```
In [3]:  import pandas as pd
         import numpy as np
         from plotly import __version__
         from plotly.offline import download_plotlyjs, init_notebook_mode, plot, iplot
         import cufflinks as cf
         init_notebook_mode(connected=True)
         cf.go_offline()
         import pandas_datareader as wb
         import seaborn as sns
         import plotly.graph_objs as go
         import plotly.express as px
```

BRICS (Brazil, Russia, India, China, and South Africa)

The BRICS acronym stands for Brazil, Russia, India, China, and South Africa. These countries are often grouped together due to their shared characteristics as emerging economies with significant potential for future growth. This project aims to analyze the BRICS nations, focusing on their economic development, inflation, foreign direct investment (FDI), and net migration.

```
In [88]:  population=pd.read_csv('Population- Sheet2.csv')
```

```
In [89]:  col = ['Year','Brazil', 'Russian Federation', 'India', 'China', 'South Africa', 'Iran, Islamic Rep.', 'Egypt, Arab Rep.', 'Ethiopia', 'United Arab Emirates']
          col2=['Year','India','China','Brazil','South Africa','Russian Federation']
          col3=['Year','India','China','Brazil','South Africa','Russian']
```

```
In [90]:  BRICS = population[col]
```

```
In [91]:  BRICS.sample(5)
```

Out[91]:

|	Year	Brazil	Russian Federation	India	China	South Africa	Iran, Islamic Rep.	Egypt, Arab Rep.	Ethiopia	United Arab Emirates
57	2017	208504960.0	144496739.0	1.354196e+09	1.396215e+09	56641209.0	84505076.0	101789386.0	108197950.0	9068296.0
16	1976	111286504.0	135147000.0	6.374514e+08	9.306850e+08	26480300.0	33841060.0	39649050.0	33062216.0	614177.0
50	2010	196353492.0	142849468.0	1.240614e+09	1.337705e+09	51784921.0	75373855.0	87252413.0	89237791.0	8481771.0
35	1995	163515328.0	148375787.0	9.642791e+08	1.204855e+09	43986084.0	60794809.0	64166908.0	57476536.0	2433988.0
38	1998	171039804.0	147670784.0	1.021435e+09	1.241935e+09	45852166.0	63461421.0	68446011.0	63136493.0	2921130.0

```
In [144]:  fig = px.line(BRICS.tail(10) ,x="Year", y=['India','China'],title='India VS China Population')
           fig.show()
```


India VS China Population
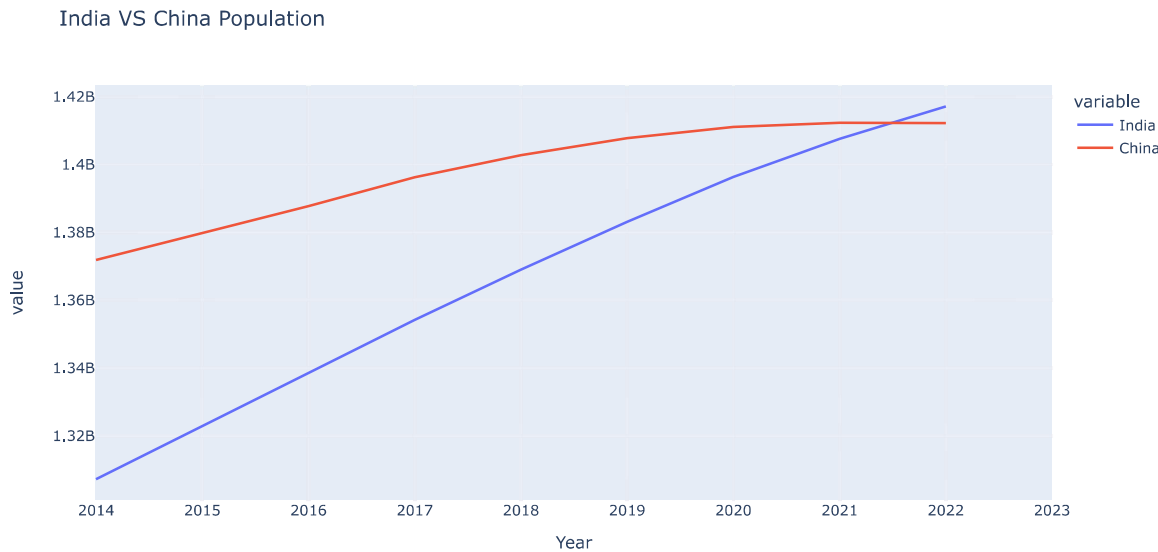
```
In [ ]:
```

```
In [146]: fig = px.line(BRICS ,x="Year", y=['Brazil','South Africa','Russian Federation'],title='BRICS Population')
          fig.show()
```

BRICS Population
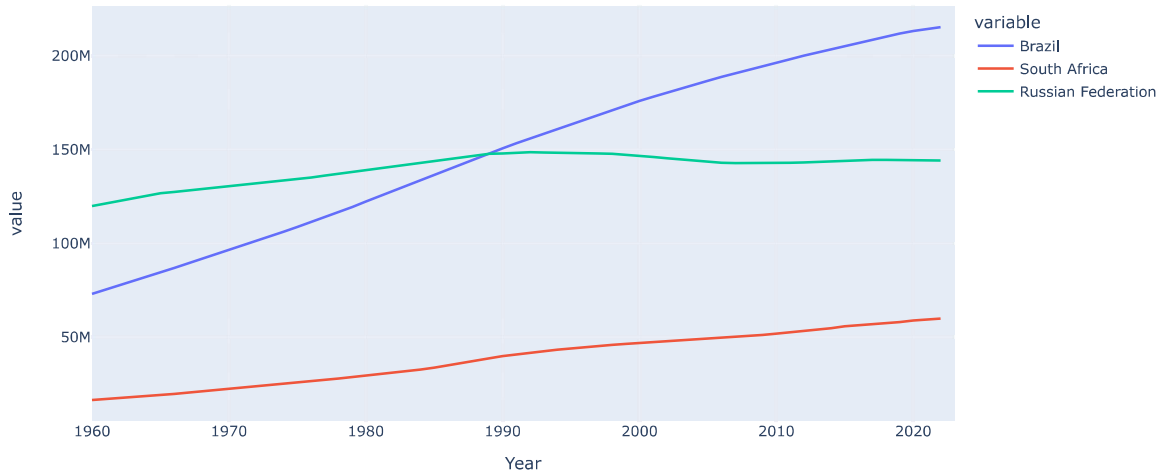

```
In [151]: BRICS['India Growth'] = BRICS['India'].pct_change() * 100
          BRICS['China Growth'] = BRICS['China'].pct_change() * 100
          BRICS['Brazil Growth'] = BRICS['Brazil'].pct_change() * 100
          BRICS['South Africa Growth'] = BRICS['South Africa'].pct_change() * 100
          BRICS['Russian Federation'] = BRICS['Russian Federation'].pct_change() * 100
```

```
In [154]: ICS.iplot(kind='line',x='Year',y=['India Growth','China Growth','Brazil Growth','South Africa Growth','Russian Federation'],title='BRICS Population Growth Rate')
```

BRICS Population Growth Rate
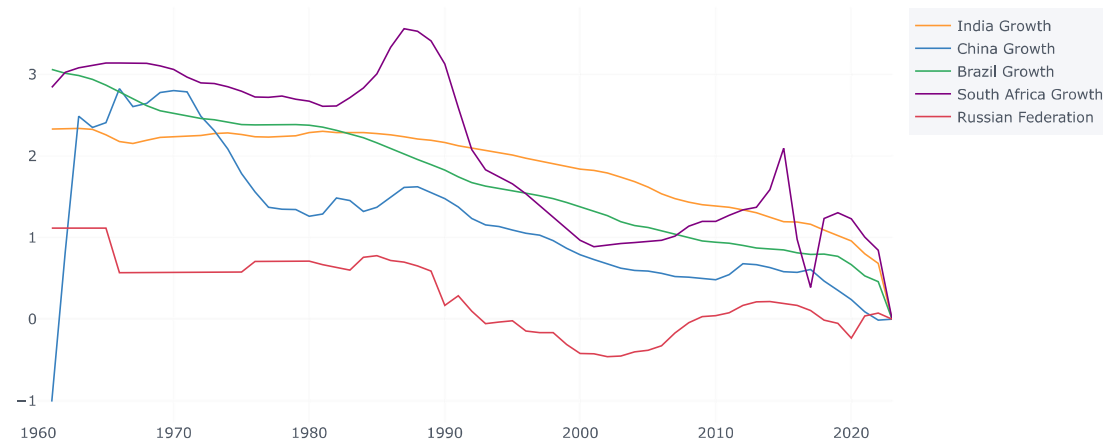
Export to plot.ly »

```
In [96]: population
```

Out[96]:

	Year	Aruba	Africa Eastern and Southern	Afghanistan	Africa Western and Central	Angola	Albania	Andorra	Arab World	United Arab Emirates	...	Virgin Islands (U.S.)	Viet Nam	Vanuatu	World	Samoa	Kosovo	Yemen, Rep.
0	1960	54608.0	130692579.0	8622466.0	97256290.0	5357195.0	1608800.0	9443.0	93359407.0	133426.0	...	32500.0	32718461.0	64608.0	3.031474e+09	113335.0	947000.0	5542459.0
1	1961	55811.0	134169237.0	8790140.0	99314028.0	5441333.0	1659800.0	10216.0	95760348.0	140984.0	...	34300.0	33621982.0	66462.0	3.072422e+09	116820.0	966000.0	5646668.0
2	1962	56682.0	137835590.0	8969047.0	101445032.0	5521400.0	1711319.0	11014.0	98268683.0	148877.0	...	35000.0	34533889.0	68391.0	3.126850e+09	120163.0	994000.0	5753386.0
3	1963	57475.0	141630546.0	9157465.0	103667517.0	5599827.0	1762621.0	11839.0	100892507.0	157006.0	...	39800.0	35526727.0	70400.0	3.193429e+09	123416.0	1022000.0	5860197.0
4	1964	58178.0	145605995.0	9355514.0	105959979.0	5673199.0	1814135.0	12690.0	103618568.0	165305.0	...	40800.0	36509166.0	72493.0	3.260442e+09	126582.0	1050000.0	5973803.0
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
59	2019	106442.0	667242986.0	37769499.0	454306063.0	32353588.0	2854191.0	76343.0	441467739.0	9211657.0	...	106669.0	95776716.0	304404.0	7.741775e+09	211905.0	1788878.0	31546691.0
60	2020	106585.0	685112979.0	38972230.0	466189102.0	33428486.0	2837849.0	77700.0	449228296.0	9287289.0	...	106290.0	96648685.0	311685.0	7.820206e+09	214929.0	1790133.0	32284046.0
61	2021	106537.0	702977106.0	40099462.0	478185907.0	34503774.0	2811666.0	79034.0	456520777.0	9365145.0	...	105870.0	97468029.0	319137.0	7.888306e+09	218764.0	1786038.0	32981641.0
62	2022	106445.0	720859132.0	41128771.0	490330870.0	35588987.0	2777689.0	79824.0	464684914.0	9441129.0	...	105413.0	98186856.0	326740.0	7.950947e+09	222382.0	1761985.0	33696614.0
63	2023	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	...	NaN	NaN	NaN	NaN	NaN	NaN	NaN

64 rows × 267 columns

```
In [107]: World_population=population.iloc[62].sum()
          World_population
```

Out[107]: 86253491819.0

```
In [158]: BRICS_population=BRICS.iloc[-2].sum().round(2)
          BRICS_population
```

Out[158]: 35811542150

```
In [170]: labels= ['World','BRICS']
          data= [World_population-BRICS_population,BRICS_population]

          fig = go.Figure(data=[go.Pie(values=data,labels=labels)])
          fig.update_layout(title='Population Distribution')
          fig.show()
```

Population Distribution

The BRICS nations (Brazil, Russia, India, China, and South Africa) have a combined population of 3.4 billion peopleThis represents roughly 41% of Worlds Population

```
In [66]: World_GDP=pd.read_csv('GDP - Sheet2.csv')
```

```
In [67]: World_GDP.sample(5)
```

Out[67]:

	Year	Aruba	Africa Eastern and Southern	Afghanistan	Africa Western and Central	Angola	Albania	Andorra	Arab World	United Arab Emirates	...	Virgin Islands (U.S.)	Viet Nam	Vanuatu	World	S
6	1966	NaN	NaN	1.400000e+09	1.584558e+10	NaN	NaN	NaN	NaN	NaN	...	NaN	NaN	NaN	2.160000e+12	
25	1985	NaN	1.360000e+11	NaN	1.170000e+11	7.558613e+09	1.897050e+09	3.467427e+08	4.240000e+11	4.060365e+10	...	NaN	1.409469e+10	131856420.7	1.300000e+13	9.55721
31	1991	872067039.1	2.760000e+11	NaN	1.280000e+11	1.040119e+10	1.099559e+09	1.106891e+09	4.810000e+11	5.155217e+10	...	NaN	9.613370e+09	201334169.1	2.390000e+13	1.25559
18	1978	NaN	1.060000e+11	3.300000e+09	7.120053e+10	NaN	NaN	3.080203e+08	2.520000e+11	2.377576e+10	...	NaN	NaN	NaN	8.740000e+12	
1	1961	NaN	NaN	5.488889e+08	1.113592e+10	NaN	NaN	NaN	NaN	NaN	...	NaN	NaN	NaN	1.450000e+12	

5 rows × 267 columns

```
In [143]: fig = px.line(World_GDP ,x="Year", y=['India','China'],title='India Vs China GDP')
          fig.show()
```
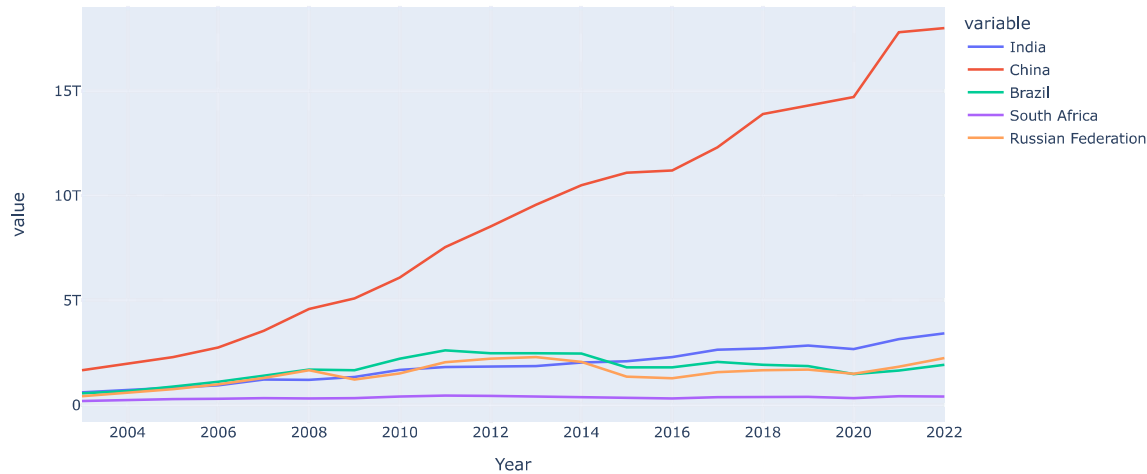
India Vs China GDP
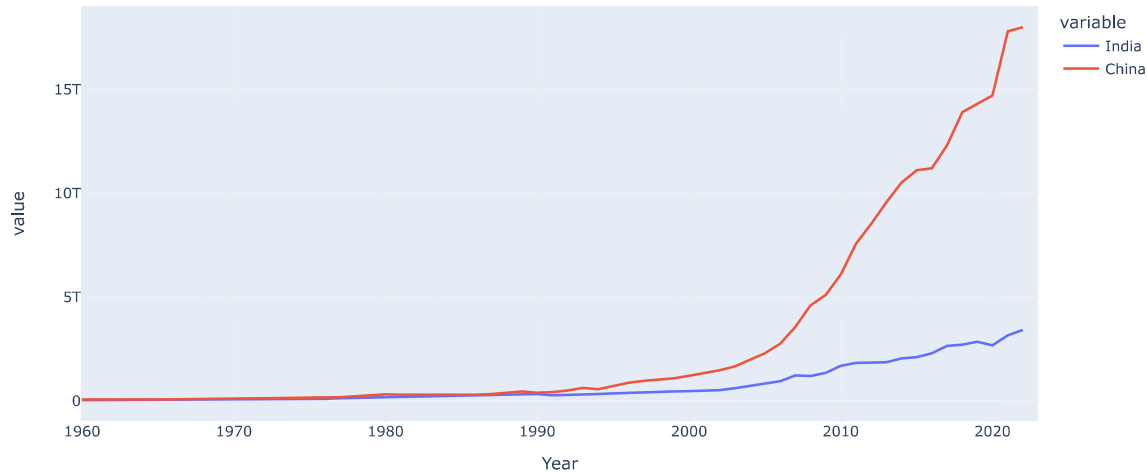

```
In [69]: BRICS_GDP = World_GDP[col]
```
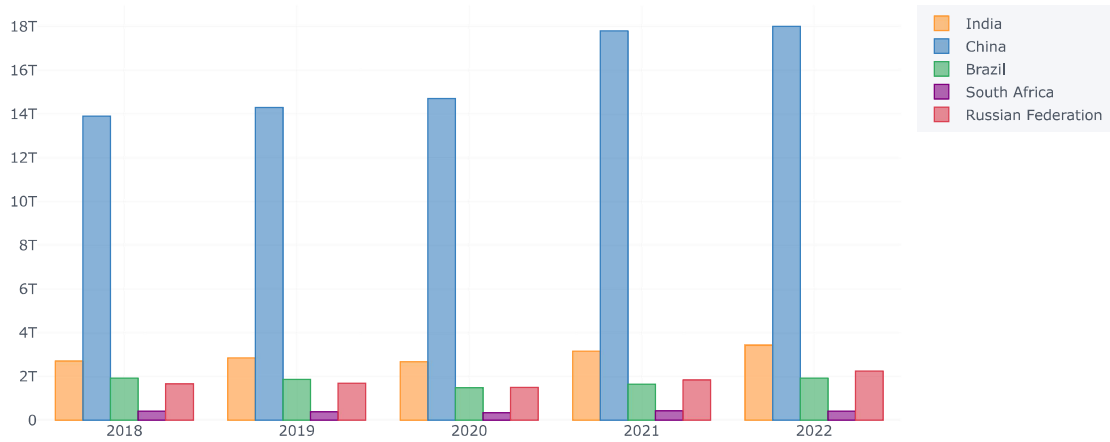
```
In [142]: fig = px.line(BRICS_GDP.tail(20) ,x="Year", y=['India','China','Brazil','South Africa','Russian Federation'],title='BRICS GDP')
          fig.show()
```

BRICS GDP

```
In [139]: BRICS_GDP.fillna(0)
          BRICS_GDP = BRICS_GDP.iloc[:-1]
          BRICS_GDP.tail().iplot(kind='bar',x="Year", y=['India','China','Brazil','South Africa','Russian Federation'],title='BRICS GDP')
```
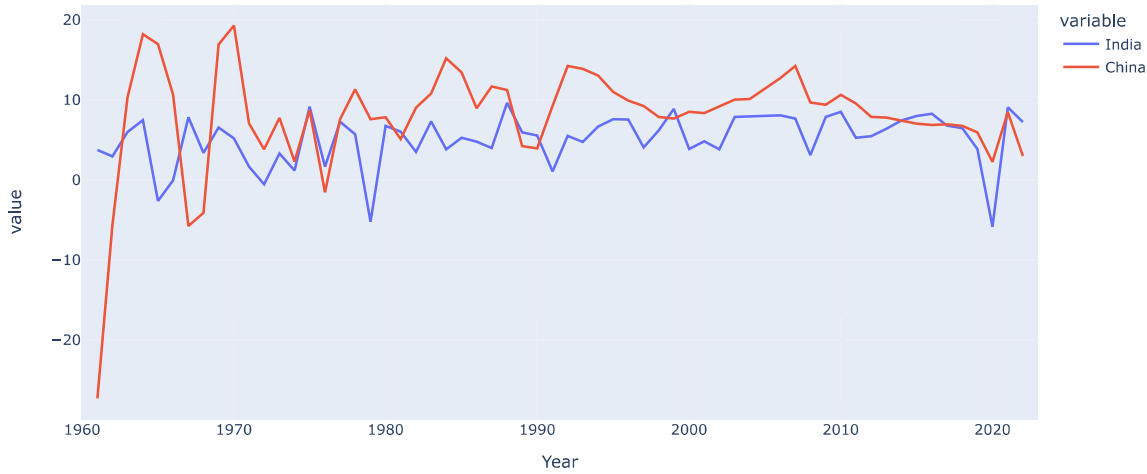
BRICS GDP

Export to plot.ly »

```
In [80]: GDP_GROWTH_RATE=pd.read_csv('GDP_growth.csv')
```
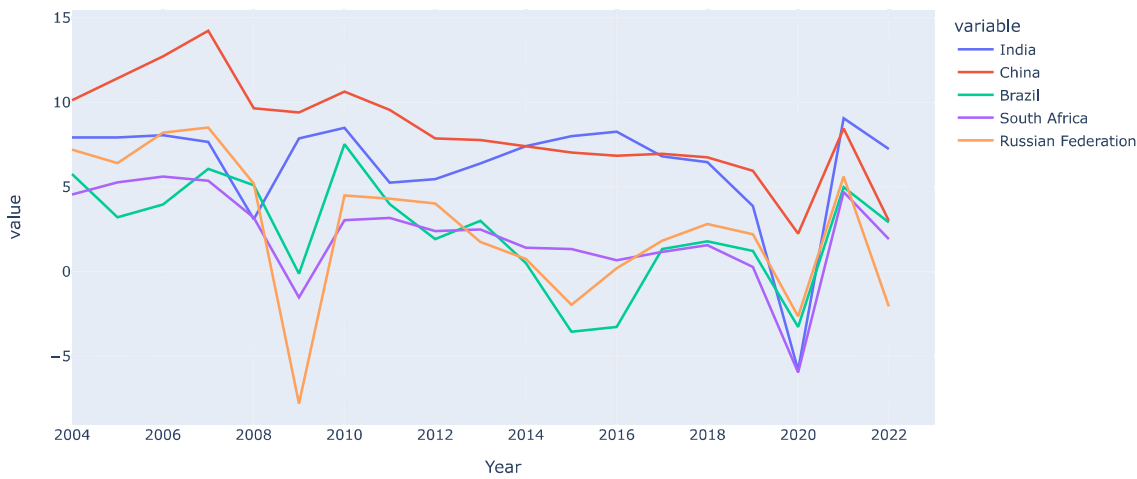
```
In [131]: fig = px.line(GDP_GROWTH_RATE ,x="Year", y=['India','China'],title='GDP Growth Rate Trends(1960-2022)')
          fig.show()
```

GDP Growth Rate Trends(1960-2022)

```
In [132]: fig = px.line(GDP_GROWTH_RATE.tail(20) ,x="Year", y=['India','China','Brazil','South Africa','Russian Federation'],title='GPD Growth Rate Trends')
          fig.show()
```
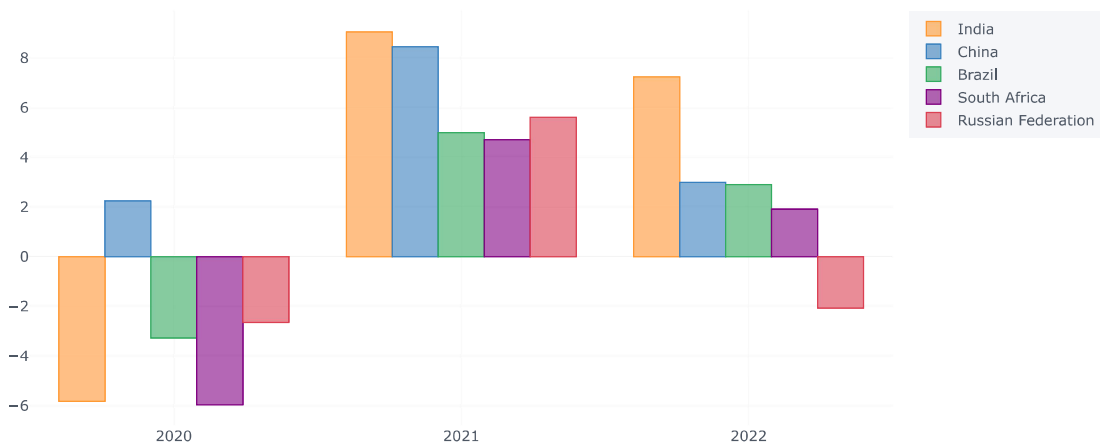

GPD Growth Rate Trends

```
In [84]: BRICS_GDP_growth = GDP_GROWTH_RATE[col]
         BRICS_GDP_growth.fillna(0)
         BRICS_GDP_growth = BRICS_GDP_growth.iloc[:-1]
```

```
In [130]: BRICS_GDP_growth.tail(3).iplot(kind='bar',x="Year", y=['India','China','Brazil','South Africa','Russian Federation'],title='GDP Growth Rate (2020-2023)')
```
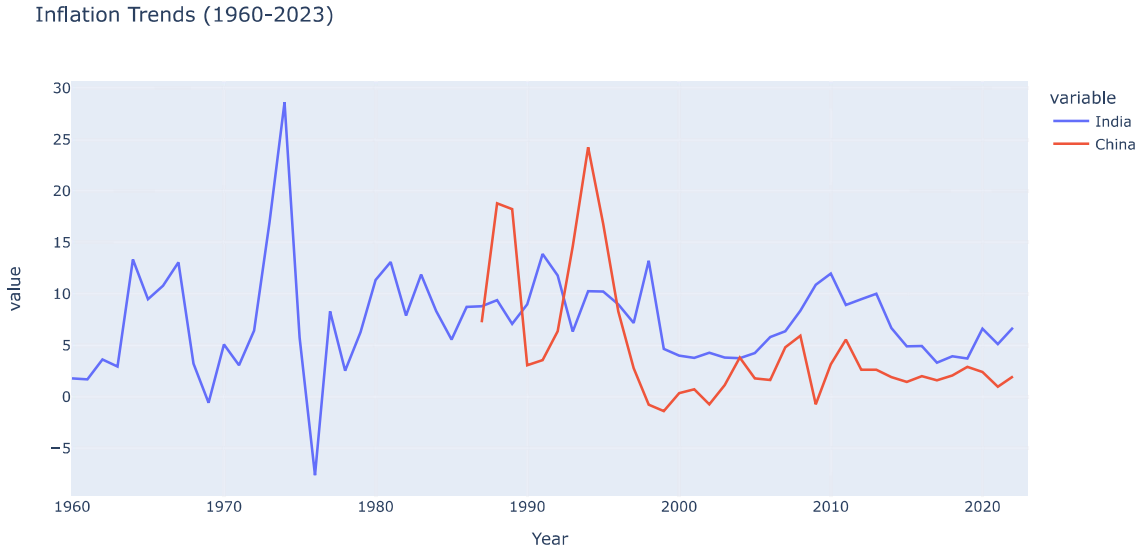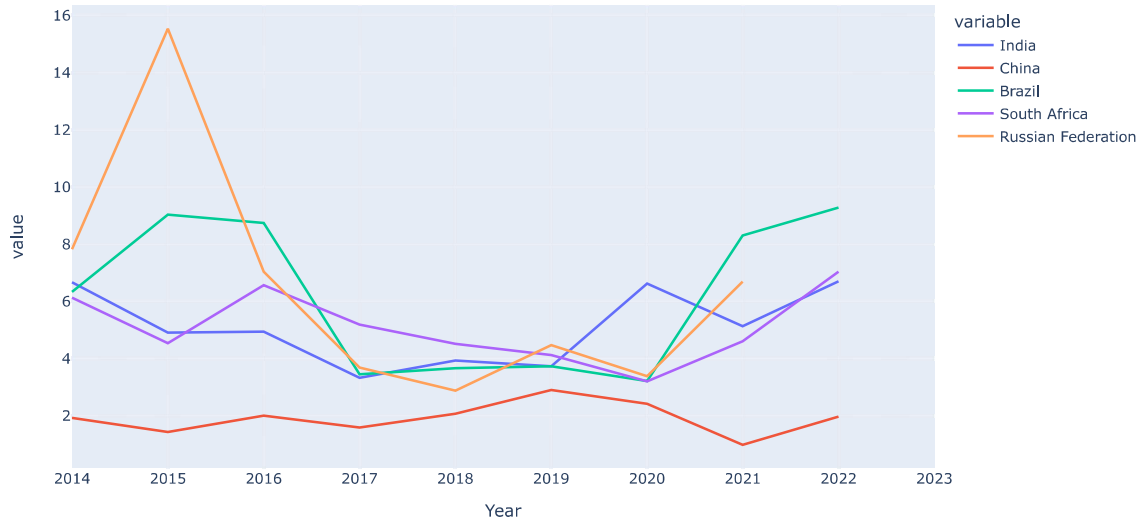

GDP Growth Rate (2020-2023)

Export to plot.ly »

```
In [58]: Inflation=pd.read_csv('Inflation.csv')
```

```
In [129]: Inflation.fillna(0)
          fig = px.line(Inflation.tail(200) ,x="Year", y=['India','China'],title='Inflation Trends (1960-2023)')
          fig.show()
```

## Inflation Trends (1960-2023)


```
In [60]: fig = px.line(Inflation.tail(10) ,x="Year", y=['India','China','Brazil','South Africa','Russian Federation'])
         fig.show()
```



```
In [61]: BRICS_Inflation1 = Inflation[col2]
         BRICS_Inflation1
         BRICS_Inflation1 = BRICS_Inflation1.iloc[:-1]
```

```
In [128]: BRICS_Inflation1.tail().iplot(kind='bar',x='Year',y=['India','China','Brazil','South Africa','Russian Federation'],title='BRICS Inflation (2018-2022)')
```

BRICS Inflation (2018-2022)
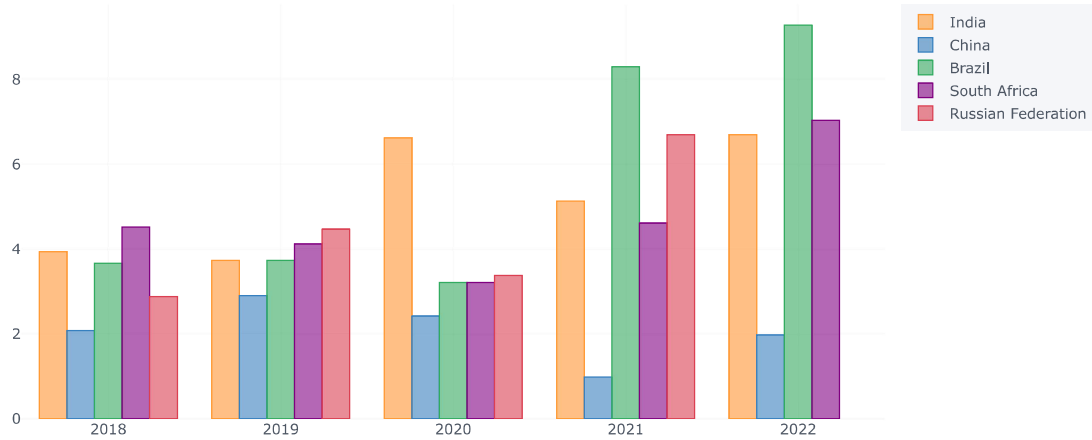
Export to plot.ly »

```
In [341]: BRICS_Inflation1
```
Out[341]:

	Year	India	China	Brazil	South Africa	Russian Federation
0	1960	1.779878	NaN	NaN	1.288859	NaN
1	1961	1.695213	NaN	NaN	2.102374	NaN
2	1962	3.632215	NaN	NaN	1.246285	NaN
3	1963	2.946161	NaN	NaN	1.337970	NaN
4	1964	13.355260	NaN	NaN	2.534973	NaN
...	...	...	...	...	...	...
58	2018	3.938826	2.074790	3.664850	4.517165	2.878297
59	2019	3.729506	2.899234	3.732976	4.120246	4.470367
60	2020	6.623437	2.419422	3.211768	3.210036	3.381659
61	2021	5.131407	0.981015	8.301660	4.611672	6.694459
62	2022	6.699034	1.973576	9.280106	7.039727	NaN

63 rows × 6 columns

```
In [6]: World_FDI=pd.read_csv('Foreign direct investment, net inflows (% of GDP).csv')
```
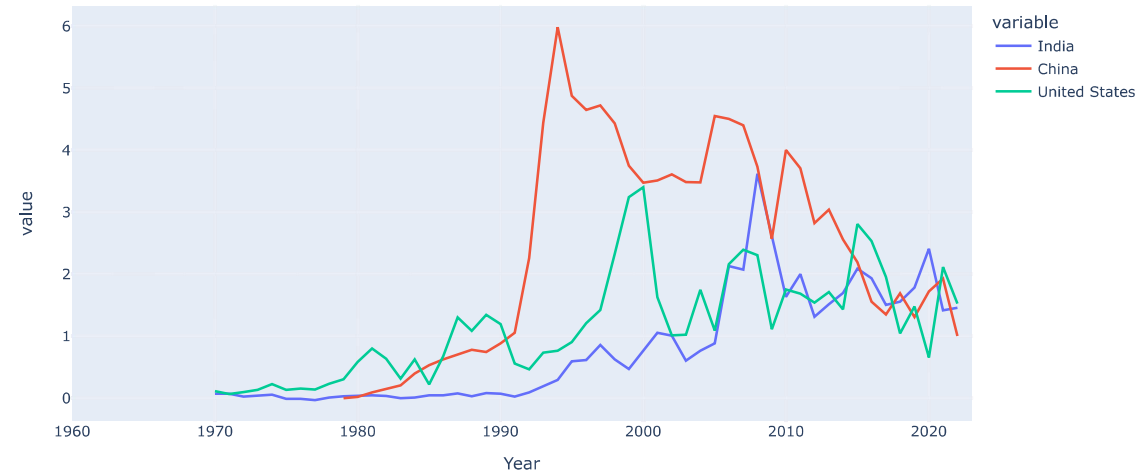
```
In [7]: World_FDI
```
Out[7]:

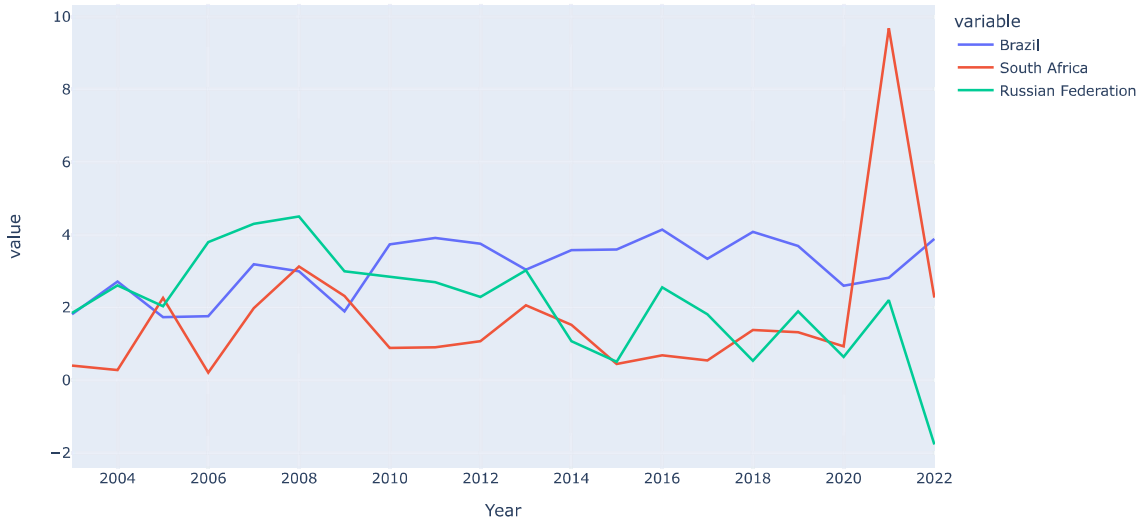|	Year	Aruba	Africa Eastern and Southern	Afghanistan	Africa Western and Central	Angola	Albania	Andorra	Arab World	United Arab Emirates	...	Virgin Islands (U.S.)	Viet Nam	Vanuatu	World	Samoa	Kosovo	Yemen, Rep.	South Africa	Zambia	Zim
0	1960	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	...	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	
1	1961	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	...	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	
2	1962	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	...	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	
3	1963	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	...	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	
4	1964	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	...	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
59	2019	-2.215280	1.497711	0.124496	1.512345	-5.78081	7.797920	NaN	1.235840	4.276339	...	NaN	4.821075	5.643187	2.081403	-0.238660	3.608747	-1.69494	1.314078	2.350919	1
60	2020	6.294368	1.481766	0.064994	1.449150	-3.84826	7.055092	NaN	1.318283	5.689844	...	NaN	4.558362	4.525842	1.407387	0.509390	5.113617	NaN	0.932200	1.353931	0
61	2021	4.303487	5.039601	0.144401	2.011011	-6.54854	6.796141	NaN	2.193652	4.977884	...	NaN	4.277081	4.431239	2.330353	1.060395	5.322207	NaN	9.677949	1.784078	0
62	2022	7.000585	1.716554	NaN	1.741923	-6.17951	7.619756	NaN	2.190303	4.483962	...	NaN	4.378644	1.012963	1.749045	0.576323	8.121202	NaN	2.268806	-0.223290	1
63	2023	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	...	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	

64 rows × 267 columns

```
In [115]: fig = px.line(World_FDI ,x="Year", y=['India','China','United States'],title='Foreign Direct Investment, Percentage of GDP')
          fig.show()
```

Foreign Direct Investment, Percentage of GDP


```
In [52]: BRICS_FDI = World_FDI[col2]
```

```
In [27]: fig = px.line(BRICS_FDI.tail(20) ,x="Year", y=['Brazil','South Africa','Russian Federation'])
         fig.show()
```

```
In [112]: BRICS_FDI = BRICS_FDI.iloc[:-1]
          BRICS_FDI.tail(5).iplot(kind='bar',x='Year',y=['India','China','Brazil','South Africa','Russian Federation'],title='BRICS Foreign Direct Investment(From 2015-2019
```

BRICS Foreign Direct Investment(From 2015-2019)
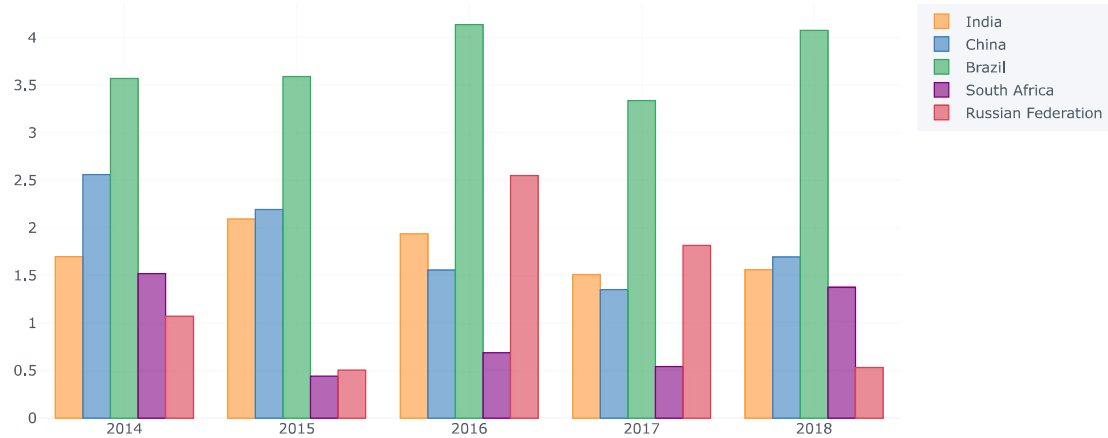
Export to plot.ly »

```
In [12]: Net_migration=pd.read_csv('Net migration csv')
```

```
In [15]: Net_migration
```

Out[15]:

|	Year	Aruba	Africa Eastern and Southern	Afghanistan	Africa Western and Central	Angola	Albania	Andorra	Arab World	United Arab Emirates	...	Virgin Islands (U.S.)	Viet Nam	Vanuatu	World	Samoa	Kosovo	Yemen, Rep.	South Africa	Zambia	Zimbabwe
0	1960	0	-90849.0	2606	-847.0	-43749.0	15540	642	-111478.0	3916.0	...	1043	0	0	0	-477	-6603	-17145	18909	-3894	-8256
1	1961	-569	-1348.0	6109	-41547.0	-49186.0	15424	653	-176004.0	4081.0	...	1665	0	0	0	-670	-6713	-17494	56098	-4357	-8582
2	1962	-609	-24259.0	7016	-36399.0	-54566.0	15288	664	-144522.0	4108.0	...	1816	0	0	0	-917	-7466	-17846	68068	-4756	-8931
3	1963	-646	-16266.0	6681	-37435.0	-59777.0	15007	670	-184289.0	4037.0	...	1843	0	0	0	-998	-7874	-18217	70976	-5029	-9369
4	1964	-684	37452.0	7079	-45534.0	-71948.0	14612	672	-173533.0	3922.0	...	1850	-10004	0	0	-984	-8266	-18583	74419	-5214	-10064
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
59	2019	412	-187000.0	-8082	-329000.0	58986.0	-8889	1238	140000.0	-4470.0	...	-458	-4028	-403	0	-2469	-33469	-39769	22728	18019	-59918
60	2020	0	-49000.0	166821	-99800.0	7557.0	-9117	1474	-1590000.0	-2760.0	...	0	-2016	-197	0	-1060	-15050	-86100	30852	9015	-29955
61	2021	501	-179000.0	-183672	-265000.0	29089.0	-10612	1377	-459000.0	-2760.0	...	-224	-992	-197	0	-882	-15050	-101468	10934	9015	-25005
62	2022	164	-274000.0	-65846	-186000.0	-1000.0	-8000	200	309000.0	0.0	...	-450	-82700	0	0	-1500	-5000	-29998	58496	-5000	-9999
63	2023	157	-271749.0	-65846	-183333.0	-1000.0	-8000	200	298369.0	0.0	...	-450	-82700	0	0	-1500	-5000	-29914	58496	-5000	-9999

64 rows × 267 columns

```
In [110]: fig = px.line(Net_migration ,x="Year", y=['India','China','United States'],title='Migration Trend of USA, IND and CHN (1960-Present)')
          fig.show()
```

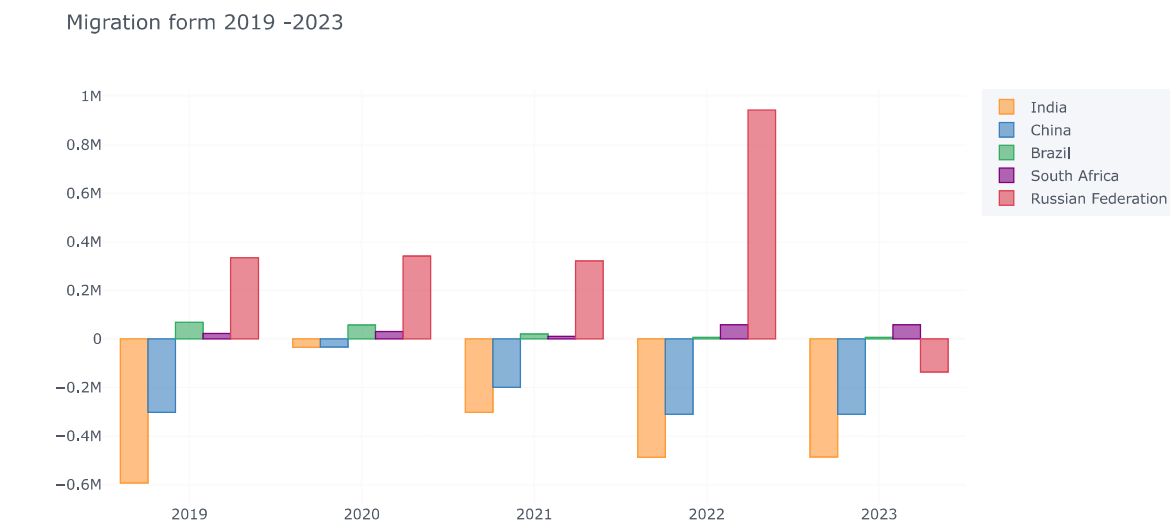Migration Trend of USA, IND and CHN (1960-Present)
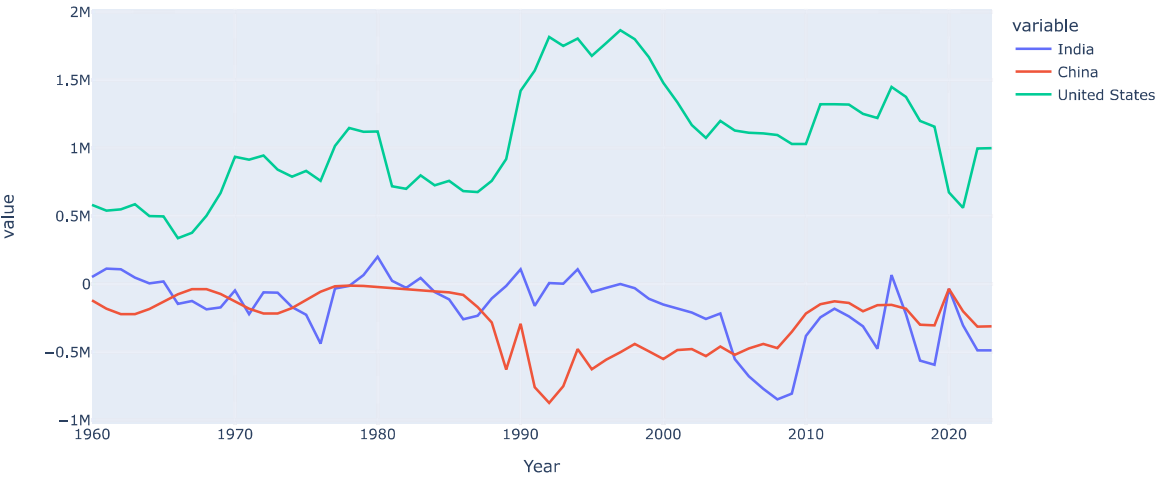
```
In [44]: BRICS_migration = Net_migration[col2]
```

```
In [100]: fig = px.line(BRICS_migration.tail(20) ,x="Year", y=['Brazil','South Africa','Russian Federation'],title='Migration Trend from 2004 - Present')
          fig.show(),
```

Migration Trend from 2004 - Present
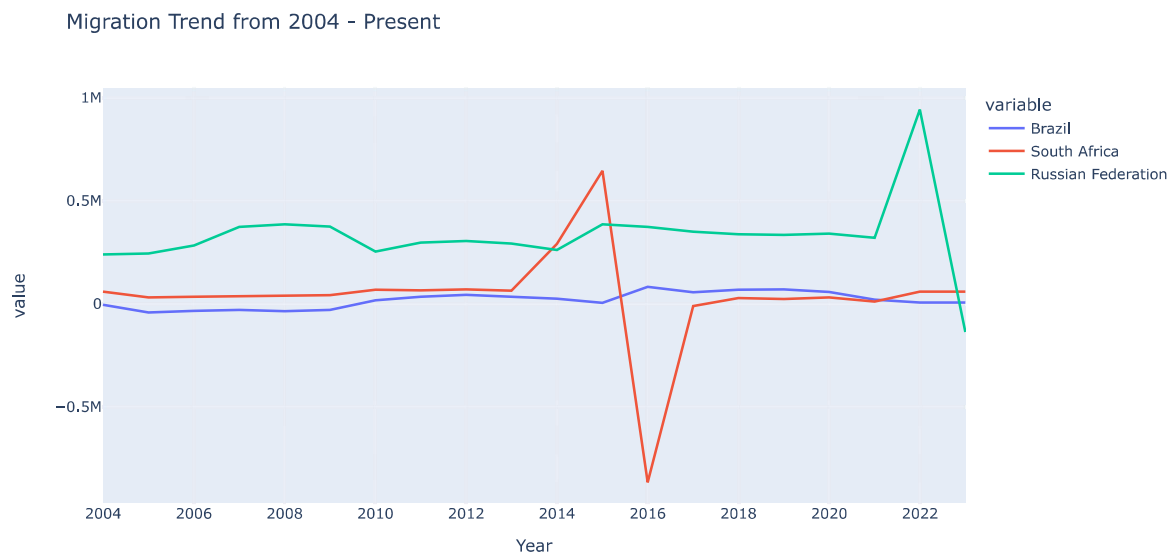

```
Out[100]: (None,)
```

```
In [98]: # BRICS_migration = BRICS_migration.iloc[:-1]
         BRICS_migration.tail().iplot(kind='bar',x='Year',y=['India','China','Brazil','South Africa','Russian Federation'],title='Migration form 2019 -2023 ')
```

Migration form 2019 -2023

Export to plot.ly »

```
In [ ]:
```

```
In [ ]:
```

```
In [ ]:
```