```python
import pandas as pd

df = pd.read_excel('south-africa-statistics.xlsx', sheet_name=0)

df.iloc[0]
```

```
Unnamed: 0         Country Name
Unnamed: 1         Country Code
Unnamed: 2       Indicator Name
Unnamed: 3       Indicator Code
Unnamed: 4               1960.0
                    ...
Unnamed: 61              2017.0
Unnamed: 62              2018.0
Unnamed: 63              2019.0
Unnamed: 64              2020.0
Unnamed: 65              2021.0
Name: 0, Length: 66, dtype: object
```

```python
import numpy as np

arr = np.array([1, 2, 3, 4, 5])

print(arr)
```

```
[1 2 3 4 5]
```

```python
#The statistics range from yea 1960 - 2021

import numpy as np
import pandas as pd

df = pd.read_excel('south-africa-statistics.xlsx', sheet_name=0)

x = df.iloc[0]
y = df.iloc[1]

arr_x = np.array(x)
arr_y = np.array(y)

for z in range (4, 66):
  print(arr_x[z])
```

```
1960.0
1961.0
1962.0
1963.0
1964.0
1965.0
1966.0
```

```
1967.0
1968.0
1969.0
1970.0
1971.0
1972.0
1973.0
1974.0
1975.0
1976.0
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2008.0
2009.0
2010.0
2011.0
2012.0
2013.0
2014.0
2015.0
2016.0
```

```
2017.0
2018.0
2019.0
2020.0
2021.0
```

#Theres 65 values/columns in each row (but start at index 4)

```python
import matplotlib.pyplot as plt
import numpy as np
import pandas as pd

df = pd.read_excel('south-africa-statistics.xlsx', sheet_name=0)

x = df.iloc[0]
arr = np.array(x)

print(arr[4:66])
```

```
[1960.0 1961.0 1962.0 1963.0 1964.0 1965.0 1966.0 1967.0 1968.0 1969.0
 1970.0 1971.0 1972.0 1973.0 1974.0 1975.0 1976.0 1977.0 1978.0 1979.0
 1980.0 1981.0 1982.0 1983.0 1984.0 1985.0 1986.0 1987.0 1988.0 1989.0
 1990.0 1991.0 1992.0 1993.0 1994.0 1995.0 1996.0 1997.0 1998.0 1999.0
 2000.0 2001.0 2002.0 2003.0 2004.0 2005.0 2006.0 2007.0 2008.0 2009.0
 2010.0 2011.0 2012.0 2013.0 2014.0 2015.0 2016.0 2017.0 2018.0 2019.0
 2020.0 2021.0]
```

#Travel services (% of commercial service exports)

```python
import matplotlib.pyplot as plt
import numpy as np
import pandas as pd

df = pd.read_excel('south-africa-statistics.xlsx', sheet_name=0)

x = df.iloc[0]    #years
y = df.iloc[1]

arr_x = np.array(x)
arr_y = np.array(y)

#print(arr_x[4:66])
#print(arr_y[4:66])

plt.plot(arr_x[4:66], arr_y[4:66])
plt.show()
```

```
#Merchandise exports to low- and middle-income economies outside
region (% of total merchandise exports)

import matplotlib.pyplot as plt
import numpy as np
import pandas as pd

df = pd.read_excel('south-africa-statistics.xlsx', sheet_name=0)

x = df.iloc[0]    #years
y = df.iloc[2]

arr_x = np.array(x)
arr_y = np.array(y)

#print(arr_x[4:66])
#print(arr_y[4:66])

plt.title("Merchandise exports to low- and middle-income economies
outside region (% of total merchandise exports)")
plt.xlabel("Years")
plt.ylabel("")
plt.plot(arr_x[4:66], arr_y[4:66])
plt.show()
```
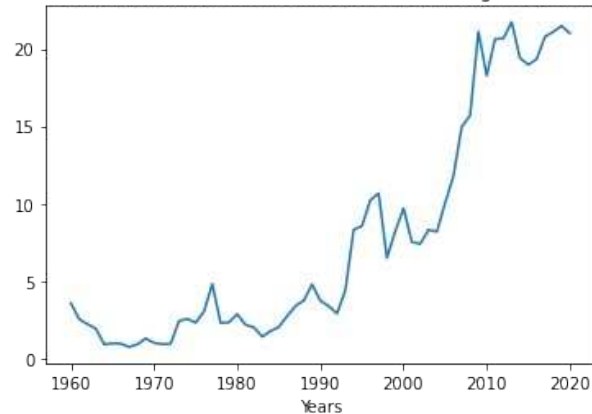
Merchandise exports to low- and middle-income economies outside region (% of total merchandise exports)


```python
import matplotlib.pyplot as plt
import numpy as np
import pandas as pd

df = pd.read_excel('south-africa-statistics.xlsx', sheet_name=0)

x = df.iloc[0]    #years
y = df.iloc[305]

arr_x = np.array(x)
arr_y = np.array(y)

#print(arr_x[4:66])
#print(arr_y[4:66])

plt.title("Insurance and financial services (% of commercial service
imports)")
plt.plot(arr_x[4:66], arr_y[4:66])
plt.show()
```
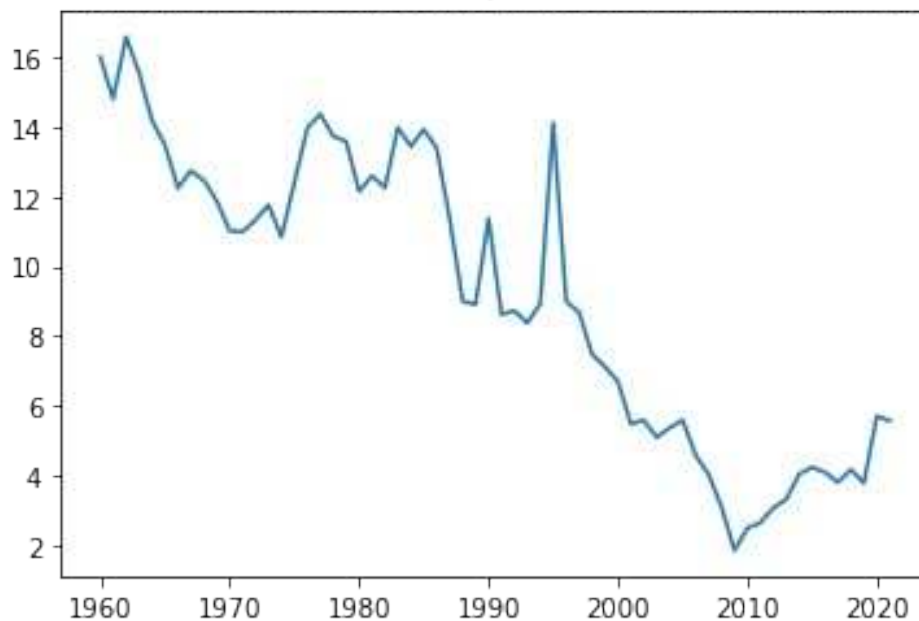
Insurance and financial services (% of commercial service imports)

```
import matplotlib.pyplot as plt
import numpy as np
import pandas as pd

df = pd.read_excel('south-africa-statistics.xlsx', sheet_name=0)

x = df.iloc[0]    #years
y = df.iloc[556]

arr_x = np.array(x)
arr_y = np.array(y)

#print(arr_x[4:66])
#print(arr_y[4:66])

plt.title("GDP (current US$)")
plt.xlabel("Years")
plt.ylabel("")
plt.plot(arr_x[4:66], arr_y[4:66])
plt.show()
```
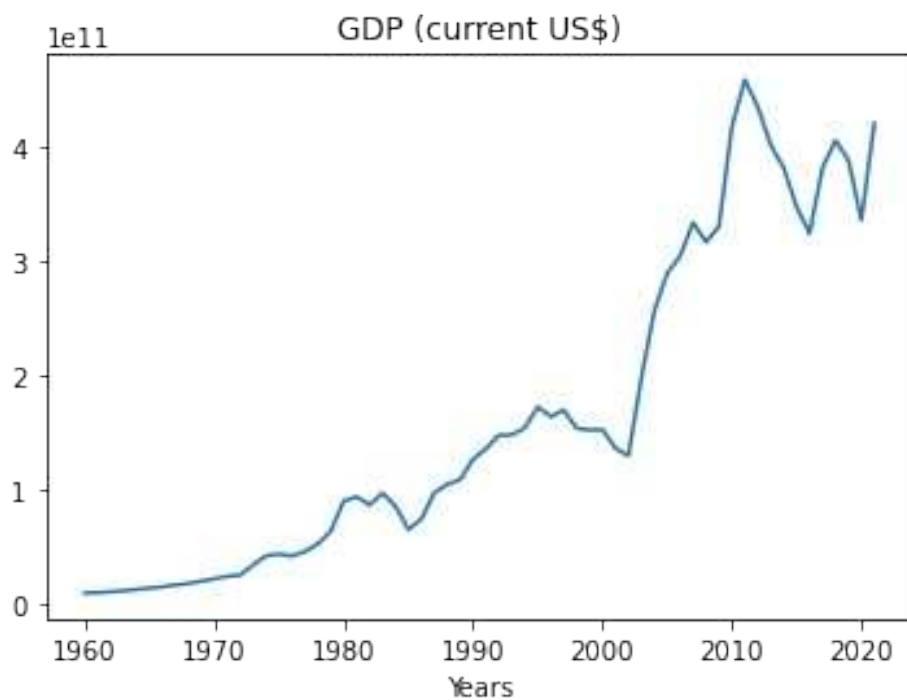
GDP (current US$)

```python
import matplotlib.pyplot as plt
import numpy as np
import pandas as pd

df = pd.read_excel('south-africa-statistics.xlsx', sheet_name=0)

x = df.iloc[0]    #years
y = df.iloc[489]

arr_x = np.array(x)
arr_y = np.array(y)

#print(arr_x[4:66])
#print(arr_y[4:66])

plt.title("Inflation, consumer prices (annual %)")
plt.xlabel("Years")
plt.ylabel("")
plt.plot(arr_x[4:66], arr_y[4:66])
plt.show()
```

Inflation, consumer prices (annual %)

```python
import matplotlib.pyplot as plt
import numpy as np
import pandas as pd

df = pd.read_excel('south-africa-statistics.xlsx', sheet_name=0)

x = df.iloc[0]    #years
y = df.iloc[1080]

arr_x = np.array(x)
arr_y = np.array(y)

#print(arr_x[4:66])
#print(arr_y[4:66])

plt.title("GDP per capita (current US$)")
plt.xlabel("Years")
plt.ylabel("")
plt.plot(arr_x[4:66], arr_y[4:66])
plt.show()
```
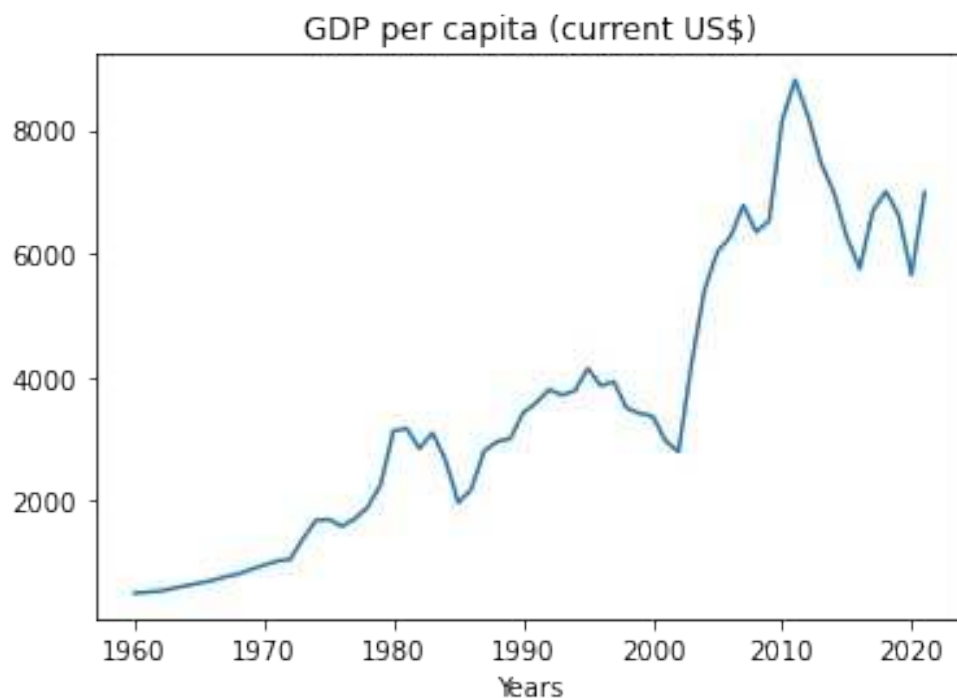
GDP per capita (current US$)

```
import matplotlib.pyplot as plt
import numpy as np
import pandas as pd

df = pd.read_excel('south-africa-statistics.xlsx', sheet_name=0)

x = df.iloc[0]    #years
y = df.iloc[505]

arr_x = np.array(x)
arr_y = np.array(y)

#print(arr_x[4:66])
#print(arr_y[4:66])

plt.title("Insurance and financial services (% of service exports,
BoP)")
plt.xlabel("Years")
plt.ylabel("")
plt.plot(arr_x[4:66], arr_y[4:66])
plt.show()
```
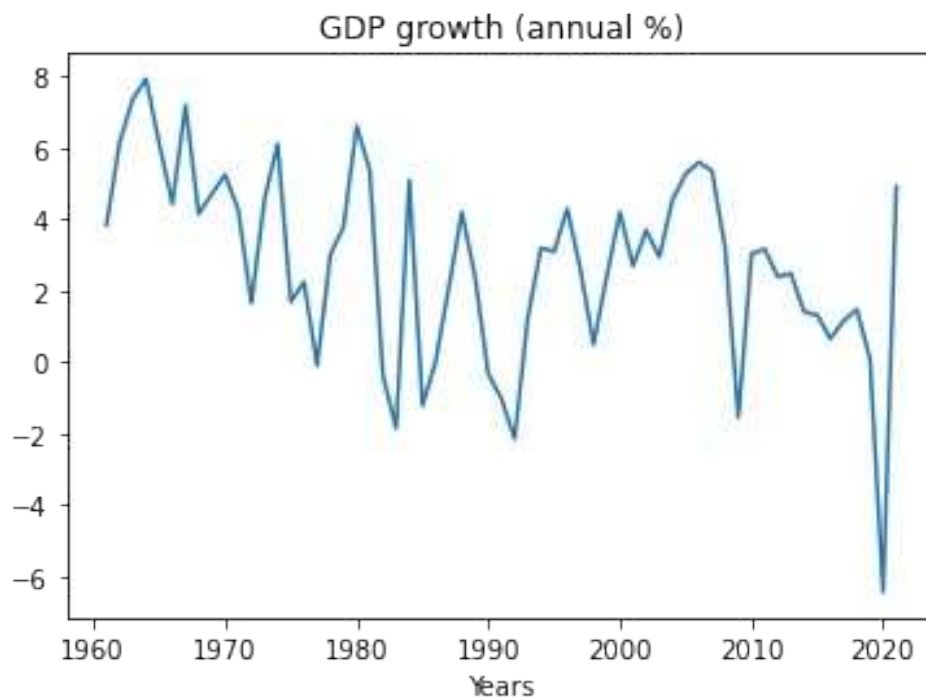
```
x = df.iloc[0]     #years
y = df.iloc[614]

arr_x = np.array(x)
arr_y = np.array(y)

#print(arr_x[4:66])
#print(arr_y[4:66])

plt.title("GDP growth (annual %)")
plt.xlabel("Years")
plt.ylabel("")
plt.plot(arr_x[4:66], arr_y[4:66])
plt.show()
```



```
import matplotlib.pyplot as plt
import numpy as np
import pandas as pd

df = pd.read_excel('south-africa-statistics.xlsx', sheet_name=0)

x = df.iloc[0]     #years
y = df.iloc[701]

arr_x = np.array(x)
arr_y = np.array(y)
```
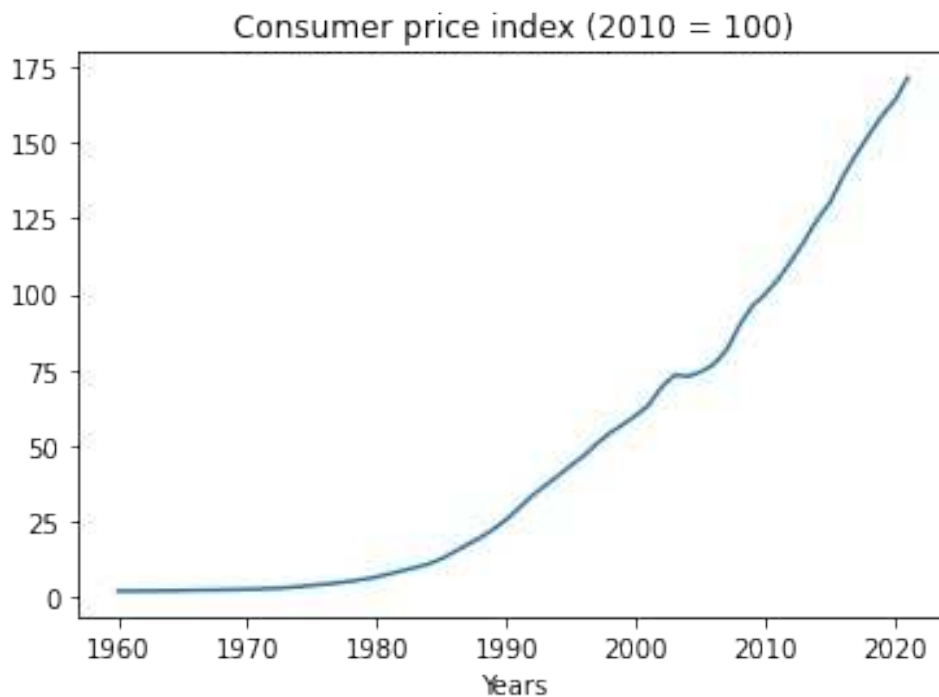
```
#print(arr_x[4:66])
#print(arr_y[4:66])

plt.title("Consumer price index (2010 = 100)")
plt.xlabel("Years")
plt.ylabel("")
plt.plot(arr_x[4:66], arr_y[4:66])
plt.show()
```


Consumer price index (2010 = 100)

```
import matplotlib.pyplot as plt
import numpy as np
import pandas as pd

df = pd.read_excel('south-africa-statistics.xlsx', sheet_name=0)

x = df.iloc[0]    #years
y = df.iloc[556]

arr_x = np.array(x)
arr_y = np.array(y)

#print(arr_x[4:66])
#print(arr_y[4:66])

plt.title("GDP (current US$)")
plt.xlabel("Years")
```
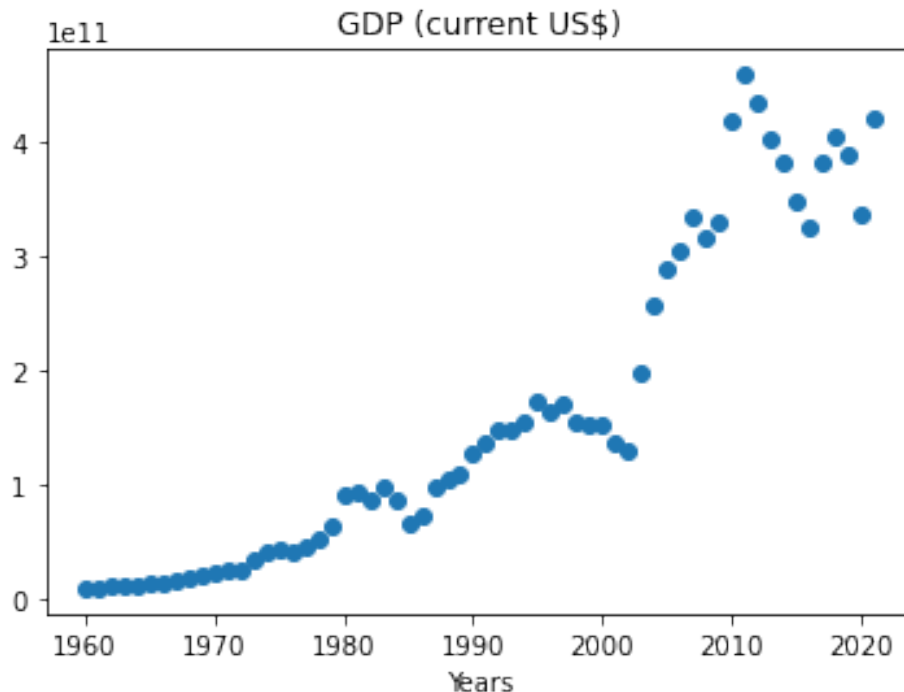
```
plt.ylabel("")
plt.scatter(arr_x[4:66], arr_y[4:66])
plt.show()
```


#Using for loop to display the values in the row more efficiently (GDP (current US$))

```
import numpy as np
import pandas as pd

df = pd.read_excel('south-africa-statistics.xlsx', sheet_name=0)

x = df.iloc[0]    #years
y = df.iloc[556] #GDP (current US$)

arr_x = np.array(x)
arr_y = np.array(y)

#print(arr_x[4:66])
#print(arr_y[4:66])
for z in range (4, 66):
 print("The " + arr_y[2] + " of " + arr_y[0] + " was R" +
str(arr_y[z]) + " in " + str(int(arr_x[z])))
```

```
The GDP (current US$) of South Africa was R8748596504.23581 in 1960
The GDP (current US$) of South Africa was R9225996313.476393 in 1961
The GDP (current US$) of South Africa was R9813996078.523447 in 1962
The GDP (current US$) of South Africa was R10854195662.880497 in 1963
```

The GDP (current US$) of South Africa was R11955995222.62343 in 1964
The GDP (current US$) of South Africa was R13068994777.891068 in 1965
The GDP (current US$) of South Africa was R14211394321.411058 in 1966
The GDP (current US$) of South Africa was R15821393678.087515 in 1967
The GDP (current US$) of South Africa was R17124793157.275152 in 1968
The GDP (current US$) of South Africa was R19256992305.291016 in 1969
The GDP (current US$) of South Africa was R21218391521.55512 in 1970
The GDP (current US$) of South Africa was R23411079378.017223 in 1971
The GDP (current US$) of South Africa was R24515911652.184795 in 1972
The GDP (current US$) of South Africa was R33262767310.819233 in 1973
The GDP (current US$) of South Africa was R41389185875.311356 in 1974
The GDP (current US$) of South Africa was R42906919870.13432 in 1975
The GDP (current US$) of South Africa was R41150449966.46239 in 1976
The GDP (current US$) of South Africa was R45328399963.05736 in 1977
The GDP (current US$) of South Africa was R51607399957.93997 in 1978
The GDP (current US$) of South Africa was R63038687892.96925 in 1979
The GDP (current US$) of South Africa was R89411894560.97795 in 1980
The GDP (current US$) of South Africa was R93141478234.65756 in 1981
The GDP (current US$) of South Africa was R85904070613.61168 in 1982
The GDP (current US$) of South Africa was R96204110958.83746 in 1983
The GDP (current US$) of South Africa was R84870134619.05373 in 1984
The GDP (current US$) of South Africa was R64459376104.04192 in 1985
The GDP (current US$) of South Africa was R73354782108.58986 in 1986
The GDP (current US$) of South Africa was R96535747615.40472 in 1987
The GDP (current US$) of South Africa was R103976854738.4117 in 1988
The GDP (current US$) of South Africa was R108055603481.55653 in 1989
The GDP (current US$) of South Africa was R126048148263.09773 in 1990
The GDP (current US$) of South Africa was R135204432694.74524 in 1991
The GDP (current US$) of South Africa was R146956872370.26648 in 1992
The GDP (current US$) of South Africa was R147196639471.18768 in 1993
The GDP (current US$) of South Africa was R153512625915.2867 in 1994
The GDP (current US$) of South Africa was R171735223677.31796 in 1995
The GDP (current US$) of South Africa was R163236785802.33994 in 1996
The GDP (current US$) of South Africa was R168976663845.4861 in 1997
The GDP (current US$) of South Africa was R152982541794.04156 in 1998
The GDP (current US$) of South Africa was R151516560274.9816 in 1999
The GDP (current US$) of South Africa was R151753369491.9162 in 2000
The GDP (current US$) of South Africa was R135429607036.65846 in 2001
The GDP (current US$) of South Africa was R129088132201.84619 in 2002
The GDP (current US$) of South Africa was R197020241490.07892 in 2003
The GDP (current US$) of South Africa was R255806631391.5507 in 2004
The GDP (current US$) of South Africa was R288868489078.9867 in 2005
The GDP (current US$) of South Africa was R303860874149.0069 in 2006
The GDP (current US$) of South Africa was R333075462599.71045 in 2007
The GDP (current US$) of South Africa was R316132138757.0813 in 2008
The GDP (current US$) of South Africa was R329753048857.0519 in 2009
The GDP (current US$) of South Africa was R417365076968.2566 in 2010
The GDP (current US$) of South Africa was R458201514136.9765 in 2011
The GDP (current US$) of South Africa was R434400545085.8111 in 2012
The GDP (current US$) of South Africa was R400886013595.5732 in 2013

The GDP (current US$) of South Africa was R381198869776.10565 in 2014
The GDP (current US$) of South Africa was R346709790458.56305 in 2015
The GDP (current US$) of South Africa was R323585509674.4806 in 2016
The GDP (current US$) of South Africa was R381448814653.4564 in 2017
The GDP (current US$) of South Africa was R404842116738.07416 in 2018
The GDP (current US$) of South Africa was R387934574098.17004 in 2019
The GDP (current US$) of South Africa was R335442101366.41736 in 2020
The GDP (current US$) of South Africa was R419946428126.00757 in 2021