

In [264...]

```
!java -version
```

```
java version "1.8.0_471"
Java(TM) SE Runtime Environment (build 1.8.0_471-b09)
Java HotSpot(TM) 64-Bit Server VM (build 25.471-b09, mixed mode)
```

In [265...]

```
!pip install tabula-py
!pip install pandas
```

```
Requirement already satisfied: tabula-py in c:\users\hp\anaconda3\lib\site-packages (2.10.0)
Requirement already satisfied: pandas>=0.25.3 in c:\users\hp\anaconda3\lib\site-packages (from tabula-py) (2.3.3)
Requirement already satisfied: numpy>1.24.4 in c:\users\hp\anaconda3\lib\site-packages (from tabula-py) (2.3.5)
Requirement already satisfied: distro in c:\users\hp\anaconda3\lib\site-packages (from tabula-py) (1.9.0)
Requirement already satisfied: python-dateutil>=2.8.2 in c:\users\hp\anaconda3\lib\site-packages (from pandas>=0.25.3->tabula-py) (2.9.0.post0)
Requirement already satisfied: pytz>=2020.1 in c:\users\hp\anaconda3\lib\site-packages (from pandas>=0.25.3->tabula-py) (2025.2)
Requirement already satisfied: tzdata>=2022.7 in c:\users\hp\anaconda3\lib\site-packages (from pandas>=0.25.3->tabula-py) (2025.2)
Requirement already satisfied: six>=1.5 in c:\users\hp\anaconda3\lib\site-packages (from python-dateutil>=2.8.2->pandas>=0.25.3->tabula-py) (1.17.0)
Requirement already satisfied: pandas in c:\users\hp\anaconda3\lib\site-packages (2.3.3)
Requirement already satisfied: numpy>=1.26.0 in c:\users\hp\anaconda3\lib\site-packages (from pandas) (2.3.5)
Requirement already satisfied: python-dateutil>=2.8.2 in c:\users\hp\anaconda3\lib\site-packages (from pandas) (2.9.0.post0)
Requirement already satisfied: pytz>=2020.1 in c:\users\hp\anaconda3\lib\site-packages (from pandas) (2025.2)
Requirement already satisfied: tzdata>=2022.7 in c:\users\hp\anaconda3\lib\site-packages (from pandas) (2025.2)
Requirement already satisfied: six>=1.5 in c:\users\hp\anaconda3\lib\site-packages (from python-dateutil>=2.8.2->pandas) (1.17.0)
```

In [266...]

```
import tabula as tb
import pandas as pd
```

In [267...]

```
data_area= [0,0,100,85]
dflist1= tb.read_pdf('Bulletin_269_Aug 2019_347.pdf', pages=46, area= data_area, re
df= dflist1[0]
df
```

Out[267...]

| | | | 21-Balance of Payments | | | | |
|----|-----------------------------|------------|------------------------------|--------------------|------------|------------|--------------------------------------|
| | Unnamed: 0 | Unnamed: 1 | Balance of Payments | Unnamed: 2 | Unnamed: 3 | Unnamed: 4 | Unnamed: 5 |
| 11 | Services Balance | NaN | 8274.4 10742.9 | 6533.0 5614.2 | 11122.4 | NaN | 2323.1 2847.3 2462.7 2528.8 |
| 12 | Receipts | NaN | 17437.2 21811.8 | 16079.3 15400.1 | 21486.9 | NaN | 5080.8 5678.2 5068.2 5038.1 |
| 13 | Transportation | NaN | 9466.0 9850.3 | 9534.6 7911.2 | 8707.9 | NaN | 2429.7 2267.9 2087.1 2029.5 |
| 14 | Of which: Suez Canal dues | NaN | 5369.1 5361.7 | 5121.6 4945.3 | 5706.7 | NaN | 1228.7 1382.2 1386.3 1389.7 |
| 15 | Travel (tourism revenues) | NaN | 5073.3 7370.4 | 3767.5 4379.7 | 9804.3 | NaN | 1539.0 2696.7 2282.5 2271.4 |
| 16 | Government receipts | NaN | 654.4 1381.5 | 378.0 776.4 | 636.7 | NaN | 585.1 131.7 138.0 163.6 |
| 17 | Others | NaN | 2243.5 3209.6 | 2399.2 2332.8 | 2338.0 | NaN | 527.0 581.9 560.6 573.6 |
| 18 | Payments | NaN | 9162.8 11068.9 | 9546.3 9785.9 | 10364.5 | NaN | 2757.7 2830.9 2605.5 2509.3 |
| 19 | Transportation | NaN | 1717.2 1535.0 | 1339.1 1332.1 | 1480.2 | NaN | 400.6 382.6 351.3 368.6 |
| 20 | Travel | NaN | 3044.5 3338.2 | 4091.0 2739.9 | 2451.5 | NaN | 550.2 649.3 511.9 542.2 |
| 21 | Government expenditures | NaN | 1073.9 854.1 | 777.1 1124.1 | 1493.5 | NaN | 424.0 449.0 540.1 238.4 |
| 22 | Others | NaN | 3327.2 5341.6 | 3339.1 4589.8 | 4939.3 | NaN | 1382.9 1350.0 1202.2 1360.1 |

| | | Unnamed: 0 | Unnamed: 1 | 21-Balance of Payments | Unnamed: 2 | Unnamed: 3 | Unnamed: 4 | Unnamed: 5 |
|----|--|------------|------------|------------------------|----------------------|------------|------------|--|
| 23 | Investment Income Balance | | NaN | -7262.7 -5700.9 | -4471.7 -4568.5 | -6279.6 | NaN | -1249.8 -1519.3 -1520.3 -1664.3 |
| 24 | Receipts | | NaN | 194.2 212.8 | 396.9 497.9 | 835.4 | NaN | 192.6 229.0 183.7 212.0 |
| 25 | Payments | | NaN | 7456.9 5913.7 | 4868.6 5066.4 | 7115.0 | NaN | 1442.4 1748.3 1704.0 1876.3 |
| 26 | Of which: Interest paid | | NaN | 652.5 643.6 | 752.0 1231.9 | 1616.1 | NaN | 343.3 415.5 401.8 399.6 |
| 27 | Current Transfers | | NaN | 30367.9 21875.8 | 16790.7 21835.1 | 26470.9 | NaN | 6071.9 5826.0 7112.4 6460.6 |
| 28 | Private (net), | | NaN | 18447.7 19205.4 | 16689.2 21686.1 | 26264.7 | NaN | 6005.4 5782.9 7087.2 6435.4 |
| 29 | NaN | | NaN | (1) | NaN | NaN | NaN | NaN |
| 30 | Of which: Remittances of Egyptians working ab... | | NaN | 18518.7 19330.0 | 17077.4 21816.3 | 26392.9 | NaN | 6033.9 5824.3 7098.8 6464.4 |
| 31 | Official (net) | | NaN | 11920.2 2670.4 | 101.5 149.0 | 206.2 | NaN | 66.5 43.1 25.2 25.2 |
| 32 | Balance of Current Account | | NaN | -2779.7 -12142.6 | -19831.1 -14394.0 | -5962.3 | NaN | -1553.2 -1754.2 -1784.8 -1930.5 |
| 33 | Capital & Financial Account | | NaN | 5189.5 17928.9 | 21176.7 31015.1 | 21996.5 | NaN | 4496.9 6247.4 4180.1 8617.1 |
| 34 | Capital Account | | NaN | 194.1 -122.9 | -141.4 -113.3 | -150.7 | NaN | -14.7 -40.3 -41.0 -37.0 |
| 35 | Financial Account | | NaN | 4995.4 18051.8 | 21318.1 31128.4 | 22147.2 | NaN | 4511.6 6287.7 4221.1 8654.1 |

| | | Unnamed: 0 | Unnamed: 1 | 21-Balance of Payments | Unnamed: 2 | Unnamed: 3 | Unnamed: 4 | Unnamed: 5 |
|----|---|------------|------------|------------------------|--------------------|------------|----------------------------|--|
| 36 | Direct investment abroad | NaN | | -326.6 -223.3 | -164.2 -175.1 | -271.2 | NaN | -27.4 -52.4 -79.5 -68.1 |
| 37 | Direct investment in Egypt (net) | NaN | | 4178.2 6379.8 | 6932.6 7932.8 | 7719.5 | NaN | 1367.8 1843.0 1919.9 2256.3 |
| 38 | Portfolio investment abroad | NaN | 65.9 47.2 | 192.1 208.4 | | -20.8 | NaN | 29.7 13.9 10.7 -49.7 |
| 39 | Portfolio investment in Egypt (Net) | NaN | | 1237.2 -638.6 | -1286.8 15985.3 | 12094.8 | NaN | 8184.1 7478.5 540.7 6905.5 |
| 40 | Of which:Bonds | NaN | | 926.7 -1147.5 | -1444.8 5491.5 | 5293.2 | NaN | 2301.3 5.8 -108.9 3294.5 |
| 41 | Other Investments (Net) | NaN | | -159.3 12486.7 | 15644.4 7177.0 | 2624.9 | NaN | -5042.6 -2995.3 1829.3 -389.9 |
| 42 | Net Borrowing | NaN | | 207.2 5036.2 | 7102.7 9699.2 | 10278.8 | NaN | 587.5 657.3 3889.5 2402.6 |
| 43 | Medium- and Long-Term Loans | NaN | | -956.2 -482.5 | -186.3 5156.8 | 6738.5 | NaN | -9.7 993.6 2065.2 1238.4 |
| 44 | Disbursements | NaN | | 1153.4 1753.5 | 2523.4 7641.1 | 8846.4 | NaN | 503.3 1563.0 2603.5 1879.4 |
| 45 | Repayments | NaN | | -2109.6 -2236.0 | -2709.7 -2484.3 | -2107.9 | NaN | -513.0 -569.4 -538.3 -641.0 |
| 46 | Medium- and Long-Term Suppliers' Credit | NaN | | -56.3 257.9 | 1505.3 2795.1 | 1118.5 | NaN | 627.9 235.1 175.5 122.0 |
| 47 | Disbursements | NaN | 8.1 313.0 | 1560.7 2912.2 | 1313.6 | NaN | 664.7 275.5 233.2 175.1 | |

| | Unnamed: 0 | Unnamed: 1 | 21-Balance of Payments | Unnamed: 2 | Unnamed: 3 | Unnamed: 4 | Unnamed: 5 |
|----|------------|------------|------------------------------|-----------------|------------|------------|----------------------------|
| 48 | Repayments | NaN | -64.4 -55.1 | -55.4 -117.1 | -195.1 | NaN | -36.8 -40.4 -57.7 -53.1 |
| 49 | | NaN | - 76 - | NaN | NaN | NaN | NaN |

In [268]:

```
dfcle= df.iloc[4: ].copy()
dfcle= dfcle.dropna(axis=1,how= 'all')
newnames= ['Category','2013/2014','2014/2015','2015/2016','2016/2017','2017/2018','
```

In [269]:

```
dfcle.columns= newnames[:len(dfcle.columns)]
dfcle= dfcle.reindex(columns=newnames)
dfcle
```

Out[269...]

| | Category | 2013/2014 | 2014/2015 | 2015/2016 | 2016/2017 | 2017/2018 | 2016/2017(I) |
|-----------|---------------------------|----------------------|----------------------|-----------|--|-----------|----------------|
| 4 | Trade Balance | -34159.3 -39060.4 | -38683.1 -37274.8 | -37276.0 | -8698.4 -8908.2 -9839.6 -9255.6 | -9272.6 | -9812.6 -943 |
| 5 | Export proceeds ** | 26022.6 22245.1 | 18704.6 21728.2 | 25827.0 | 5798.2 5839.4 6215.7 6755.8 | 7016.1 | 6785.2 748 |
| 6 | Petroleum exports | 12355.9 8891.9 | 5674.3 6589.5 | 8773.0 | 1996.9 1782.5 2029.1 2202.5 | 2758.9 | 2810.0 319 |
| 7 | Other exports | 13666.7 13353.2 | 13030.3 15138.7 | 17054.0 | 3801.3 4056.9 4186.6 4553.3 | 4257.2 | 3975.2 429 |
| 8 | Import payments** | -60181.9 -61305.5 | -57387.7 -59003.0 | -63103.0 | -14496.6 -14747.6 -16055.3 -16011.4 | -16288.7 | -1659 -1692 |
| 9 | Petroleum imports | -13246.9 -12366.1 | -9293.6 -12015.5 | -12489.8 | -3337.6 -2752.9 -3231.7 -3410.0 | -3095.2 | -3415.6 -244 |
| 10 | Other imports | -46935.0 -48939.4 | -48094.1 -46987.5 | -50613.2 | -11159.0 -11994.7 -12823.6 -12601.4 | -13193.5 | -1318 -1448 |
| 11 | Services Balance | 8274.4 10742.9 | 6533.0 5614.2 | 11122.4 | 2323.1 2847.3 2462.7 2528.8 | 3283.6 | 4283.1 297 |
| 12 | Receipts | 17437.2 21811.8 | 16079.3 15400.1 | 21486.9 | 5080.8 5678.2 5068.2 5038.1 | 5702.4 | 6938.4 589 |
| 13 | Transportation | 9466.0 9850.3 | 9534.6 7911.2 | 8707.9 | 2429.7 2267.9 2087.1 2029.5 | 2323.4 | 2242.8 224 |
| 14 | Of which: Suez Canal dues | 5369.1 5361.7 | 5121.6 4945.3 | 5706.7 | 1228.7 1382.2 1386.3 1389.7 | 1548.5 | 1441.2 148 |

| | Category | 2013/2014 | 2014/2015 | 2015/2016 | 2016/2017 | 2017/2018 | 2016/2017(1) |
|----|-----------------------------|--------------------|--------------------|-----------|--|-----------|--------------|
| 15 | Travel (tourism revenues) | 5073.3 7370.4 | 3767.5 4379.7 | 9804.3 | 1539.0 2696.7 2282.5 2271.4 | 2553.7 | 3930.9 285 |
| 16 | Government receipts | 654.4 1381.5 | 378.0 776.4 | 636.7 | 585.1 131.7 138.0 163.6 | 203.4 | 166.0 12 |
| 17 | Others | 2243.5 3209.6 | 2399.2 2332.8 | 2338.0 | 527.0 581.9 560.6 573.6 | 621.9 | 598.7 66 |
| 18 | Payments | 9162.8 11068.9 | 9546.3 9785.9 | 10364.5 | 2757.7 2830.9 2605.5 2509.3 | 2418.8 | 2655.3 291 |
| 19 | Transportation | 1717.2 1535.0 | 1339.1 1332.1 | 1480.2 | 400.6 382.6 351.3 368.6 | 377.7 | 448.5 41 |
| 20 | Travel | 3044.5 3338.2 | 4091.0 2739.9 | 2451.5 | 550.2 649.3 511.9 542.2 | 748.1 | 717.0 65 |
| 21 | Government expenditures | 1073.9 854.1 | 777.1 1124.1 | 1493.5 | 424.0 449.0 540.1 238.4 | 266.0 | 183.1 17 |
| 22 | Others | 3327.2 5341.6 | 3339.1 4589.8 | 4939.3 | 1382.9 1350.0 1202.2 1360.1 | 1027.0 | 1306.7 166 |
| 23 | Investment Income Balance | -7262.7 -5700.9 | -4471.7 -4568.5 | -6279.6 | -1249.8 -1519.3 -1520.3 -1664.3 | -1575.7 | -2048.0 -176 |
| 24 | Receipts | 194.2 212.8 | 396.9 497.9 | 835.4 | 192.6 229.0 183.7 212.0 | 210.7 | 227.7 25 |
| 25 | Payments | 7456.9 5913.7 | 4868.6 5066.4 | 7115.0 | 1442.4 1748.3 1704.0 1876.3 | 1786.4 | 2275.7 202 |
| 26 | Of which: Interest paid | 652.5 643.6 | 752.0 1231.9 | 1616.1 | 343.3 415.5 401.8 399.6 | 399.2 | 508.3 56 |
| 27 | Current Transfers | 30367.9 21875.8 | 16790.7 21835.1 | 26470.9 | 6071.9 5826.0 7112.4 6460.6 | 7071.9 | 5908.9 602 |
| 28 | Private (net), | 18447.7 19205.4 | 16689.2 21686.1 | 26264.7 | 6005.4 5782.9 7087.2 6435.4 | 6959.2 | 5861.2 593 |
| 29 | NaN | (1) | NaN | NaN | NaN | NaN | N |

| | Category | 2013/2014 | 2014/2015 | 2015/2016 | 2016/2017 | 2017/2018 | 2016/2017(I) |
|----|---|---------------------|----------------------|-----------|--|-----------|--------------|
| 30 | Of which: Remittances of Egyptians working ab... | 18518.7 19330.0 | 17077.4 21816.3 | 26392.9 | 6033.9 5824.3 7098.8 6464.4 | 7005.4 | 5909.0 613 |
| 31 | Official (net) | 11920.2 2670.4 | 101.5 149.0 | 206.2 | 66.5 43.1 25.2 25.2 | 112.7 | 47.7 11 |
| 32 | Balance of Current Account | -2779.7 -12142.6 | -19831.1 -14394.0 | -5962.3 | -1553.2 -1754.2 -1784.8 -1930.5 | -492.8 | -1668.6 -218 |
| 33 | Capital & Financial Account | 5189.5 17928.9 | 21176.7 31015.1 | 21996.5 | 4496.9 6247.4 4180.1 8617.1 | 2951.9 | 1475.6 31 |
| 34 | Capital Account | 194.1 -122.9 | -141.4 -113.3 | -150.7 | -14.7 -40.3 -41.0 -37.0 | -32.4 | -35.0 -2 |
| 35 | Financial Account | 4995.4 18051.8 | 21318.1 31128.4 | 22147.2 | 4511.6 6287.7 4221.1 8654.1 | 2984.3 | 1510.6 33 |
| 36 | Direct investment abroad | -326.6 -223.3 | -164.2 -175.1 | -271.2 | -27.4 -52.4 -79.5 -68.1 | -71.2 | -65.8 -11 |
| 37 | Direct investment in Egypt (net) | 4178.2 6379.8 | 6932.6 7932.8 | 7719.5 | 1367.8 1843.0 1919.9 2256.3 | 1700.3 | 1099.9 174 |
| 38 | Portfolio investment abroad | 65.9 47.2 | 192.1 208.4 | -20.8 | 29.7 13.9 10.7 -49.7 | 4.3 | -75.4 2 |
| 39 | Portfolio investment in Egypt (Net) | 1237.2 -638.6 | -1286.8 15985.3 | 12094.8 | 8184.1 7478.5 540.7 6905.5 | -2829.9 | -3240.3 -264 |
| 40 | Of which:Bonds | 926.7 -1147.5 | -1444.8 5491.5 | 5293.2 | 2301.3 5.8 -108.9 3294.5 | 2101.8 | -121.3 -18 |
| 41 | Other Investments (Net) | -159.3 12486.7 | 15644.4 7177.0 | 2624.9 | -5042.6 -2995.3 1829.3 -389.9 | 4180.8 | 3792.2 134 |
| 42 | Net Borrowing | 207.2 5036.2 | 7102.7 9699.2 | 10278.8 | 587.5 657.3 3889.5 2402.6 | 3329.4 | 998.8 7 |

| | Category | 2013/2014 | 2014/2015 | 2015/2016 | 2016/2017 | 2017/2018 | 2016/2017(I) |
|-----------|---|--------------------|--------------------|-----------|--------------------------------------|-----------|--------------|
| 43 | Medium- and Long-Term Loans | -956.2 -482.5 | -186.3 5156.8 | 6738.5 | -9.7 993.6 2065.2 1238.4 | 2441.3 | -488.8 80 |
| 44 | Disbursements | 1153.4 1753.5 | 2523.4 7641.1 | 8846.4 | 503.3 1563.0 2603.5 1879.4 | 2800.5 | 153.3 137 |
| 45 | Repayments | -2109.6 -2236.0 | -2709.7 -2484.3 | -2107.9 | -513.0 -569.4 -538.3 -641.0 | -359.2 | -642.1 -57 |
| 46 | Medium- and Long-Term Suppliers' Credit | -56.3 257.9 | 1505.3 2795.1 | 1118.5 | 627.9 235.1 175.5 122.0 | 585.9 | 291.3 26 |
| 47 | Disbursements | 8.1 313.0 | 1560.7 2912.2 | 1313.6 | 664.7 275.5 233.2 175.1 | 629.8 | 328.8 30 |
| 48 | Repayments | -64.4 -55.1 | -55.4 -117.1 | -195.1 | -36.8 -40.4 -57.7 -53.1 | -43.9 | -37.5 -3 |
| 49 | NaN | - 76 - | NaN | NaN | NaN | NaN | - 7 |

In [270]:

dfcle.Category

```
Out[270... 4          Trade Balance
5          Export proceeds **
6          Petroleum exports
7          Other exports
8          Import payments**
9          Petroleum imports
10         Other imports
11         Services Balance
12         Receipts
13         Transportation
14         Of which: Suez Canal dues
15         Travel ( tourism revenues )
16         Government receipts
17         Others
18         Payments
19         Transportation
20         Travel
21         Government expenditures
22         Others
23         Investment Income Balance
24         Receipts
25         Payments
26         Of which: Interest paid
27         Current Transfers
28         Private (net),
29         NaN
30         Of which: Remittances of Egyptians working ab...
31         Official (net)
32         Balance of Current Account
33         Capital & Financial Account
34         Capital Account
35         Financial Account
36         Direct investment abroad
37         Direct investment in Egypt (net)
38         Portfolio investment abroad
39         Portfolio investment in Egypt (Net)
40         Of which:Bonds
41         Other Investments (Net)
42         Net Borrowing
43         Medium- and Long-Term Loans
44         Disbursements
45         Repayments
46         Medium- and Long-Term Suppliers' Credit
47         Disbursements
48         Repayments
49         NaN
Name: Category, dtype: object
```

```
In [271... dfcle.set_index('Category')
```

Out[271...]

2013/2014 2014/2015 2015/2016 2016/2017 2017/2018 2016/2017(Q4)

| Category | | | | | | | |
|----------------------------------|----------|----------|----------|----------|----------|---------|----------|
| Trade Balance | | | | | -8698.4 | | |
| | -34159.3 | -38683.1 | -37276.0 | -8908.2 | | -9272.6 | -9812.6 |
| | -39060.4 | -37274.8 | | -9839.6 | | | -9438.9 |
| | | | | -9255.6 | | | |
| Export proceeds ** | 26022.6 | 18704.6 | | 5798.2 | | | |
| | 22245.1 | 21728.2 | 25827.0 | 5839.4 | 7016.1 | 6785.2 | 7488.7 |
| | | | | 6215.7 | | | |
| | | | | 6755.8 | | | |
| Petroleum exports | 12355.9 | 5674.3 | | 1996.9 | | | |
| | 8891.9 | 6589.5 | 8773.0 | 1782.5 | 2758.9 | 2810.0 | 3198.7 |
| | | | | 2029.1 | | | |
| | | | | 2202.5 | | | |
| Other exports | 13666.7 | 13030.3 | | 3801.3 | | | |
| | 13353.2 | 15138.7 | 17054.0 | 4056.9 | 4257.2 | 3975.2 | 4290.0 |
| | | | | 4186.6 | | | |
| | | | | 4553.3 | | | |
| Import payments** | -60181.9 | -57387.7 | | -14496.6 | | | |
| | -61305.5 | -59003.0 | -63103.0 | -14747.6 | -16288.7 | | -16597.8 |
| | | | | -16055.3 | | | -16927.6 |
| | | | | -16011.4 | | | |
| Petroleum imports | -13246.9 | -9293.6 | | -3337.6 | | | |
| | -12366.1 | -12015.5 | -12489.8 | -2752.9 | -3095.2 | -3415.6 | -2442.3 |
| | | | | -3231.7 | | | |
| | | | | -3410.0 | | | |
| Other imports | -46935.0 | -48094.1 | | -11159.0 | | | |
| | -48939.4 | -46987.5 | -50613.2 | -11994.7 | -13193.5 | | -13182.2 |
| | | | | -12823.6 | | | -14485.3 |
| | | | | -12601.4 | | | |
| Services Balance | 8274.4 | 6533.0 | | 2323.1 | | | |
| | 10742.9 | 5614.2 | 11122.4 | 2847.3 | 3283.6 | 4283.1 | 2975.6 |
| | | | | 2462.7 | | | |
| | | | | 2528.8 | | | |
| Receipts | 17437.2 | 16079.3 | | 5080.8 | | | |
| | 21811.8 | 15400.1 | 21486.9 | 5678.2 | 5702.4 | 6938.4 | 5894.8 |
| | | | | 5068.2 | | | |
| | | | | 5038.1 | | | |
| Transportation | 9466.0 | 9534.6 | | 2429.7 | | | |
| | 9850.3 | 7911.2 | 8707.9 | 2267.9 | 2323.4 | 2242.8 | 2247.7 |
| | | | | 2087.1 | | | |
| | | | | 2029.5 | | | |
| Of which: Suez Canal dues | 5369.1 | 5121.6 | | 1228.7 | | | |
| | 5361.7 | 4945.3 | 5706.7 | 1382.2 | 1548.5 | 1441.2 | 1487.1 |
| | | | | 1386.3 | | | |
| | | | | 1389.7 | | | |

2013/2014 2014/2015 2015/2016 2016/2017 2017/2018 2016/2017(Q4)

| Category | | | | | | | |
|------------------------------------|--------------------|--------------------|---------|--|---------|--------------------|--|
| Travel (tourism revenues) | 5073.3 7370.4 | 3767.5 4379.7 | 9804.3 | 1539.0 2696.7 2282.5 2271.4 | 2553.7 | 3930.9 2859.1 | |
| Government receipts | 654.4 1381.5 | 378.0 776.4 | 636.7 | 585.1 131.7 138.0 163.6 | 203.4 | 166.0 127.7 | |
| Others | 2243.5 3209.6 | 2399.2 2332.8 | 2338.0 | 527.0 581.9 560.6 573.6 | 621.9 | 598.7 660.3 | |
| Payments | 9162.8 11068.9 | 9546.3 9785.9 | 10364.5 | 2757.7 2830.9 2605.5 2509.3 | 2418.8 | 2655.3 2919.2 | |
| Transportation | 1717.2 1535.0 | 1339.1 1332.1 | 1480.2 | 400.6 382.6 351.3 368.6 | 377.7 | 448.5 416.1 | |
| Travel | 3044.5 3338.2 | 4091.0 2739.9 | 2451.5 | 550.2 649.3 511.9 542.2 | 748.1 | 717.0 659.5 | |
| Government expenditures | 1073.9 854.1 | 777.1 1124.1 | 1493.5 | 424.0 449.0 540.1 238.4 | 266.0 | 183.1 175.3 | |
| Others | 3327.2 5341.6 | 3339.1 4589.8 | 4939.3 | 1382.9 1350.0 1202.2 1360.1 | 1027.0 | 1306.7 1668.3 | |
| Investment Income Balance | -7262.7 -5700.9 | -4471.7 -4568.5 | -6279.6 | -1249.8 -1519.3 -1520.3 -1664.3 | -1575.7 | -2048.0 -1769.5 | |
| Receipts | 194.2 212.8 | 396.9 497.9 | 835.4 | 192.6 229.0 183.7 212.0 | 210.7 | 227.7 259.2 | |
| Payments | 7456.9 5913.7 | 4868.6 5066.4 | 7115.0 | 1442.4 1748.3 1704.0 1876.3 | 1786.4 | 2275.7 2028.7 | |
| Of which: Interest paid | 652.5 643.6 | 752.0 1231.9 | 1616.1 | 343.3 415.5 401.8 399.6 | 399.2 | 508.3 565.9 | |
| Current Transfers | 30367.9 21875.8 | 16790.7 21835.1 | 26470.9 | 6071.9 5826.0 7112.4 6460.6 | 7071.9 | 5908.9 6047.8 | |
| Private (net), | 18447.7 19205.4 | 16689.2 21686.1 | 26264.7 | 6005.4 5782.9 7087.2 6435.4 | 6959.2 | 5861.2 5932.0 | |

2013/2014 2014/2015 2015/2016 2016/2017 2017/2018 2016/2017(Q4)

| Category | | (1) | NaN | NaN | NaN | NaN | NaN | NaN |
|--|--|---------------------|----------------------|---------|--|---------|--------------------|--------|
| Of which: | | | | | | | | |
| Remittances of Egyptians working abroad | | 18518.7 19330.0 | 17077.4 21816.3 | 26392.9 | 6033.9 5824.3 7098.8 6464.4 | 7005.4 | 5909.0 | 6136.9 |
| Official (net) | | 11920.2 2670.4 | 101.5 149.0 | 206.2 | 66.5 25.2 43.1 25.2 25.2 | 112.7 | 47.7 115.8 | |
| Balance of Current Account | | -2779.7 -12142.6 | -19831.1 -14394.0 | -5962.3 | -1553.2 -1754.2 -1784.8 -1930.5 | -492.8 | -1668.6 -2185.0 | |
| Capital & Financial Account | | 5189.5 17928.9 | 21176.7 31015.1 | 21996.5 | 4496.9 6247.4 4180.1 8617.1 | 2951.9 | 1475.6 310.5 | |
| Capital Account | | 194.1 -122.9 | -141.4 -113.3 | -150.7 | -14.7 -41.0 -40.3 -37.0 | -32.4 | -35.0 -28.7 | |
| Financial Account | | 4995.4 18051.8 | 21318.1 31128.4 | 22147.2 | 4511.6 6287.7 4221.1 8654.1 | 2984.3 | 1510.6 339.2 | |
| Direct investment abroad | | -326.6 -223.3 | -164.2 -175.1 | -271.2 | -27.4 -79.5 -52.4 -68.1 | -71.2 | -65.8 -118.4 | |
| Direct investment in Egypt (net) | | 4178.2 6379.8 | 6932.6 7932.8 | 7719.5 | 1367.8 1843.0 1919.9 2256.3 | 1700.3 | 1099.9 1741.1 | |
| Portfolio investment abroad | | 65.9 47.2 | 192.1 208.4 | -20.8 | 29.7 10.7 13.9 -49.7 | 4.3 | -75.4 24.7 | |
| Portfolio investment in Egypt (Net) | | 1237.2 -638.6 | -1286.8 15985.3 | 12094.8 | 8184.1 7478.5 540.7 6905.5 | -2829.9 | -3240.3 -2649.8 | |
| Of which:Bonds | | 926.7 -1147.5 | -1444.8 5491.5 | 5293.2 | 2301.3 -108.9 5.8 3294.5 | 2101.8 | -121.3 -182.3 | |

2013/2014 2014/2015 2015/2016 2016/2017 2017/2018 2016/2017(Q4)

| Category | | | | | | | |
|--|--------------------|--------------------|---------|--|--------|--------|--------|
| Other Investments (Net) | -159.3 12486.7 | 15644.4 7177.0 | 2624.9 | -5042.6 -2995.3 1829.3 -389.9 | 4180.8 | 3792.2 | 1341.6 |
| Net Borrowing | 207.2 5036.2 | 7102.7 9699.2 | 10278.8 | 587.5 657.3 3889.5 2402.6 | 3329.4 | 998.8 | 72.5 |
| Medium- and Long-Term Loans | -956.2 -482.5 | -186.3 5156.8 | 6738.5 | -9.7 993.6 2065.2 1238.4 | 2441.3 | -488.8 | 803.7 |
| Disbursements | 1153.4 1753.5 | 2523.4 7641.1 | 8846.4 | 503.3 1563.0 2603.5 1879.4 | 2800.5 | 153.3 | 1379.4 |
| Repayments | -2109.6 -2236.0 | -2709.7 -2484.3 | -2107.9 | -513.0 -569.4 -538.3 -641.0 | -359.2 | -642.1 | -575.7 |
| Medium- and Long-Term Suppliers' Credit | -56.3 257.9 | 1505.3 2795.1 | 1118.5 | 627.9 235.1 175.5 122.0 | 585.9 | 291.3 | 266.1 |
| Disbursements | 8.1 313.0 | 1560.7 2912.2 | 1313.6 | 664.7 275.5 233.2 175.1 | 629.8 | 328.8 | 305.6 |
| Repayments | -64.4 -55.1 | -55.4 -117.1 | -195.1 | -36.8 -40.4 -57.7 -53.1 | -43.9 | -37.5 | -39.5 |
| Nan | - 76 - | NaN | NaN | NaN | NaN | NaN | - 75 - |

In [272]:

```
keep= [10,26,33]
dfc= dfcle.iloc[keep].copy()
zi= dfc.reset_index(drop=True)
zi
```

Out[272...]

| | Category | 2013/2014 | 2014/2015 | 2015/2016 | 2016/2017 | 2017/2018 | 2016/2017(Q4) |
|---|---|--------------------|--------------------|-----------|--------------------------------------|-----------|---------------|
| 0 | Of which: Suez Canal dues | 5369.1 5361.7 | 5121.6 4945.3 | 5706.7 | 1228.7 1382.2 1386.3 1389.7 | 1548.5 | 1441.2 1487.1 |
| 1 | Of which: Remittances of Egyptians working ab... | 18518.7 19330.0 | 17077.4 21816.3 | 26392.9 | 6033.9 5824.3 7098.8 6464.4 | 7005.4 | 5909.0 6136.9 |
| 2 | Direct investment in Egypt (net) | 4178.2 6379.8 | 6932.6 7932.8 | 7719.5 | 1367.8 1843.0 1919.9 2256.3 | 1700.3 | 1099.9 1741.1 |



In [273...]

zi

Out[273...]

| | Category | 2013/2014 | 2014/2015 | 2015/2016 | 2016/2017 | 2017/2018 | 2016/2017(Q4) |
|---|---|--------------------|--------------------|-----------|--------------------------------------|-----------|---------------|
| 0 | Of which: Suez Canal dues | 5369.1 5361.7 | 5121.6 4945.3 | 5706.7 | 1228.7 1382.2 1386.3 1389.7 | 1548.5 | 1441.2 1487.1 |
| 1 | Of which: Remittances of Egyptians working ab... | 18518.7 19330.0 | 17077.4 21816.3 | 26392.9 | 6033.9 5824.3 7098.8 6464.4 | 7005.4 | 5909.0 6136.9 |
| 2 | Direct investment in Egypt (net) | 4178.2 6379.8 | 6932.6 7932.8 | 7719.5 | 1367.8 1843.0 1919.9 2256.3 | 1700.3 | 1099.9 1741.1 |



In [274...]

```
import numpy as np
df=zi
cols_to_fix = [
    '2013/2014', '2014/2015', '2015/2016', '2016/2017', '2017/2018',
    '2016/2017(Q4)', '2017/2018(Q1)', '2017/2018(Q2)', '2017/2018(Q3)', '2017/2018(Q4)']

for col in cols_to_fix:
    df[col] = df[col].astype(str).replace('nan', '')

for i in range(len(cols_to_fix) - 1):
    current_col = cols_to_fix[i]
```

```

next_col = cols_to_fix[i+1]

for row_idx in df.index:
    cell_parts = df.at[row_idx, current_col].split()

    if len(cell_parts) > 1:
        df.at[row_idx, current_col] = cell_parts[0]
        extra_values = cell_parts[1:]
        existing_next_val = df.at[row_idx, next_col].split()
        new_next_content = extra_values + existing_next_val
        df.at[row_idx, next_col] = " ".join(new_next_content)

df.replace(' ', np.nan, inplace=True)

```

In [275...]

```

df1=df

cols_to_remove = ['2013/2014', '2014/2015', '2015/2016', '2016/2017', '2017/2018']
df1 = df1.drop(columns=cols_to_remove)
df1

```

Out[275...]

| | Category | 2016/2017(Q4) | 2017/2018(Q1) | 2017/2018(Q2) | 2017/2018(Q3) | 2017/2018 |
|---|---|---------------|---------------|---------------|---------------|-----------|
| 0 | Of which: Suez Canal dues | 1228.7 | 1382.2 | 1386.3 | 1389.7 | 15 |
| 1 | Of which: Remittances of Egyptians working ab... | 6033.9 | 5824.3 | 7098.8 | 6464.4 | 70 |
| 2 | Direct investment in Egypt (net) | 1367.8 | 1843.0 | 1919.9 | 2256.3 | 17 |



In [276...]

```

data_area= [0,0,100,85]
dflist2= tb.read_pdf('Bulletin_2018_8_Aug_2018_335.pdf', pages=46, area= data_area,
df2= dflist2[0]
df2

```

Out[276...]

| | Unnamed: 0 | Unnamed: 1 | 21-Balance of Payments | Unnamed: 2 | Unnamed: 3 | Unnamed: 4 | Unnamed: 5 | 1 |
|----|--------------------|------------|------------------------|--|------------|------------|------------|-----------|
| 0 | NaN | NaN | NaN | (US\$ mn) | NaN | NaN | NaN | NaN |
| 1 | NaN | NaN | NaN | ၂၀၁၅/၂၀၁၆ | NaN | 2015/2016* | NaN | 2 |
| 2 | NaN | During | NaN | Fiscal Years | NaN | ၂၀၁၆/၂၀၁၇ | ၂၀၁၅/၂၀၁၆ | ၂၀၁၅/၂၀၁၆ |
| 3 | NaN | NaN | 2012/2013 2013/2014 | 2014/2015 (1) 2015/2016* 2016/2017* | NaN | Q4 | Q4 | Q1 |
| 4 | Trade Balance | NaN | -30694.7 -34159.3 | -39060.4 -38683.1 -35435.1 | NaN | -8834.5 | -8834.5 | -9416.7 |
| 5 | Export proceeds ** | NaN | 26988.1 26022.6 | 22245.1 18704.6 21687.0 | NaN | 5298.9 | 5298.9 | 5261.4 |
| 6 | Petroleum exports | NaN | 13023.0 12355.9 | 8891.9 5674.3 6548.3 | NaN | 1463.2 | 1463.2 | 1525.9 |
| 7 | Other exports | NaN | 13965.1 13666.7 | 13353.2 13030.3 15138.7 | NaN | 3835.7 | 3835.7 | 3735.5 |
| 8 | Import payments** | NaN | -57682.8 -60181.9 | -61305.5 -57387.7 -57122.1 | NaN | -14133.4 | -14133.4 | -14678.1 |
| 9 | Petroleum imports | NaN | -12124.2 -13246.9 | -12366.1 -9293.6 -11196.7 | NaN | -2221.5 | -2221.5 | -2746.7 |
| 10 | Other imports | NaN | -45558.6 -46935.0 | -48939.4 -48094.1 -45925.4 | NaN | -11911.9 | -11911.9 | -11931.4 |
| 11 | Services Balance | NaN | 12445.8 8274.4 | 10742.9 6533.0 6811.1 | NaN | 1012.7 | 1012.7 | 974.1 |
| 12 | Receipts | NaN | 22026.6 17437.2 | 21811.8 16079.3 16597.0 | NaN | 3564.1 | 3564.1 | 3327.7 |

| | | Unnamed: 0 | Unnamed: 1 | 21-Balance of Payments | Unnamed: 2 | Unnamed: 3 | Unnamed: 4 | Unnamed: 5 | |
|----|----------------------------|------------|------------|------------------------|-------------------------------|------------|------------|------------|---|
| 13 | Transportation | | Nan | 9187.5 9466.0 | 9850.3 9534.6 9108.1 | | 2281.6 | 1904.0 | |
| 14 | Of which: Suez Canal dues | | Nan | 5031.8 5369.1 | 5361.7 5121.6 4945.3 | | 1243.9 | 1300.4 | |
| 15 | Travel (tourism revenues) | | Nan | 9751.8 5073.3 | 7370.4 3767.5 4379.7 | | 510.4 | 758.2 | |
| 16 | Government receipts | | Nan | 437.6 654.4 | 1381.5 378.0 776.4 | | 99.3 | 62.5 | |
| 17 | Others | | Nan | 2649.7 2243.5 | 3209.6 2399.2 2332.8 | | 672.8 | 603.0 | € |
| 18 | Payments | | Nan | 9580.8 9162.8 | 11068.9 9546.3 9785.9 | | 2551.4 | 2353.6 | |
| 19 | Transportation | | Nan | 1658.7 1717.2 | 1535.0 1339.1 1332.1 | | 322.8 | 306.2 | 2 |
| 20 | Travel | | Nan | 2928.8 3044.5 | 3338.2 4091.0 2739.9 | | 1177.3 | 1105.2 | € |
| 21 | Government expenditures | | Nan | 1243.7 1073.9 | 854.1 777.1 1124.1 | | 327.2 | 157.0 | 2 |
| 22 | Others | | Nan | 3749.6 3327.2 | 5341.6 3339.1 4589.8 | | 724.1 | 785.2 | |
| 23 | Investment Income Balance | | Nan | -7406.4 -7262.7 | -5700.9 -4471.7 -4423.0 | | -1357.0 | -1129.5 | |
| 24 | Receipts | | Nan | 197.8 194.2 | 212.8 396.9 497.9 | | 123.7 | 81.6 | |
| 25 | Payments | | Nan | 7604.2 7456.9 | 5913.7 4868.6 4920.9 | | 1480.7 | 1211.1 | |
| 26 | Of which: Interest paid | | Nan | 755.1 652.5 | 643.6 752.0 1143.5 | | 227.6 | 258.9 | 3 |
| 27 | Current Transfers | | Nan | 19264.9 30367.9 | 21875.8 16790.7 | | 4388.2 | 4352.8 | |

| | | Unnamed: 0 | Unnamed: 1 | 21-Balance of Payments | Unnamed: 2 | Unnamed: 3 | Unnamed: 4 | Unnamed: 5 | |
|----|---|------------|------------------|------------------------|----------------------------------|------------|------------|------------|---|
| | | | | | 17471.8 | | | | |
| 28 | Private (net), | Nan | | 18429.3 18447.7 | 19205.4 16689.2 17322.8 | Nan | 4347.4 | 4319.0 | |
| 29 | | Nan | Nan | (2) | Nan | Nan | Nan | Nan | |
| 30 | Of which: Remittances of Egyptians working ab... | Nan | | 18668.0 18518.7 | 19330.0 17077.4 17453.0 | Nan | 4417.8 | 4354.9 | |
| 31 | Official (net) | Nan | | 835.6 11920.2 | 2670.4 101.5 149.0 | Nan | 40.8 | 33.8 | |
| 32 | Balance of Current Account | Nan | | -6390.4 -2779.7 | -12142.6 -19831.1 -15575.2 | Nan | -4790.6 | -5219.3 | |
| 33 | Capital & Financial Account | Nan | | 9773.0 5189.5 | 17928.9 21176.7 29034.2 | Nan | 6626.6 | 8029.7 | |
| 34 | Capital Account | Nan | | -86.8 194.1 | -122.9 -141.4 -113.3 | Nan | -10.6 | -9.4 | |
| 35 | Financial Account | Nan | | 9859.8 4995.4 | 18051.8 21318.1 29147.5 | Nan | 6637.2 | 8039.1 | |
| 36 | Direct investment abroad | Nan | | -183.6 -326.6 | -223.3 -164.2 -175.1 | Nan | -50.7 | -62.0 | |
| 37 | Direct investment in Egypt (net) | Nan | | 3753.3 4178.2 | 6379.8 6932.6 7915.8 | Nan | 1046.9 | 1872.2 | |
| 38 | Portfolio investment abroad | Nan | 22.4 65.9 | 47.2 192.1 208.4 | Nan | 43.5 | 27.7 | | |
| 39 | Portfolio investment in Egypt (Net) | Nan | | 1477.4 1237.2 | -638.6 -1286.8 15985.3 | Nan | 214.6 | -840.9 | |
| 40 | Of which:Bonds | Nan | | 2257.9 926.7 | -1147.5 -1444.8 5491.5 | Nan | -21.1 | -832.5 | 2 |
| 41 | Other Investments | Nan | 4790.3 -159.3 | 12486.7 15644.4 | Nan | 5382.9 | 7042.1 | | |

| | | | | 21- | | | | |
|----|--|------------|------|---------------------------|-------------------------------|------------|------------|------------|
| | Unnamed: 0 | Unnamed: 1 | | Balance of Payments | Unnamed: 2 | Unnamed: 3 | Unnamed: 4 | Unnamed: 5 |
| | | (Net) | | | 5213.1 | | | |
| 42 | Net Borrowing | NaN | | 1174.1 207.2 | 5036.2 7102.7 7735.3 | NaN | 1830.3 | 2240.8 |
| 43 | Medium- and Long-Term Loans | NaN | | 750.4 -956.2 | -482.5 -186.3 4133.4 | NaN | -8.9 | 992.6 |
| 44 | Disbursements | NaN | | 2709.6 1153.4 | 1753.5 2523.4 6679.1 | NaN | 447.2 | 1918.6 |
| 45 | Repayments | NaN | | -1959.2 -2109.6 | -2236.0 -2709.7 -2545.7 | NaN | -456.1 | -926.0 |
| 46 | Medium- and Long-Term Suppliers' Credit | NaN | | -18.2 -56.3 | 257.9 1505.3 1516.4 | NaN | 823.8 | 677.4 |
| 47 | Disbursements | NaN | 43.4 | 8.1 | 313.0 1560.7 1637.3 | NaN | 857.2 | 694.8 |
| 48 | Repayments | NaN | | -61.6 -64.4 | -55.1 -55.4 -120.9 | NaN | -33.4 | -17.4 |
| 49 | NaN | NaN | | - 76 - | NaN | NaN | NaN | NaN |

In [277]:

```
df22= df2.iloc[4: ].copy()
df22= df22.dropna(axis=1, how= 'all')
newnames= ['Category', "2012/2013", "2013/2014", "2014/2015", "2015/2016", "2016/2017"]
df22
```

Out[277...]

| | | 21- Balance of Payments | Unnamed: 2 | Unnamed: 4 | Unnamed: 5 | Unnamed: 6 | Unnamed: 7 | ت[|
|----|-----------------------------|----------------------------------|----------------------------------|---------------|---------------|----------------------|---------------|----|
| 4 | Trade Balance | -30694.7 -34159.3 | -39060.4 -38683.1 -35435.1 | -8834.5 | -9416.7 | -9599.6 -9347.0 | -8387.5 | |
| 5 | Export proceeds ** | 26988.1 26022.6 | 22245.1 18704.6 21687.0 | 5298.9 | 5261.4 | 5185.1 5547.5 | 5693.0 | |
| 6 | Petroleum exports | 13023.0 12355.9 | 8891.9 5674.3 6548.3 | 1463.2 | 1525.9 | 1409.4 1721.3 | 1891.7 | |
| 7 | Other exports | 13965.1 13666.7 | 13353.2 13030.3 15138.7 | 3835.7 | 3735.5 | 3775.7 3826.2 | 3801.3 | |
| 8 | Import payments** | -57682.8 -60181.9 | -61305.5 -57387.7 -57122.1 | -14133.4 | -14678.1 | -14784.7 -14894.5 | -14080.5 | |
| 9 | Petroleum imports | -12124.2 -13246.9 | -12366.1 -9293.6 -11196.7 | -2221.5 | -2746.7 | -2589.5 -3192.6 | -2999.6 | |
| 10 | Other imports | -45558.6 -46935.0 | -48939.4 -48094.1 -45925.4 | -11911.9 | -11931.4 | -12195.2 -11701.9 | -11080.9 | |
| 11 | Services Balance | 12445.8 8274.4 | 10742.9 6533.0 6811.1 | 1012.7 | 974.1 | 784.1 1532.9 | 2323.1 | |
| 12 | Receipts | 22026.6 17437.2 | 21811.8 16079.3 16597.0 | 3564.1 | 3327.7 | 3283.5 3708.1 | 5080.8 | |
| 13 | Transportation | 9187.5 9466.0 | 9850.3 9534.6 9108.1 | 2281.6 | 1904.0 | 1762.4 1815.1 | 2429.7 | |
| 14 | Of which: Suez Canal dues | 5031.8 5369.1 | 5361.7 5121.6 4945.3 | 1243.9 | 1300.4 | 1214.2 1202.0 | 1228.7 | |
| 15 | Travel (tourism revenues) | 9751.8 5073.3 | 7370.4 3767.5 4379.7 | 510.4 | 758.2 | 825.8 1256.7 | 1539.0 | |
| 16 | Government receipts | 437.6 654.4 | 1381.5 378.0 776.4 | 99.3 | 62.5 | 60.9 67.9 | 585.1 | 1 |

| | | Unnamed: 0 | 21-Balance of Payments | Unnamed: 2 | Unnamed: 4 | Unnamed: 5 | Unnamed: 6 | Unnamed: 7 | Unnamed: 8 | Unnamed: 9 |
|----|---------------------------------|--------------------|-------------------------------|------------|------------|--------------------|------------|------------|------------|------------|
| 17 | Others | 2649.7 2243.5 | 3209.6 2399.2 2332.8 | 672.8 | 603.0 | 634.4 568.4 | 527.0 | 555 | | |
| 18 | Payments | 9580.8 9162.8 | 11068.9 9546.3 9785.9 | 2551.4 | 2353.6 | 2499.4 2175.2 | | 2757.7 | | |
| 19 | Transportation | 1658.7 1717.2 | 1535.0 1339.1 1332.1 | 322.8 | 306.2 | 291.1 334.2 | 400.6 | 333 | | |
| 20 | Travel | 2928.8 3044.5 | 3338.2 4091.0 2739.9 | 1177.3 | 1105.2 | 636.2 448.3 | 550.2 | 666 | | |
| 21 | Government expenditures | 1243.7 1073.9 | 854.1 777.1 1124.1 | 327.2 | 157.0 | 217.8 325.3 | 424.0 | 444 | | |
| 22 | Others | 3749.6 3327.2 | 5341.6 3339.1 4589.8 | 724.1 | 785.2 | 1354.3 1067.4 | | 1382.9 | | |
| 23 | Investment Income Balance | -7406.4 -7262.7 | -5700.9 -4471.7 -4423.0 | -1357.0 | -1129.5 | -1134.8 -1054.4 | | -1197.1 | | |
| 24 | Receipts | 197.8 194.2 | 212.8 396.9 497.9 | 123.7 | 81.6 | 94.4 129.3 | 192.6 | 222 | | |
| 25 | Payments | 7604.2 7456.9 | 5913.7 4868.6 4920.9 | 1480.7 | 1211.1 | 1229.2 1183.7 | | 1389.7 | | |
| 26 | Of which: Interest paid | 755.1 652.5 | 643.6 752.0 1143.5 | 227.6 | 258.9 | 306.4 323.3 | 318.9 | 444 | | |
| 27 | Current Transfers | 19264.9 30367.9 | 21875.8 16790.7 17471.8 | 4388.2 | 4352.8 | 5755.3 5764.0 | | 4865.1 | | |
| 28 | Private (net), | 18429.3 18447.7 | 19205.4 16689.2 17322.8 | 4347.4 | 4319.0 | 5716.2 5754.4 | | 4798.6 | | |
| 29 | Nan | (2) | Nan | Nan | Nan | Nan | | | | |

| | Unnamed: 0 | 21-Balance of Payments | Unnamed: 2 | Unnamed: 4 | Unnamed: 5 | Unnamed: 6 | Unnamed: 7 | Unnamed: 8 |
|----|---|------------------------|----------------------------------|------------|------------|--------------------|--------------|------------|
| 30 | Of which: Remittances of Egyptians working ab... | 18668.0 18518.7 | 19330.0 17077.4 17453.0 | 4417.8 | 4354.9 | 5756.0 5780.4 | 4827.1 | |
| 31 | Official (net) | 835.6 11920.2 | 2670.4 101.5 149.0 | 40.8 | 33.8 | 39.1 9.6 | 66.5 | |
| 32 | Balance of Current Account | -6390.4 -2779.7 | -12142.6 -19831.1 -15575.2 | -4790.6 | -5219.3 | -4195.0 -3104.5 | -2396.4 | |
| 33 | Capital & Financial Account | 9773.0 5189.5 | 17928.9 21176.7 29034.2 | 6626.6 | 8029.7 | 10687.8 8358.9 | 4395.3 | |
| 34 | Capital Account | -86.8 194.1 | -122.9 -141.4 -113.3 | -10.6 | -9.4 | -29.6 -59.6 | -14.7 | - |
| 35 | Financial Account | 9859.8 4995.4 | 18051.8 21318.1 29147.5 | 6637.2 | 8039.1 | 10717.4 8418.5 | 4410.0 | |
| 36 | Direct investment abroad | -183.6 -326.6 | -223.3 -164.2 -175.1 | -50.7 | -62.0 | -46.0 -39.7 | -27.4 | - |
| 37 | Direct investment in Egypt (net) | 3753.3 4178.2 | 6379.8 6932.6 7915.8 | 1046.9 | 1872.2 | 2414.8 2278.0 | 1350.8 | |
| 38 | Portfolio investment abroad | 22.4 65.9 | 47.2 192.1 208.4 | 43.5 | 27.7 | 107.0 44.0 | 29.7 | |
| 39 | Portfolio investment in Egypt (Net) | 1477.4 1237.2 | -638.6 -1286.8 15985.3 | 214.6 | -840.9 | 1053.8 7588.3 | 8184.1 74 | |
| 40 | Of which:Bonds | 2257.9 926.7 | -1147.5 -1444.8 5491.5 | -21.1 | -832.5 | 27.0 3995.7 | 2301.3 | |
| 41 | Other Investments (Net) | 4790.3 -159.3 | 12486.7 15644.4 5213.1 | 5382.9 | 7042.1 | 7187.8 -1452.1 | -5127.2 | |
| 42 | Net Borrowing | 1174.1 207.2 | 5036.2 7102.7 7735.3 | 1830.3 | 2240.8 | 4842.6 2586.5 | 502.9 65 | |

| | | 21- | Balance of Payments | Unnamed: 2 | Unnamed: 4 | Unnamed: 5 | Unnamed: 6 | Unnamed: 7 | ... |
|----|---|--------------------|-------------------------------|---------------|---------------|------------------|---------------|---------------|-----|
| | | Unnamed: 0 | | | | | | | |
| 43 | Medium- and Long-Term Loans | 750.4 -956.2 | -482.5 -186.3 4133.4 | -8.9 | 992.6 | 2854.0 1319.9 | -47.3 | 99 | |
| 44 | Disbursements | 2709.6 1153.4 | 1753.5 2523.4 6679.1 | 447.2 | 1918.6 | 3348.2 1871.0 | 465.0 | | |
| 45 | Repayments | -1959.2 -2109.6 | -2236.0 -2709.7 -2545.7 | -456.1 | -926.0 | -494.2 -551.1 | -512.3 | | |
| 46 | Medium- and Long-Term Suppliers' Credit | -18.2 -56.3 | 257.9 1505.3 1516.4 | 823.8 | 677.4 | 516.5 973.3 | 586.7 | 2 | |
| 47 | Disbursements | 43.4 8.1 | 313.0 1560.7 1637.3 | 857.2 | 694.8 | 553.6 999.1 | 625.0 | 2 | |
| 48 | Repayments | -61.6 -64.4 | -55.1 -55.4 -120.9 | -33.4 | -17.4 | -37.1 -25.8 | -38.3 | - | |
| 49 | NaN | - 76 - | NaN | NaN | NaN | NaN | NaN | | |

In [278]:

```
df22.columns= newnames[:len(df22.columns)]
df22= df22.reindex(columns=newnames)
df22.set_index('Category')
df22
```

Out[278...]

| | Category | 2012/2013 | 2013/2014 | 2014/2015 | 2015/2016 | 2016/2017 | 2015/2016(I) |
|-----------|-----------------------------|----------------------|----------------------------------|-----------|-----------|----------------------|--------------|
| 4 | Trade Balance | -30694.7 -34159.3 | -39060.4 -38683.1 -35435.1 | -8834.5 | -9416.7 | -9599.6 -9347.0 | -838 |
| 5 | Export proceeds ** | 26988.1 26022.6 | 22245.1 18704.6 21687.0 | 5298.9 | 5261.4 | 5185.1 5547.5 | 569 |
| 6 | Petroleum exports | 13023.0 12355.9 | 8891.9 5674.3 6548.3 | 1463.2 | 1525.9 | 1409.4 1721.3 | 189 |
| 7 | Other exports | 13965.1 13666.7 | 13353.2 13030.3 15138.7 | 3835.7 | 3735.5 | 3775.7 3826.2 | 380 |
| 8 | Import payments** | -57682.8 -60181.9 | -61305.5 -57387.7 -57122.1 | -14133.4 | -14678.1 | -14784.7 -14894.5 | -1408 |
| 9 | Petroleum imports | -12124.2 -13246.9 | -12366.1 -9293.6 -11196.7 | -2221.5 | -2746.7 | -2589.5 -3192.6 | -299 |
| 10 | Other imports | -45558.6 -46935.0 | -48939.4 -48094.1 -45925.4 | -11911.9 | -11931.4 | -12195.2 -11701.9 | -1108 |
| 11 | Services Balance | 12445.8 8274.4 | 10742.9 6533.0 6811.1 | 1012.7 | 974.1 | 784.1 1532.9 | 232 |
| 12 | Receipts | 22026.6 17437.2 | 21811.8 16079.3 16597.0 | 3564.1 | 3327.7 | 3283.5 3708.1 | 508 |
| 13 | Transportation | 9187.5 9466.0 | 9850.3 9534.6 9108.1 | 2281.6 | 1904.0 | 1762.4 1815.1 | 242 |
| 14 | Of which: Suez Canal dues | 5031.8 5369.1 | 5361.7 5121.6 4945.3 | 1243.9 | 1300.4 | 1214.2 1202.0 | 122 |
| 15 | Travel (tourism revenues) | 9751.8 5073.3 | 7370.4 3767.5 4379.7 | 510.4 | 758.2 | 825.8 1256.7 | 153 |
| 16 | Government receipts | 437.6 654.4 | 1381.5 378.0 776.4 | 99.3 | 62.5 | 60.9 67.9 | 58 |
| 17 | Others | 2649.7 2243.5 | 3209.6 2399.2 2332.8 | 672.8 | 603.0 | 634.4 568.4 | 52 |
| 18 | Payments | 9580.8 9162.8 | 11068.9 9546.3 | 2551.4 | 2353.6 | 2499.4 2175.2 | 275 |

| | Category | 2012/2013 | 2013/2014 | 2014/2015 | 2015/2016 | 2016/2017 | 2015/2016(1) |
|----|--|--------------------|----------------------------------|-----------|-----------|--------------------|--------------|
| | | | 9785.9 | | | | |
| 19 | Transportation | 1658.7 1717.2 | 1535.0 1339.1 1332.1 | 322.8 | 306.2 | 291.1 334.2 | 40 |
| 20 | Travel | 2928.8 3044.5 | 3338.2 4091.0 2739.9 | 1177.3 | 1105.2 | 636.2 448.3 | 55 |
| 21 | Government expenditures | 1243.7 1073.9 | 854.1 777.1 1124.1 | 327.2 | 157.0 | 217.8 325.3 | 42 |
| 22 | Others | 3749.6 3327.2 | 5341.6 3339.1 4589.8 | 724.1 | 785.2 | 1354.3 1067.4 | 138 |
| 23 | Investment Income Balance | -7406.4 -7262.7 | -5700.9 -4471.7 -4423.0 | -1357.0 | -1129.5 | -1134.8 -1054.4 | -119 |
| 24 | Receipts | 197.8 194.2 | 212.8 396.9 497.9 | 123.7 | 81.6 | 94.4 129.3 | 19 |
| 25 | Payments | 7604.2 7456.9 | 5913.7 4868.6 4920.9 | 1480.7 | 1211.1 | 1229.2 1183.7 | 138 |
| 26 | Of which: Interest paid | 755.1 652.5 | 643.6 752.0 1143.5 | 227.6 | 258.9 | 306.4 323.3 | 31 |
| 27 | Current Transfers | 19264.9 30367.9 | 21875.8 16790.7 17471.8 | 4388.2 | 4352.8 | 5755.3 5764.0 | 486 |
| 28 | Private (net), | 18429.3 18447.7 | 19205.4 16689.2 17322.8 | 4347.4 | 4319.0 | 5716.2 5754.4 | 479 |
| 29 | Nan | (2) | Nan | Nan | Nan | Nan | N |
| 30 | Of which: Remittances of Egyptians working ab... | 18668.0 18518.7 | 19330.0 17077.4 17453.0 | 4417.8 | 4354.9 | 5756.0 5780.4 | 482 |
| 31 | Official (net) | 835.6 11920.2 | 2670.4 101.5 149.0 | 40.8 | 33.8 | 39.1 9.6 | 6 |
| 32 | Balance of Current Account | -6390.4 -2779.7 | -12142.6 -19831.1 -15575.2 | -4790.6 | -5219.3 | -4195.0 -3104.5 | -239 |
| 33 | Capital & Financial Account | 9773.0 5189.5 | 17928.9 21176.7 29034.2 | 6626.6 | 8029.7 | 10687.8 8358.9 | 439 |

| | Category | 2012/2013 | 2013/2014 | 2014/2015 | 2015/2016 | 2016/2017 | 2015/2016(I) |
|-----------|---|--------------------|-------------------------------|------------------|------------------|-------------------|---------------------|
| 34 | Capital Account | -86.8 194.1 | -122.9 -141.4 -113.3 | -10.6 | -9.4 | -29.6 -59.6 | -1 |
| 35 | Financial Account | 9859.8 4995.4 | 18051.8 21318.1 29147.5 | 6637.2 | 8039.1 | 10717.4 8418.5 | 441 |
| 36 | Direct investment abroad | -183.6 -326.6 | -223.3 -164.2 -175.1 | -50.7 | -62.0 | -46.0 -39.7 | -2 |
| 37 | Direct investment in Egypt (net) | 3753.3 4178.2 | 6379.8 6932.6 7915.8 | 1046.9 | 1872.2 | 2414.8 2278.0 | 135 |
| 38 | Portfolio investment abroad | 22.4 65.9 | 47.2 192.1 208.4 | 43.5 | 27.7 | 107.0 44.0 | 2 |
| 39 | Portfolio investment in Egypt (Net) | 1477.4 1237.2 | -638.6 -1286.8 15985.3 | 214.6 | -840.9 | 1053.8 7588.3 | 818 |
| 40 | Of which:Bonds | 2257.9 926.7 | -1147.5 -1444.8 5491.5 | -21.1 | -832.5 | 27.0 3995.7 | 230 |
| 41 | Other Investments (Net) | 4790.3 -159.3 | 12486.7 15644.4 5213.1 | 5382.9 | 7042.1 | 7187.8 -1452.1 | -512 |
| 42 | Net Borrowing | 1174.1 207.2 | 5036.2 7102.7 7735.3 | 1830.3 | 2240.8 | 4842.6 2586.5 | 50 |
| 43 | Medium- and Long-Term Loans | 750.4 -956.2 | -482.5 -186.3 4133.4 | -8.9 | 992.6 | 2854.0 1319.9 | -2 |
| 44 | Disbursements | 2709.6 1153.4 | 1753.5 2523.4 6679.1 | 447.2 | 1918.6 | 3348.2 1871.0 | 46 |
| 45 | Repayments | -1959.2 -2109.6 | -2236.0 -2709.7 -2545.7 | -456.1 | -926.0 | -494.2 -551.1 | -51 |
| 46 | Medium- and Long-Term Suppliers' Credit | -18.2 -56.3 | 257.9 1505.3 1516.4 | 823.8 | 677.4 | 516.5 973.3 | 58 |
| 47 | Disbursements | 43.4 8.1 | 313.0 1560.7 1637.3 | 857.2 | 694.8 | 553.6 999.1 | 62 |

| | Category | 2012/2013 | 2013/2014 | 2014/2015 | 2015/2016 | 2016/2017 | 2015/2016(Q4) |
|----|------------|-----------|-----------|-----------------|-----------|-----------|-------------------------|
| 48 | Repayments | -61.6 | -64.4 | -55.1 -120.9 | -55.4 | -33.4 | -17.4 -37.1 -25.8 |
| 49 | | NaN | - 76 - | NaN | NaN | NaN | NaN |

In [279...]

```
keep= [10,26,33]
d23= df22.iloc[keep].copy()
d24= d23.reset_index(drop=True)
d24
```

Out[279...]

| | Category | 2012/2013 | 2013/2014 | 2014/2015 | 2015/2016 | 2016/2017 | 2015/2016(Q4) |
|---|---|--------------------|-------------------------------|-----------|-----------|------------------|---------------|
| 0 | Of which: Suez Canal dues | 5031.8 5369.1 | 5361.7 5121.6 4945.3 | 1243.9 | 1300.4 | 1214.2 1202.0 | 1228.7 |
| 1 | Of which: Remittances of Egyptians working ab... | 18668.0 18518.7 | 19330.0 17077.4 17453.0 | 4417.8 | 4354.9 | 5756.0 5780.4 | 4827.1 |
| 2 | Direct investment in Egypt (net) | 3753.3 4178.2 | 6379.8 6932.6 7915.8 | 1046.9 | 1872.2 | 2414.8 2278.0 | 1350.8 |



In [280...]

```
df2=d24
cols_to_fix = [
    '2012/2013', "2013/2014", "2014/2015", "2015/2016", "2016/2017", "2015/2016(Q4)
]

for col in cols_to_fix:
    df2[col] = df2[col].astype(str).replace('nan', '')

for i in range(len(cols_to_fix) - 1):
    current_col = cols_to_fix[i]
    next_col = cols_to_fix[i+1]

    for row_idx in df2.index:
        cell_parts = df2.at[row_idx, current_col].split()

        if len(cell_parts) > 1:
            df2.at[row_idx, current_col] = cell_parts[0]
            extra_values = cell_parts[1:]
            existing_next_val = df2.at[row_idx, next_col].split()
            new_next_content = extra_values + existing_next_val
            df2.at[row_idx, next_col] = " ".join(new_next_content)
```

```
df2.replace(' ', np.nan, inplace=True)
df2
```

Out[280...]

| | Category | 2012/2013 | 2013/2014 | 2014/2015 | 2015/2016 | 2016/2017 | 2015/2016(Q4) |
|---|---|-----------|-----------|-----------|-----------|-----------|---------------|
| 0 | Of which: Suez Canal dues | 5031.8 | 5369.1 | 5361.7 | 5121.6 | 4945.3 | 1243.9 |
| 1 | Of which: Remittances of Egyptians working ab... | 18668.0 | 18518.7 | 19330.0 | 17077.4 | 17453.0 | 4417.8 |
| 2 | Direct investment in Egypt (net) | 3753.3 | 4178.2 | 6379.8 | 6932.6 | 7915.8 | 1046.9 |



In [281...]

```
df2
cols_to_remove = ['2012/2013', '2013/2014', '2014/2015', '2015/2016', '2016/2017']
df2 = df2.drop(columns=cols_to_remove)
df2
```

Out[281...]

| | Category | 2015/2016(Q4) | 2016/2017(Q1) | 2016/2017(Q2) | 2016/2017(Q3) | 2016/2017 |
|---|---|---------------|---------------|---------------|---------------|-----------|
| 0 | Of which: Suez Canal dues | 1243.9 | 1300.4 | 1214.2 | 1202.0 | 12 |
| 1 | Of which: Remittances of Egyptians working ab... | 4417.8 | 4354.9 | 5756.0 | 5780.4 | 48 |
| 2 | Direct investment in Egypt (net) | 1046.9 | 1872.2 | 2414.8 | 2278.0 | 13 |



In [282...]

```
data_area= [0,0,100,85]
dflist3= tb.read_pdf('Bulletin_281_Aug 2020_359.pdf', pages=46, area= data_area,relax=True)
dflist3[0]
```

Out[282...]

| | Unnamed: 0 | Unnamed: 1 | Unnamed: 2 | Unnamed: 3 | 21-Balance of Payments | Unnamed: 4 | Unnamed: 5 |
|-----------|--------------------|------------|------------|------------|---|------------|---------------|
| 0 | NaN | NaN | NaN | NaN | (US\$ mn) | NaN | NaN |
| 1 | NaN | NaN | NaN | NaN | ၂၀၁၅/၂၀၁၆ ၂၀၁၆/၂၀၁၇ ၂၀၁၇/၂၀၁၈* (+) | NaN | NaN |
| 2 | NaN | During | NaN | NaN | Fiscal Years | NaN | NaN |
| 3 | NaN | NaN | NaN | 2014/2015 | 2015/2016 2016/2017 2017/2018* (+) | NaN | (+)2018/2019* |
| 4 | Trade Balance | NaN | NaN | -39060.4 | -38683.1 -37274.8 -37276.0 | NaN | -38034.4 |
| 5 | Export proceeds ** | NaN | NaN | 22245.1 | 18704.6 21728.2 25827.0 | NaN | 28495.0 |
| 6 | Petroleum exports | NaN | NaN | 8891.9 | 5674.3 6589.5 8773.0 | NaN | 11557.0 |
| 7 | Other exports | NaN | NaN | 13353.2 | 13030.3 15138.7 17054.0 | NaN | 16938.0 |
| 8 | Import payments** | NaN | NaN | -61305.5 | -57387.7 -59003.0 -63103.0 | NaN | -66529.4 |
| 9 | Petroleum imports | NaN | NaN | -12366.1 | -9293.6 -12015.5 -12489.8 | NaN | -11548.9 |
| 10 | Other imports | NaN | NaN | -48939.4 | -48094.1 -46987.5 -50613.2 | NaN | -54980.5 |
| 11 | Services Balance | NaN | NaN | 10742.9 | 6533.0 5614.2 11122.4 | NaN | 13036.5 |
| 12 | Receipts | NaN | NaN | 21811.8 | 16079.3 15400.1 21486.9 | NaN | 24423.6 |

| | Unnamed: 0 | Unnamed: 1 | Unnamed: 2 | Unnamed: 3 | 21-Balance of Payments | Unnamed: 4 | Unnamed: 5 |
|----|----------------------------|------------|------------|------------|-------------------------------|------------|------------|
| 13 | Transportation | NaN | NaN | 9850.3 | 9534.6 7911.2 8707.9 | NaN | 8600.3 |
| 14 | Of which: Suez Canal dues | NaN | NaN | 5361.7 | 5121.6 4945.3 5706.7 | NaN | 5730.7 |
| 15 | Travel (tourism revenues) | NaN | NaN | 7370.4 | 3767.5 4379.7 9804.3 | NaN | 12570.6 |
| 16 | Government receipts | NaN | NaN | 1381.5 | 378.0 776.4 636.7 | NaN | 718.8 |
| 17 | Others | NaN | NaN | 3209.6 | 2399.2 2332.8 2338.0 | NaN | 2533.9 |
| 18 | Payments | NaN | NaN | 11068.9 | 9546.3 9785.9 10364.5 | NaN | 11387.1 |
| 19 | Transportation | NaN | NaN | 1535.0 | 1339.1 1332.1 1480.2 | NaN | 1792.4 |
| 20 | Travel | NaN | NaN | 3338.2 | 4091.0 2739.9 2451.5 | NaN | 2902.9 |
| 21 | Government expenditures | NaN | NaN | 854.1 | 777.1 1124.1 1493.5 | NaN | 692.4 |
| 22 | Others | NaN | NaN | 5341.6 | 3339.1 4589.8 4939.3 | NaN | 5999.4 |
| 23 | Investment Income Balance | NaN | NaN | -5700.9 | -4471.7 -4568.5 -6279.6 | NaN | -11009.6 |
| 24 | Receipts | NaN | NaN | 212.8 | 396.9 497.9 835.4 | NaN | 1014.1 |
| 25 | (++) | NaN | NaN | NaN | NaN | NaN | NaN |
| 26 | Payments | NaN | NaN | 5913.7 | 4868.6 5066.4 7115.0 | NaN | 12023.7 |
| 27 | Of which: Interest paid | NaN | NaN | 643.6 | 752.0 1231.9 1616.1 | NaN | 2574.1 |

| | | Unnamed: 0 | Unnamed: 1 | Unnamed: 2 | Unnamed: 3 | 21-Balance of Payments | Unnamed: 4 | Unnamed: 5 |
|----|---|------------|------------|------------|------------|---------------------------------|------------|------------|
| 28 | Current Transfers | | NaN | NaN | 21875.8 | 16790.7 21835.1 26470.9 | NaN | 25113.6 |
| 29 | Private (net), | | NaN | NaN | 19205.4 | 16689.2 21686.1 26264.7 | NaN | 24763.1 |
| 30 | | NaN | (1) | NaN | NaN | NaN | NaN | NaN |
| 31 | Of which: Remittances of Egyptians working ab... | | NaN | NaN | 19330.0 | 17077.4 21816.3 26392.9 | NaN | 25150.8 |
| 32 | Official (net) | | NaN | NaN | 2670.4 | 101.5 149.0 206.2 | NaN | 350.5 |
| 33 | Balance of Current Account | | NaN | NaN | -12142.6 | -19831.1 -14394.0 -5962.3 | NaN | -10893.9 |
| 34 | Capital & Financial Account | | NaN | NaN | 17928.9 | 21176.7 31015.1 21996.5 | NaN | 10856.9 |
| 35 | Capital Account | | NaN | NaN | -122.9 | -141.4 -113.3 -150.7 | NaN | -129.2 |
| 36 | Financial Account | | NaN | NaN | 18051.8 | 21318.1 31128.4 22147.2 | NaN | 10986.1 |
| 37 | Direct investment abroad | | NaN | NaN | -223.3 | -164.2 -175.1 -271.2 | NaN | -374.0 |
| 38 | | NaN | (++) | NaN | NaN | NaN | NaN | NaN |
| 39 | Direct investment in Egypt (net) | | NaN | NaN | 6379.8 | 6932.6 7932.8 7719.5 | NaN | 8236.3 |
| 40 | Portfolio investment abroad | | NaN | NaN | 47.2 | 192.1 208.4 -20.8 | NaN | -96.4 |
| 41 | Portfolio investment in Egypt (Net) | | NaN | NaN | -638.6 | -1286.8 15985.3 12094.8 | NaN | 4230.1 |
| 42 | Of which:Bonds | | NaN | NaN | -1147.5 | -1444.8 5491.5 5293.2 | NaN | 5094.2 |

| | Unnamed: 0 | Unnamed: 1 | Unnamed: 2 | Unnamed: 3 | 21-Balance of Payments | Unnamed: 4 | Unnamed: 5 |
|----|---|------------|------------|------------|-------------------------------|------------|------------|
| 43 | Other Investments (Net) | NaN | NaN | 12486.7 | 15644.4 7177.0 2624.9 | NaN | -1009.9 |
| 44 | Net Borrowing | NaN | NaN | 5036.2 | 7102.7 9699.2 10278.8 | NaN | 6253.4 |
| 45 | Medium- and Long-Term Loans | NaN | NaN | -482.5 | -186.3 5156.8 6738.5 | NaN | 3333.7 |
| 46 | Disbursements | NaN | NaN | 1753.5 | 2523.4 7641.1 8846.4 | NaN | 5525.2 |
| 47 | Repayments | NaN | NaN | -2236.0 | -2709.7 -2484.3 -2107.9 | NaN | -2191.5 |
| 48 | Medium- and Long-Term Suppliers' Credit | NaN | NaN | 257.9 | 1505.3 2795.1 1118.5 | NaN | 828.8 |
| 49 | Disbursements | NaN | NaN | 313.0 | 1560.7 2912.2 1313.6 | NaN | 1160.8 |
| 50 | Repayments | NaN | NaN | -55.1 | -55.4 -117.1 -195.1 | NaN | -332.0 |
| 51 | NaN | NaN | NaN | NaN | - 76 - | NaN | NaN |

In [283]:

```
df31= df3.iloc[4: ].copy()
df31= df31.dropna(axis=1, how= 'all')
newnames= ['Category', "2014/2015", "2015/2016", "2016/2017", "2017/2018", "2018/2019"]
df31
```

Out[283...]

| | | | | | 21-Balance of Payments | | | | |
|-----------|-----------------------------|------------|------------|--|----------------------------------|------------|------------|----------|--|
| | Unnamed: 0 | Unnamed: 1 | Unnamed: 3 | | Unnamed: 5 | Unnamed: 7 | Unnamed: 9 | Un | |
| 4 | Trade Balance | NaN | -39060.4 | | -38683.1 -37274.8 -37276.0 | -38034.4 | -9272.6 | -9812.6 | |
| 5 | Export proceeds ** | NaN | 22245.1 | | 18704.6 21728.2 25827.0 | 28495.0 | 7016.1 | 6785.2 | |
| 6 | Petroleum exports | NaN | 8891.9 | | 5674.3 6589.5 8773.0 | 11557.0 | 2758.9 | 2810.0 | |
| 7 | Other exports | NaN | 13353.2 | | 13030.3 15138.7 17054.0 | 16938.0 | 4257.2 | 3975.2 | |
| 8 | Import payments** | NaN | -61305.5 | | -57387.7 -59003.0 -63103.0 | -66529.4 | -16288.7 | -16597.8 | |
| 9 | Petroleum imports | NaN | -12366.1 | | -9293.6 -12015.5 -12489.8 | -11548.9 | -3095.2 | -3415.6 | |
| 10 | Other imports | NaN | -48939.4 | | -48094.1 -46987.5 -50613.2 | -54980.5 | -13193.5 | -13182.2 | |
| 11 | Services Balance | NaN | 10742.9 | | 6533.0 5614.2 11122.4 | 13036.5 | 3283.6 | 4283.1 | |
| 12 | Receipts | NaN | 21811.8 | | 16079.3 15400.1 21486.9 | 24423.6 | 5702.4 | 6938.4 | |
| 13 | Transportation | NaN | 9850.3 | | 9534.6 7911.2 8707.9 | 8600.3 | 2323.4 | 2242.8 | |
| 14 | Of which: Suez Canal dues | NaN | 5361.7 | | 5121.6 4945.3 5706.7 | 5730.7 | 1548.5 | 1441.2 | |
| 15 | Travel (tourism revenues) | NaN | 7370.4 | | 3767.5 4379.7 9804.3 | 12570.6 | 2553.7 | 3930.9 | |
| 16 | Government receipts | NaN | 1381.5 | | 378.0 776.4 636.7 | 718.8 | 203.4 | 166.0 | |

| | | | | | 21-Balance of Payments | | | | |
|----|---------------------------|------------|------------|------------|-------------------------------|------------|------------|------------|----|
| | | Unnamed: 0 | Unnamed: 1 | Unnamed: 3 | | Unnamed: 5 | Unnamed: 7 | Unnamed: 9 | Un |
| 17 | Others | NaN | 3209.6 | | 2399.2 2332.8 2338.0 | 2533.9 | 621.9 | 598.7 | |
| 18 | Payments | NaN | 11068.9 | | 9546.3 9785.9 10364.5 | 11387.1 | 2418.8 | 2655.3 | |
| 19 | Transportation | NaN | 1535.0 | | 1339.1 1332.1 1480.2 | 1792.4 | 377.7 | 448.5 | |
| 20 | Travel | NaN | 3338.2 | | 4091.0 2739.9 2451.5 | 2902.9 | 748.1 | 717.0 | |
| 21 | Government expenditures | NaN | 854.1 | | 777.1 1124.1 1493.5 | 692.4 | 266.0 | 183.1 | |
| 22 | Others | NaN | 5341.6 | | 3339.1 4589.8 4939.3 | 5999.4 | 1027.0 | 1306.7 | |
| 23 | Investment Income Balance | NaN | -5700.9 | | -4471.7 -4568.5 -6279.6 | -11009.6 | -1575.7 | -2391.4 | |
| 24 | Receipts | NaN | 212.8 | | 396.9 497.9 835.4 | 1014.1 | 210.7 | 227.7 | |
| 25 | (++) | NaN | NaN | | NaN | NaN | NaN | NaN | |
| 26 | Payments | NaN | 5913.7 | | 4868.6 5066.4 7115.0 | 12023.7 | 1786.4 | 2619.1 | |
| 27 | Of which: Interest paid | NaN | 643.6 | | 752.0 1231.9 1616.1 | 2574.1 | 399.2 | 508.3 | |
| 28 | Current Transfers | NaN | 21875.8 | | 16790.7 21835.1 26470.9 | 25113.6 | 7071.9 | 5908.9 | |
| 29 | Private (net), | NaN | 19205.4 | | 16689.2 21686.1 26264.7 | 24763.1 | 6959.2 | 5861.2 | |
| 30 | NaN | (1) | NaN | | NaN | NaN | NaN | NaN | |
| 31 | Of which: Remittances of | NaN | 19330.0 | | 17077.4 21816.3 | 25150.8 | 7005.4 | 5909.0 | |

| | | Unnamed: 0 | Unnamed: 1 | Unnamed: 3 | 21-Balance of Payments | Unnamed: 5 | Unnamed: 7 | Unnamed: 9 | Un |
|----|-------------------------------------|-------------------------|------------|------------|---------------------------------|------------|------------|------------|-----|
| | | Egyptians working ab... | | | 26392.9 | | | | |
| 32 | Official (net) | NaN | 2670.4 | | 101.5 149.0 206.2 | 350.5 | 112.7 | 47.7 | |
| 33 | Balance of Current Account | NaN | -12142.6 | | -19831.1 -14394.0 -5962.3 | -10893.9 | -492.8 | -2012.0 | |
| 34 | Capital & Financial Account | NaN | 17928.9 | | 21176.7 31015.1 21996.5 | 10856.9 | 2951.9 | 1791.1 | |
| 35 | Capital Account | NaN | -122.9 | | -141.4 -113.3 -150.7 | -129.2 | -32.4 | -35.0 | -20 |
| 36 | Financial Account | NaN | 18051.8 | | 21318.1 31128.4 22147.2 | 10986.1 | 2984.3 | 1826.1 | |
| 37 | Direct investment abroad | NaN | -223.3 | | -164.2 -175.1 -271.2 | -374.0 | -71.2 | -65.8 | |
| 38 | NaN | (++) | NaN | | NaN | NaN | NaN | NaN | |
| 39 | Direct investment in Egypt (net) | NaN | 6379.8 | | 6932.6 7932.8 7719.5 | 8236.3 | 1700.3 | 1415.4 | |
| 40 | Portfolio investment abroad | NaN | 47.2 | | 192.1 208.4 -20.8 | -96.4 | 4.3 | -75.4 | |
| 41 | Portfolio investment in Egypt (Net) | NaN | -638.6 | | -1286.8 15985.3 12094.8 | 4230.1 | -2829.9 | -3240.3 | |
| 42 | Of which:Bonds | NaN | -1147.5 | | -1444.8 5491.5 5293.2 | 5094.2 | 2101.8 | -121.3 | |
| 43 | Other Investments (Net) | NaN | 12486.7 | | 15644.4 7177.0 2624.9 | -1009.9 | 4180.8 | 3792.2 | |
| 44 | Net Borrowing | NaN | 5036.2 | | 7102.7 9699.2 10278.8 | 6253.4 | 3329.4 | 998.8 | |

| | | | | | 21-Balance of Payments | | | | |
|----|--|------------|------------|--------|-------------------------------|------------|------------|--------|----|
| | Unnamed: 0 | Unnamed: 1 | Unnamed: 3 | | Unnamed: 5 | Unnamed: 7 | Unnamed: 9 | | Un |
| 45 | Medium- and Long-Term Loans | NaN | -482.5 | | -186.3 5156.8 6738.5 | 3333.7 | 2441.3 | -488.8 | |
| 46 | Disbursements | NaN | 1753.5 | | 2523.4 7641.1 8846.4 | 5525.2 | 2800.5 | 153.3 | |
| 47 | Repayments | NaN | -2236.0 | | -2709.7 -2484.3 -2107.9 | -2191.5 | -359.2 | -642.1 | |
| 48 | Medium- and Long-Term Suppliers' Credit | NaN | 257.9 | | 1505.3 2795.1 1118.5 | 828.8 | 585.9 | 291.3 | |
| 49 | Disbursements | NaN | 313.0 | | 1560.7 2912.2 1313.6 | 1160.8 | 629.8 | 328.8 | |
| 50 | Repayments | NaN | -55.1 | | -55.4 -117.1 -195.1 | -332.0 | -43.9 | -37.5 | |
| 51 | NaN | NaN | NaN | - 76 - | NaN | NaN | NaN | NaN | |

In [284]:

```
df31.columns= newnames[:len(df31.columns)]
df31= df31.reindex(columns=newnames)
df31.set_index('Category')
df31
```

Out[284...]

| | Category | 2014/2015 | 2015/2016 | 2016/2017 | 2017/2018 | 2018/2019 | 2017/2018(I) |
|----|-----------------------------|-----------|-----------|----------------------------------|-----------|-----------|--------------|
| 4 | Trade Balance | NaN | -39060.4 | -38683.1 -37274.8 -37276.0 | -38034.4 | -9272.6 | -981 |
| 5 | Export proceeds ** | NaN | 22245.1 | 18704.6 21728.2 25827.0 | 28495.0 | 7016.1 | 678 |
| 6 | Petroleum exports | NaN | 8891.9 | 5674.3 6589.5 8773.0 | 11557.0 | 2758.9 | 281 |
| 7 | Other exports | NaN | 13353.2 | 13030.3 15138.7 17054.0 | 16938.0 | 4257.2 | 397 |
| 8 | Import payments** | NaN | -61305.5 | -57387.7 -59003.0 -63103.0 | -66529.4 | -16288.7 | -1659 |
| 9 | Petroleum imports | NaN | -12366.1 | -9293.6 -12015.5 -12489.8 | -11548.9 | -3095.2 | -341 |
| 10 | Other imports | NaN | -48939.4 | -48094.1 -46987.5 -50613.2 | -54980.5 | -13193.5 | -1318 |
| 11 | Services Balance | NaN | 10742.9 | 6533.0 5614.2 11122.4 | 13036.5 | 3283.6 | 428 |
| 12 | Receipts | NaN | 21811.8 | 16079.3 15400.1 21486.9 | 24423.6 | 5702.4 | 693 |
| 13 | Transportation | NaN | 9850.3 | 9534.6 7911.2 8707.9 | 8600.3 | 2323.4 | 224 |
| 14 | Of which: Suez Canal dues | NaN | 5361.7 | 5121.6 4945.3 5706.7 | 5730.7 | 1548.5 | 142 |
| 15 | Travel (tourism revenues) | NaN | 7370.4 | 3767.5 4379.7 9804.3 | 12570.6 | 2553.7 | 393 |
| 16 | Government receipts | NaN | 1381.5 | 378.0 776.4 636.7 | 718.8 | 203.4 | 16 |
| 17 | Others | NaN | 3209.6 | 2399.2 2332.8 2338.0 | 2533.9 | 621.9 | 59 |
| 18 | Payments | NaN | 11068.9 | 9546.3 9785.9 | 11387.1 | 2418.8 | 265 |

| | Category | 2014/2015 | 2015/2016 | 2016/2017 | 2017/2018 | 2018/2019 | 2017/2018(1) |
|----|--|-----------|-----------|---------------------------------|-----------|-----------|--------------|
| | | | | 10364.5 | | | |
| 19 | Transportation | Nan | 1535.0 | 1332.1 1480.2 | 1792.4 | 377.7 | 44 |
| 20 | Travel | Nan | 3338.2 | 4091.0 2739.9 2451.5 | 2902.9 | 748.1 | 71 |
| 21 | Government expenditures | Nan | 854.1 | 777.1 1124.1 1493.5 | 692.4 | 266.0 | 18 |
| 22 | Others | Nan | 5341.6 | 3339.1 4589.8 4939.3 | 5999.4 | 1027.0 | 130 |
| 23 | Investment Income Balance | Nan | -5700.9 | -4471.7 -4568.5 -6279.6 | -11009.6 | -1575.7 | -239 |
| 24 | Receipts | Nan | 212.8 | 396.9 497.9 835.4 | 1014.1 | 210.7 | 22 |
| 25 | (++) | Nan | Nan | Nan | Nan | Nan | N |
| 26 | Payments | Nan | 5913.7 | 4868.6 5066.4 7115.0 | 12023.7 | 1786.4 | 261 |
| 27 | Of which: Interest paid | Nan | 643.6 | 752.0 1231.9 1616.1 | 2574.1 | 399.2 | 50 |
| 28 | Current Transfers | Nan | 21875.8 | 16790.7 21835.1 26470.9 | 25113.6 | 7071.9 | 590 |
| 29 | Private (net), | Nan | 19205.4 | 16689.2 21686.1 26264.7 | 24763.1 | 6959.2 | 586 |
| 30 | Nan | (1) | Nan | Nan | Nan | Nan | N |
| 31 | Of which: Remittances of Egyptians working ab... | Nan | 19330.0 | 17077.4 21816.3 26392.9 | 25150.8 | 7005.4 | 590 |
| 32 | Official (net) | Nan | 2670.4 | 101.5 149.0 206.2 | 350.5 | 112.7 | 4 |
| 33 | Balance of Current Account | Nan | -12142.6 | -19831.1 -14394.0 -5962.3 | -10893.9 | -492.8 | -201 |

| | Category | 2014/2015 | 2015/2016 | 2016/2017 | 2017/2018 | 2018/2019 | 2017/2018(1) |
|-----------|-------------------------------------|------------------|------------------|-------------------------------|------------------|------------------|---------------------|
| 34 | Capital & Financial Account | NaN | 17928.9 | 21176.7 31015.1 21996.5 | 10856.9 | 2951.9 | 179 |
| 35 | Capital Account | NaN | -122.9 | -141.4 -113.3 -150.7 | -129.2 | -32.4 | -3 |
| 36 | Financial Account | NaN | 18051.8 | 21318.1 31128.4 22147.2 | 10986.1 | 2984.3 | 182 |
| 37 | Direct investment abroad | NaN | -223.3 | -164.2 -175.1 -271.2 | -374.0 | -71.2 | -6 |
| 38 | NaN | (++) | NaN | NaN | NaN | NaN | N |
| 39 | Direct investment in Egypt (net) | NaN | 6379.8 | 6932.6 7932.8 7719.5 | 8236.3 | 1700.3 | 141 |
| 40 | Portfolio investment abroad | NaN | 47.2 | 192.1 208.4 -20.8 | -96.4 | 4.3 | -7 |
| 41 | Portfolio investment in Egypt (Net) | NaN | -638.6 | -1286.8 15985.3 12094.8 | 4230.1 | -2829.9 | -324 |
| 42 | Of which:Bonds | NaN | -1147.5 | -1444.8 5491.5 5293.2 | 5094.2 | 2101.8 | -12 |
| 43 | Other Investments (Net) | NaN | 12486.7 | 15644.4 7177.0 2624.9 | -1009.9 | 4180.8 | 379 |
| 44 | Net Borrowing | NaN | 5036.2 | 7102.7 9699.2 10278.8 | 6253.4 | 3329.4 | 99 |
| 45 | Medium- and Long-Term Loans | NaN | -482.5 | -186.3 5156.8 6738.5 | 3333.7 | 2441.3 | -48 |
| 46 | Disbursements | NaN | 1753.5 | 2523.4 7641.1 8846.4 | 5525.2 | 2800.5 | 15 |
| 47 | Repayments | NaN | -2236.0 | -2709.7 -2484.3 -2107.9 | -2191.5 | -359.2 | -64 |
| 48 | Medium- and Long-Term | NaN | 257.9 | 1505.3 2795.1 1118.5 | 828.8 | 585.9 | 29 |

| Category | 2014/2015 | 2015/2016 | 2016/2017 | 2017/2018 | 2018/2019 | 2017/2018(Q4) |
|-------------------------|-----------|-----------|----------------------------|-----------|-----------|---------------|
| Suppliers' Credit | | | | | | |
| 49 Disbursements | Nan | 313.0 | 1560.7 2912.2 1313.6 | 1160.8 | 629.8 | 32 |
| 50 Repayments | Nan | -55.1 | -55.4 -117.1 -195.1 | -332.0 | -43.9 | -3 |
| 51 | Nan | Nan | Nan | - 76 - | Nan | Nan |

In [285...]

```
keep= [10,27,35]
df32= df31.iloc[keep].copy()
df33= df32.reset_index(drop=True)
df33
```

Out[285...]

| Category | 2014/2015 | 2015/2016 | 2016/2017 | 2017/2018 | 2018/2019 | 2017/2018(Q4) |
|---|-----------|-----------|-------------------------------|-----------|-----------|---------------|
| Of which: | | | 5121.6 | | | |
| 0 Suez Canal dues | Nan | 5361.7 | 4945.3 5706.7 | 5730.7 | 1548.5 | 1441.2 |
| Of which: Remittances of Egyptians working ab... | | | 17077.4 21816.3 26392.9 | 25150.8 | 7005.4 | 5909.0 |
| Direct investment in Egypt (net) | Nan | 6379.8 | 6932.6 7932.8 7719.5 | 8236.3 | 1700.3 | 1415.4 |



```
df3=df33
cols_to_fix = [
    "2014/2015", "2015/2016", "2016/2017", "2017/2018", "2018/2019", "2017/2018(Q4)"]

for col in cols_to_fix:
    df3[col] = df3[col].astype(str).replace('nan', '')

for i in range(len(cols_to_fix) - 1):
    current_col = cols_to_fix[i]
    next_col = cols_to_fix[i+1]

    for row_idx in df3.index:
        cell_parts = df3.at[row_idx, current_col].split()
```

```

if len(cell_parts) > 1:
    df3.at[row_idx, current_col] = cell_parts[0]
    extra_values = cell_parts[1:]
    existing_next_val = df3.at[row_idx, next_col].split()
    new_next_content = extra_values + existing_next_val
    df3.at[row_idx, next_col] = " ".join(new_next_content)

df3.replace('', np.nan, inplace=True)
df3

```

C:\Users\hp\AppData\Local\Temp\ipykernel_22756\3976044703.py:24: FutureWarning: Down casting behavior in `replace` is deprecated and will be removed in a future version. To retain the old behavior, explicitly call `result.infer_objects(copy=False)`. To opt-in to the future behavior, set `pd.set_option('future.no_silent_downcasting', True)`
df3.replace('', np.nan, inplace=True)

Out[286...]

| | Category | 2014/2015 | 2015/2016 | 2016/2017 | 2017/2018 | 2018/2019 | 2017/2018(Q4) |
|---|---|-----------|-----------|-----------|-----------|-----------|---------------|
| 0 | Of which: Suez Canal dues | NaN | 5361.7 | 5121.6 | 4945.3 | 5706.7 | 5730.7 |
| 1 | Of which: Remittances of Egyptians working ab... | NaN | 19330.0 | 17077.4 | 21816.3 | 26392.9 | 25150.8 |
| 2 | Direct investment in Egypt (net) | NaN | 6379.8 | 6932.6 | 7932.8 | 7719.5 | 8236.3 |



In [287...]

df3.to_dict()

```
Out[287... {'Category': {0: 'Of which: Suez Canal dues',
  1: 'Of which: Remittances of Egyptians working abroad',
  2: 'Direct investment in Egypt (net)'},
'2014/2015': {0: nan, 1: nan, 2: nan},
'2015/2016': {0: '5361.7', 1: '19330.0', 2: '6379.8'},
'2016/2017': {0: '5121.6', 1: '17077.4', 2: '6932.6'},
'2017/2018': {0: '4945.3', 1: '21816.3', 2: '7932.8'},
'2018/2019': {0: '5706.7', 1: '26392.9', 2: '7719.5'},
'2017/2018(Q4)': {0: '5730.7', 1: '25150.8', 2: '8236.3'},
'2018/2019(Q1)': {0: '1548.5', 1: '7005.4', 2: '1700.3'},
'2018/2019(Q2)': {0: '1441.2', 1: '5909.0', 2: '1415.4'},
'2018/2019(Q3)': {0: '1487.1', 1: '6136.9', 2: '2769.3'},
'2018/2019(Q4)': {0: '1344.7', 1: '6165.5', 2: '2339.3'},
'2019/2020(Q1)': {0: '1457.7', 1: '6939.4', 2: '1712.3'},
'2019/2020(Q2)': {0: '1507.3', 1: '6712.6', 2: '2352.6'},
'2019/2020(Q3)': {0: '1524.8 1429.1',
  1: '6963.9 7869.0 رج',
  2: '2605.9 970.5'}}}
```

```
In [288... import re
bad_col = '2019/2020(Q3)'
cols = [c for c in df3.columns if c != 'Category']
```

```
bad_col_idx = cols.index(bad_col)
extracted = df3[bad_col].astype(str).str.findall(r'[\d\.\.]+')
df3[bad_col] = extracted.str[1]
value_to_move_left = extracted.str[0]

for i in range(bad_col_idx - 1, -1, -1):
    current_col_name = cols[i]
    next_value_to_move = df3[current_col_name].copy()
    df3[current_col_name] = value_to_move_left
    value_to_move_left = next_value_to_move
for col in cols:
    df3[col] = pd.to_numeric(df3[col], errors='coerce')
print(df3[cols].tail())
```

| | 2014/2015 | 2015/2016 | 2016/2017 | 2017/2018 | 2018/2019 | 2017/2018(Q4) | \ |
|---|---------------|---------------|---------------|---------------|---------------|---------------|---|
| 0 | 5361.7 | 5121.6 | 4945.3 | 5706.7 | 5730.7 | 1548.5 | |
| 1 | 19330.0 | 17077.4 | 21816.3 | 26392.9 | 25150.8 | 7005.4 | |
| 2 | 6379.8 | 6932.6 | 7932.8 | 7719.5 | 8236.3 | 1700.3 | |
| | 2018/2019(Q1) | 2018/2019(Q2) | 2018/2019(Q3) | 2018/2019(Q4) | 2019/2020(Q1) | \ | |
| 0 | 1441.2 | 1487.1 | 1344.7 | 1457.7 | 1507.3 | | |
| 1 | 5909.0 | 6136.9 | 6165.5 | 6939.4 | 6712.6 | | |
| 2 | 1415.4 | 2769.3 | 2339.3 | 1712.3 | 2352.6 | | |
| | 2019/2020(Q2) | 2019/2020(Q3) | | | | | |
| 0 | 1524.8 | 1429.1 | | | | | |
| 1 | 6963.9 | 7869.0 | | | | | |
| 2 | 2605.9 | 970.5 | | | | | |

```
In [289... df3
```

Out[289...]

| | Category | 2014/2015 | 2015/2016 | 2016/2017 | 2017/2018 | 2018/2019 | 2017/2018(Q4) |
|---|---|-----------|-----------|-----------|-----------|-----------|---------------|
| 0 | Of which: Suez Canal dues | 5361.7 | 5121.6 | 4945.3 | 5706.7 | 5730.7 | 1548.5 |
| 1 | Of which: Remittances of Egyptians working ab... | 19330.0 | 17077.4 | 21816.3 | 26392.9 | 25150.8 | 7005.4 |
| 2 | Direct investment in Egypt (net) | 6379.8 | 6932.6 | 7932.8 | 7719.5 | 8236.3 | 1700.3 |



In [290...]

```
df3
cols_to_remove = ['2018/2019', '2017/2018', '2014/2015', '2015/2016', '2016/2017']
df3 = df3.drop(columns=cols_to_remove)
df3
```

Out[290...]

| | Category | 2017/2018(Q4) | 2018/2019(Q1) | 2018/2019(Q2) | 2018/2019(Q3) | 2018/2019 |
|---|---|---------------|---------------|---------------|---------------|-----------|
| 0 | Of which: Suez Canal dues | 1548.5 | 1441.2 | 1487.1 | 1344.7 | 14 |
| 1 | Of which: Remittances of Egyptians working ab... | 7005.4 | 5909.0 | 6136.9 | 6165.5 | 69 |
| 2 | Direct investment in Egypt (net) | 1700.3 | 1415.4 | 2769.3 | 2339.3 | 17 |



In [291...]

```
data_area= [0,0,100,85]
dflist4= tb.read_pdf('Bulletin_293_Aug 2021_371.pdf', pages=46, area= data_area,relax=True)
df4= dflist4[0]
df4
```

Out[291...]

| | Unnamed: 0 | Unnamed: 1 | Unnamed: 2 | Unnamed: 3 | 21-Balance of Payments | Unnamed: 4 | Unnamed: 5 |
|----|--------------------|------------|------------|------------|---|------------|----------------|
| 0 | NaN | NaN | NaN | NaN | (US\$ mn) | NaN | NaN |
| 1 | NaN | NaN | NaN | NaN | ₪ 000000000 00000 | NaN | NaN |
| 2 | NaN | During | NaN | NaN | Fiscal Years | NaN | NaN |
| 3 | NaN | NaN | NaN | 2015/2016 | 2016/2017 2017/2018* (+) 2018/2019* (+) | NaN | (+) 2019/2020* |
| 4 | Trade Balance | NaN | NaN | -38683.1 | -37274.8 -37276.0 -38034.4 | NaN | -36465.1 |
| 5 | Export proceeds ** | NaN | NaN | 18704.6 | 21728.2 25827.0 28495.0 | NaN | 26376.0 |
| 6 | Petroleum exports | NaN | NaN | 5674.3 | 6589.5 8773.0 11557.0 | NaN | 8479.9 |
| 7 | Other exports | NaN | NaN | 13030.3 | 15138.7 17054.0 16938.0 | NaN | 17896.1 |
| 8 | Import payments** | NaN | NaN | -57387.7 | -59003.0 -63103.0 -66529.4 | NaN | -62841.1 |
| 9 | Petroleum imports | NaN | NaN | -9293.6 | -12015.5 -12489.8 -11548.9 | NaN | -8900.9 |
| 10 | Other imports | NaN | NaN | -48094.1 | -46987.5 -50613.2 -54980.5 | NaN | -53940.2 |
| 11 | Services Balance | NaN | NaN | 6533.0 | 5614.2 11122.4 13036.5 | NaN | 8972.5 |
| 12 | Receipts | NaN | NaN | 16079.3 | 15400.1 21486.9 24423.6 | NaN | 21288.9 |

| | Unnamed: 0 | Unnamed: 1 | Unnamed: 2 | Unnamed: 3 | 21-Balance of Payments | Unnamed: 4 | Unnamed: 5 |
|----|----------------------------|------------|------------|------------|--------------------------------|------------|------------|
| 13 | Transportation | NaN | NaN | 9534.6 | 7911.2 8707.9 8600.3 | NaN | 7881.1 |
| 14 | Of which: Suez Canal dues | NaN | NaN | 5121.6 | 4945.3 5706.7 5730.7 | NaN | 5805.7 |
| 15 | Travel (tourism revenues) | NaN | NaN | 3767.5 | 4379.7 9804.3 12570.6 | NaN | 9859.4 |
| 16 | Government receipts | NaN | NaN | 378.0 | 776.4 636.7 718.8 | NaN | 758.5 |
| 17 | Others | NaN | NaN | 2399.2 | 2332.8 2338.0 2533.9 | NaN | 2789.9 |
| 18 | Payments | NaN | NaN | 9546.3 | 9785.9 10364.5 11387.1 | NaN | 12316.4 |
| 19 | Transportation | NaN | NaN | 1339.1 | 1332.1 1480.2 1792.4 | NaN | 2050.1 |
| 20 | Travel | NaN | NaN | 4091.0 | 2739.9 2451.5 2902.9 | NaN | 3213.0 |
| 21 | Government expenditures | NaN | NaN | 777.1 | 1124.1 1493.5 692.4 | NaN | 975.8 |
| 22 | Others | NaN | NaN | 3339.1 | 4589.8 4939.3 5999.4 | NaN | 6077.5 |
| 23 | Investment Income Balance | NaN | NaN | -4471.7 | -4568.5 -6279.6 -11009.6 | NaN | -11354.0 |
| 24 | Receipts | NaN | NaN | 396.9 | 497.9 835.4 1014.1 | NaN | 942.1 |
| 25 | (++) | NaN | NaN | NaN | NaN | NaN | NaN |
| 26 | Payments | NaN | NaN | 4868.6 | 5066.4 7115.0 12023.7 | NaN | 12296.1 |
| 27 | Of which: Interest paid | NaN | NaN | 752.0 | 1231.9 1616.1 2574.1 | NaN | 2947.7 |

| | | Unnamed: 0 | Unnamed: 1 | Unnamed: 2 | Unnamed: 3 | 21-Balance of Payments | Unnamed: 4 | Unnamed: 5 |
|----|---|------------|------------|------------|------------|---------------------------------|------------|------------|
| 28 | Current Transfers | | NaN | NaN | 16790.7 | 21835.1 26470.9 25113.6 | NaN | 27679.9 |
| 29 | Private (net), | | NaN | NaN | 16689.2 | 21686.1 26264.7 24763.1 | NaN | 27461.8 |
| 30 | | NaN | (1) | NaN | NaN | NaN | NaN | NaN |
| 31 | Of which: Remittances of Egyptians working ab... | | NaN | NaN | 17077.4 | 21816.3 26392.9 25150.8 | NaN | 27758.0 |
| 32 | Official (net) | | NaN | NaN | 101.5 | 149.0 206.2 350.5 | NaN | 218.1 |
| 33 | Balance of Current Account | | NaN | NaN | -19831.1 | -14394.0 -5962.3 -10893.9 | NaN | -11166.7 |
| 34 | Capital & Financial Account | | NaN | NaN | 21176.7 | 31015.1 21996.5 10856.9 | NaN | 5374.6 |
| 35 | Capital Account | | NaN | NaN | -141.4 | -113.3 -150.7 -129.2 | NaN | -248.5 |
| 36 | Financial Account | | NaN | NaN | 21318.1 | 31128.4 22147.2 10986.1 | NaN | 5623.1 |
| 37 | Direct investment abroad | | NaN | NaN | -164.2 | -175.1 -271.2 -374.0 | NaN | -351.2 |
| 38 | | NaN | (++) | NaN | NaN | NaN | NaN | NaN |
| 39 | Direct investment in Egypt (net) | | NaN | NaN | 6932.6 | 7932.8 7719.5 8236.3 | NaN | 7453.0 |
| 40 | Portfolio investment abroad | | NaN | NaN | 192.1 | 208.4 -20.8 -96.4 | NaN | -818.1 |
| 41 | Portfolio investment in Egypt (Net) | | NaN | NaN | -1286.8 | 15985.3 12094.8 4230.1 | NaN | -7307.3 |
| 42 | Of which:Bonds | | NaN | NaN | -1444.8 | 5491.5 5293.2 5094.2 | NaN | 4594.9 |

| | Unnamed: 0 | Unnamed: 1 | Unnamed: 2 | Unnamed: 3 | 21-Balance of Payments | Unnamed: 4 | Unnamed: 5 |
|----|---|------------|------------|------------|-------------------------------|------------|------------|
| 43 | Other Investments (Net) | NaN | NaN | 15644.4 | 7177.0 2624.9 -1009.9 | NaN | 6646.7 |
| 44 | Net Borrowing | NaN | NaN | 7102.7 | 9699.2 10278.8 6253.4 | NaN | 4541.6 |
| 45 | Medium- and Long-Term Loans | NaN | NaN | -186.3 | 5156.8 6738.5 3333.7 | NaN | 7216.8 |
| 46 | Disbursements | NaN | NaN | 2523.4 | 7641.1 8846.4 5525.2 | NaN | 9253.1 |
| 47 | Repayments | NaN | NaN | -2709.7 | -2484.3 -2107.9 -2191.5 | NaN | -2036.3 |
| 48 | Medium- and Long-Term Suppliers' Credit | NaN | NaN | 1505.3 | 2795.1 1118.5 828.8 | NaN | -644.9 |
| 49 | Disbursements | NaN | NaN | 1560.7 | 2912.2 1313.6 1160.8 | NaN | 34.3 |
| 50 | Repayments | NaN | NaN | -55.4 | -117.1 -195.1 -332.0 | NaN | -679.2 |
| 51 | NaN | NaN | NaN | NaN | - 76 - | NaN | NaN |

In [292]:

```
df41= df4.iloc[4: ].copy()
df41= df41.dropna(axis=1,how= 'all')
newnames= ['Category',"2015/2016", "2016/2017", "2017/2018", "2018/2019", "2019/2020"]
df41
```

Out[292...]

| | | | | | 21-Balance of Payments | | | | |
|----|-----------------------------|------------|------------|------------|----------------------------------|------------|------------|------------|----|
| | | Unnamed: 0 | Unnamed: 1 | Unnamed: 3 | | Unnamed: 5 | Unnamed: 7 | Unnamed: 9 | Un |
| 4 | Trade Balance | | NaN | -38683.1 | -37274.8 -37276.0 -38034.4 | -36465.1 | -8287.5 | -8783.2 | |
| 5 | Export proceeds ** | | NaN | 18704.6 | 21728.2 25827.0 28495.0 | 26376.0 | 7583.0 | 7120.8 | |
| 6 | Petroleum exports | | NaN | 5674.3 | 6589.5 8773.0 11557.0 | 8479.9 | 3043.9 | 2438.3 | |
| 7 | Other exports | | NaN | 13030.3 | 15138.7 17054.0 16938.0 | 17896.1 | 4539.1 | 4682.5 | |
| 8 | Import payments** | | NaN | -57387.7 | -59003.0 -63103.0 -66529.4 | -62841.1 | -15870.5 | -15904.0 | |
| 9 | Petroleum imports | | NaN | -9293.6 | -12015.5 -12489.8 -11548.9 | -8900.9 | -2741.5 | -3044.5 | |
| 10 | Other imports | | NaN | -48094.1 | -46987.5 -50613.2 -54980.5 | -53940.2 | -13129.0 | -12859.5 | |
| 11 | Services Balance | | NaN | 6533.0 | 5614.2 11122.4 13036.5 | 8972.5 | 3275.1 | 4035.0 | |
| 12 | Receipts | | NaN | 16079.3 | 15400.1 21486.9 24423.6 | 21288.9 | 6267.7 | 7436.6 | |
| 13 | Transportation | | NaN | 9534.6 | 7911.2 8707.9 8600.3 | 7881.1 | 2139.0 | 2262.8 | |
| 14 | Of which: Suez Canal dues | | NaN | 5121.6 | 4945.3 5706.7 5730.7 | 5805.7 | 1457.7 | 1507.3 | |
| 15 | Travel (tourism revenues) | | NaN | 3767.5 | 4379.7 9804.3 12570.6 | 9859.4 | 3179.0 | 4193.6 | |
| 16 | Government receipts | | NaN | 378.0 | 776.4 636.7 718.8 | 758.5 | 298.8 | 219.9 | |

| | | | | | 21-Balance of Payments | | | | |
|----|---------------------------|------------|------------|--|--------------------------------|------------|------------|---------|--|
| | Unnamed: 0 | Unnamed: 1 | Unnamed: 3 | | Unnamed: 5 | Unnamed: 7 | Unnamed: 9 | Un | |
| 17 | Others | NaN | 2399.2 | | 2332.8 2338.0 2533.9 | 2789.9 | 650.9 | 760.3 | |
| 18 | Payments | NaN | 9546.3 | | 9785.9 10364.5 11387.1 | 12316.4 | 2992.6 | 3401.6 | |
| 19 | Transportation | NaN | 1339.1 | | 1332.1 1480.2 1792.4 | 2050.1 | 516.0 | 522.8 | |
| 20 | Travel | NaN | 4091.0 | | 2739.9 2451.5 2902.9 | 3213.0 | 824.0 | 955.2 | |
| 21 | Government expenditures | NaN | 777.1 | | 1124.1 1493.5 692.4 | 975.8 | 126.2 | 227.3 | |
| 22 | Others | NaN | 3339.1 | | 4589.8 4939.3 5999.4 | 6077.5 | 1526.4 | 1696.3 | |
| 23 | Investment Income Balance | NaN | -4471.7 | | -4568.5 -6279.6 -11009.6 | -11354.0 | -3002.9 | -3328.0 | |
| 24 | Receipts | NaN | 396.9 | | 497.9 835.4 1014.1 | 942.1 | 294.0 | 300.8 | |
| 25 | (++) | NaN | NaN | | NaN | NaN | NaN | NaN | |
| 26 | Payments | NaN | 4868.6 | | 5066.4 7115.0 12023.7 | 12296.1 | 3296.9 | 3628.8 | |
| 27 | Of which: Interest paid | NaN | 752.0 | | 1231.9 1616.1 2574.1 | 2947.7 | 786.6 | 828.4 | |
| 28 | Current Transfers | NaN | 16790.7 | | 21835.1 26470.9 25113.6 | 27679.9 | 6927.6 | 6694.0 | |
| 29 | Private (net), | NaN | 16689.2 | | 21686.1 26264.7 24763.1 | 27461.8 | 6877.4 | 6630.5 | |
| 30 | NaN | (1) | NaN | | NaN | NaN | NaN | NaN | |
| 31 | Of which: Remittances of | NaN | 17077.4 | | 21816.3 26392.9 | 27758.0 | 6939.4 | 6712.6 | |

| | | | | | 21- | | | | |
|----|-------------------------------------|------------|------------|--|---------------------------------|------------|------------|------------|--------|
| | Unnamed: 0 | Unnamed: 1 | Unnamed: 3 | | Balance of Payments | Unnamed: 5 | Unnamed: 7 | Unnamed: 9 | Un |
| | Egyptians working ab... | | | | | | | 25150.8 | |
| 32 | Official (net) | NaN | 101.5 | | 149.0 206.2 350.5 | 218.1 | 50.2 | 63.5 | |
| 33 | Balance of Current Account | NaN | -19831.1 | | -14394.0 -5962.3 -10893.9 | -11166.7 | -1087.7 | -1382.2 | |
| 34 | Capital & Financial Account | NaN | 21176.7 | | 31015.1 21996.5 10856.9 | 5374.6 | 1220.4 | 657.9 | |
| 35 | Capital Account | NaN | -141.4 | | -113.3 -150.7 -129.2 | -248.5 | -31.8 | -37.2 | -60.1 |
| 36 | Financial Account | NaN | 21318.1 | | 31128.4 22147.2 10986.1 | 5623.1 | 1252.2 | 695.1 | |
| 37 | Direct investment abroad | NaN | -164.2 | | -175.1 -271.2 -374.0 | -351.2 | -85.6 | -70.6 | |
| 38 | NaN | (++) | NaN | | NaN | NaN | NaN | NaN | |
| 39 | Direct investment in Egypt (net) | NaN | 6932.6 | | 7932.8 7719.5 8236.3 | 7453.0 | 1712.3 | 2352.6 | |
| 40 | Portfolio investment abroad | NaN | 192.1 | | 208.4 -20.8 -96.4 | -818.1 | -85.1 | 123.2 | -100.1 |
| 41 | Portfolio investment in Egypt (Net) | NaN | -1286.8 | | 15985.3 12094.8 4230.1 | -7307.3 | 3178.3 | -1981.5 | |
| 42 | Of which:Bonds | NaN | -1444.8 | | 5491.5 5293.2 5094.2 | 4594.9 | 2050.3 | -300.2 | |
| 43 | Other Investments (Net) | NaN | 15644.4 | | 7177.0 2624.9 -1009.9 | 6646.7 | -3467.7 | 271.4 | |
| 44 | Net Borrowing | NaN | 7102.7 | | 9699.2 10278.8 6253.4 | 4541.6 | 1338.7 | 3954.9 | |

| | | | | | 21-Balance of Payments | | | | |
|----|--|------------|------------|--------|-------------------------------|------------|------------|--------|----|
| | Unnamed: 0 | Unnamed: 1 | Unnamed: 3 | | Unnamed: 5 | Unnamed: 7 | Unnamed: 9 | | Un |
| 45 | Medium- and Long-Term Loans | NaN | -186.3 | | 5156.8 6738.5 3333.7 | 7216.8 | 770.6 | 2290.8 | |
| 46 | Disbursements | NaN | 2523.4 | | 7641.1 8846.4 5525.2 | 9253.1 | 1112.3 | 2964.8 | |
| 47 | Repayments | NaN | -2709.7 | | -2484.3 -2107.9 -2191.5 | -2036.3 | -341.7 | -674.0 | |
| 48 | Medium- and Long-Term Suppliers' Credit | NaN | 1505.3 | | 2795.1 1118.5 828.8 | -644.9 | 347.4 | -170.3 | |
| 49 | Disbursements | NaN | 1560.7 | | 2912.2 1313.6 1160.8 | 34.3 | 430.4 | 2.9 | |
| 50 | Repayments | NaN | -55.4 | | -117.1 -195.1 -332.0 | -679.2 | -83.0 | -173.2 | |
| 51 | NaN | NaN | NaN | - 76 - | NaN | NaN | NaN | | |

In [293]:

```
df41.columns= newnames[:len(df41.columns)]
df41= df41.reindex(columns=newnames)
df41.set_index('Category')
df41
```

Out[293...]

| | Category | 2015/2016 | 2016/2017 | 2017/2018 | 2018/2019 | 2019/2020 | 2018/2019(I) |
|----|-----------------------------|-----------|-----------|----------------------------------|-----------|-----------|--------------|
| 4 | Trade Balance | NaN | -38683.1 | -37274.8 -37276.0 -38034.4 | -36465.1 | -8287.5 | -878 |
| 5 | Export proceeds ** | NaN | 18704.6 | 21728.2 25827.0 28495.0 | 26376.0 | 7583.0 | 712 |
| 6 | Petroleum exports | NaN | 5674.3 | 6589.5 8773.0 11557.0 | 8479.9 | 3043.9 | 243 |
| 7 | Other exports | NaN | 13030.3 | 15138.7 17054.0 16938.0 | 17896.1 | 4539.1 | 468 |
| 8 | Import payments** | NaN | -57387.7 | -59003.0 -63103.0 -66529.4 | -62841.1 | -15870.5 | -1590 |
| 9 | Petroleum imports | NaN | -9293.6 | -12015.5 -12489.8 -11548.9 | -8900.9 | -2741.5 | -304 |
| 10 | Other imports | NaN | -48094.1 | -46987.5 -50613.2 -54980.5 | -53940.2 | -13129.0 | -1285 |
| 11 | Services Balance | NaN | 6533.0 | 5614.2 11122.4 13036.5 | 8972.5 | 3275.1 | 403 |
| 12 | Receipts | NaN | 16079.3 | 15400.1 21486.9 24423.6 | 21288.9 | 6267.7 | 743 |
| 13 | Transportation | NaN | 9534.6 | 7911.2 8707.9 8600.3 | 7881.1 | 2139.0 | 226 |
| 14 | Of which: Suez Canal dues | NaN | 5121.6 | 4945.3 5706.7 5730.7 | 5805.7 | 1457.7 | 150 |
| 15 | Travel (tourism revenues) | NaN | 3767.5 | 4379.7 9804.3 12570.6 | 9859.4 | 3179.0 | 419 |
| 16 | Government receipts | NaN | 378.0 | 776.4 636.7 718.8 | 758.5 | 298.8 | 21 |
| 17 | Others | NaN | 2399.2 | 2332.8 2338.0 2533.9 | 2789.9 | 650.9 | 76 |
| 18 | Payments | NaN | 9546.3 | 9785.9 10364.5 | 12316.4 | 2992.6 | 340 |

| | Category | 2015/2016 | 2016/2017 | 2017/2018 | 2018/2019 | 2019/2020 | 2018/2019(1) |
|----|--|-----------|-----------|---------------------------------|-----------|-----------|--------------|
| | | | | 11387.1 | | | |
| 19 | Transportation | Nan | 1339.1 | 1332.1 1480.2 1792.4 | 2050.1 | 516.0 | 52 |
| 20 | Travel | Nan | 4091.0 | 2739.9 2451.5 2902.9 | 3213.0 | 824.0 | 95 |
| 21 | Government expenditures | Nan | 777.1 | 1124.1 1493.5 692.4 | 975.8 | 126.2 | 22 |
| 22 | Others | Nan | 3339.1 | 4589.8 4939.3 5999.4 | 6077.5 | 1526.4 | 169 |
| 23 | Investment Income Balance | Nan | -4471.7 | -4568.5 -6279.6 -11009.6 | -11354.0 | -3002.9 | -332 |
| 24 | Receipts | Nan | 396.9 | 497.9 835.4 1014.1 | 942.1 | 294.0 | 30 |
| 25 | (++) | Nan | Nan | Nan | Nan | Nan | N |
| 26 | Payments | Nan | 4868.6 | 5066.4 7115.0 12023.7 | 12296.1 | 3296.9 | 362 |
| 27 | Of which: Interest paid | Nan | 752.0 | 1231.9 1616.1 2574.1 | 2947.7 | 786.6 | 82 |
| 28 | Current Transfers | Nan | 16790.7 | 21835.1 26470.9 25113.6 | 27679.9 | 6927.6 | 669 |
| 29 | Private (net), | Nan | 16689.2 | 21686.1 26264.7 24763.1 | 27461.8 | 6877.4 | 663 |
| 30 | Nan | (1) | Nan | Nan | Nan | Nan | N |
| 31 | Of which: Remittances of Egyptians working ab... | Nan | 17077.4 | 21816.3 26392.9 25150.8 | 27758.0 | 6939.4 | 671 |
| 32 | Official (net) | Nan | 101.5 | 149.0 206.2 350.5 | 218.1 | 50.2 | 6 |
| 33 | Balance of Current Account | Nan | -19831.1 | -14394.0 -5962.3 -10893.9 | -11166.7 | -1087.7 | -138 |

| | Category | 2015/2016 | 2016/2017 | 2017/2018 | 2018/2019 | 2019/2020 | 2018/2019(1) |
|-----------|-------------------------------------|------------------|------------------|-------------------------------|------------------|------------------|---------------------|
| 34 | Capital & Financial Account | NaN | 21176.7 | 31015.1 21996.5 10856.9 | 5374.6 | 1220.4 | 65 |
| 35 | Capital Account | NaN | -141.4 | -113.3 -150.7 -129.2 | -248.5 | -31.8 | -3 |
| 36 | Financial Account | NaN | 21318.1 | 31128.4 22147.2 10986.1 | 5623.1 | 1252.2 | 69 |
| 37 | Direct investment abroad | NaN | -164.2 | -175.1 -271.2 -374.0 | -351.2 | -85.6 | -7 |
| 38 | NaN | (++) | NaN | NaN | NaN | NaN | N |
| 39 | Direct investment in Egypt (net) | NaN | 6932.6 | 7932.8 7719.5 8236.3 | 7453.0 | 1712.3 | 235 |
| 40 | Portfolio investment abroad | NaN | 192.1 | 208.4 -20.8 -96.4 | -818.1 | -85.1 | 12 |
| 41 | Portfolio investment in Egypt (Net) | NaN | -1286.8 | 15985.3 12094.8 4230.1 | -7307.3 | 3178.3 | -198 |
| 42 | Of which:Bonds | NaN | -1444.8 | 5491.5 5293.2 5094.2 | 4594.9 | 2050.3 | -30 |
| 43 | Other Investments (Net) | NaN | 15644.4 | 7177.0 2624.9 -1009.9 | 6646.7 | -3467.7 | 27 |
| 44 | Net Borrowing | NaN | 7102.7 | 9699.2 10278.8 6253.4 | 4541.6 | 1338.7 | 395 |
| 45 | Medium- and Long-Term Loans | NaN | -186.3 | 5156.8 6738.5 3333.7 | 7216.8 | 770.6 | 229 |
| 46 | Disbursements | NaN | 2523.4 | 7641.1 8846.4 5525.2 | 9253.1 | 1112.3 | 296 |
| 47 | Repayments | NaN | -2709.7 | -2484.3 -2107.9 -2191.5 | -2036.3 | -341.7 | -67 |
| 48 | Medium- and Long-Term | NaN | 1505.3 | 2795.1 1118.5 828.8 | -644.9 | 347.4 | -17 |

| Category | 2015/2016 | 2016/2017 | 2017/2018 | 2018/2019 | 2019/2020 | 2018/2019(Q4) |
|-------------------------|-----------|-----------|----------------------------|-----------|-----------|---------------|
| Suppliers' Credit | | | | | | |
| 49 Disbursements | Nan | 1560.7 | 2912.2 1313.6 1160.8 | 34.3 | 430.4 | |
| 50 Repayments | Nan | -55.4 | -117.1 -195.1 -332.0 | -679.2 | -83.0 | -17 |
| 51 | Nan | Nan | Nan | - 76 - | Nan | Nan |

In [294...]

```
keep= [10,27,35]
d42= df41.iloc[keep].copy()
d43= d42.reset_index(drop=True)
d43
```

Out[294...]

| Category | 2015/2016 | 2016/2017 | 2017/2018 | 2018/2019 | 2019/2020 | 2018/2019(Q4) |
|---|-----------|-----------|----------------------------|-----------|-----------|---------------|
| Of which: | | | 4945.3 | | | |
| 0 Suez Canal dues | Nan | 5121.6 | 5706.7 5730.7 | 5805.7 | 1457.7 | 1507.3 |
| Of which: | | | 21816.3 | | | |
| 1 Remittances of Egyptians working ab... | Nan | 17077.4 | 26392.9 25150.8 | 27758.0 | 6939.4 | 6712.6 |
| Direct investment in Egypt (net) | Nan | 6932.6 | 7932.8 7719.5 8236.3 | 7453.0 | 1712.3 | 2352.6 |



```
df4=d43
cols_to_fix = [
    "2015/2016", "2016/2017", "2017/2018", "2018/2019", "2019/2020", "2018/2019(Q4)"]

for col in cols_to_fix:
    df4[col] = df4[col].astype(str).replace('nan', '')

for i in range(len(cols_to_fix) - 1):
    current_col = cols_to_fix[i]
    next_col = cols_to_fix[i+1]

    for row_idx in df4.index:
        cell_parts = df4.at[row_idx, current_col].split()
```

```

        if len(cell_parts) > 1:
            df4.at[row_idx, current_col] = cell_parts[0]
            extra_values = cell_parts[1:]
            existing_next_val = df4.at[row_idx, next_col].split()
            new_next_content = extra_values + existing_next_val
            df4.at[row_idx, next_col] = " ".join(new_next_content)

df4.replace(' ', np.nan, inplace=True)
df4

```

C:\Users\hp\AppData\Local\Temp\ipykernel_22756\2770791749.py:24: FutureWarning: Down casting behavior in `replace` is deprecated and will be removed in a future version. To retain the old behavior, explicitly call `result.infer_objects(copy=False)`. To opt-in to the future behavior, set `pd.set_option('future.no_silent_downcasting', True)`
df4.replace(' ', np.nan, inplace=True)

Out[295...]

| | Category | 2015/2016 | 2016/2017 | 2017/2018 | 2018/2019 | 2019/2020 | 2018/2019(Q4) |
|---|---|-----------|-----------|-----------|-----------|-----------|---------------|
| 0 | Of which: Suez Canal dues | NaN | 5121.6 | 4945.3 | 5706.7 | 5730.7 | 5805.7 |
| 1 | Of which: Remittances of Egyptians working ab... | NaN | 17077.4 | 21816.3 | 26392.9 | 25150.8 | 27758.0 |
| 2 | Direct investment in Egypt (net) | NaN | 6932.6 | 7932.8 | 7719.5 | 8236.3 | 7453.0 |



In [296...]

```

bad_col = '2020/2021(Q3)'
cols = [c for c in df4.columns if c != 'Category']

bad_col_idx = cols.index(bad_col)
extracted = df4[bad_col].astype(str).str.findall(r'[\d\.\.]+')
df4[bad_col] = extracted.str[1]
value_to_move_left = extracted.str[0]

for i in range(bad_col_idx - 1, -1, -1):
    current_col_name = cols[i]
    next_value_to_move = df4[current_col_name].copy()
    df4[current_col_name] = value_to_move_left
    value_to_move_left = next_value_to_move

for col in cols:
    df4[col] = pd.to_numeric(df4[col], errors='coerce')
print(df4[cols].tail())

```

| | 2015/2016 | 2016/2017 | 2017/2018 | 2018/2019 | 2019/2020 | 2018/2019(Q4) | \ |
|---|---------------|---------------|---------------|---------------|---------------|---------------|---|
| 0 | 5121.6 | 4945.3 | 5706.7 | 5730.7 | 5805.7 | 1457.7 | |
| 1 | 17077.4 | 21816.3 | 26392.9 | 25150.8 | 27758.0 | 6939.4 | |
| 2 | 6932.6 | 7932.8 | 7719.5 | 8236.3 | 7453.0 | 1712.3 | |
| | 2019/2020(Q1) | 2019/2020(Q2) | 2019/2020(Q3) | 2019/2020(Q4) | 2020/2021(Q1) | 2020/2021(Q1) | \ |
| 0 | 1507.3 | 1524.8 | 1429.1 | 1344.5 | 1380.7 | | |
| 1 | 6712.6 | 6963.9 | 7869.0 | 6212.5 | 8028.1 | | |
| 2 | 2352.6 | 2605.9 | 970.5 | 1524.0 | 1605.1 | | |
| | 2020/2021(Q2) | 2020/2021(Q3) | | | | | |
| 0 | 1516.6 | 1452.4 | | | | | |
| 1 | 7493.3 | 7849.6 | | | | | |
| 2 | 1752.2 | 1429.7 | | | | | |

In [297...]

```
cols_to_remove = ['2019/2020', '2018/2019', '2015/2016', '2016/2017', '2017/2018']
df4 = df4.drop(columns=cols_to_remove)
df4
```

Out[297...]

| | Category | 2018/2019(Q4) | 2019/2020(Q1) | 2019/2020(Q2) | 2019/2020(Q3) | 2019/2020 |
|---|---|---------------|---------------|---------------|---------------|-----------|
| 0 | Of which: Suez Canal dues | 1457.7 | 1507.3 | 1524.8 | 1429.1 | 13 |
| 1 | Of which: Remittances of Egyptians working ab... | 6939.4 | 6712.6 | 6963.9 | 7869.0 | 62 |
| 2 | Direct investment in Egypt (net) | 1712.3 | 2352.6 | 2605.9 | 970.5 | 15 |



In [298...]

```
data_area= [0,0,100,83]
dflist5= tb.read_pdf('Monthly Statistical Bulletin 305.pdf', pages=46, area= data_a
df5= dflist5[0]
df5
```

Out[298...]

| | Unnamed: 0 | Unnamed: 1 | Unnamed: 2 | 21-Balance of Payments | Unnamed: 3 | Unnamed: 4 | Unnamed: 5 |
|----|--------------------|------------|------------|---|------------|---------------|------------|
| 0 | NaN | NaN | NaN | (US\$ mn) | NaN | NaN | NaN |
| 1 | NaN | NaN | NaN | ၂၀၁၀၂၀၂၁ ၂၀၁၀ | NaN | NaN | NaN |
| 2 | NaN | During | NaN | Fiscal Years | NaN | NaN | NaN |
| 3 | NaN | NaN | 2016/2017 | (+) 2017/2018 2018/2019 (+) 2019/2020* (+) | NaN | (+)2020/2021* | NaN |
| 4 | Trade Balance | NaN | -37274.8 | -37276.0 -38034.4 -36465.1 | NaN | -42059.6 | NaN |
| 5 | Export proceeds ** | NaN | 21728.2 | 25827.0 28495.0 26376.0 | NaN | 28676.5 | NaN |
| 6 | Petroleum exports | NaN | 6589.5 | 8773.0 11557.0 8479.9 | NaN | 8597.2 | NaN |
| 7 | Other exports | NaN | 15138.7 | 17054.0 16938.0 17896.1 | NaN | 20079.3 | NaN |
| 8 | Import payments** | NaN | -59003.0 | -63103.0 -66529.4 -62841.1 | NaN | -70736.1 | NaN |
| 9 | Petroleum imports | NaN | -12015.5 | -12489.8 -11548.9 -8900.9 | NaN | -8603.9 | NaN |
| 10 | Other imports | NaN | -46987.5 | -50613.2 -54980.5 -53940.2 | NaN | -62132.2 | NaN |
| 11 | Services Balance | NaN | 5614.2 | 11122.4 13036.5 8972.5 | NaN | 5119.0 | NaN |
| 12 | Receipts | NaN | 15400.1 | 21486.9 24423.6 21288.9 | NaN | 15995.1 | NaN |

| | | Unnamed: 0 | Unnamed: 1 | Unnamed: 2 | 21-Balance of Payments | Unnamed: 3 | Unnamed: 4 | Unnamed: 5 |
|----|----------------------------|------------|------------|------------|---------------------------------|------------|------------|------------|
| 13 | Transportation | | Nan | 7911.2 | 8707.9 8600.3 7881.1 | | 7527.7 | |
| 14 | Of which: Suez Canal dues | | Nan | 4945.3 | 5706.7 5730.7 5805.7 | | 5911.2 | |
| 15 | Travel (tourism revenues) | | Nan | 4379.7 | 9804.3 12570.6 9859.4 | | 4861.5 | |
| 16 | Government receipts | | Nan | 776.4 | 636.7 718.8 758.5 | | 513.1 | |
| 17 | Others | | Nan | 2332.8 | 2338.0 2533.9 2789.9 | | 3092.8 | |
| 18 | Payments | | Nan | 9785.9 | 10364.5 11387.1 12316.4 | | 10876.1 | |
| 19 | Transportation | | Nan | 1332.1 | 1480.2 1792.4 2050.1 | | 1812.2 | |
| 20 | Travel | | Nan | 2739.9 | 2451.5 2902.9 3213.0 | | 2708.2 | |
| 21 | Government expenditures | | Nan | 1124.1 | 1493.5 692.4 975.8 | | 1246.6 | |
| 22 | Others | | Nan | 4589.8 | 4939.3 5999.4 6077.5 | | 5109.1 | |
| 23 | Investment Income Balance | | Nan | -4568.5 | -6279.6 -11009.6 -11354.0 | | -12399.2 | |
| 24 | Receipts | | Nan | 497.9 | 835.4 1014.1 942.1 | | 572.9 | |
| 25 | (++) | | Nan | | Nan | | Nan | |
| 26 | Payments | | Nan | 5066.4 | 7115.0 12023.7 12296.1 | | 12972.1 | |
| 27 | Of which: Interest paid | | Nan | 1231.9 | 1616.1 2574.1 2947.7 | | 2518.7 | |

| | | Unnamed: 0 | Unnamed: 1 | Unnamed: 2 | 21-Balance of Payments | Unnamed: 3 | Unnamed: 4 | Unnamed: 5 |
|----|---|------------|------------|------------|---------------------------------|------------|------------|------------|
| 28 | Current Transfers | NaN | 21835.1 | | 26470.9 25113.6 27679.9 | NaN | 30903.4 | NaN |
| 29 | Private (net), | NaN | 21686.1 | | 26264.7 24763.1 27461.8 | NaN | 31180.3 | NaN |
| 30 | Of which: Remittances of Egyptians working ab... | NaN | 21816.3 | | 26392.9 25150.8 27758.0 | NaN | 31425.3 | NaN |
| 31 | Official (net) | NaN | 149.0 | | 206.2 350.5 218.1 | NaN | -276.9 | NaN |
| 32 | Balance of Current Account | NaN | -14394.0 | | -5962.3 -10893.9 -11166.7 | NaN | -18436.4 | NaN |
| 33 | Capital & Financial Account | NaN | 31015.1 | | 21996.5 10856.9 5374.6 | NaN | 23374.0 | NaN |
| 34 | Capital Account | NaN | -113.3 | | -150.7 -129.2 -248.5 | NaN | -153.0 | NaN |
| 35 | Financial Account | NaN | 31128.4 | | 22147.2 10986.1 5623.1 | NaN | 23527.0 | NaN |
| 36 | Direct investment abroad | NaN | -175.1 | | -271.2 -374.0 -351.2 | NaN | -379.1 | NaN |
| 37 | NaN | (++) | NaN | | NaN | NaN | NaN | NaN |
| 38 | Direct investment in Egypt (net) | NaN | 7932.8 | | 7719.5 8236.3 7453.0 | NaN | 5214.2 | NaN |
| 39 | Portfolio investment abroad | NaN | 208.4 | | -20.8 -96.4 -818.1 | NaN | -750.7 | NaN |
| 40 | Portfolio investment in Egypt (Net) | NaN | 15985.3 | | 12094.8 4230.1 -7307.3 | NaN | 18742.4 | NaN |
| 41 | Of which:Bonds | NaN | 5491.5 | | 5293.2 5094.2 4594.9 | NaN | 4548.9 | NaN |

| | Unnamed: 0 | Unnamed: 1 | Unnamed: 2 | 21-Balance of Payments | Unnamed: 3 | Unnamed: 4 | Unnamed: 5 |
|----|---|------------|------------|-------------------------------|------------|------------|------------|
| 42 | Other Investments (Net) | NaN | 7177.0 | 2624.9 -1009.9 6646.7 | NaN | 700.2 | NaN |
| 43 | Net Borrowing | NaN | 9699.2 | 10278.8 6253.4 4541.6 | NaN | 7964.7 | NaN |
| 44 | Medium- and Long-Term Loans | NaN | 5156.8 | 6738.5 3333.7 7216.8 | NaN | 4263.7 | NaN |
| 45 | Disbursements | NaN | 7641.1 | 8846.4 5525.2 9253.1 | NaN | 6502.4 | NaN |
| 46 | Repayments | NaN | -2484.3 | -2107.9 -2191.5 -2036.3 | NaN | -2238.7 | NaN |
| 47 | Medium- and Long-Term Suppliers' Credit | NaN | 2795.1 | 1118.5 828.8 -644.9 | NaN | 2173.6 | NaN |
| 48 | Disbursements | NaN | 2912.2 | 1313.6 1160.8 34.3 | NaN | 3304.1 | NaN |
| 49 | Repayments | NaN | -117.1 | -195.1 -332.0 -679.2 | NaN | -1130.5 | NaN |
| 50 | NaN | NaN | NaN | - 76 - | NaN | NaN | NaN |

In [299...]

```
df51= df5.iloc[4:].copy()
df51= df51.dropna(axis=1,how= 'all')
newnames= ['Category', "2016/2017", "2017/2018", "2018/2019", "2019/2020", "2020/2021"]
```

In [300...]

```
df51.columns= newnames[:len(df51.columns)]
df51= df51.reindex(columns=newnames)
df51.set_index('Category')
```

Out[300...]

2016/2017 2017/2018 2018/2019 2019/2020 2020/2021 2019/2020(Q4)

| Category | | | | | | | |
|------------------------------------|-----|----------|----------------------------------|----------|----------|----------|--|
| Trade Balance | NaN | -37274.8 | -37276.0 -38034.4 -36465.1 | -42059.6 | -8406.6 | -8559.3 | |
| Export proceeds ** | NaN | 21728.2 | 25827.0 28495.0 26376.0 | 28676.5 | 5422.4 | 6280.6 | |
| Petroleum exports | NaN | 6589.5 | 8773.0 11557.0 8479.9 | 8597.2 | 1153.0 | 1600.1 | |
| Other exports | NaN | 15138.7 | 17054.0 16938.0 17896.1 | 20079.3 | 4269.4 | 4680.5 | |
| Import payments** | NaN | -59003.0 | -63103.0 -66529.4 -62841.1 | -70736.1 | -13829.0 | -14839.9 | |
| Petroleum imports | NaN | -12015.5 | -12489.8 -11548.9 -8900.9 | -8603.9 | -800.7 | -1456.4 | |
| Other imports | NaN | -46987.5 | -50613.2 -54980.5 -53940.2 | -62132.2 | -13028.3 | -13383.5 | |
| Services Balance | NaN | 5614.2 | 11122.4 13036.5 8972.5 | 5119.0 | 550.1 | 876.3 | |
| Receipts | NaN | 15400.1 | 21486.9 24423.6 21288.9 | 15995.1 | 2738.9 | 3397.2 | |
| Transportation | NaN | 7911.2 | 8707.9 8600.3 7881.1 | 7527.7 | 1585.0 | 1738.3 | |
| Of which: Suez Canal dues | NaN | 4945.3 | 5706.7 5730.7 5805.7 | 5911.2 | 1344.5 | 1380.7 | |
| Travel (tourism revenues) | NaN | 4379.7 | 9804.3 12570.6 9859.4 | 4861.5 | 305.0 | 801.0 | |
| Government receipts | NaN | 776.4 | 636.7 718.8 758.5 | 513.1 | 193.5 | 137.7 | |
| Others | NaN | 2332.8 | 2338.0 2533.9 2789.9 | 3092.8 | 655.4 | 720.2 | |

2016/2017 2017/2018 2018/2019 2019/2020 2020/2021 2019/2020(Q4)

| Category | | | | | | |
|--|-----|---------|---------------------------------|----------|---------|---------|
| Payments | NaN | 9785.9 | 10364.5 11387.1 12316.4 | 10876.1 | 2188.8 | 2520.9 |
| Transportation | NaN | 1332.1 | 1480.2 1792.4 2050.1 | 1812.2 | 466.4 | 437.5 |
| Travel | NaN | 2739.9 | 2451.5 2902.9 3213.0 | 2708.2 | 380.4 | 575.8 |
| Government expenditures | NaN | 1124.1 | 1493.5 692.4 975.8 | 1246.6 | 357.0 | 230.7 |
| Others | NaN | 4589.8 | 4939.3 5999.4 6077.5 | 5109.1 | 985.0 | 1276.9 |
| Investment Income Balance | NaN | -4568.5 | -6279.6 -11009.6 -11354.0 | -12399.2 | -2175.3 | -3066.8 |
| Receipts | NaN | 497.9 | 835.4 1014.1 942.1 | 572.9 | 259.2 | 57.5 |
| (++) | NaN | NaN | NaN | NaN | NaN | NaN |
| Payments | NaN | 5066.4 | 7115.0 12023.7 12296.1 | 12972.1 | 2434.5 | 3124.3 |
| Of which: Interest paid | NaN | 1231.9 | 1616.1 2574.1 2947.7 | 2518.7 | 570.8 | 706.1 |
| Current Transfers | NaN | 21835.1 | 26470.9 25113.6 27679.9 | 30903.4 | 6204.0 | 7964.9 |
| Private (net), | NaN | 21686.1 | 26264.7 24763.1 27461.8 | 31180.3 | 6155.0 | 7947.9 |
| Of which: Remittances of Egyptians working abroad | NaN | 21816.3 | 26392.9 25150.8 27758.0 | 31425.3 | 6212.5 | 8028.1 |
| Official (net) | NaN | 149.0 | 206.2 350.5 218.1 | -276.9 | 49.0 | 17.0 |

2016/2017 2017/2018 2018/2019 2019/2020 2020/2021 2019/2020(Q4)

| Category | | | | | | |
|--|------|----------|---------------------------------|----------|---------|---------|
| Balance of Current Account | NaN | -14394.0 | -5962.3 -10893.9 -11166.7 | -18436.4 | -3827.8 | -2784.9 |
| Capital & Financial Account | NaN | 31015.1 | 21996.5 10856.9 5374.6 | 23374.0 | 1284.0 | 3917.6 |
| Capital Account | NaN | -113.3 | -150.7 -129.2 -248.5 | -153.0 | -62.6 | -44.3 |
| Financial Account | NaN | 31128.4 | 22147.2 10986.1 5623.1 | 23527.0 | 1346.6 | 3961.9 |
| Direct investment abroad | NaN | -175.1 | -271.2 -374.0 -351.2 | -379.1 | -56.3 | -78.5 |
| NaN | (++) | NaN | NaN | NaN | NaN | NaN |
| Direct investment in Egypt (net) | NaN | 7932.8 | 7719.5 8236.3 7453.0 | 5214.2 | 1524.0 | 1605.1 |
| Portfolio investment abroad | NaN | 208.4 | -20.8 -96.4 -818.1 | -750.7 | -846.2 | -85.9 |
| Portfolio investment in Egypt (Net) | NaN | 15985.3 | 12094.8 4230.1 -7307.3 | 18742.4 | 636.8 | 6686.4 |
| Of which:Bonds | NaN | 5491.5 | 5293.2 5094.2 4594.9 | 4548.9 | 3742.5 | 29.8 |
| Other Investments (Net) | NaN | 7177.0 | 2624.9 -1009.9 6646.7 | 700.2 | 88.3 | -4165.2 |
| Net Borrowing | NaN | 9699.2 | 10278.8 6253.4 4541.6 | 7964.7 | 1286.0 | 2189.2 |
| Medium- and Long-Term Loans | NaN | 5156.8 | 6738.5 3333.7 7216.8 | 4263.7 | 4687.6 | 331.8 |
| Disbursements | NaN | 7641.1 | 8846.4 5525.2 9253.1 | 6502.4 | 5046.7 | 956.1 |

| | 2016/2017 | 2017/2018 | 2018/2019 | 2019/2020 | 2020/2021 | 2019/2020(Q4) |
|--|-----------|-----------|-----------|-----------|-----------|---------------|
|--|-----------|-----------|-----------|-----------|-----------|---------------|

| Category | | 2016/2017 | 2017/2018 | 2018/2019 | 2019/2020 | 2020/2021 | 2019/2020(Q4) |
|--|-----|-----------|-----------|-------------------------------|-----------|-----------|---------------|
| Repayments | NaN | -2484.3 | | -2107.9 -2191.5 -2036.3 | -2238.7 | -359.1 | -624.3 |
| Medium- and Long-Term Suppliers' Credit | NaN | 2795.1 | | 1118.5 828.8 -644.9 | 2173.6 | -154.9 | 1884.9 |
| Disbursements | NaN | 2912.2 | | 1313.6 1160.8 34.3 | 3304.1 | 19.0 | 2053.0 |
| Repayments | NaN | -117.1 | | -195.1 -332.0 -679.2 | -1130.5 | -173.9 | -168.1 |
| NaN | NaN | NaN | | - 76 - | NaN | NaN | NaN |

In [301...]

```
keep= [10,26,34]
d52= df51.iloc[keep].copy()
d53= d52.reset_index(drop=True)
d53
```

Out[301...]

| | Category | 2016/2017 | 2017/2018 | 2018/2019 | 2019/2020 | 2020/2021 | 2019/2020(Q4) |
|---|---|-----------|-----------|-------------------------------|-----------|-----------|---------------|
| 0 | Of which: Suez Canal dues | NaN | 4945.3 | 5706.7 5730.7 5805.7 | 5911.2 | 1344.5 | 1380.7 |
| 1 | Of which: Remittances of Egyptians working ab... | NaN | 21816.3 | 26392.9 25150.8 27758.0 | 31425.3 | 6212.5 | 8028.1 |
| 2 | Direct investment in Egypt (net) | NaN | 7932.8 | 7719.5 8236.3 7453.0 | 5214.2 | 1524.0 | 1605.1 |



In [302...]

```
df5=d53
cols_to_fix = [
    "2016/2017", "2017/2018", "2018/2019", "2019/2020", "2020/2021", "2019/2020(Q4)
]

for col in cols_to_fix:
    df5[col] = df5[col].astype(str).replace('nan', '')
```

```

for i in range(len(cols_to_fix) - 1):
    current_col = cols_to_fix[i]
    next_col = cols_to_fix[i+1]

    for row_idx in df5.index:
        cell_parts = df5.at[row_idx, current_col].split()

        if len(cell_parts) > 1:
            df5.at[row_idx, current_col] = cell_parts[0]
            extra_values = cell_parts[1:]
            existing_next_val = df5.at[row_idx, next_col].split()
            new_next_content = extra_values + existing_next_val
            df5.at[row_idx, next_col] = " ".join(new_next_content)

df5.replace('', np.nan, inplace=True)
df5

```

C:\Users\hp\AppData\Local\Temp\ipykernel_22756\1203110805.py:24: FutureWarning: Down casting behavior in `replace` is deprecated and will be removed in a future version. To retain the old behavior, explicitly call `result.infer_objects(copy=False)`. To opt-in to the future behavior, set `pd.set_option('future.no_silent_downcasting', True)`
df5.replace('', np.nan, inplace=True)

Out[302...]

| | Category | 2016/2017 | 2017/2018 | 2018/2019 | 2019/2020 | 2020/2021 | 2019/2020(Q4) |
|---|---|-----------|-----------|-----------|-----------|-----------|---------------|
| 0 | Of which: Suez Canal dues | NaN | 4945.3 | 5706.7 | 5730.7 | 5805.7 | 5911.2 |
| 1 | Of which: Remittances of Egyptians working ab... | NaN | 21816.3 | 26392.9 | 25150.8 | 27758.0 | 31425.3 |
| 2 | Direct investment in Egypt (net) | NaN | 7932.8 | 7719.5 | 8236.3 | 7453.0 | 5214.2 |



In [303...]

```

bad_col = '2021/2022(Q3)'
cols = [c for c in df5.columns if c != 'Category']

bad_col_idx = cols.index(bad_col)
extracted = df5[bad_col].astype(str).str.findall(r'[\d\.\.]+')
df5[bad_col] = extracted.str[1]
value_to_move_left = extracted.str[0]

for i in range(bad_col_idx - 1, -1, -1):
    current_col_name = cols[i]
    next_value_to_move = df5[current_col_name].copy()

```

```

df5[current_col_name] = value_to_move_left
value_to_move_left = next_value_to_move
for col in cols:
    df5[col] = pd.to_numeric(df5[col], errors='coerce')
print(df5[cols].tail())

```

| | 2016/2017 | 2017/2018 | 2018/2019 | 2019/2020 | 2020/2021 | 2019/2020(Q4) | \ |
|---|---------------|---------------|---------------|---------------|---------------|---------------|---|
| 0 | 4945.3 | 5706.7 | 5730.7 | 5805.7 | 5911.2 | 1344.5 | |
| 1 | 21816.3 | 26392.9 | 25150.8 | 27758.0 | 31425.3 | 6212.5 | |
| 2 | 7932.8 | 7719.5 | 8236.3 | 7453.0 | 5214.2 | 1524.0 | |
| | 2020/2021(Q1) | 2020/2021(Q2) | 2020/2021(Q3) | 2020/2021(Q4) | 2021/2022(Q1) | \ | |
| 0 | 1380.7 | 1516.6 | 1452.4 | 1561.5 | 1688.2 | | |
| 1 | 8028.1 | 7493.3 | 7849.6 | 8054.3 | 8145.9 | | |
| 2 | 1605.1 | 1752.2 | 1429.7 | 427.2 | 1664.9 | | |
| | 2021/2022(Q2) | 2021/2022(Q3) | | | | | |
| 0 | 1690.8 | 1705.9 | | | | | |
| 1 | 7437.2 | 8045.7 | | | | | |
| 2 | 1600.5 | 4083.1 | | | | | |

In [304...]

```

cols_to_remove = ['2019/2020', '2018/2019', '2017/2018', '2020/2021', '2016/2017']
df5 = df5.drop(columns=cols_to_remove)
df5

```

Out[304...]

| | Category | 2019/2020(Q4) | 2020/2021(Q1) | 2020/2021(Q2) | 2020/2021(Q3) | 2020/2021 |
|---|---|---------------|---------------|---------------|---------------|-----------|
| 0 | Of which: Suez Canal dues | 1344.5 | 1380.7 | 1516.6 | 1452.4 | 15 |
| 1 | Of which: Remittances of Egyptians working ab... | 6212.5 | 8028.1 | 7493.3 | 7849.6 | 80 |
| 2 | Direct investment in Egypt (net) | 1524.0 | 1605.1 | 1752.2 | 1429.7 | 4 |



In [305...]

```

data_area= [0,0,100,83]
dflist6= tb.read_pdf('Monthly Statistical Bulletin 317.pdf', pages=46, area= data_a
df6= dflist6[0]

```

In [306...]

```

df61= df6.iloc[4:].copy()
df61= df61.dropna(axis=1, how= 'all')
newnames= ['Category', "2017/2018", "2018/2019", "2019/2020", "2020/2021", "2021/2022"]

```

In [307...]

```

df61.columns= newnames[:len(df61.columns)]
df61= df61.reindex(columns=newnames)
df61.set_index('Category')

```

Out[307...]

2017/2018 2018/2019 2019/2020 2020/2021 2021/2022 2020/2021(Q4)

| Category | | NaN | 2017/2018 | 2018/2019 | 2019/2020 | 2020/2021 | 2021/2022 | 2020/2021(Q4) |
|------------------------------------|--|-----|-----------|----------------------------------|-----------|------------|-----------|---------------|
| | | | | 2018/2019 | 2019/2020 | 2020/2021* | Q4 | Q1 |
| Trade Balance | | NaN | -37276.0 | -38034.4 -36465.1 -42059.6 | -43396.0 | -11485.1 | -11074.5 | |
| Export proceeds ** | | NaN | 25827.0 | 28495.0 26376.0 28676.5 | 43906.4 | 8103.0 | 8852.3 | |
| Petroleum exports | | NaN | 8773.0 | 11557.0 8479.9 8597.2 | 17977.2 | 2666.1 | 2901.0 | |
| Other exports | | NaN | 17054.0 | 16938.0 17896.1 20079.3 | 25929.2 | 5436.9 | 5951.3 | |
| Import payments** | | NaN | -63103.0 | -66529.4 -62841.1 -70736.1 | -87302.4 | -19588.1 | -19926.8 | |
| Petroleum imports | | NaN | -12489.8 | -11548.9 -8900.9 -8603.9 | -13544.6 | -2847.7 | -3002.1 | |
| Other imports | | NaN | -50613.2 | -54980.5 -53940.2 -62132.2 | -73757.8 | -16740.4 | -16924.7 | |
| Services Balance | | NaN | 11122.4 | 13036.5 8972.5 5119.0 | 11158.7 | 1933.9 | 2937.2 | |
| Receipts | | NaN | 21486.9 | 24423.6 21288.9 15995.1 | 26925.7 | 4683.7 | 6204.2 | |
| Transportation | | NaN | 8707.9 | 8600.3 7881.1 7527.7 | 9734.2 | 2043.7 | 2276.7 | |
| Of which: Suez Canal dues | | NaN | 5706.7 | 5730.7 5805.7 5911.2 | 6996.8 | 1561.5 | 1688.2 | |
| Travel (tourism revenues) | | NaN | 9804.3 | 12570.6 9859.4 4861.5 | 10748.1 | 1748.9 | 2836.8 | |
| Government receipts | | NaN | 636.7 | 718.8 758.5 513.1 | 2736.3 | 106.2 | 160.7 | |

2017/2018 2018/2019 2019/2020 2020/2021 2021/2022 2020/2021(Q4)

| Category | | | | | | | |
|--|-----|---------|----------------------------------|----------|---------|---------|-----|
| Others | NaN | 2338.0 | 2533.9 2789.9 3092.8 | 3707.1 | 784.9 | 930.0 | |
| Payments | NaN | 10364.5 | 11387.1 12316.4 10876.1 | 15767.0 | 2749.8 | 3267.0 | |
| Transportation | NaN | 1480.2 | 1792.4 2050.1 1812.2 | 3023.6 | 546.9 | 653.4 | |
| Travel | NaN | 2451.5 | 2902.9 3213.0 2708.2 | 4479.8 | 739.4 | 823.7 | |
| Government expenditures | NaN | 1493.5 | 692.4 975.8 1246.6 | 2340.0 | 348.0 | 291.6 | |
| Others | NaN | 4939.3 | 5999.4 6077.5 5109.1 | 5923.6 | 1115.5 | 1498.3 | |
| Investment Income Balance | NaN | -6279.6 | -11009.6 -11354.0 -12399.2 | -15763.2 | -3546.9 | -3883.7 | |
| Receipts | NaN | 835.4 | 1014.1 942.1 572.9 | 996.5 | 252.8 | 112.0 | |
| (++) | NaN | NaN | NaN | NaN | NaN | NaN | NaN |
| Payments | NaN | 7115.0 | 12023.7 12296.1 12972.1 | 16759.7 | 3799.7 | 3995.7 | |
| Of which: Interest paid | NaN | 1616.1 | 2574.1 2947.7 2518.7 | 2777.6 | 614.1 | 704.4 | |
| Current Transfers | NaN | 26470.9 | 25113.6 27679.9 30903.4 | 31449.2 | 7963.3 | 8020.3 | |
| Private (net), | NaN | 26264.7 | 24763.1 27461.8 31180.3 | 31719.8 | 7991.7 | 8080.3 | |
| Of which: Remittances of Egyptians working abroad | NaN | 26392.9 | 25150.8 27758.0 31425.3 | 31923.5 | 8054.3 | 8145.9 | |

2017/2018 2018/2019 2019/2020 2020/2021 2021/2022 2020/2021(Q4)

| Category | | | | | | |
|--|------|---------|----------------------------------|----------|---------|---------|
| Official (net) | NaN | 206.2 | 350.5 -276.9 | 218.1 | -270.6 | -28.4 |
| Balance of Current Account | NaN | -5962.3 | -10893.9 -11166.7 -18436.4 | -16551.3 | -5134.8 | -4000.7 |
| Capital & Financial Account | NaN | 21996.5 | 10856.9 5374.6 23374.0 | 11805.6 | 6311.8 | 6049.5 |
| Capital Account | NaN | -150.7 | -129.2 -248.5 -153.0 | -77.8 | -35.0 | -36.3 |
| Financial Account | NaN | 22147.2 | 10986.1 5623.1 23527.0 | 11883.4 | 6346.8 | 6085.8 |
| Direct investment abroad | NaN | -271.2 | -374.0 -351.2 -379.1 | -346.4 | -76.7 | -84.2 |
| Nan | (++) | NaN | NaN | NaN | NaN | NaN |
| Direct investment in Egypt (net) | NaN | 7719.5 | 8236.3 7453.0 5214.2 | 8937.4 | 427.2 | 1664.9 |
| Portfolio investment abroad | NaN | -20.8 | -96.4 -818.1 -750.7 | -139.8 | -23.6 | -0.9 |
| Portfolio investment in Egypt (Net) | NaN | 12094.8 | 4230.1 -7307.3 18742.4 | -20983.3 | 2755.5 | 3560.8 |
| Of which:Bonds | NaN | 5293.2 | 5094.2 4594.9 4548.9 | 1014.3 | -32.1 | 3092.2 |
| Other Investments (Net) | NaN | 2624.9 | -1009.9 6646.7 700.2 | 24415.5 | 3264.4 | 945.2 |
| Net Borrowing | NaN | 10278.8 | 6253.4 4541.6 7964.7 | -1446.9 | 1747.2 | -2426.0 |
| Medium- and Long-Term Loans | NaN | 6738.5 | 3333.7 7216.8 4263.7 | 710.4 | 1508.2 | -96.7 |
| Disbursements | NaN | 8846.4 | 5525.2 9253.1 | 3661.1 | 2129.8 | 563.2 |

2017/2018 2018/2019 2019/2020 2020/2021 2021/2022 2020/2021(Q4)

| Category | | | | | | | |
|--|-----|---------|-----------------------------|---------|--------|---------|--|
| | | 6502.4 | | | | | |
| Repayments | NaN | -2107.9 | -2036.3 | -2950.7 | -621.6 | -659.9 | |
| | | -2238.7 | | | | | |
| Medium- and Long-Term Suppliers' and Buyers' Credit | NaN | 1118.5 | 828.8 -644.9 2173.6 | 749.5 | -37.2 | -1976.1 | |
| Disbursements | NaN | 1313.6 | 1160.8 34.3 3304.1 | 3973.5 | 323.5 | 272.8 | |
| Repayments | NaN | -195.1 | -332.0 -679.2 -1130.5 | -3224.0 | -360.7 | -2248.9 | |
| NaN | NaN | - 76 - | NaN | NaN | NaN | NaN | |

In [308]:

```
keep= [11,26,35]
df62= df61.iloc[keep].copy()
df63= df62.reset_index(drop=True)
```

In [309]:

```
df6=df63
cols_to_fix = [
    "2017/2018", "2018/2019", "2019/2020", "2020/2021", "2021/2022", "2020/2021(Q4)"
]

for col in cols_to_fix:
    df6[col] = df6[col].astype(str).replace('nan', '')

for i in range(len(cols_to_fix) - 1):
    current_col = cols_to_fix[i]
    next_col = cols_to_fix[i+1]

    for row_idx in df6.index:
        cell_parts = df6.at[row_idx, current_col].split()

        if len(cell_parts) > 1:
            df6.at[row_idx, current_col] = cell_parts[0]
            extra_values = cell_parts[1:]
            existing_next_val = df6.at[row_idx, next_col].split()
            new_next_content = extra_values + existing_next_val
            df6.at[row_idx, next_col] = " ".join(new_next_content)

df6.replace(' ', np.nan, inplace=True)
df6
```

```
C:\Users\hp\AppData\Local\Temp\ipykernel_22756\696352640.py:24: FutureWarning: Downcasting behavior in `replace` is deprecated and will be removed in a future version.
To retain the old behavior, explicitly call `result.infer_objects(copy=False)`. To opt-in to the future behavior, set `pd.set_option('future.no_silent_downcasting', True)`
    df6.replace('', np.nan, inplace=True)
```

Out[309...]

| | Category | 2017/2018 | 2018/2019 | 2019/2020 | 2020/2021 | 2021/2022 | 2020/2021(Q4) |
|---|----------------------------------|-----------|-----------|-----------|-----------|-----------|---------------|
| 0 | Of which: | | | | | | |
| 0 | Suez Canal dues | NaN | 5706.7 | 5730.7 | 5805.7 | 5911.2 | 6996.8 |
| 1 | Private (net), | NaN | 26264.7 | 24763.1 | 27461.8 | 31180.3 | 31719.8 |
| 2 | Direct investment in Egypt (net) | NaN | 7719.5 | 8236.3 | 7453.0 | 5214.2 | 8937.4 |



In [310...]

```
bad_col = '2022/2023(Q3)'
cols = [c for c in df6.columns if c != 'Category']

bad_col_idx = cols.index(bad_col)
extracted = df6[bad_col].astype(str).str.findall(r'[\d\.\.]+')
df6[bad_col] = extracted.str[1]
value_to_move_left = extracted.str[0]

for i in range(bad_col_idx - 1, -1, -1):
    current_col_name = cols[i]
    next_value_to_move = df6[current_col_name].copy()
    df6[current_col_name] = value_to_move_left
    value_to_move_left = next_value_to_move
for col in cols:
    df6[col] = pd.to_numeric(df6[col], errors='coerce')
print(df6[cols].tail())
```

| | 2017/2018 | 2018/2019 | 2019/2020 | 2020/2021 | 2021/2022 | 2020/2021(Q4) | \ |
|---|-----------|-----------|-----------|-----------|-----------|---------------|---|
| 0 | 5706.7 | 5730.7 | 5805.7 | 5911.2 | 6996.8 | 1561.5 | |
| 1 | 26264.7 | 24763.1 | 27461.8 | 31180.3 | 31719.8 | 7991.7 | |
| 2 | 7719.5 | 8236.3 | 7453.0 | 5214.2 | 8937.4 | 427.2 | |

| | 2021/2022(Q1) | 2021/2022(Q2) | 2021/2022(Q3) | 2021/2022(Q4) | 2022/2023(Q1) | \ |
|---|---------------|---------------|---------------|---------------|---------------|---|
| 0 | 1688.2 | 1690.8 | 1705.9 | 1911.9 | 2010.2 | |
| 1 | 8080.3 | 7398.4 | 8008.3 | 8232.8 | 6380.7 | |
| 2 | 1664.9 | 1600.5 | 4083.1 | 1588.9 | 3296.8 | |

| | 2022/2023(Q2) | 2022/2023(Q3) |
|---|---------------|---------------|
| 0 | 1970.2 | 2240.0 |
| 1 | 5511.0 | 5399.5 |
| 2 | 2431.1 | 2217.5 |

In [311...]

df6

Out[311...]

| | Category | 2017/2018 | 2018/2019 | 2019/2020 | 2020/2021 | 2021/2022 | 2020/2021(Q4) |
|---|----------------------------------|-----------|-----------|-----------|-----------|-----------|---------------|
| 0 | Of which: | | | | | | |
| 0 | Suez Canal dues | 5706.7 | 5730.7 | 5805.7 | 5911.2 | 6996.8 | 1561.5 |
| 1 | Private (net), | 26264.7 | 24763.1 | 27461.8 | 31180.3 | 31719.8 | 7991.7 |
| 2 | Direct investment in Egypt (net) | 7719.5 | 8236.3 | 7453.0 | 5214.2 | 8937.4 | 427.2 |



In [312...]

```
cols_to_remove = ['2019/2020', '2018/2019', '2017/2018', '2021/2022', '2020/2021']
df6 = df6.drop(columns=cols_to_remove)
df6
```

Out[312...]

| | Category | 2020/2021(Q4) | 2021/2022(Q1) | 2021/2022(Q2) | 2021/2022(Q3) | 2021/2022(Q4) |
|---|----------------------------------|---------------|---------------|---------------|---------------|---------------|
| 0 | Of which: | | | | | |
| 0 | Suez Canal dues | 1561.5 | 1688.2 | 1690.8 | 1705.9 | 191 |
| 1 | Private (net), | 7991.7 | 8080.3 | 7398.4 | 8008.3 | 823 |
| 2 | Direct investment in Egypt (net) | 427.2 | 1664.9 | 1600.5 | 4083.1 | 158 |



In [313...]

```
data_area= [0,0,100,83]
dflist7= tb.read_pdf('Monthly Statistical Bulletin 329.pdf', pages=46, area= data_a
df7= dflist7[0]
```

In [314...]

```
df71= df7.iloc[4:].copy()
df71= df71.dropna(axis=1, how= 'all')
newnames= ['Category', "2018/2019", "2019/2020", "2020/2021", "2021/2022", "2022/2023"]
```

In [315...]

```
df71.columns= newnames[:len(df71.columns)]
df71= df71.reindex(columns=newnames)
df71.set_index('Category')
```

Out[315...]

2018/2019 2019/2020 2020/2021 2021/2022 2022/2023 2021/2022(Q4)

| Category | | | | | | | |
|------------------------------------|-----|----------------------|----------------------|----------|----------|----------|--|
| Trade Balance | NaN | -38034.4 -36465.1 | -42059.6 -43396.0 | -31159.6 | -9858.3 | -9102.2 | |
| Export proceeds ** | NaN | 28495.0 26376.0 | 28676.5 43906.4 | 39624.0 | 11436.9 | 9965.2 | |
| Petroleum exports | NaN | 11557.0 8479.9 | 8597.2 17977.2 | 13816.5 | 4904.5 | 3708.3 | |
| Other exports | NaN | 16938.0 17896.1 | 20079.3 25929.2 | 25807.5 | 6532.4 | 6256.9 | |
| Import payments** | NaN | -66529.4 -62841.1 | -70736.1 -87302.4 | -70783.6 | -21295.2 | -19067.4 | |
| Petroleum imports | NaN | -11548.9 -8900.9 | -8603.9 -13544.6 | -13406.5 | -4606.7 | -3814.3 | |
| Other imports | NaN | -54980.5 -53940.2 | -62132.2 -73757.8 | -57377.1 | -16688.5 | -15253.1 | |
| Services Balance | NaN | 13036.5 8972.5 | 5119.0 11158.7 | 21926.5 | 3211.1 | 4053.7 | |
| Receipts | NaN | 24423.6 21288.9 | 15995.1 26925.7 | 34562.1 | 7398.2 | 8044.2 | |
| Transportation | NaN | 8600.3 7881.1 | 7527.7 9734.2 | 14000.3 | 2723.9 | 3043.7 | |
| Of which: Suez Canal dues | NaN | 5730.7 5805.7 | 5911.2 6996.8 | 8759.6 | 1911.9 | 2010.2 | |
| Travel (tourism revenues) | NaN | 12570.6 9859.4 | 4861.5 10748.1 | 13629.3 | 2545.8 | 4071.3 | |
| Government receipts | NaN | 718.8 758.5 | 513.1 2736.3 | 2355.2 | 1176.8 | 139.9 | |
| Others | NaN | 2533.9 2789.9 | 3092.8 3707.1 | 4577.3 | 951.7 | 789.3 | |
| Payments | NaN | 11387.1 12316.4 | 10876.1 15767.0 | 12635.6 | 4187.1 | 3990.5 | |
| Transportation | NaN | 1792.4 2050.1 | 1812.2 3023.6 | 2750.0 | 826.3 | 884.8 | |
| Travel | NaN | 2902.9 3213.0 | 2708.2 4479.8 | 4990.2 | 1455.0 | 1592.0 | |
| Government expenditures | NaN | 692.4 975.8 | 1246.6 2340.0 | 1248.4 | 515.6 | 471.8 | |

2018/2019 2019/2020 2020/2021 2021/2022 2022/2023 2021/2022(Q4)

| Category | | | | | | | |
|--|------|----------------------|----------------------|----------|---------|---------|--|
| Others | NaN | 5999.4 6077.5 | 5109.1 5923.6 | 3647.0 | 1390.2 | 1041.9 | |
| Investment Income Balance | NaN | -11009.6 -11354.0 | -12399.2 -15763.2 | -17318.4 | -4503.6 | -4535.3 | |
| Receipts | NaN | 1014.1 942.1 | 572.9 996.5 | 2137.8 | 417.3 | 275.8 | |
| (++) | NaN | NaN | NaN | NaN | NaN | NaN | |
| Payments | NaN | 12023.7 12296.1 | 12972.1 16759.7 | 19456.2 | 4920.9 | 4811.1 | |
| Of which: Interest paid | NaN | 2574.1 2947.7 | 2518.7 2777.6 | 6150.4 | 838.4 | 1219.5 | |
| Current Transfers | NaN | 25113.6 27679.9 | 30903.4 31449.2 | 21841.0 | 8193.0 | 6391.5 | |
| Private (net), | NaN | 24763.1 27461.8 | 31180.3 31719.8 | 21897.4 | 8232.8 | 6380.7 | |
| Of which: Remittances of Egyptians working abroad | NaN | 25150.8 27758.0 | 31425.3 31923.5 | 22076.4 | 8294.7 | 6442.1 | |
| Official (net) | NaN | 350.5 218.1 | -276.9 -270.6 | -56.4 | -39.8 | 10.8 | |
| Balance of Current Account | NaN | -10893.9 -11166.7 | -18436.4 -16551.3 | -4710.5 | -2957.8 | -3192.3 | |
| Capital & Financial Account | NaN | 10856.9 5374.6 | 23374.0 11805.6 | 8931.5 | 988.3 | 4417.0 | |
| Capital Account | NaN | -129.2 -248.5 | -153.0 -77.8 | -54.2 | 46.9 | 14.5 | |
| Financial Account | NaN | 10986.1 5623.1 | 23527.0 11883.4 | 8985.7 | 941.4 | 4402.5 | |
| Direct investment abroad | NaN | -374.0 -351.2 | -379.1 -346.4 | -337.7 | -85.0 | -68.5 | |
| NaN | (++) | NaN | NaN | NaN | NaN | NaN | |

2018/2019 2019/2020 2020/2021 2021/2022 2022/2023 2021/2022(Q4)

| Category | | | | | | |
|--|-----|--------------------|---------------------|---------|---------|---------|
| Direct investment in Egypt (net) | NaN | 8236.3 7453.0 | 5214.2 8937.4 | 10038.6 | 1588.9 | 3296.8 |
| Portfolio investment abroad | NaN | -96.4 -818.1 | -750.7 -139.8 | -328.1 | -129.5 | -50.5 |
| Portfolio investment in Egypt (Net) | NaN | 4230.1 -7307.3 | 18742.4 -20983.3 | -3765.7 | -3735.2 | -2158.3 |
| Of which:Bonds | NaN | 5094.2 4594.9 | 4548.9 1014.3 | 344.7 | -42.6 | -2.0 |
| Other Investments (Net) | NaN | -1009.9 6646.7 | 700.2 24415.5 | 3378.6 | 3302.2 | 3383.0 |
| Net Borrowing | NaN | 6253.4 4541.6 | 7964.7 -1446.9 | 1434.4 | 2.4 | 2283.1 |
| Medium- and Long-Term Loans | NaN | 3333.7 7216.8 | 4263.7 710.4 | -226.0 | 407.1 | -283.6 |
| Disbursements | NaN | 5525.2 9253.1 | 6502.4 3661.1 | 3195.2 | 1200.5 | 391.1 |
| Repayments | NaN | -2191.5 -2036.3 | -2238.7 -2950.7 | -3421.2 | -793.4 | -674.7 |
| Medium- and Long-Term Suppliers' and Buyers' Credit | NaN | 828.8 -644.9 | 2173.6 749.5 | 1678.2 | -210.7 | 347.7 |
| Disbursements | NaN | 1160.8 34.3 | 3304.1 3973.5 | 2861.6 | 147.1 | 581.0 |
| Repayments | NaN | -332.0 -679.2 | -1130.5 -3224.0 | -1183.4 | -357.8 | -233.3 |
| NaN | NaN | - 76 - | NaN | NaN | NaN | NaN |

In [316]:

```
keep= [10,26,34]
df72= df71.iloc[keep].copy()
df73= df72.reset_index(drop=True)
df73
```

Out[316...]

| | Category | 2018/2019 | 2019/2020 | 2020/2021 | 2021/2022 | 2022/2023 | 2021/2022(Q4) |
|---|---|-----------|--------------------|--------------------|-----------|-----------|---------------|
| 0 | Of which: Suez Canal dues | NaN | 5730.7 5805.7 | 5911.2 6996.8 | 8759.6 | 1911.9 | 2010.2 |
| 1 | Of which: Remittances of Egyptians working ab... | NaN | 25150.8 27758.0 | 31425.3 31923.5 | 22076.4 | 8294.7 | 6442.1 |
| 2 | Direct investment in Egypt (net) | NaN | 8236.3 7453.0 | 5214.2 8937.4 | 10038.6 | 1588.9 | 3296.8 |



In [317...]

```
df7=df73
cols_to_fix = [
    "2018/2019", "2019/2020", "2020/2021", "2021/2022", "2022/2023", "2021/2022(Q4)", "
]

for col in cols_to_fix:
    df7[col] = df7[col].astype(str).replace('nan', '')

for i in range(len(cols_to_fix) - 1):
    current_col = cols_to_fix[i]
    next_col = cols_to_fix[i+1]

    for row_idx in df7.index:
        cell_parts = df7.at[row_idx, current_col].split()

        if len(cell_parts) > 1:
            df7.at[row_idx, current_col] = cell_parts[0]
            extra_values = cell_parts[1:]
            existing_next_val = df7.at[row_idx, next_col].split()
            new_next_content = extra_values + existing_next_val
            df7.at[row_idx, next_col] = " ".join(new_next_content)

df7.replace(' ', np.nan, inplace=True)
df7
```

C:\Users\hp\AppData\Local\Temp\ipykernel_22756\2498804823.py:24: FutureWarning: Down casting behavior in `replace` is deprecated and will be removed in a future version. To retain the old behavior, explicitly call `result.infer_objects(copy=False)`. To opt-in to the future behavior, set `pd.set_option('future.no_silent_downcasting', True)`

```
df7.replace(' ', np.nan, inplace=True)
```

Out[317...]

| | Category | 2018/2019 | 2019/2020 | 2020/2021 | 2021/2022 | 2022/2023 | 2021/2022(Q4) |
|---|-----------------|---|-----------|-----------|-----------|-----------|---------------|
| 0 | Suez Canal dues | Of which: Remittances of Egyptians working ab... | NaN | 5730.7 | 5805.7 | 5911.2 | 6996.8 |
| 1 | | Of which: Direct investment in Egypt (net) | NaN | 25150.8 | 27758.0 | 31425.3 | 31923.5 |
| 2 | | | NaN | 8236.3 | 7453.0 | 5214.2 | 8937.4 |
| | | | | | | | 10038.6 |



In [318...]

```
bad_col = '2023/2024(Q3)'
cols = [c for c in df7.columns if c != 'Category']

bad_col_idx = cols.index(bad_col)
extracted = df7[bad_col].astype(str).str.findall(r'[\d\.\.]+')
df7[bad_col] = extracted.str[1]
value_to_move_left = extracted.str[0]

for i in range(bad_col_idx - 1, -1, -1):
    current_col_name = cols[i]
    next_value_to_move = df7[current_col_name].copy()
    df7[current_col_name] = value_to_move_left
    value_to_move_left = next_value_to_move
for col in cols:
    df7[col] = pd.to_numeric(df7[col], errors='coerce')
print(df7[cols].tail())
```

| | 2018/2019 | 2019/2020 | 2020/2021 | 2021/2022 | 2022/2023 | 2021/2022(Q4) | \ |
|--|-----------|-----------|-----------|-----------|-----------|---------------|---|
|--|-----------|-----------|-----------|-----------|-----------|---------------|---|

| | | | | | | | |
|---|---------|---------|---------|---------|---------|--------|--|
| 0 | 5730.7 | 5805.7 | 5911.2 | 6996.8 | 8759.6 | 1911.9 | |
| 1 | 25150.8 | 27758.0 | 31425.3 | 31923.5 | 22076.4 | 8294.7 | |
| 2 | 8236.3 | 7453.0 | 5214.2 | 8937.4 | 10038.6 | 1588.9 | |

| | 2022/2023(Q1) | 2022/2023(Q2) | 2022/2023(Q3) | 2022/2023(Q4) | 2023/2024(Q1) | \ |
|--|---------------|---------------|---------------|---------------|---------------|---|
|--|---------------|---------------|---------------|---------------|---------------|---|

| | | | | | | |
|---|--------|--------|--------|--------|--------|--|
| 0 | 2010.2 | 1970.2 | 2240.0 | 2539.2 | 2399.3 | |
| 1 | 6442.1 | 5550.3 | 5457.7 | 4626.3 | 4516.3 | |
| 2 | 3296.8 | 2431.1 | 2217.5 | 2093.2 | 2321.7 | |

| | 2023/2024(Q2) | 2023/2024(Q3) |
|--|---------------|---------------|
|--|---------------|---------------|

| | | |
|---|--------|---------|
| 0 | 2403.4 | 959.3 |
| 1 | 4931.8 | 5022.4 |
| 2 | 3208.2 | 18182.4 |

In [319...]

```
cols_to_remove = ['2019/2020', '2018/2019', '2022/2023', '2021/2022', '2020/2021']
df7 = df7.drop(columns=cols_to_remove)
df7
```

Out[319...]

| | Category | 2021/2022(Q4) | 2022/2023(Q1) | 2022/2023(Q2) | 2022/2023(Q3) | 2022/2023 |
|----------|---|---------------|---------------|---------------|---------------|-----------|
| 0 | Of which: Suez Canal dues | 1911.9 | 2010.2 | 1970.2 | 2240.0 | 25 |
| 1 | Of which: Remittances of Egyptians working ab... | 8294.7 | 6442.1 | 5550.3 | 5457.7 | 46 |
| 2 | Direct investment in Egypt (net) | 1588.9 | 3296.8 | 2431.1 | 2217.5 | 20 |



In [320...]

```
data_area= [0,0,100,83]
dflist8= tb.read_pdf('Bulletin_281_Aug_2020_359.pdf', pages=46, area= data_area,rel
df8= dflist8[0]
```

In [321...]

```
df81= df8.iloc[4:].copy()
df81= df81.dropna(axis=1,how= 'all')
newnames= ['Category', "2019/2020", "2020/2021", "2021/2022", "2022/2023", "2023/2024"]
```

In [322...]

```
df81.columns= newnames[:len(df81.columns)]
df81= df81.reindex(columns=newnames)
df81.set_index('Category')
```

Out[322...]

2019/2020 2020/2021 2021/2022 2022/2023 2023/2024 2022/2023(Q4)

| Category | | | | | | | |
|------------------------------------|-----|----------|----------------------------------|----------|----------|----------|--|
| Trade Balance | NaN | -39060.4 | -38683.1 -37274.8 -37276.0 | -38034.4 | -9272.6 | -9812.6 | |
| Export proceeds ** | NaN | 22245.1 | 18704.6 21728.2 25827.0 | 28495.0 | 7016.1 | 6785.2 | |
| Petroleum exports | NaN | 8891.9 | 5674.3 6589.5 8773.0 | 11557.0 | 2758.9 | 2810.0 | |
| Other exports | NaN | 13353.2 | 13030.3 15138.7 17054.0 | 16938.0 | 4257.2 | 3975.2 | |
| Import payments** | NaN | -61305.5 | -57387.7 -59003.0 -63103.0 | -66529.4 | -16288.7 | -16597.8 | |
| Petroleum imports | NaN | -12366.1 | -9293.6 -12015.5 -12489.8 | -11548.9 | -3095.2 | -3415.6 | |
| Other imports | NaN | -48939.4 | -48094.1 -46987.5 -50613.2 | -54980.5 | -13193.5 | -13182.2 | |
| Services Balance | NaN | 10742.9 | 6533.0 5614.2 11122.4 | 13036.5 | 3283.6 | 4283.1 | |
| Receipts | NaN | 21811.8 | 16079.3 15400.1 21486.9 | 24423.6 | 5702.4 | 6938.4 | |
| Transportation | NaN | 9850.3 | 9534.6 7911.2 8707.9 | 8600.3 | 2323.4 | 2242.8 | |
| Of which: Suez Canal dues | NaN | 5361.7 | 5121.6 4945.3 5706.7 | 5730.7 | 1548.5 | 1441.2 | |
| Travel (tourism revenues) | NaN | 7370.4 | 3767.5 4379.7 9804.3 | 12570.6 | 2553.7 | 3930.9 | |
| Government receipts | NaN | 1381.5 | 378.0 776.4 636.7 | 718.8 | 203.4 | 166.0 | |
| Others | NaN | 3209.6 | 2399.2 2332.8 2338.0 | 2533.9 | 621.9 | 598.7 | |

2019/2020 2020/2021 2021/2022 2022/2023 2023/2024 2022/2023(Q4)

| Category | | | | | | |
|--|-----|---------|-------------------------------|----------|---------|---------|
| Payments | NaN | 11068.9 | 9546.3 9785.9 10364.5 | 11387.1 | 2418.8 | 2655.3 |
| Transportation | NaN | 1535.0 | 1339.1 1332.1 1480.2 | 1792.4 | 377.7 | 448.5 |
| Travel | NaN | 3338.2 | 4091.0 2739.9 2451.5 | 2902.9 | 748.1 | 717.0 |
| Government expenditures | NaN | 854.1 | 777.1 1124.1 1493.5 | 692.4 | 266.0 | 183.1 |
| Others | NaN | 5341.6 | 3339.1 4589.8 4939.3 | 5999.4 | 1027.0 | 1306.7 |
| Investment Income Balance | NaN | -5700.9 | -4471.7 -4568.5 -6279.6 | -11009.6 | -1575.7 | -2391.4 |
| Receipts | NaN | 212.8 | 396.9 497.9 835.4 | 1014.1 | 210.7 | 227.7 |
| (++) | NaN | NaN | NaN | NaN | NaN | NaN |
| Payments | NaN | 5913.7 | 4868.6 5066.4 7115.0 | 12023.7 | 1786.4 | 2619.1 |
| Of which: Interest paid | NaN | 643.6 | 752.0 1231.9 1616.1 | 2574.1 | 399.2 | 508.3 |
| Current Transfers | NaN | 21875.8 | 16790.7 21835.1 26470.9 | 25113.6 | 7071.9 | 5908.9 |
| Private (net), | NaN | 19205.4 | 16689.2 21686.1 26264.7 | 24763.1 | 6959.2 | 5861.2 |
| Nan | (1) | NaN | NaN | NaN | NaN | NaN |
| Of which: Remittances of Egyptians working abroad | NaN | 19330.0 | 17077.4 21816.3 26392.9 | 25150.8 | 7005.4 | 5909.0 |
| Official (net) | NaN | 2670.4 | 101.5 149.0 206.2 | 350.5 | 112.7 | 47.7 |

2019/2020 2020/2021 2021/2022 2022/2023 2023/2024 2022/2023(Q4)

| Category | | | | | | |
|--|------|----------|---------------------------------|----------|---------|---------|
| Balance of Current Account | NaN | -12142.6 | -19831.1 -14394.0 -5962.3 | -10893.9 | -492.8 | -2012.0 |
| Capital & Financial Account | NaN | 17928.9 | 21176.7 31015.1 21996.5 | 10856.9 | 2951.9 | 1791.1 |
| Capital Account | NaN | -122.9 | -141.4 -113.3 -150.7 | -129.2 | -32.4 | -35.0 |
| Financial Account | NaN | 18051.8 | 21318.1 31128.4 22147.2 | 10986.1 | 2984.3 | 1826.1 |
| Direct investment abroad | NaN | -223.3 | -164.2 -175.1 -271.2 | -374.0 | -71.2 | -65.8 |
| Nan | (++) | NaN | NaN | NaN | NaN | NaN |
| Direct investment in Egypt (net) | NaN | 6379.8 | 6932.6 7932.8 7719.5 | 8236.3 | 1700.3 | 1415.4 |
| Portfolio investment abroad | NaN | 47.2 | 192.1 208.4 -20.8 | -96.4 | 4.3 | -75.4 |
| Portfolio investment in Egypt (Net) | NaN | -638.6 | -1286.8 15985.3 12094.8 | 4230.1 | -2829.9 | -3240.3 |
| Of which:Bonds | NaN | -1147.5 | -1444.8 5491.5 5293.2 | 5094.2 | 2101.8 | -121.3 |
| Other Investments (Net) | NaN | 12486.7 | 15644.4 7177.0 2624.9 | -1009.9 | 4180.8 | 3792.2 |
| Net Borrowing | NaN | 5036.2 | 7102.7 9699.2 10278.8 | 6253.4 | 3329.4 | 998.8 |
| Medium- and Long-Term Loans | NaN | -482.5 | -186.3 5156.8 6738.5 | 3333.7 | 2441.3 | -488.8 |
| Disbursements | NaN | 1753.5 | 2523.4 7641.1 8846.4 | 5525.2 | 2800.5 | 153.3 |

| | 2019/2020 | 2020/2021 | 2021/2022 | 2022/2023 | 2023/2024 | 2022/2023(Q4) |
|--|-----------|-----------|-----------|-----------|-----------|---------------|
|--|-----------|-----------|-----------|-----------|-----------|---------------|

| Category | | | | | | | |
|--|-----|---------|-------------------------------|---------|--------|--------|--|
| Repayments | Nan | -2236.0 | -2709.7 -2484.3 -2107.9 | -2191.5 | -359.2 | -642.1 | |
| Medium- and Long-Term Suppliers' Credit | Nan | 257.9 | 1505.3 2795.1 1118.5 | 828.8 | 585.9 | 291.3 | |
| Disbursements | Nan | 313.0 | 1560.7 2912.2 1313.6 | 1160.8 | 629.8 | 328.8 | |
| Repayments | Nan | -55.1 | -55.4 -117.1 -195.1 | -332.0 | -43.9 | -37.5 | |
| Nan | Nan | Nan | - 76 - | Nan | Nan | Nan | |

In [323...]

```
keep= [10,27,35]
df82= df81.iloc[keep].copy()
df83= df82.reset_index(drop=True)
df83
```

Out[323...]

| | Category | 2019/2020 | 2020/2021 | 2021/2022 | 2022/2023 | 2023/2024 | 2022/2023(Q4) |
|---|---|-----------|-----------|-------------------------------|-----------|-----------|---------------|
| 0 | Of which: Suez Canal dues | Nan | 5361.7 | 5121.6 4945.3 5706.7 | 5730.7 | 1548.5 | 1441.2 |
| 1 | Of which: Remittances of Egyptians working ab... | Nan | 19330.0 | 17077.4 21816.3 26392.9 | 25150.8 | 7005.4 | 5909.0 |
| 2 | Direct investment in Egypt (net) | Nan | 6379.8 | 6932.6 7932.8 7719.5 | 8236.3 | 1700.3 | 1415.4 |



In [324...]

```
df8=df83
cols_to_fix = [
    "2019/2020", "2020/2021", "2021/2022", "2022/2023", "2023/2024", "2022/2023(Q4)"

for col in cols_to_fix:
    df8[col] = df8[col].astype(str).replace('nan', '')
```

```

for i in range(len(cols_to_fix) - 1):
    current_col = cols_to_fix[i]
    next_col = cols_to_fix[i+1]

    for row_idx in df8.index:
        cell_parts = df8.at[row_idx, current_col].split()

        if len(cell_parts) > 1:
            df8.at[row_idx, current_col] = cell_parts[0]
            extra_values = cell_parts[1:]
            existing_next_val = df8.at[row_idx, next_col].split()
            new_next_content = extra_values + existing_next_val
            df8.at[row_idx, next_col] = " ".join(new_next_content)

df8.replace('', np.nan, inplace=True)
df8

```

C:\Users\hp\AppData\Local\Temp\ipykernel_22756\1549165525.py:23: FutureWarning: Down casting behavior in `replace` is deprecated and will be removed in a future version. To retain the old behavior, explicitly call `result.infer_objects(copy=False)`. To opt-in to the future behavior, set `pd.set_option('future.no_silent_downcasting', True)`
df8.replace('', np.nan, inplace=True)

Out[324...]

| | Category | 2019/2020 | 2020/2021 | 2021/2022 | 2022/2023 | 2023/2024 | 2022/2023(Q4) |
|---|---|-----------|-----------|-----------|-----------|-----------|---------------|
| 0 | Of which: Suez Canal dues | NaN | 5361.7 | 5121.6 | 4945.3 | 5706.7 | 5730.7 |
| 1 | Of which: Remittances of Egyptians working ab... | NaN | 19330.0 | 17077.4 | 21816.3 | 26392.9 | 25150.8 |
| 2 | Direct investment in Egypt (net) | NaN | 6379.8 | 6932.6 | 7932.8 | 7719.5 | 8236.3 |



In [325...]

```

bad_col = '2024/2025(Q3)'
cols = [c for c in df8.columns if c != 'Category']

bad_col_idx = cols.index(bad_col)
extracted = df8[bad_col].astype(str).str.findall(r'[\d\.\.]+')
df8[bad_col] = extracted.str[1]
value_to_move_left = extracted.str[0]

for i in range(bad_col_idx - 1, -1, -1):
    current_col_name = cols[i]
    next_value_to_move = df8[current_col_name].copy()

```

```

df8[current_col_name] = value_to_move_left
value_to_move_left = next_value_to_move
for col in cols:
    df8[col] = pd.to_numeric(df8[col], errors='coerce')
print(df8[cols].tail())

```

| | 2019/2020 | 2020/2021 | 2021/2022 | 2022/2023 | 2023/2024 | 2022/2023(Q4) | \ |
|---|---------------|---------------|---------------|---------------|---------------|---------------|---|
| 0 | 5361.7 | 5121.6 | 4945.3 | 5706.7 | 5730.7 | 1548.5 | |
| 1 | 19330.0 | 17077.4 | 21816.3 | 26392.9 | 25150.8 | 7005.4 | |
| 2 | 6379.8 | 6932.6 | 7932.8 | 7719.5 | 8236.3 | 1700.3 | |
| | 2023/2024(Q1) | 2023/2024(Q2) | 2023/2024(Q3) | 2023/2024(Q4) | 2024/2025(Q1) | \ | |
| 0 | 1441.2 | 1487.1 | 1344.7 | 1457.7 | 1507.3 | | |
| 1 | 5909.0 | 6136.9 | 6165.5 | 6939.4 | 6712.6 | | |
| 2 | 1415.4 | 2769.3 | 2339.3 | 1712.3 | 2352.6 | | |
| | 2024/2025(Q2) | 2024/2025(Q3) | | | | | |
| 0 | 1524.8 | 1429.1 | | | | | |
| 1 | 6963.9 | 7869.0 | | | | | |
| 2 | 2605.9 | 970.5 | | | | | |

In [326...]

```

cols_to_remove = ['2019/2020', '2023/2024', '2022/2023', '2021/2022', '2020/2021']
df8 = df8.drop(columns=cols_to_remove)
df8

```

Out[326...]

| | Category | 2022/2023(Q4) | 2023/2024(Q1) | 2023/2024(Q2) | 2023/2024(Q3) | 2023/2024 |
|---|---|---------------|---------------|---------------|---------------|-----------|
| 0 | Of which: Suez Canal dues | 1548.5 | 1441.2 | 1487.1 | 1344.7 | 14 |
| 1 | Of which: Remittances of Egyptians working ab... | 7005.4 | 5909.0 | 6136.9 | 6165.5 | 69 |
| 2 | Direct investment in Egypt (net) | 1700.3 | 1415.4 | 2769.3 | 2339.3 | 17 |

In [327...]

```

dfs = [df1, df2, df3, df4, df5, df6, df7, df8]
dfs_indexed = [d.set_index('Category') for d in dfs]
final_df = pd.concat(dfs_indexed, axis=1, join='outer')
final_df = final_df.reset_index()
final_df = dfs

```

In [328...]

```

cleaned_dfs = []
for d in dfs:
    temp_df = d.copy()
    temp_df['Category'] = temp_df['Category'].astype(str).str.strip()
    temp_df = temp_df[temp_df['Category'] != 'Private (net)']

```

```
temp_df = temp_df.set_index('Category')
cleaned_dfs.append(temp_df)
final_df = pd.concat(cleaned_dfs, axis=1, join='outer')
final_df = final_df.reset_index()
print(final_df.head())
```

| | | | Category | 2016/2017(Q4) | \ |
|---|---------------|--|-----------------|---------------|-----------------|
| 0 | | Of which: | Suez Canal dues | 1228.7 | |
| 1 | Of which: | Remittances of Egyptians working ab... | | 6033.9 | |
| 2 | | Direct investment in Egypt (net) | | 1367.8 | |
| 3 | | Private (net), | | NaN | |
| | | | | | |
| 0 | 2017/2018(Q1) | 2017/2018(Q2) | 2017/2018(Q3) | 2017/2018(Q4) | 2018/2019(Q1) \ |
| 1 | 1382.2 | 1386.3 | 1389.7 | 1548.5 | 1441.2 |
| 2 | 5824.3 | 7098.8 | 6464.4 | 7005.4 | 5909.0 |
| 3 | 1843.0 | 1919.9 | 2256.3 | 1700.3 | 1099.9 |
| | | | | | |
| 0 | 2018/2019(Q2) | 2018/2019(Q3) | 2015/2016(Q4) | 2016/2017(Q1) | 2016/2017(Q2) \ |
| 1 | 1487.1 | 1344.7 | 1243.9 | 1300.4 | 1214.2 |
| 2 | 6136.9 | 6165.5 | 4417.8 | 4354.9 | 5756.0 |
| 3 | 1741.1 | 1805.4 | 1046.9 | 1872.2 | 2414.8 |
| | | | | | |
| 0 | 2016/2017(Q3) | 2016/2017(Q4) | 2017/2018(Q1) | 2017/2018(Q2) | 2017/2018(Q3) \ |
| 1 | 1202.0 | 1228.7 | 1382.2 | 1386.3 | 1389.7 |
| 2 | 5780.4 | 4827.1 | 5973.6 | 7098.9 | 6464.4 \ |
| 3 | 2278.0 | 1350.8 | 1843.0 | 1919.9 | 2256.3 |
| | | | | | |
| 0 | 2017/2018(Q4) | 2018/2019(Q1) | 2018/2019(Q2) | 2018/2019(Q3) | 2018/2019(Q4) \ |
| 1 | 1548.5 | 1441.2 | 1487.1 | 1344.7 | 1457.7 |
| 2 | 7005.4 | 5909.0 | 6136.9 | 6165.5 | 6939.4 |
| 3 | 1700.3 | 1415.4 | 2769.3 | 2339.3 | 1712.3 |
| | | | | | |
| 0 | 2019/2020(Q1) | 2019/2020(Q2) | 2019/2020(Q3) | 2018/2019(Q4) | 2019/2020(Q1) \ |
| 1 | 1507.3 | 1524.8 | 1429.1 | 1457.7 | 1507.3 |
| 2 | 6712.6 | 6963.9 | 7869.0 | 6939.4 | 6712.6 |
| 3 | 2352.6 | 2605.9 | 970.5 | 1712.3 | 2352.6 |
| | | | | | |
| 0 | 2019/2020(Q2) | 2019/2020(Q3) | 2019/2020(Q4) | 2020/2021(Q1) | 2020/2021(Q2) \ |
| 1 | 1524.8 | 1429.1 | 1344.5 | 1380.7 | 1516.6 |
| 2 | 6963.9 | 7869.0 | 6212.5 | 8028.1 | 7493.3 |
| 3 | 2605.9 | 970.5 | 1524.0 | 1605.1 | 1752.2 |
| | | | | | |
| 0 | 2020/2021(Q3) | 2019/2020(Q4) | 2020/2021(Q1) | 2020/2021(Q2) | 2020/2021(Q3) \ |
| 1 | 1452.4 | 1344.5 | 1380.7 | 1516.6 | 1452.4 |
| 2 | 7849.6 | 6212.5 | 8028.1 | 7493.3 | 7849.6 |
| 3 | 1429.7 | 1524.0 | 1605.1 | 1752.2 | 1429.7 |
| | | | | | |
| 0 | 2020/2021(Q4) | 2021/2022(Q1) | 2021/2022(Q2) | 2021/2022(Q3) | 2020/2021(Q4) \ |
| 1 | 1561.5 | 1688.2 | 1690.8 | 1705.9 | 1561.5 |
| 2 | 8054.3 | 8145.9 | 7437.2 | 8045.7 | NaN |
| 3 | 427.2 | 1664.9 | 1600.5 | 4083.1 | 427.2 |
| | | | | | |
| 0 | 2021/2022(Q1) | 2021/2022(Q2) | 2021/2022(Q3) | 2021/2022(Q4) | 2022/2023(Q1) \ |
| 1 | 1688.2 | 1690.8 | 1705.9 | 1911.9 | 2010.2 |

| | | | | | |
|---|---------------|---------------|---------------|---------------|-----------------|
| 1 | NaN | NaN | NaN | NaN | NaN |
| 2 | 1664.9 | 1600.5 | 4083.1 | 1588.9 | 3296.8 |
| 3 | 8080.3 | 7398.4 | 8008.3 | 8232.8 | 6380.7 |
| | | | | | |
| 0 | 2022/2023(Q2) | 2022/2023(Q3) | 2021/2022(Q4) | 2022/2023(Q1) | 2022/2023(Q2) \ |
| 1 | 1970.2 | 2240.0 | 1911.9 | 2010.2 | 1970.2 |
| 2 | NaN | NaN | 8294.7 | 6442.1 | 5550.3 |
| 3 | 2431.1 | 2217.5 | 1588.9 | 3296.8 | 2431.1 |
| | 5511.0 | 5399.5 | NaN | NaN | NaN |
| | | | | | |
| 0 | 2022/2023(Q3) | 2022/2023(Q4) | 2023/2024(Q1) | 2023/2024(Q2) | 2023/2024(Q3) \ |
| 1 | 2240.0 | 2539.2 | 2399.3 | 2403.4 | 959.3 |
| 2 | 5457.7 | 4626.3 | 4516.3 | 4931.8 | 5022.4 |
| 3 | 2217.5 | 2093.2 | 2321.7 | 3208.2 | 18182.4 |
| | NaN | NaN | NaN | NaN | NaN |
| | | | | | |
| 0 | 2022/2023(Q4) | 2023/2024(Q1) | 2023/2024(Q2) | 2023/2024(Q3) | 2023/2024(Q4) \ |
| 1 | 1548.5 | 1441.2 | 1487.1 | 1344.7 | 1457.7 |
| 2 | 7005.4 | 5909.0 | 6136.9 | 6165.5 | 6939.4 |
| 3 | 1700.3 | 1415.4 | 2769.3 | 2339.3 | 1712.3 |
| | NaN | NaN | NaN | NaN | NaN |
| | | | | | |
| 0 | 2024/2025(Q1) | 2024/2025(Q2) | 2024/2025(Q3) | | |
| 1 | 1507.3 | 1524.8 | 1429.1 | | |
| 2 | 6712.6 | 6963.9 | 7869.0 | | |
| 3 | 2352.6 | 2605.9 | 970.5 | | |
| | NaN | NaN | NaN | | |

In [329... final_df

| | Category | 2016/2017(Q4) | 2017/2018(Q1) | 2017/2018(Q2) | 2017/2018(Q3) | 2017/2018 |
|---|---|---------------|---------------|---------------|---------------|-----------|
| 0 | Of which: Suez Canal dues | 1228.7 | 1382.2 | 1386.3 | 1389.7 | 15 |
| 1 | Of which: Remittances of Egyptians working ab... | 6033.9 | 5824.3 | 7098.8 | 6464.4 | 70 |
| 2 | Direct investment in Egypt (net) | 1367.8 | 1843.0 | 1919.9 | 2256.3 | 17 |
| 3 | Private (net), | NaN | NaN | NaN | NaN | |



```
In [330... final_df['Category'] = final_df['Category'].astype(str).str.strip()
final_df = final_df[final_df['Category'] != 'Private (net)',]
print(final_df['Category'].unique())
```

```
[ 'Of which: Suez Canal dues'  
  'Of which: Remittances of Egyptians working abroad'  
  'Direct investment in Egypt (net)']
```

In [331... [final_df.info\(\)](#)

```
<class 'pandas.core.frame.DataFrame'>
Index: 3 entries, 0 to 2
Data columns (total 65 columns):
 #   Column           Non-Null Count Dtype  
--- 
 0   Category         3 non-null      object  
 1   2016/2017(Q4)    3 non-null      object  
 2   2017/2018(Q1)    3 non-null      object  
 3   2017/2018(Q2)    3 non-null      object  
 4   2017/2018(Q3)    3 non-null      object  
 5   2017/2018(Q4)    3 non-null      object  
 6   2018/2019(Q1)    3 non-null      object  
 7   2018/2019(Q2)    3 non-null      object  
 8   2018/2019(Q3)    3 non-null      object  
 9   2015/2016(Q4)    3 non-null      object  
 10  2016/2017(Q1)    3 non-null      object  
 11  2016/2017(Q2)    3 non-null      object  
 12  2016/2017(Q3)    3 non-null      object  
 13  2016/2017(Q4)    3 non-null      object  
 14  2017/2018(Q1)    3 non-null      object  
 15  2017/2018(Q2)    3 non-null      object  
 16  2017/2018(Q3)    3 non-null      object  
 17  2017/2018(Q4)    3 non-null      float64 
 18  2018/2019(Q1)    3 non-null      float64 
 19  2018/2019(Q2)    3 non-null      float64 
 20  2018/2019(Q3)    3 non-null      float64 
 21  2018/2019(Q4)    3 non-null      float64 
 22  2019/2020(Q1)    3 non-null      float64 
 23  2019/2020(Q2)    3 non-null      float64 
 24  2019/2020(Q3)    3 non-null      float64 
 25  2018/2019(Q4)    3 non-null      float64 
 26  2019/2020(Q1)    3 non-null      float64 
 27  2019/2020(Q2)    3 non-null      float64 
 28  2019/2020(Q3)    3 non-null      float64 
 29  2019/2020(Q4)    3 non-null      float64 
 30  2020/2021(Q1)    3 non-null      float64 
 31  2020/2021(Q2)    3 non-null      float64 
 32  2020/2021(Q3)    3 non-null      float64 
 33  2019/2020(Q4)    3 non-null      float64 
 34  2020/2021(Q1)    3 non-null      float64 
 35  2020/2021(Q2)    3 non-null      float64 
 36  2020/2021(Q3)    3 non-null      float64 
 37  2020/2021(Q4)    3 non-null      float64 
 38  2021/2022(Q1)    3 non-null      float64 
 39  2021/2022(Q2)    3 non-null      float64 
 40  2021/2022(Q3)    3 non-null      float64 
 41  2020/2021(Q4)    2 non-null      float64 
 42  2021/2022(Q1)    2 non-null      float64 
 43  2021/2022(Q2)    2 non-null      float64 
 44  2021/2022(Q3)    2 non-null      float64 
 45  2021/2022(Q4)    2 non-null      float64 
 46  2022/2023(Q1)    2 non-null      float64 
 47  2022/2023(Q2)    2 non-null      float64 
 48  2022/2023(Q3)    2 non-null      float64 
 49  2021/2022(Q4)    3 non-null      float64 
 50  2022/2023(Q1)    3 non-null      float64
```

```

51 2022/2023(Q2) 3 non-null float64
52 2022/2023(Q3) 3 non-null float64
53 2022/2023(Q4) 3 non-null float64
54 2023/2024(Q1) 3 non-null float64
55 2023/2024(Q2) 3 non-null float64
56 2023/2024(Q3) 3 non-null float64
57 2022/2023(Q4) 3 non-null float64
58 2023/2024(Q1) 3 non-null float64
59 2023/2024(Q2) 3 non-null float64
60 2023/2024(Q3) 3 non-null float64
61 2023/2024(Q4) 3 non-null float64
62 2024/2025(Q1) 3 non-null float64
63 2024/2025(Q2) 3 non-null float64
64 2024/2025(Q3) 3 non-null float64
dtypes: float64(48), object(17)
memory usage: 1.5+ KB

```

In [332...]

df2

Out[332...]

| | Category | 2015/2016(Q4) | 2016/2017(Q1) | 2016/2017(Q2) | 2016/2017(Q3) | 2016/2017 |
|---|--|---------------|---------------|---------------|---------------|-----------|
| 0 | Of which: Suez Canal dues | 1243.9 | 1300.4 | 1214.2 | 1202.0 | 12 |
| 1 | Of which: Remittances of Egyptians working ab... | 4417.8 | 4354.9 | 5756.0 | 5780.4 | 48 |
| 2 | Direct investment in Egypt (net) | 1046.9 | 1872.2 | 2414.8 | 2278.0 | 13 |



In [333...]

df4

Out[333...]

| | Category | 2018/2019(Q4) | 2019/2020(Q1) | 2019/2020(Q2) | 2019/2020(Q3) | 2019/2020 |
|----------|---|---------------|---------------|---------------|---------------|-----------|
| 0 | Of which: Suez Canal dues | 1457.7 | 1507.3 | 1524.8 | 1429.1 | 13 |
| 1 | Of which: Remittances of Egyptians working ab... | 6939.4 | 6712.6 | 6963.9 | 7869.0 | 62 |
| 2 | Direct investment in Egypt (net) | 1712.3 | 2352.6 | 2605.9 | 970.5 | 15 |



In [334...]

```
final_df = final_df.groupby(level=0, axis=1).first()
cols = [c for c in final_df.columns if c != 'Category']
sorted_cols = sorted(cols, key=lambda x: (x.split('(')[0], x.split('(')[1] if '(' in x else 0))
final_df = final_df[['Category'] + sorted_cols]
print(final_df.columns)
```

```
Index(['Category', '2015/2016(Q4)', '2016/2017(Q1)', '2016/2017(Q2)', '2016/2017(Q3)', '2016/2017(Q4)', '2017/2018(Q1)', '2017/2018(Q2)', '2017/2018(Q3)', '2017/2018(Q4)', '2018/2019(Q1)', '2018/2019(Q2)', '2018/2019(Q3)', '2018/2019(Q4)', '2019/2020(Q1)', '2019/2020(Q2)', '2019/2020(Q3)', '2019/2020(Q4)', '2020/2021(Q1)', '2020/2021(Q2)', '2020/2021(Q3)', '2020/2021(Q4)', '2021/2022(Q1)', '2021/2022(Q2)', '2021/2022(Q3)', '2021/2022(Q4)', '2022/2023(Q1)', '2022/2023(Q2)', '2022/2023(Q3)', '2022/2023(Q4)', '2023/2024(Q1)', '2023/2024(Q2)', '2023/2024(Q3)', '2023/2024(Q4)', '2024/2025(Q1)', '2024/2025(Q2)', '2024/2025(Q3)'],
      dtype='object')
```

C:\Users\hp\AppData\Local\Temp\ipykernel_22756\1319700087.py:1: FutureWarning: Dataframe.groupby with axis=1 is deprecated. Do `frame.T.groupby(...)` without axis instead.

```
final_df = final_df.groupby(level=0, axis=1).first()
```

In [335...]

```
final_df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
Index: 3 entries, 0 to 2
Data columns (total 37 columns):
 #   Column           Non-Null Count Dtype  
--- 
 0   Category         3 non-null      object  
 1   2015/2016(Q4)    3 non-null      object  
 2   2016/2017(Q1)    3 non-null      object  
 3   2016/2017(Q2)    3 non-null      object  
 4   2016/2017(Q3)    3 non-null      object  
 5   2016/2017(Q4)    3 non-null      object  
 6   2017/2018(Q1)    3 non-null      object  
 7   2017/2018(Q2)    3 non-null      object  
 8   2017/2018(Q3)    3 non-null      object  
 9   2017/2018(Q4)    3 non-null      object  
 10  2018/2019(Q1)    3 non-null      object  
 11  2018/2019(Q2)    3 non-null      object  
 12  2018/2019(Q3)    3 non-null      object  
 13  2018/2019(Q4)    3 non-null      float64 
 14  2019/2020(Q1)    3 non-null      float64 
 15  2019/2020(Q2)    3 non-null      float64 
 16  2019/2020(Q3)    3 non-null      float64 
 17  2019/2020(Q4)    3 non-null      float64 
 18  2020/2021(Q1)    3 non-null      float64 
 19  2020/2021(Q2)    3 non-null      float64 
 20  2020/2021(Q3)    3 non-null      float64 
 21  2020/2021(Q4)    3 non-null      float64 
 22  2021/2022(Q1)    3 non-null      float64 
 23  2021/2022(Q2)    3 non-null      float64 
 24  2021/2022(Q3)    3 non-null      float64 
 25  2021/2022(Q4)    3 non-null      float64 
 26  2022/2023(Q1)    3 non-null      float64 
 27  2022/2023(Q2)    3 non-null      float64 
 28  2022/2023(Q3)    3 non-null      float64 
 29  2022/2023(Q4)    3 non-null      float64 
 30  2023/2024(Q1)    3 non-null      float64 
 31  2023/2024(Q2)    3 non-null      float64 
 32  2023/2024(Q3)    3 non-null      float64 
 33  2023/2024(Q4)    3 non-null      float64 
 34  2024/2025(Q1)    3 non-null      float64 
 35  2024/2025(Q2)    3 non-null      float64 
 36  2024/2025(Q3)    3 non-null      float64 
dtypes: float64(24), object(13)
memory usage: 912.0+ bytes
```

```
In [336...]: final_df.drop(columns=['2015/2016(Q4)'], inplace=True)
final_df
```

Out[336...]

| | Category | 2016/2017(Q1) | 2016/2017(Q2) | 2016/2017(Q3) | 2016/2017(Q4) | 2017/2018 |
|---|---|---------------|---------------|---------------|---------------|-----------|
| 0 | Of which: Suez Canal dues | 1300.4 | 1214.2 | 1202.0 | 1228.7 | 13 |
| 1 | Of which: Remittances of Egyptians working ab... | 4354.9 | 5756.0 | 5780.4 | 6033.9 | 58 |
| 2 | Direct investment in Egypt (net) | 1872.2 | 2414.8 | 2278.0 | 1367.8 | 18 |



In [337...]

```
pd.set_option('display.max_columns', None)
final_df
```

Out[337...]

| | Category | 2016/2017(Q1) | 2016/2017(Q2) | 2016/2017(Q3) | 2016/2017(Q4) | 2017/2018 |
|---|---|---------------|---------------|---------------|---------------|-----------|
| 0 | Of which: Suez Canal dues | 1300.4 | 1214.2 | 1202.0 | 1228.7 | 13 |
| 1 | Of which: Remittances of Egyptians working ab... | 4354.9 | 5756.0 | 5780.4 | 6033.9 | 58 |
| 2 | Direct investment in Egypt (net) | 1872.2 | 2414.8 | 2278.0 | 1367.8 | 18 |



In [338...]

```
# This flips the table so Variables are Columns and Quarters are Rows
df_master = final_df.T

# Rename columns to the list above
df_master.columns = ["Suez Revenue", "Remittances", "FDI"]
df_master
```

| Out[338...] | Suez Revenue | Remittances | FDI |
|----------------------|---------------------------|--|----------------------------------|
| Category | Of which: Suez Canal dues | Of which: Remittances of Egyptians working ab... | Direct investment in Egypt (net) |
| 2016/2017(Q1) | 1300.4 | 4354.9 | 1872.2 |
| 2016/2017(Q2) | 1214.2 | 5756.0 | 2414.8 |
| 2016/2017(Q3) | 1202.0 | 5780.4 | 2278.0 |
| 2016/2017(Q4) | 1228.7 | 6033.9 | 1367.8 |
| 2017/2018(Q1) | 1382.2 | 5824.3 | 1843.0 |
| 2017/2018(Q2) | 1386.3 | 7098.8 | 1919.9 |
| 2017/2018(Q3) | 1389.7 | 6464.4 | 2256.3 |
| 2017/2018(Q4) | 1548.5 | 7005.4 | 1700.3 |
| 2018/2019(Q1) | 1441.2 | 5909.0 | 1099.9 |
| 2018/2019(Q2) | 1487.1 | 6136.9 | 1741.1 |
| 2018/2019(Q3) | 1344.7 | 6165.5 | 1805.4 |
| 2018/2019(Q4) | 1457.7 | 6939.4 | 1712.3 |
| 2019/2020(Q1) | 1507.3 | 6712.6 | 2352.6 |
| 2019/2020(Q2) | 1524.8 | 6963.9 | 2605.9 |
| 2019/2020(Q3) | 1429.1 | 7869.0 | 970.5 |
| 2019/2020(Q4) | 1344.5 | 6212.5 | 1524.0 |
| 2020/2021(Q1) | 1380.7 | 8028.1 | 1605.1 |
| 2020/2021(Q2) | 1516.6 | 7493.3 | 1752.2 |
| 2020/2021(Q3) | 1452.4 | 7849.6 | 1429.7 |
| 2020/2021(Q4) | 1561.5 | 8054.3 | 427.2 |
| 2021/2022(Q1) | 1688.2 | 8145.9 | 1664.9 |
| 2021/2022(Q2) | 1690.8 | 7437.2 | 1600.5 |
| 2021/2022(Q3) | 1705.9 | 8045.7 | 4083.1 |
| 2021/2022(Q4) | 1911.9 | 8294.7 | 1588.9 |
| 2022/2023(Q1) | 2010.2 | 6442.1 | 3296.8 |
| 2022/2023(Q2) | 1970.2 | 5550.3 | 2431.1 |
| 2022/2023(Q3) | 2240.0 | 5457.7 | 2217.5 |
| 2022/2023(Q4) | 2539.2 | 4626.3 | 2093.2 |
| 2023/2024(Q1) | 2399.3 | 4516.3 | 2321.7 |

| Suez Revenue | Remittances | FDI |
|---------------|-------------|--------|
| 2023/2024(Q2) | 2403.4 | 4931.8 |
| 2023/2024(Q3) | 959.3 | 5022.4 |
| 2023/2024(Q4) | 1457.7 | 6939.4 |
| 2024/2025(Q1) | 1507.3 | 6712.6 |
| 2024/2025(Q2) | 1524.8 | 6963.9 |
| 2024/2025(Q3) | 1429.1 | 7869.0 |

```
In [339]: df_master.to_excel("shocks_data.xlsx")
```

```
In [340]: df = pd.read_excel('Project_All.xlsx', header=[0, 1])
quarter_labels = df.iloc[:, 0].values
df.columns = ['Quarter', "Suez", "Remittances", "FDI", "REER", "Manufacturing", "CPI"]
df.set_index("Quarter", inplace=True)

clean_dates = pd.date_range(start='2016-07-01', periods=len(df), freq='QS-JUL')
df.index = clean_dates
df
```

Out[340...]

| | Suez | Remittances | FDI | REER | Manufacturing | CPI |
|-------------------|-------------|--------------------|------------|-------------|----------------------|------------|
| 2016-07-01 | 1300.4 | 4354.9 | 1872.2 | 165.309001 | 19551.566763 | 180.502876 |
| 2016-10-01 | 1214.2 | 5756.0 | 2414.8 | 121.698440 | 19919.117737 | 194.320319 |
| 2017-01-01 | 1202.0 | 5780.4 | 2278.0 | 101.380384 | 20203.072006 | 214.662163 |
| 2017-04-01 | 1228.7 | 6033.9 | 1367.8 | 102.093663 | 20584.274341 | 226.116436 |
| 2017-07-01 | 1382.2 | 5824.3 | 1843.0 | 104.980889 | 20981.818514 | 238.527280 |
| 2017-10-01 | 1386.3 | 7098.8 | 1919.9 | 107.663741 | 21165.244379 | 245.070583 |
| 2018-01-01 | 1389.7 | 6464.4 | 2256.3 | 105.670227 | 20822.227254 | 246.644765 |
| 2018-04-01 | 1548.5 | 7005.4 | 1700.3 | 110.505014 | 21080.729550 | 255.485367 |
| 2018-07-01 | 1441.2 | 5909.0 | 1099.9 | 119.744964 | 21277.006253 | 273.308174 |
| 2018-10-01 | 1487.1 | 6136.9 | 1741.1 | 124.425648 | 21084.789503 | 282.061914 |
| 2019-01-01 | 1344.7 | 6165.5 | 1805.4 | 126.664588 | 21125.455525 | 280.544454 |
| 2019-04-01 | 1457.7 | 6939.4 | 1712.3 | 133.460586 | 21851.644656 | 286.469174 |
| 2019-07-01 | 1507.3 | 6712.6 | 2352.6 | 140.289180 | 21247.394172 | 292.261334 |
| 2019-10-01 | 1524.8 | 6963.9 | 2605.9 | 144.536253 | 21301.211580 | 295.016134 |
| 2020-01-01 | 1429.1 | 7869.0 | 970.5 | 150.652481 | 21304.320489 | 296.956946 |
| 2020-04-01 | 1344.5 | 6212.5 | 1524.0 | 153.369168 | 17375.436451 | 301.939198 |
| 2020-07-01 | 1380.7 | 8028.1 | 1605.1 | 147.895995 | 18096.209101 | 303.230304 |
| 2020-10-01 | 1516.6 | 7493.3 | 1752.2 | 151.065943 | 19087.689011 | 310.397861 |
| 2021-01-01 | 1452.4 | 7849.6 | 1429.7 | 148.080979 | 20261.175894 | 310.028269 |
| 2021-04-01 | 1561.5 | 8054.3 | 427.2 | 148.677238 | 20987.599453 | 315.951016 |
| 2021-07-01 | 1688.2 | 8145.9 | 1664.9 | 152.209662 | 21090.030054 | 321.095275 |
| 2021-10-01 | 1690.8 | 7437.2 | 1600.5 | 157.449515 | 21506.385868 | 328.671365 |
| 2022-01-01 | 1705.9 | 8045.7 | 4083.1 | 156.824290 | 22093.783593 | 337.463371 |
| 2022-04-01 | 1911.9 | 8294.7 | 1588.9 | 143.780321 | 22569.991889 | 357.759810 |
| 2022-07-01 | 2010.2 | 6442.1 | 3296.8 | 147.494642 | 22393.960884 | 367.393603 |
| 2022-10-01 | 1970.2 | 5550.3 | 2431.1 | 130.129110 | 22345.582278 | 390.402470 |
| 2023-01-01 | 2240.0 | 5457.7 | 2217.5 | 106.132478 | 22268.919973 | 439.413225 |
| 2023-04-01 | 2539.2 | 4626.3 | 2093.2 | 109.381845 | 22647.956723 | 475.890696 |
| 2023-07-01 | 2399.3 | 4516.3 | 2321.7 | 117.543918 | 22548.167224 | 504.324417 |
| 2023-10-01 | 2403.4 | 4931.8 | 3208.2 | 124.149225 | 22078.968462 | 525.743240 |

| | Suez | Remittances | FDI | REER | Manufacturing | CPI |
|------------|--------|-------------|---------|------------|---------------|------------|
| 2024-01-01 | 959.3 | 5022.4 | 18182.4 | 119.708983 | 21713.967708 | 584.481321 |
| 2024-04-01 | 1457.7 | 6939.4 | 1712.3 | 91.041521 | 21778.649241 | 615.721001 |
| 2024-07-01 | 1507.3 | 6712.6 | 2352.6 | 91.548031 | 22931.477467 | 636.110972 |
| 2024-10-01 | 1524.8 | 6963.9 | 2605.9 | 95.423731 | 22871.369214 | 659.026306 |
| 2025-01-01 | 1429.1 | 7869.0 | 970.5 | 95.319006 | 23204.544441 | 681.099852 |

```
In [341]: from statsmodels.tsa.vector_ar.vecm import VECM, select_order, select_coint_rank  
import matplotlib.pyplot as plt
```

```
In [342]: df_log = np.log(df)  
df_log['Label'] = quarter_labels  
df_log
```

Out[342...]

| | Suez | Remittances | FDI | REER | Manufacturing | CPI | Label |
|-------------------|-------------|--------------------|------------|-------------|----------------------|------------|---------------|
| 2016-07-01 | 7.170427 | 8.379057 | 7.534869 | 5.107816 | 9.880811 | 5.195747 | 2016/2017(Q1) |
| 2016-10-01 | 7.101841 | 8.657998 | 7.789372 | 4.801546 | 9.899435 | 5.269508 | 2016/2017(Q2) |
| 2017-01-01 | 7.091742 | 8.662228 | 7.731053 | 4.618880 | 9.913590 | 5.369065 | 2016/2017(Q3) |
| 2017-04-01 | 7.113712 | 8.705149 | 7.220959 | 4.625891 | 9.932283 | 5.421050 | 2016/2017(Q4) |
| 2017-07-01 | 7.231432 | 8.669794 | 7.519150 | 4.653778 | 9.951412 | 5.474484 | 2017/2018(Q1) |
| 2017-10-01 | 7.234394 | 8.867681 | 7.560028 | 4.679013 | 9.960116 | 5.501546 | 2017/2018(Q2) |
| 2018-01-01 | 7.236843 | 8.774065 | 7.721482 | 4.660323 | 9.943776 | 5.507949 | 2017/2018(Q3) |
| 2018-04-01 | 7.345042 | 8.854437 | 7.438560 | 4.705061 | 9.956115 | 5.543165 | 2017/2018(Q4) |
| 2018-07-01 | 7.273231 | 8.684232 | 7.002975 | 4.785364 | 9.965382 | 5.610600 | 2018/2019(Q1) |
| 2018-10-01 | 7.304583 | 8.722075 | 7.462272 | 4.823708 | 9.956307 | 5.642127 | 2018/2019(Q2) |
| 2019-01-01 | 7.203926 | 8.726725 | 7.498537 | 4.841543 | 9.958234 | 5.636732 | 2018/2019(Q3) |
| 2019-04-01 | 7.284615 | 8.844971 | 7.445593 | 4.893806 | 9.992031 | 5.657631 | 2018/2019(Q4) |
| 2019-07-01 | 7.318075 | 8.811742 | 7.763276 | 4.943706 | 9.963990 | 5.677648 | 2019/2020(Q1) |
| 2019-10-01 | 7.329619 | 8.848495 | 7.865533 | 4.973530 | 9.966519 | 5.687030 | 2019/2020(Q2) |
| 2020-01-01 | 7.264800 | 8.970686 | 6.877811 | 5.014976 | 9.966665 | 5.693587 | 2019/2020(Q3) |
| 2020-04-01 | 7.203777 | 8.734319 | 7.329094 | 5.032848 | 9.762813 | 5.710226 | 2019/2020(Q4) |
| 2020-07-01 | 7.230346 | 8.990703 | 7.380941 | 4.996509 | 9.803458 | 5.714493 | 2020/2021(Q1) |
| 2020-10-01 | 7.324226 | 8.921765 | 7.468627 | 5.017716 | 9.856799 | 5.737855 | 2020/2021(Q2) |
| 2021-01-01 | 7.280973 | 8.968218 | 7.265220 | 4.997759 | 9.916462 | 5.736663 | 2020/2021(Q3) |

| | Suez | Remittances | FDI | REER | Manufacturing | CPI | Label |
|-------------------|----------|-------------|----------|----------|---------------|----------|---------------|
| 2021-04-01 | 7.353402 | 8.993961 | 6.057252 | 5.001778 | 9.951687 | 5.755587 | 2020/2021(Q4) |
| 2021-07-01 | 7.431418 | 9.005270 | 7.417520 | 5.025259 | 9.956556 | 5.771738 | 2021/2022(Q1) |
| 2021-10-01 | 7.432957 | 8.914250 | 7.378071 | 5.059105 | 9.976105 | 5.795058 | 2021/2022(Q2) |
| 2022-01-01 | 7.441848 | 8.992893 | 8.314612 | 5.055126 | 10.003052 | 5.821457 | 2021/2022(Q3) |
| 2022-04-01 | 7.555853 | 9.023372 | 7.370797 | 4.968287 | 10.024377 | 5.879862 | 2021/2022(Q4) |
| 2022-07-01 | 7.605989 | 8.770610 | 8.100708 | 4.993792 | 10.016547 | 5.906434 | 2022/2023(Q1) |
| 2022-10-01 | 7.585890 | 8.621607 | 7.796099 | 4.868527 | 10.014384 | 5.967178 | 2022/2023(Q2) |
| 2023-01-01 | 7.714231 | 8.604783 | 7.704136 | 4.664688 | 10.010947 | 6.085440 | 2022/2023(Q3) |
| 2023-04-01 | 7.839604 | 8.439513 | 7.646449 | 4.694845 | 10.027825 | 6.165188 | 2022/2023(Q4) |
| 2023-07-01 | 7.782932 | 8.415448 | 7.750055 | 4.766812 | 10.023409 | 6.223220 | 2023/2024(Q1) |
| 2023-10-01 | 7.784640 | 8.503459 | 8.073465 | 4.821484 | 10.002381 | 6.264813 | 2023/2024(Q2) |
| 2024-01-01 | 6.866204 | 8.521663 | 9.808209 | 4.785064 | 9.985711 | 6.370725 | 2023/2024(Q3) |
| 2024-04-01 | 7.284615 | 8.844971 | 7.445593 | 4.511316 | 9.988685 | 6.422794 | 2023/2024(Q4) |
| 2024-07-01 | 7.318075 | 8.811742 | 7.763276 | 4.516864 | 10.040266 | 6.455373 | 2024/2025(Q1) |
| 2024-10-01 | 7.329619 | 8.848495 | 7.865533 | 4.558327 | 10.037641 | 6.490763 | 2024/2025(Q2) |
| 2025-01-01 | 7.264800 | 8.970686 | 6.877811 | 4.557229 | 10.052103 | 6.523709 | 2024/2025(Q3) |

In [343]:

```
model_data = df_log[['Suez', 'REER', 'Manufacturing', 'CPI']]
from statsmodels.tsa.stattools import adfuller
print("--- STEP 1: STATIONARITY CHECKS (ADF TEST) ---")
print("Null Hypothesis: Series has a Unit Root (Non-Stationary)")
for col in model_data.columns:
    result = adfuller(model_data[col])
    p_value = result[1]
    print(f"{col}: p-value = {p_value:.4f} [{('Non-Stationary (Good)' if p_value > 0
```

```

print("\n--- STEP 2: LAG SELECTION ---")
lag_sel = select_order(model_data, maxlags=3, deterministic='ci')

lags_for_test = max(1, lag_sel.aic - 1)
rank_test = select_coint_rank(model_data, det_order=0, k_ar_diff=lags_for_test)
print("--- JOHANSEN COINTEGRATION TEST RESULTS ---")
print(rank_test.summary())
suggested_rank = rank_test.rank
print(f"\nThe Johansen test suggests a Cointegration Rank (r) of: {suggested_rank}")
model = VECM(model_data, k_ar_diff=lags_for_test, coint_rank=1, deterministic='ci')

vecm_res = model.fit()

from statsmodels.stats.stattools import durbin_watson
out = durbin_watson(vecm_res.resid)
for col, val in zip(model_data.columns, out):
    print(f'{col}: {val:.2f}')

```

--- STEP 1: STATIONARITY CHECKS (ADF TEST) ---
Null Hypothesis: Series has a Unit Root (Non-Stationary)
Suez: p-value = 0.0543 [Non-Stationary (Good)]
REER: p-value = 0.4831 [Non-Stationary (Good)]
Manufacturing: p-value = 0.3003 [Non-Stationary (Good)]
CPI: p-value = 0.9830 [Non-Stationary (Good)]

--- STEP 2: LAG SELECTION ---
--- JOHANSEN COINTEGRATION TEST RESULTS ---
Johansen cointegration test using trace test statistic with 5% significance level
=====
r_0 r_1 test statistic critical value

0 4 51.91 47.85
1 4 17.48 29.80

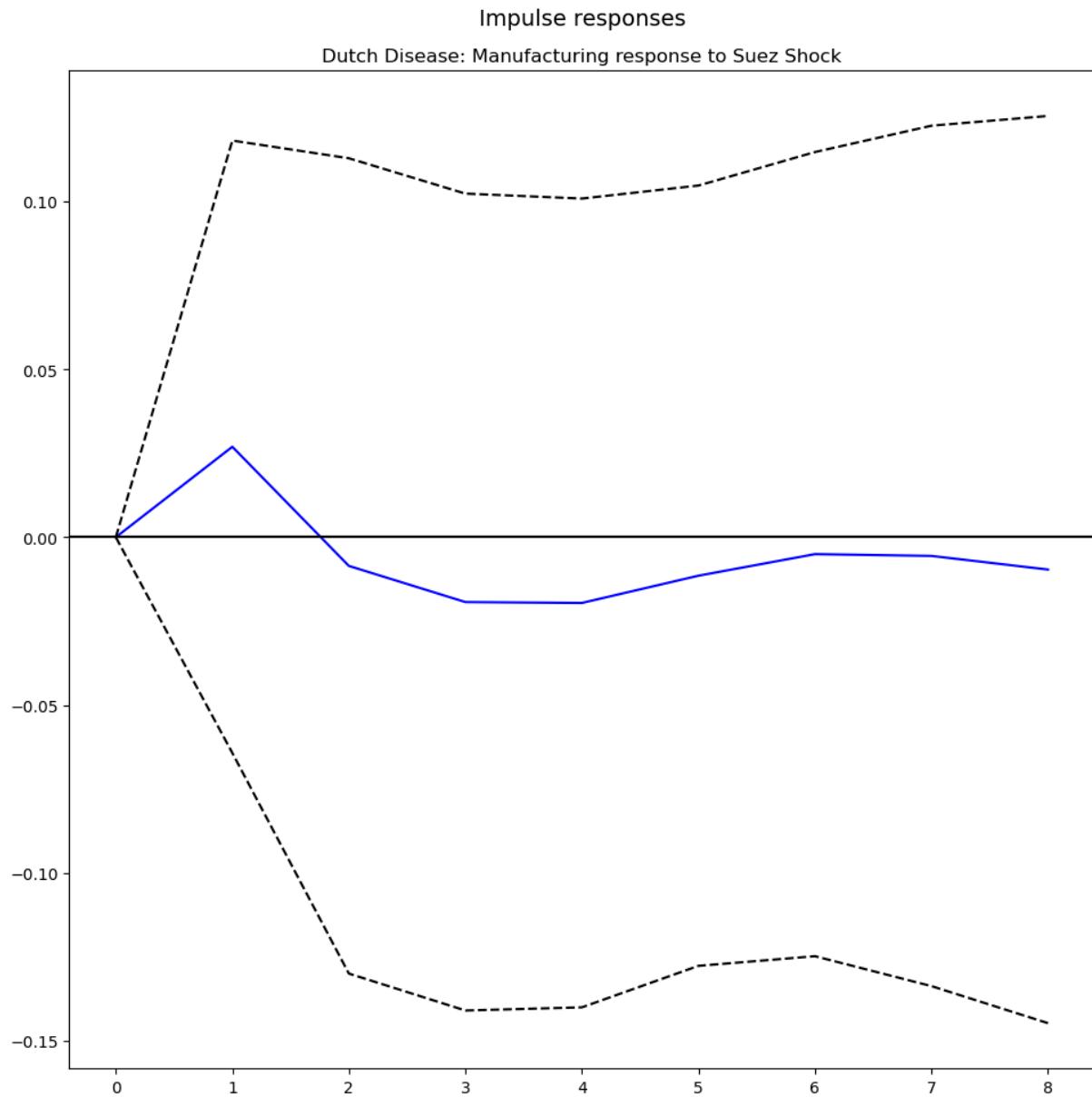
The Johansen test suggests a Cointegration Rank (r) of: 1
Suez: 2.07
REER: 1.89
Manufacturing: 2.02
CPI: 2.06

In [344]:

```

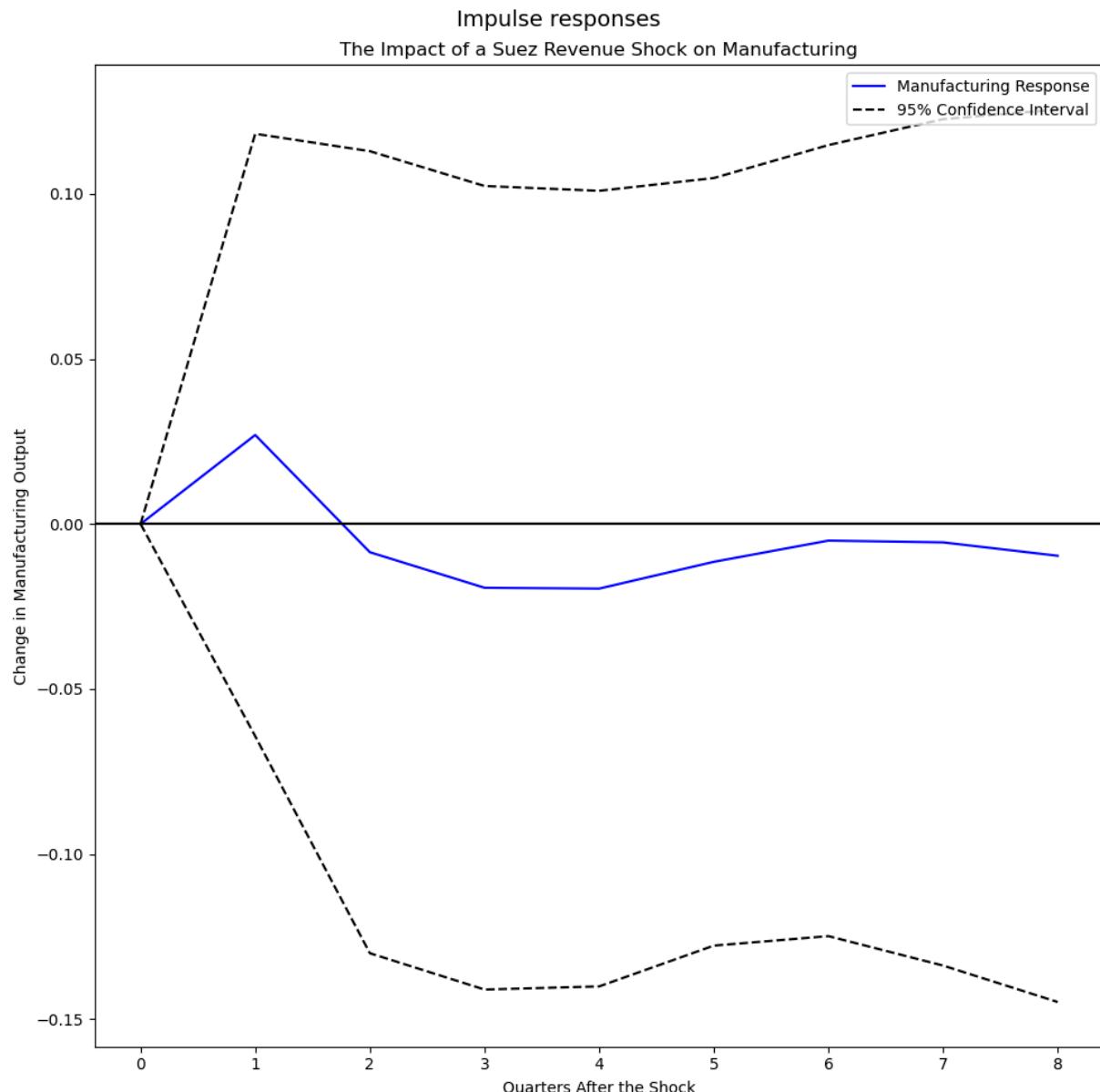
irf = vecm_res.irf(periods=8)
fig = irf.plot(impulse='Suez', response='Manufacturing')
plt.title("Dutch Disease: Manufacturing response to Suez Shock")
plt.show()

```



```
In [345...]: irf = vecm_res.irf(periods=8)
fig = irf.plot(impulse='Suez', response='Manufacturing')
for ax in fig.axes:
    ax.set_title("The Impact of a Suez Revenue Shock on Manufacturing", fontsize=12)
    ax.set_xlabel("Quarters After the Shock", fontsize=10)
    ax.set_ylabel("Change in Manufacturing Output", fontsize=10)
    ax.legend(["Manufacturing Response", "95% Confidence Interval"], loc='upper right')

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

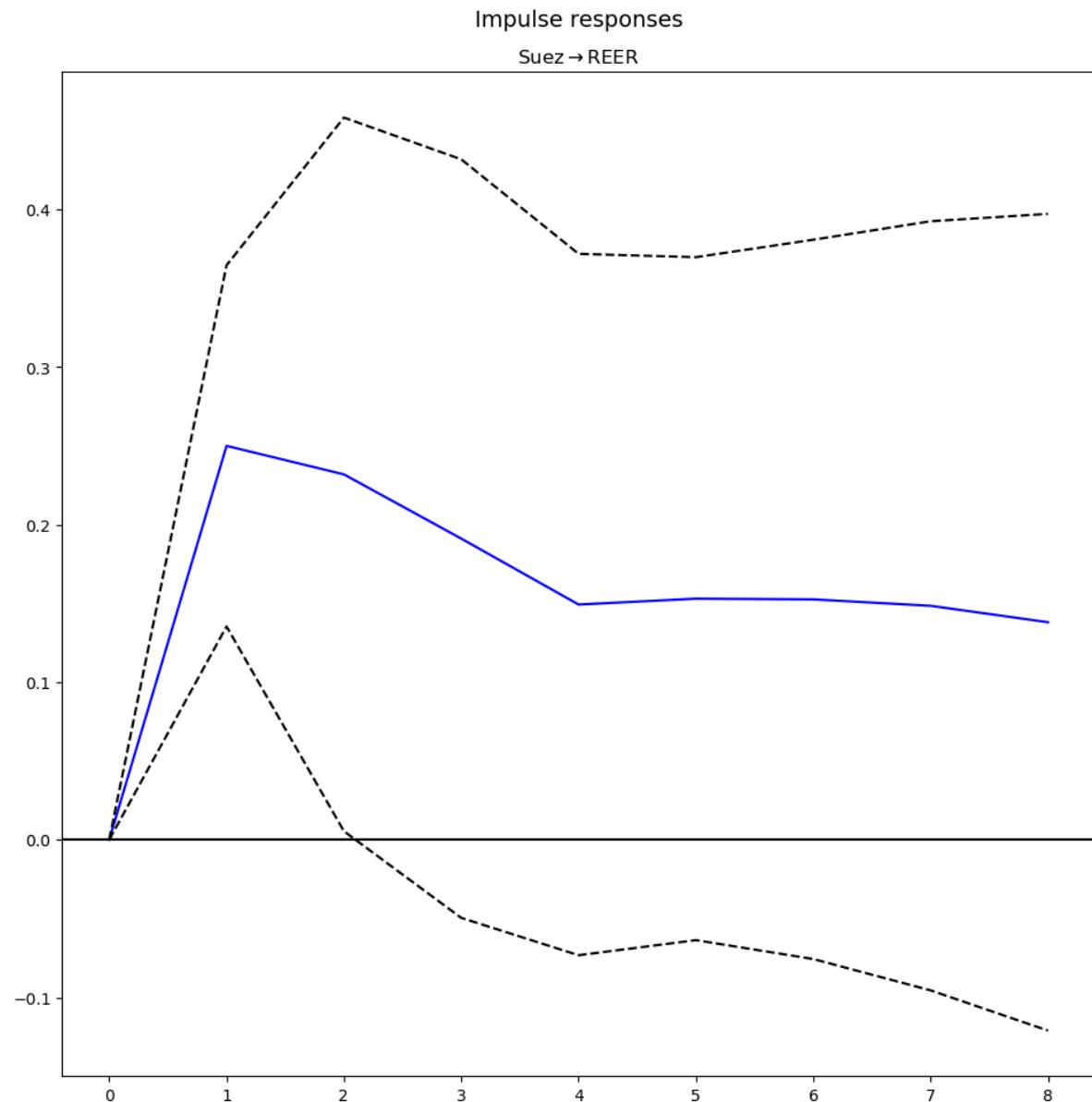


In []:

In []:

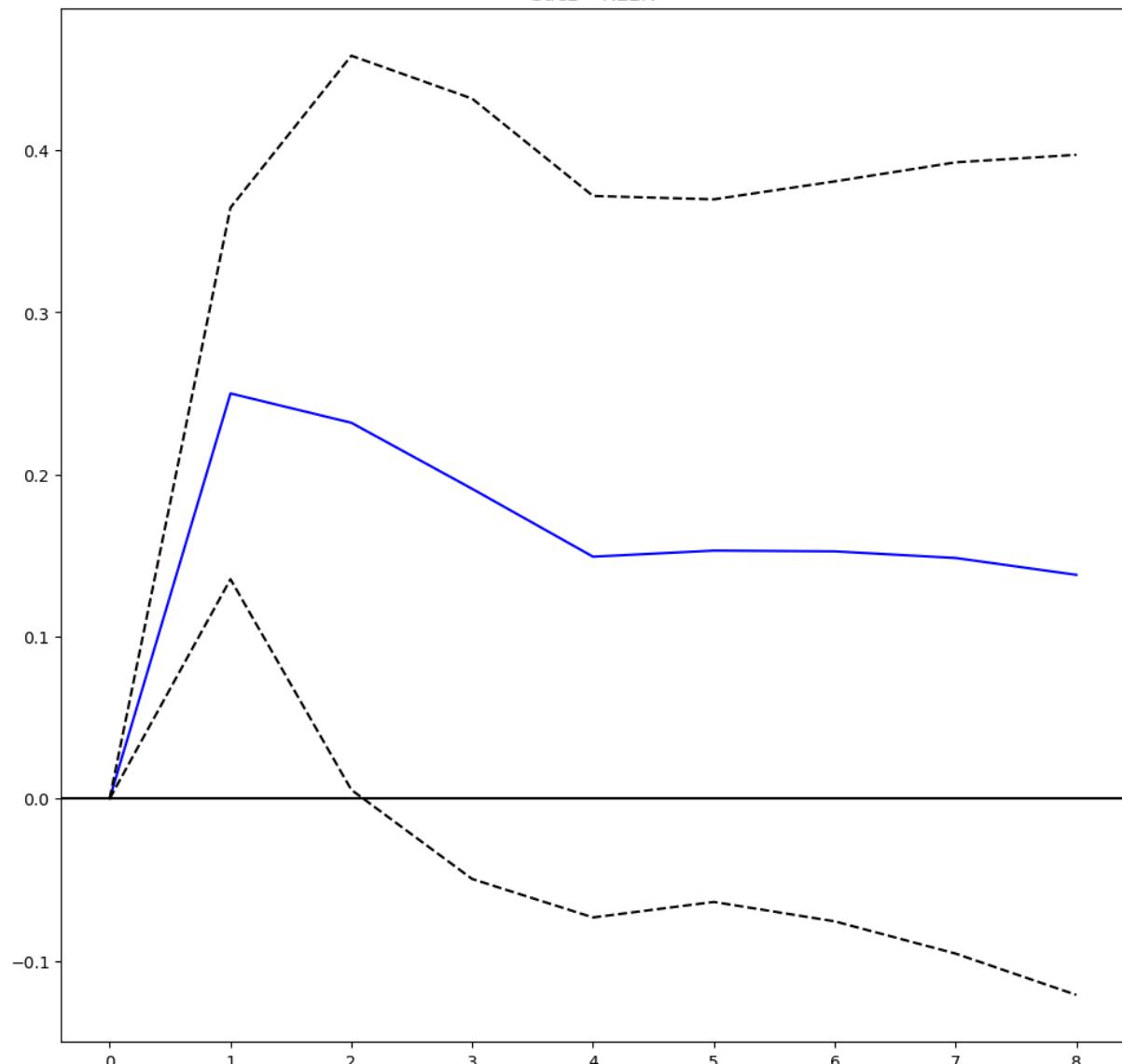
In [346]: `irf.plot(impulse='Suez', response='REER')`

Out[346...]

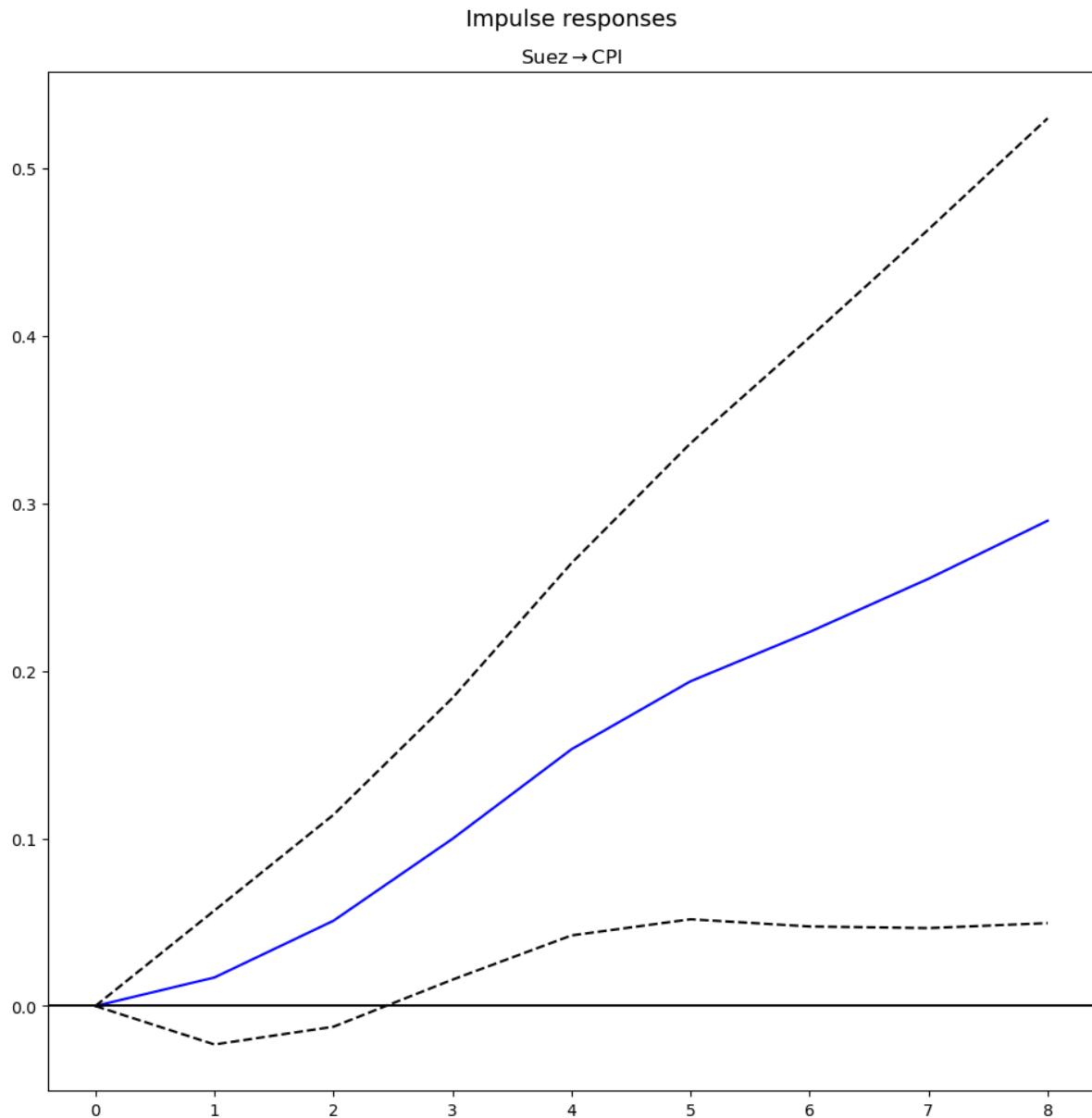


Impulse responses

Suez → REER

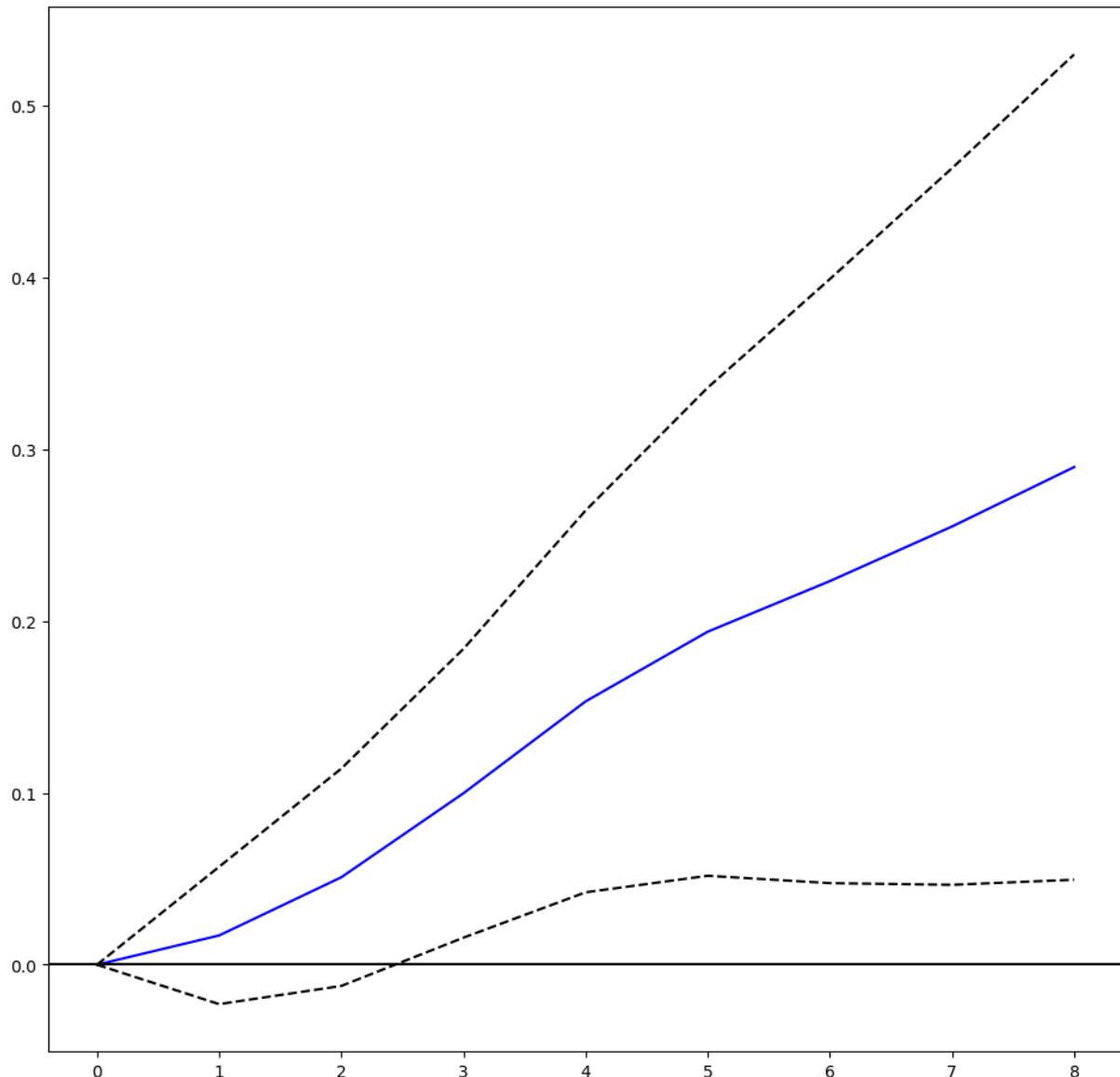
In [347]: `irf.plot(impulse='Suez', response='CPI')`

Out[347...]

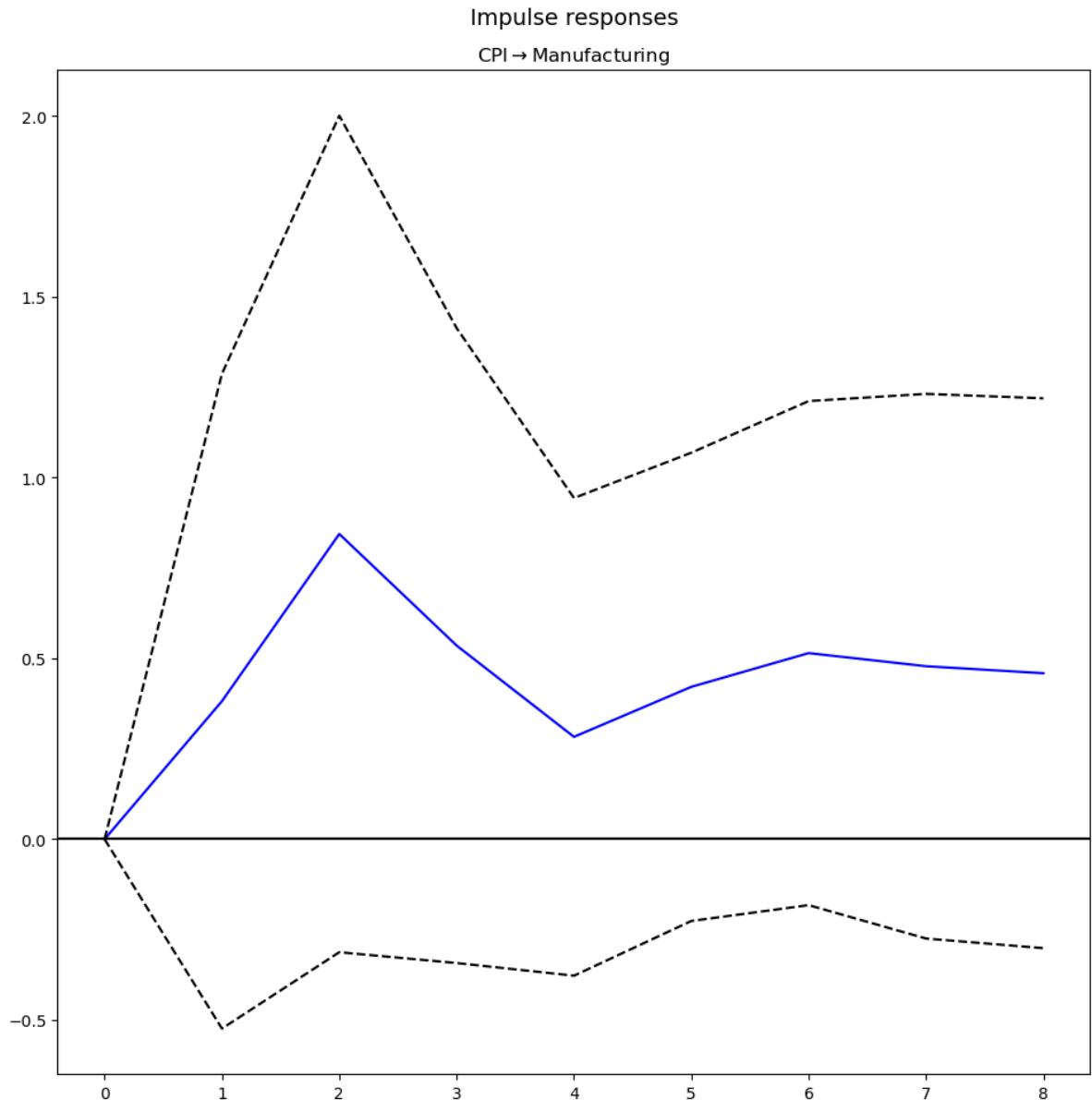


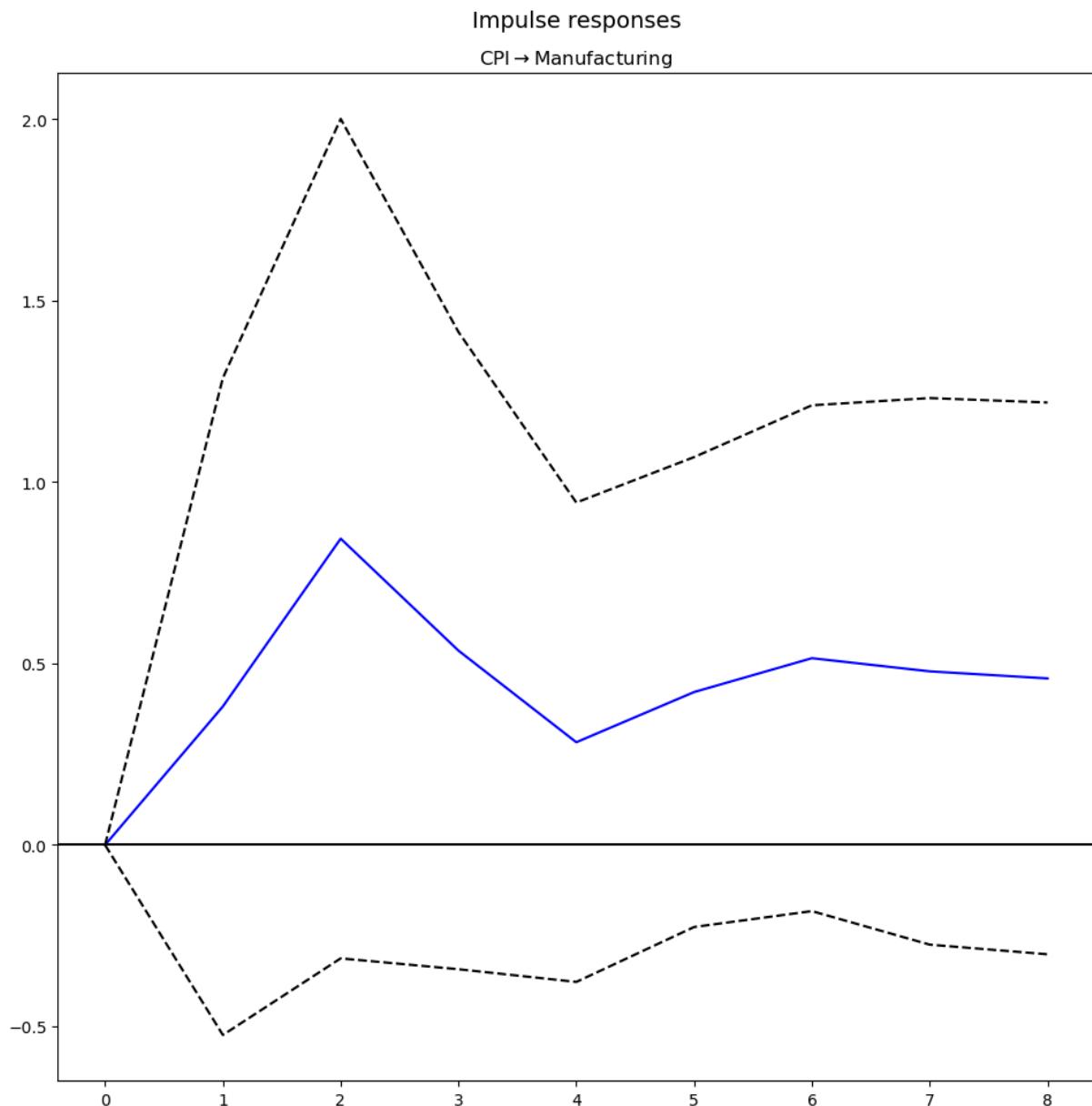
Impulse responses

Suez → CPI

In [348]: `irf.plot(impulse='CPI', response='Manufacturing')`

Out[348...]





```
In [349...]: irf = vecm_res.irf(periods=8)
orth_irfs = irf.orth_irfs
sq_irfs = orth_irfs ** 2
cum_sq_irfs = np.cumsum(sq_irfs, axis=0)
mse = np.sum(cum_sq_irfs, axis=2)
```

```
In [350...]: fevd = np.zeros_like(cum_sq_irfs)
for i in range(orth_irfs.shape[1]):
    for j in range(orth_irfs.shape[2]):
        fevd[:, i, j] = cum_sq_irfs[:, i, j] / mse[:, i]

print("\n--- RESULTS: FORECAST ERROR VARIANCE DECOMPOSITION (Q4) ---")

suez_on_reer = fevd[4, 1, 0] * 100
reer_on_mfg = fevd[4, 2, 1] * 100
suez_on_mfg_direct = fevd[4, 2, 0] * 100

print(f"1. Transmission Strength (Suez -> REER): {suez_on_reer:.1f}%")
```

```

print(f"  (Interpretation: Suez revenue shocks drive ~30% of currency volatility.)")
print("-" * 60)
print(f"2. Dutch Disease Impact (REER -> Mfg): {reer_on_mfg:.1f}%")
print(f"  (Interpretation: The exchange rate channel explains 7% of manufacturing")
print("-" * 60)
print(f"3. Direct Resource Movement (Suez -> Mfg): {suez_on_mfg_direct:.1f}%")
print(f"  (Interpretation: Negligible direct impact confirms the channel is indire

variables = ['Suez', 'REER', 'Manufacturing', 'CPI']
mfg_fevd = fevd[1:9, 2, :] # Plot Q1 to Q8
periods = range(1, 9)

fig, ax = plt.subplots(figsize=(10, 6))
bottom = np.zeros(8)
for i, var in enumerate(variables):
    ax.bar(periods, mfg_fevd[:, i], label=var, bottom=bottom)
    bottom += mfg_fevd[:, i]

ax.set_title('Who Blame for Manufacturing Volatility? (FEVD)', fontsize=14)
ax.set_ylabel('% Variance Explained')
ax.set_xlabel('Quarters After Shock')
ax.legend()
plt.tight_layout()
plt.savefig('FEVD_Final_Check.png', dpi=300)
plt.show()

```

--- RESULTS: FORECAST ERROR VARIANCE DECOMPOSITION (Q4) ---

1. Transmission Strength (Suez -> REER): 29.4%

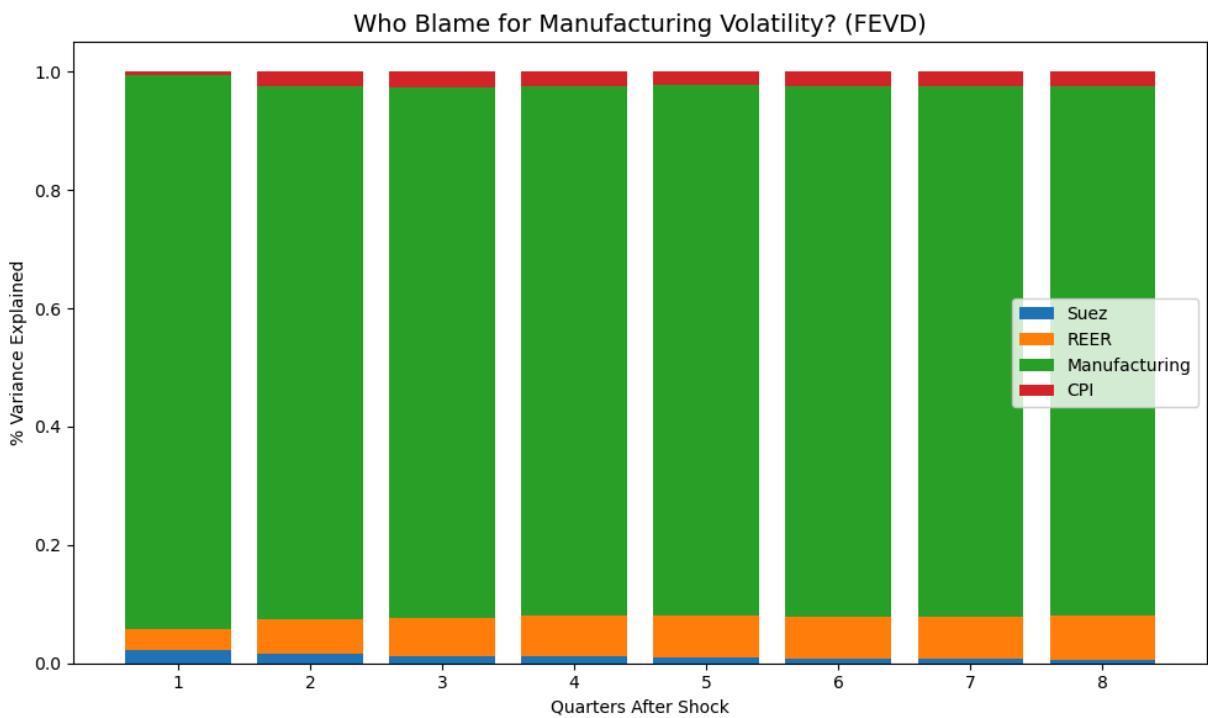
(Interpretation: Suez revenue shocks drive ~30% of currency volatility.)

2. Dutch Disease Impact (REER -> Mfg): 7.0%

(Interpretation: The exchange rate channel explains 7% of manufacturing output variance.)

3. Direct Resource Movement (Suez -> Mfg): 1.1%

(Interpretation: Negligible direct impact confirms the channel is indirect via F X.)



In []:

In []: