Trends in Amount Received

In [49]:

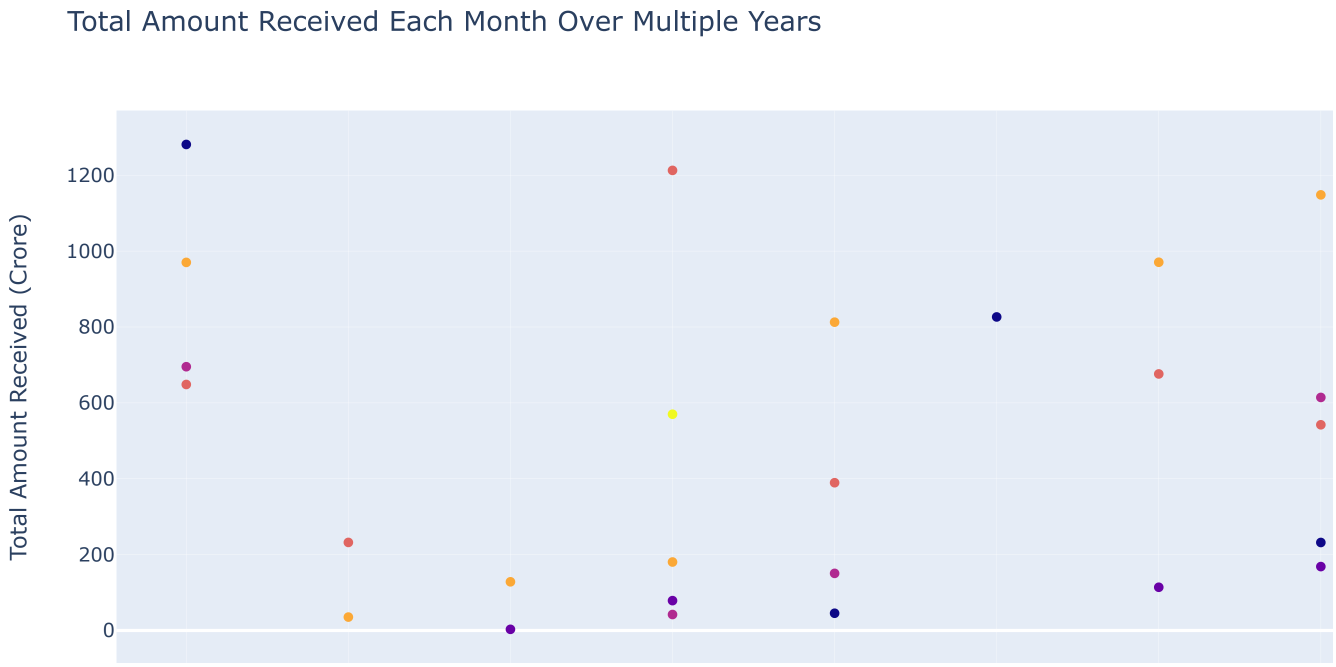
```
# Convert 'Date of Encashment' to datetime
df1['Date of Encashment'] = pd.to_datetime(df1['Date of Encashment'])

# Resample data to monthly frequency and sum the denominations
monthly_data = df1.resample('M', on='Date of Encashment')['Denomination(Crore)'].sum().reset_index()

# Create an interactive line plot using Plotly with 'plasma_r' theme and red line color
fig = px.line(monthly_data, x='Date of Encashment', y='Denomination(Crore)', title='Monthly Trends in Amou
fig.update_xaxes(title='Date')
fig.update_yaxes(title='Total Amount Received (Crore)')
fig.show()
```



Total Amount Received Each Month Over Multiple Years

In [51]:

```python
# Reset the index to ensure it's a RangeIndex
df1.reset_index(inplace=True)

# Extract the year and month from the 'Date of Encashment' column
df1['Year'] = df1['Date of Encashment'].dt.year
df1['Month'] = df1['Date of Encashment'].dt.month_name()

# Create a pivot table to aggregate the data by month and year
pivot_table = df1.pivot_table(index='Month', columns='Year', values='Denomination(Crore)', aggfunc='sum')

# Reshape the pivot table for Plotly scatter plot
scatter_df = pivot_table.stack().reset_index()
scatter_df.columns = ['Month', 'Year', 'Amount']

# Create an interactive scatter plot using Plotly
fig = px.scatter(scatter_df, x='Month', y='Amount', color='Year', title='Total Amount Received Each Month
                 labels={'Amount': 'Total Amount Received (Crore)'}, hover_data={'Year': False, 'Month': F

fig.show()

```



The top 10 political parties

In [52]:

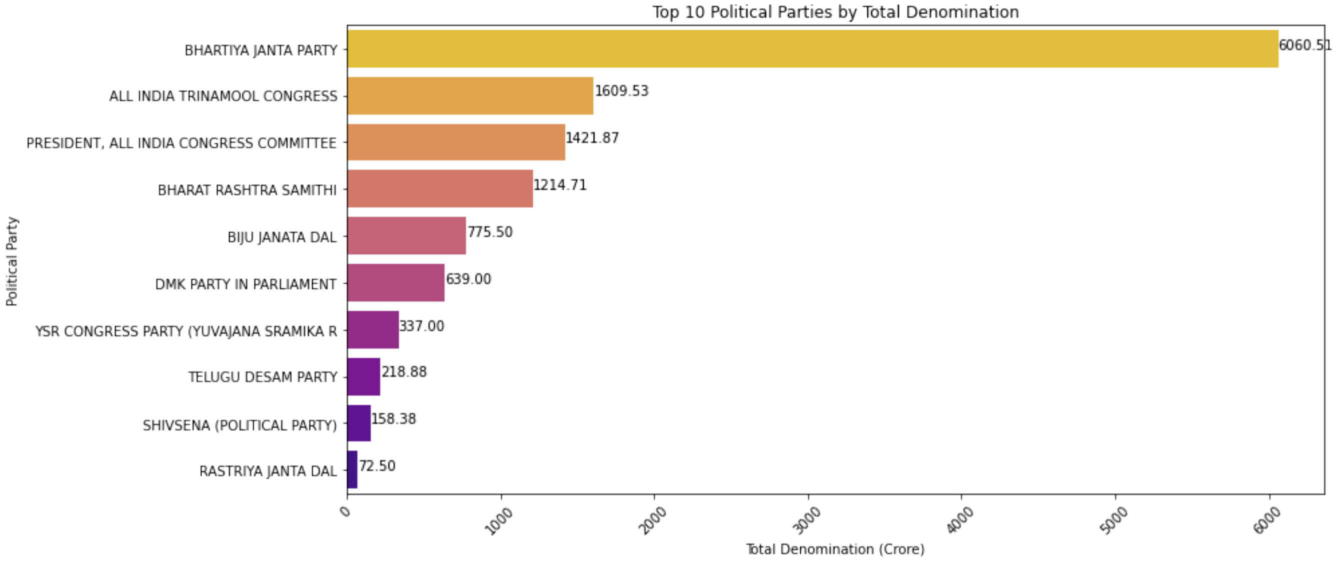
```python
# Group by 'Name of the Political Party' and calculate total denomination amount
party_denomination = df1.groupby(['Name of the Political Party','Party_Acronym'])['Denomination(Crore)'].s

# Get the top 20 political parties
top_10_parties = party_denomination.nlargest(10)

#reset index
top_10_parties = top_10_parties.reset_index()

# Display the top 20 political parties
print(top_10_parties)

```

```
              Name of the Political Party Party_Acronym  Denomination(Crore)
0                     BHARTIYA JANTA PARTY           BJP              6060.51
1                 ALL INDIA TRINAMOOL CONGRESS          AITC              1609.53
2   PRESIDENT, ALL INDIA CONGRESS COMMITTEE         PAICC              1421.87
3                    BHARAT RASHTRA SAMITHI           BRS              1214.71
4                           BIJU JANATA DAL           BJD               775.50
5                   DMK PARTY IN PARLIAMENT          DPIP               639.00
6     YSR CONGRESS PARTY (YUVAJANA SRAMIKA R        YCP(SR               337.00
7                       TELUGU DESAM PARTY           TDP               218.88
8                  SHIVSENA (POLITICAL PARTY)          S(P               158.38
9                       RASTRIYA JANTA DAL           RJD                72.50
```

Top 10 Political Parties by Total Denomination

In [53]:

```python
# Create a bar plot for the top 10 political parties
plt.figure(figsize=(14,6))
sns.barplot(x='Denomination(Crore)', y='Name of the Political Party', data=top_10_parties, palette='plasma
plt.xlabel('Total Denomination (Crore)')
plt.ylabel('Political Party')
plt.title('Top 10 Political Parties by Total Denomination')
plt.xticks(rotation=45)

# Add value labels above the bars
for index, row in top_10_parties.iterrows():
    plt.text(row['Denomination(Crore)'], index, f"{row['Denomination(Crore)']:.2f}", color='black', ha="le

plt.tight_layout()
plt.show()
```



In [ ]:

In [54]:

```python
# Group by 'Name of the Political Party' and 'Party_Acronym' and count the number of Bond Recived
party_count = df1.groupby(['Name of the Political Party', 'Party_Acronym']).size()

# Sort the party_count Series by count in descending order
party_count = party_count.sort_values(ascending=False)

# Reset index to make 'Name of the Political Party' and 'Party_Acronym' columns accessible for plotting
party_count = party_count.reset_index(name='Receive Count')

party_count
```

Out[54]:

	Name of the Political Party	Party_Acronym	Receive Count
0	BHARTIYA JANTA PARTY	BJP	8633
1	ALL INDIA TRINAMOOL CONGRESS	AITC	3305
2	PRESIDENT, ALL INDIA CONGRESS COMMITTEE	PAICC	3146
3	BHARAT RASHTRA SAMITHI	BRS	1806
4	BIJU JANATA DAL	BJD	861
5	DMK PARTY IN PARLIAMENT	DPIP	648
6	YSR CONGRESS PARTY (YUVAJANA SRAMIKA R	YCP(SR	472
7	SHIVSENA (POLITICAL PARTY)	S(P	354
8	TELUGU DESAM PARTY	TDP	279
9	AAM AADMI PARTY	AAP	245
10	RASTRIYA JANTA DAL	RJD	149
11	NATIONALIST CONGRESS PARTY PARLIAMENT OF	NCPPO	116
12	JANATA DAL (SECULAR)	JD(S)	75
13	SIKKIM KRANTIKARI MORCHA	SKM	50
14	ADYAKSHA SAMAJVADI PARTY	ASP	46
15	JHARKHAND MUKTI MORCHA	JMM	45
16	JANASENA PARTY	JP	39
17	ALL INDIA ANNA DRAVIDA MUNNETRA KAZHAGAM	AIADMK	38
18	SHIROMANI AKALI DAL	SAD	33
19	MAHARASHTRAWADI GOMNTAK PARTY	MGP	28
20	GOA FORWARD PARTY	GFP	17
21	BIHAR PRADESH JANTA DAL(UNITED)	BPJD	14
22	SIKKIM DEMOCRATIC FRONT	SDF	10
23	JAMMU AND KASHMIR NATIONAL CONFERENCE	JAKNC	5
24	NATIONALIST CONGRESS PARTY MAHARASHTRA PRADESH	NCPMP	5
25	SHIVSENA	S	1
26	RASHTRIYA JANTA DAL	RJD	1

In [55]:

```python
# Get the top 10 parties by count
party_count.head(10)
```

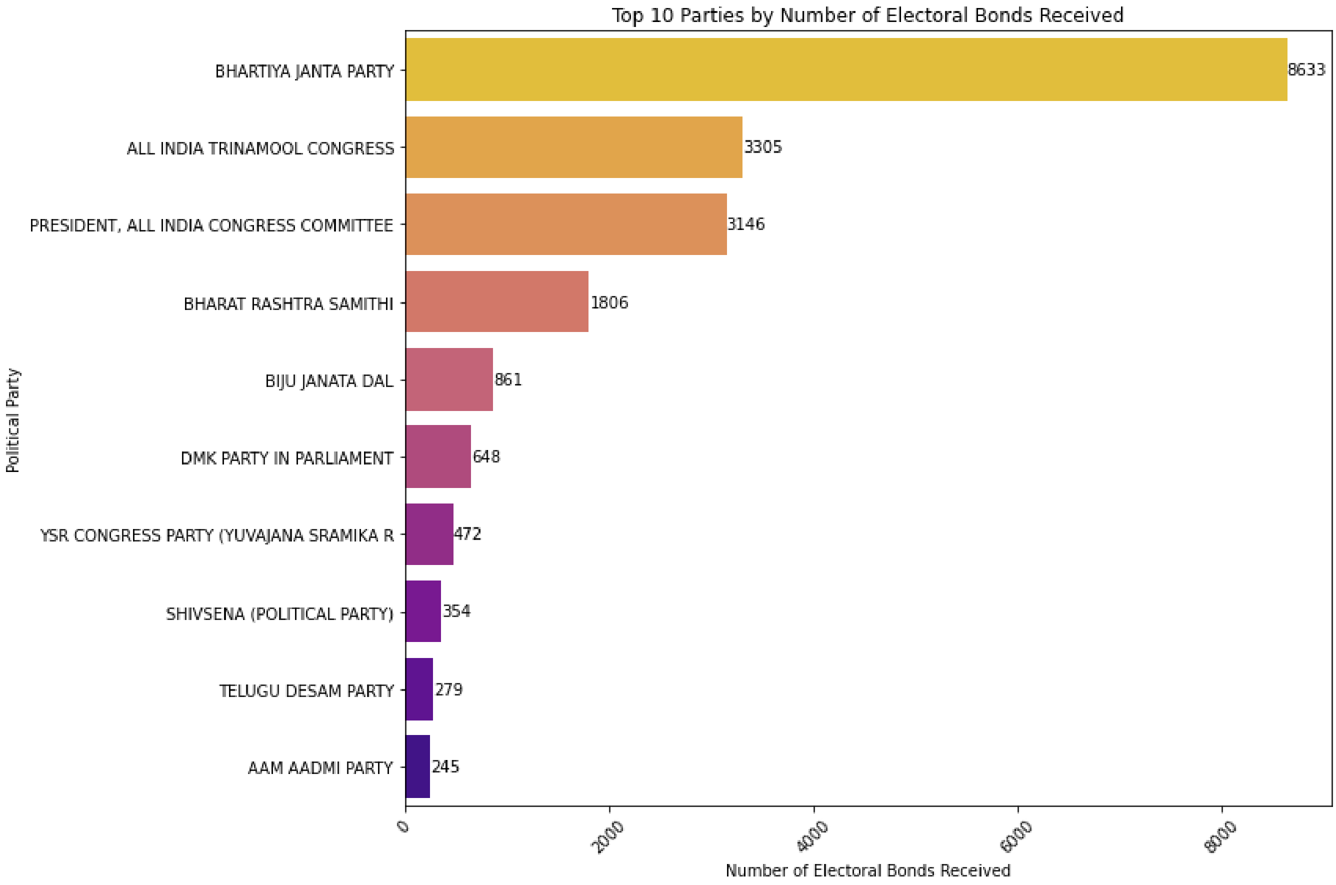
Out[55]:

	Name of the Political Party	Party_Acronym	Receive Count
0	BHARTIYA JANTA PARTY	BJP	8633
1	ALL INDIA TRINAMOOL CONGRESS	AITC	3305
2	PRESIDENT, ALL INDIA CONGRESS COMMITTEE	PAICC	3146
3	BHARAT RASHTRA SAMITHI	BRS	1806
4	BIJU JANATA DAL	BJD	861
5	DMK PARTY IN PARLIAMENT	DPIP	648
6	YSR CONGRESS PARTY (YUVAJANA SRAMIKA R	YCP(SR	472
7	SHIVSENA (POLITICAL PARTY)	S(P	354
8	TELUGU DESAM PARTY	TDP	279
9	AAM AADMI PARTY	AAP	245

Top 10 Parties by Number of Electoral Bonds Received

In [56]:

```
# Group by 'Name of the Political Party' and 'Party_Acronym' and count the number of occurrences
party_count = df1.groupby(['Name of the Political Party', 'Party_Acronym']).size()

# Get the top 10 parties by count
top_10_parties = party_count.nlargest(10)

# Reset index to make 'Name of the Political Party' and 'Party_Acronym' columns accessible for plotting
top_10_parties = top_10_parties.reset_index(name='Count')

# Create a bar plot for the count of Electoral Bonds received by the top 10 parties
plt.figure(figsize=(12, 8))
sns.barplot(x='Count', y='Name of the Political Party', data=top_10_parties, palette='plasma_r')
plt.xlabel('Number of Electoral Bonds Received')
plt.ylabel('Political Party')
plt.title('Top 10 Parties by Number of Electoral Bonds Received')
plt.xticks(rotation=45)

# Add value labels above the bars
for index, row in top_10_parties.iterrows():
    plt.text(row['Count'], index, str(row['Count']), color='black', ha="left", va="center")

plt.tight_layout()
plt.show()
```



In [57]:

```python
# Group by 'Name of the Political Party' and 'Party_Acronym' and calculate total denomination amount
party_denomination = df1.groupby(['Name of the Political Party', 'Party_Acronym', 'Year'])['Denomination(C

# Get the top 5 political parties by total denomination amount
top_5_parties = party_denomination.groupby(['Name of the Political Party', 'Party_Acronym']).sum().nlarges

# Filter the data to include only the top 5 parties
top_5_party_denomination = party_denomination[party_denomination.index.get_level_values(1).isin(top_5_part

# Reset index to make 'Year', 'Name of the Political Party', and 'Party_Acronym' columns accessible for pl
top_5_party_denomination = top_5_party_denomination.reset_index()
top_5_party_denomination
```

Out[57]:

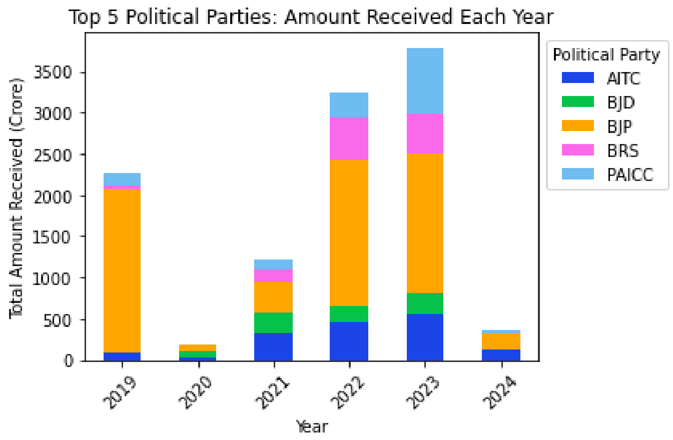
	Name of the Political Party	Party_Acronym	Year	Denomination(Crore)
0	ALL INDIA TRINAMOOL CONGRESS	AITC	2019	87.09
1	ALL INDIA TRINAMOOL CONGRESS	AITC	2020	29.77
2	ALL INDIA TRINAMOOL CONGRESS	AITC	2021	330.94
3	ALL INDIA TRINAMOOL CONGRESS	AITC	2022	468.80
4	ALL INDIA TRINAMOOL CONGRESS	AITC	2023	562.47
5	ALL INDIA TRINAMOOL CONGRESS	AITC	2024	130.45
6	BHARAT RASHTRA SAMITHI	BRS	2019	37.15
7	BHARAT RASHTRA SAMITHI	BRS	2021	153.00
8	BHARAT RASHTRA SAMITHI	BRS	2022	528.99
9	BHARAT RASHTRA SAMITHI	BRS	2023	495.57
10	BHARTIYA JANTA PARTY	BJP	2019	1971.75
11	BHARTIYA JANTA PARTY	BJP	2020	73.89
12	BHARTIYA JANTA PARTY	BJP	2021	373.00
13	BHARTIYA JANTA PARTY	BJP	2022	1763.55
14	BHARTIYA JANTA PARTY	BJP	2023	1676.33
15	BHARTIYA JANTA PARTY	BJP	2024	202.00
16	BIJU JANATA DAL	BJD	2019	10.00
17	BIJU JANATA DAL	BJD	2020	77.00
18	BIJU JANATA DAL	BJD	2021	241.00
19	BIJU JANATA DAL	BJD	2022	195.00
20	BIJU JANATA DAL	BJD	2023	252.50
21	PRESIDENT, ALL INDIA CONGRESS COMMITTEE	PAICC	2019	170.31
22	PRESIDENT, ALL INDIA CONGRESS COMMITTEE	PAICC	2020	9.00
23	PRESIDENT, ALL INDIA CONGRESS COMMITTEE	PAICC	2021	123.92
24	PRESIDENT, ALL INDIA CONGRESS COMMITTEE	PAICC	2022	289.36
25	PRESIDENT, ALL INDIA CONGRESS COMMITTEE	PAICC	2023	793.37
26	PRESIDENT, ALL INDIA CONGRESS COMMITTEE	PAICC	2024	35.90

Top 5 Political Parties: Amount Received Each Year

In [58]:

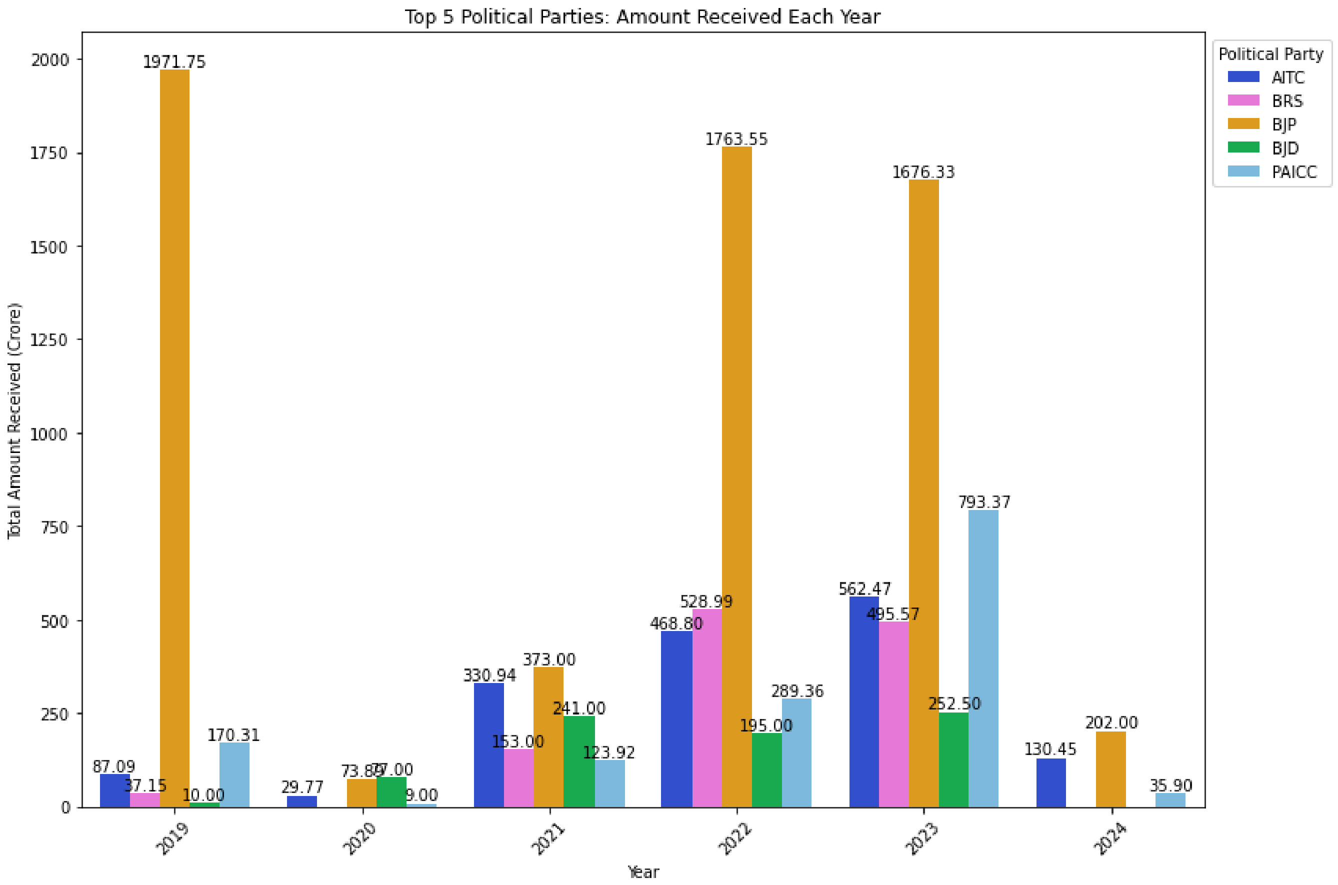
```python
# Pivot the data to have 'Year' as the index, 'Name of the Political Party' as the columns, and 'Denominat
pivot_table = top_5_party_denomination.pivot(index='Year', columns='Party_Acronym', values='Denomination(C

# Define colors for each party
party_colors = {
    'BJP': 'orange',
    'BRS': '#fa69e9',
    'AITC': '#1c45e8',
    'PAICC': '#6ebcf0',
    'BJD': '#06c24b'
}

# Create a stacked bar plot for the amount received by the top 5 parties each year
plt.figure(figsize=(12, 8))
pivot_table.plot(kind='bar', stacked=True, color=[party_colors[col] for col in pivot_table.columns])
plt.xlabel('Year')
plt.ylabel('Total Amount Received (Crore)')
plt.title('Top 5 Political Parties: Amount Received Each Year')
plt.legend(title='Political Party', bbox_to_anchor=(1, 1), loc='upper left')
plt.xticks(rotation=45)

plt.tight_layout()
plt.show()
```

```
<Figure size 864x576 with 0 Axes>
```



In [59]:

```
# Define colors for each party
party_colors = {
    'BJP': 'orange',
    'BRS': '#fa69e9',
    'AITC': '#1c45e8',
    'PAICC': '#6ebcf0',
    'BJD': '#06c24b'
}

# Create a grouped bar plot for the amount received by the top 5 parties each year
plt.figure(figsize=(12, 8))
sns.barplot(x='Year', y='Denomination(Crore)', hue='Party_Acronym', data=top_5_party_denomination, palette
plt.xlabel('Year')
plt.ylabel('Total Amount Received (Crore)')
plt.title('Top 5 Political Parties: Amount Received Each Year')
plt.legend(title='Political Party', bbox_to_anchor=(1, 1), loc='upper left')
plt.xticks(rotation=45)

# Add value labels on the bars
for p in plt.gca().patches:
    height = p.get_height()
    if np.isfinite(height):  # Check if height is a finite number
        plt.gca().text(p.get_x() + p.get_width()/2, height + 0.05, f'{height:.2f}', ha='center', va='botto

plt.tight_layout()
```



In [ ]: