

In [351...]

```
!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 [352...]

```
!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 [353...]

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

In [354...]

```
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[354...]

		Unnamed: 0	Unnamed: 1	21-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 [355...]

```
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 [356...]

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

Out[356...]

	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(1)
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 [357]:

dfcle.Category

```
Out[357... 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 [358... dfcle.set_index('Category')
```

Out[358...]

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

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 [359]:

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

Out[359...]

	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 [360...]

zi

Out[360...]

	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 [361...]

```
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 [362...]

```

df1=df

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

```

Out[362...]

	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



```

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[363...]

	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	Nan	2281.6	1904.0	
14	Of which: Suez Canal dues		Nan	5031.8 5369.1	5361.7 5121.6 4945.3	Nan	1243.9	1300.4	
15	Travel (tourism revenues)		Nan	9751.8 5073.3	7370.4 3767.5 4379.7	Nan	510.4	758.2	
16	Government receipts		Nan	437.6 654.4	1381.5 378.0 776.4	Nan	99.3	62.5	
17	Others		Nan	2649.7 2243.5	3209.6 2399.2 2332.8	Nan	672.8	603.0	€
18	Payments		Nan	9580.8 9162.8	11068.9 9546.3 9785.9	Nan	2551.4	2353.6	
19	Transportation		Nan	1658.7 1717.2	1535.0 1339.1 1332.1	Nan	322.8	306.2	2
20	Travel		Nan	2928.8 3044.5	3338.2 4091.0 2739.9	Nan	1177.3	1105.2	€
21	Government expenditures		Nan	1243.7 1073.9	854.1 777.1 1124.1	Nan	327.2	157.0	2
22	Others		Nan	3749.6 3327.2	5341.6 3339.1 4589.8	Nan	724.1	785.2	
23	Investment Income Balance		Nan	-7406.4 -7262.7	-5700.9 -4471.7 -4423.0	Nan	-1357.0	-1129.5	
24	Receipts		Nan	197.8 194.2	212.8 396.9 497.9	Nan	123.7	81.6	
25	Payments		Nan	7604.2 7456.9	5913.7 4868.6 4920.9	Nan	1480.7	1211.1	
26	Of which: Interest paid		Nan	755.1 652.5	643.6 752.0 1143.5	Nan	227.6	258.9	3
27	Current Transfers		Nan	19264.9 30367.9	21875.8 16790.7	Nan	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 [364]:

```
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[364...]

		21- Balance of Payments	Unnamed: 2	Unnamed: 4	Unnamed: 5	Unnamed: 6	Unnamed: 7	Unnamed: 8
	Unnamed: 0							
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
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	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 [365...]

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

Out[365...]	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(1)
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 -4
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 [366...]

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

Out[366...]

	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 [367...]

```
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[367...]

	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 [368...]

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

Out[368...]

	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 [369...]

```
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[369...]

	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 [370]:

```
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[370...]

					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	-21
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	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 [371]:

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

Out[371...]

	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 [372...]

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

Out[372...]

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[373...]

	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 [374...]

df3.to_dict()

```
Out[374... {'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 [375... 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 [376... df3
```

Out[376...]

	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 [377...]

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

Out[377...]

	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 [378...]

```
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[378...]

	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 [379]:

```
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[379...]

					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	NaN	

In [380]:

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

Out[380...]

	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 [381...]

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

Out[381...]

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[382...]

	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 [383...]

```

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(Q2)	\
0	1507.3	1524.8	1429.1	1344.5	1380.7	1516.6	
1	6712.6	6963.9	7869.0	6212.5	8028.1	7493.3	
2	2352.6	2605.9	970.5	1524.0	1605.1	1752.2	
	2020/2021(Q2)	2020/2021(Q3)					
0	1516.6	1452.4					
1	7493.3	7849.6					
2	1752.2	1429.7					

In [384...]

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

Out[384...]

	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	1380.7
1	Of which: Remittances of Egyptians working ab...	6939.4	6712.6	6963.9	7869.0	8028.1
2	Direct investment in Egypt (net)	1712.3	2352.6	2605.9	970.5	1605.1



In [385...]

```
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[385...]

	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	၂၀၁၀၂၀၂၅ 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 [386...]

```
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 [387...]

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

Out[387...]

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 [388...]

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

Out[388...]

	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



```
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[389...]

	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 [390...]
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 [391...]

```

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

```

Out[391...]

	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 [392...]

```

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

```

In [393...]

```

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 [394...]

```

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

```

Out[394...]

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 [395]:

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

In [396]:

```
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[396...]

	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 [397...]

```
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())
```

0	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	

0	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	

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

In [398...]

df6

Out[398...]

	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 [399...]

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

Out[399...]

	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 [400...]

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

In [401...]

```
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 [402...]

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

Out[402...]

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 [403]:

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

Out[403...]

	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 [404...]

```
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[404...]

	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 [405...]

```
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 [406...]

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

Out[406...]

	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 [407...]

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

In [408...]

```
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 [409...]

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

Out[409...]

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 [410...]

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

Out[410...]

	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 [411...]

```
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[411...]

	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 [412...]
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 [413...]

```

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

```

Out[413...]

	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 [414...]

```

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 [415...]

```

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) \
	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 [416... 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 [417... 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 [418... [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 [419...]

df2

Out[419...]

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 [420...]

df4

Out[420...]

	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 [421...]

```
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 [422...]

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

Out[423...]

	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 [424...]

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

Out[424...]

	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 [425...]

```
# 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[425...]

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

```
In [427]: 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[427...]

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

```
In [429]: df_log = np.log(df)  
df_log['Label'] = quarter_labels  
df_log
```

Out[429...]

	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 [441]:

```

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()
beta = vecm_res.beta
variables = ['Suez', 'REER', 'Manufacturing', 'CPI']
suez_coef = beta[0][0] # Should be 1.0
reer_coef = beta[1][0]
manuf_coef = beta[2][0]
cpi_coef = beta[3][0]

# Solving for REER (The Spending Effect Coefficient)
# Equation: 1*Suez + beta2*REER + beta3*Manuf + beta4*CPI = 0
# REER = (-1/beta2)*Suez + (-beta3/beta2)*Manuf + (-beta4/beta2)*CPI
spending_effect = -1 / reer_coef

print(f"Spending Effect Coefficient: {spending_effect:.3f}")
print(f"Interpretation: A 1% rise in Suez revenues leads to a {spending_effect:.2f}")

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

Spending Effect Coefficient: 1.291

Interpretation: A 1% rise in Suez revenues leads to a 1.29% REER appreciation.

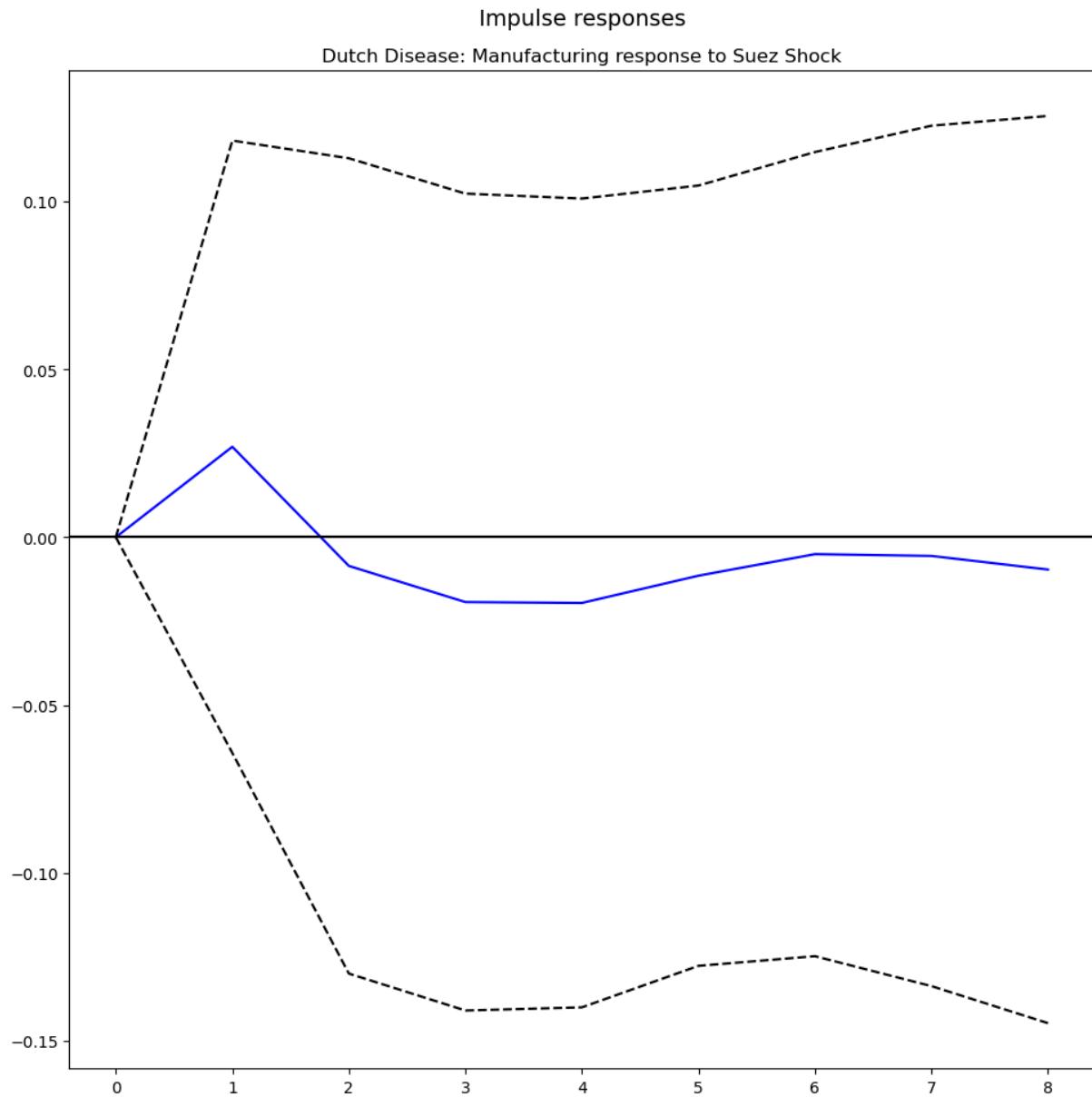
Suez: 2.07

REER: 1.89

Manufacturing: 2.02

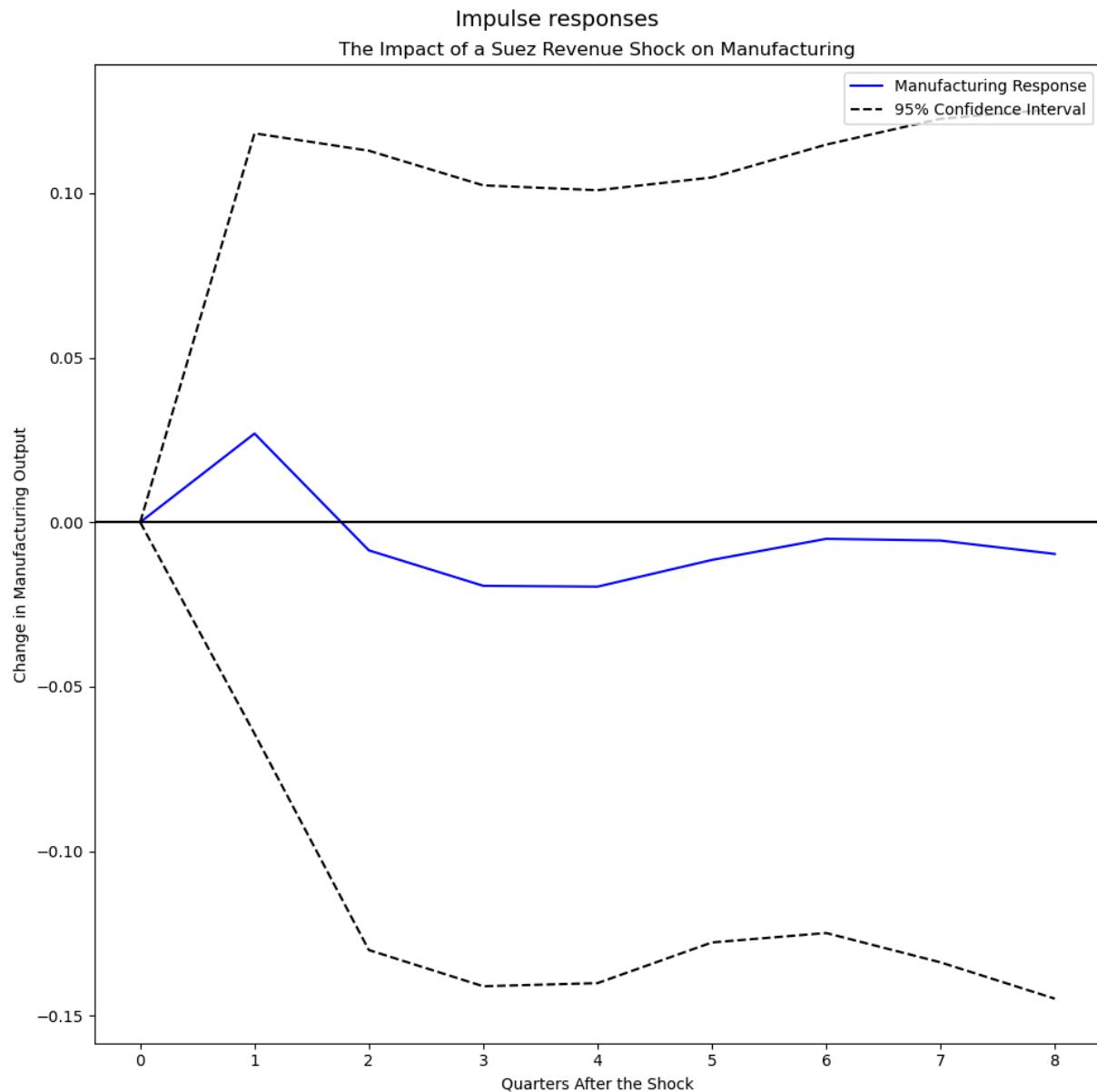
CPI: 2.06

```
In [431...]: 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 [432]: 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()
```

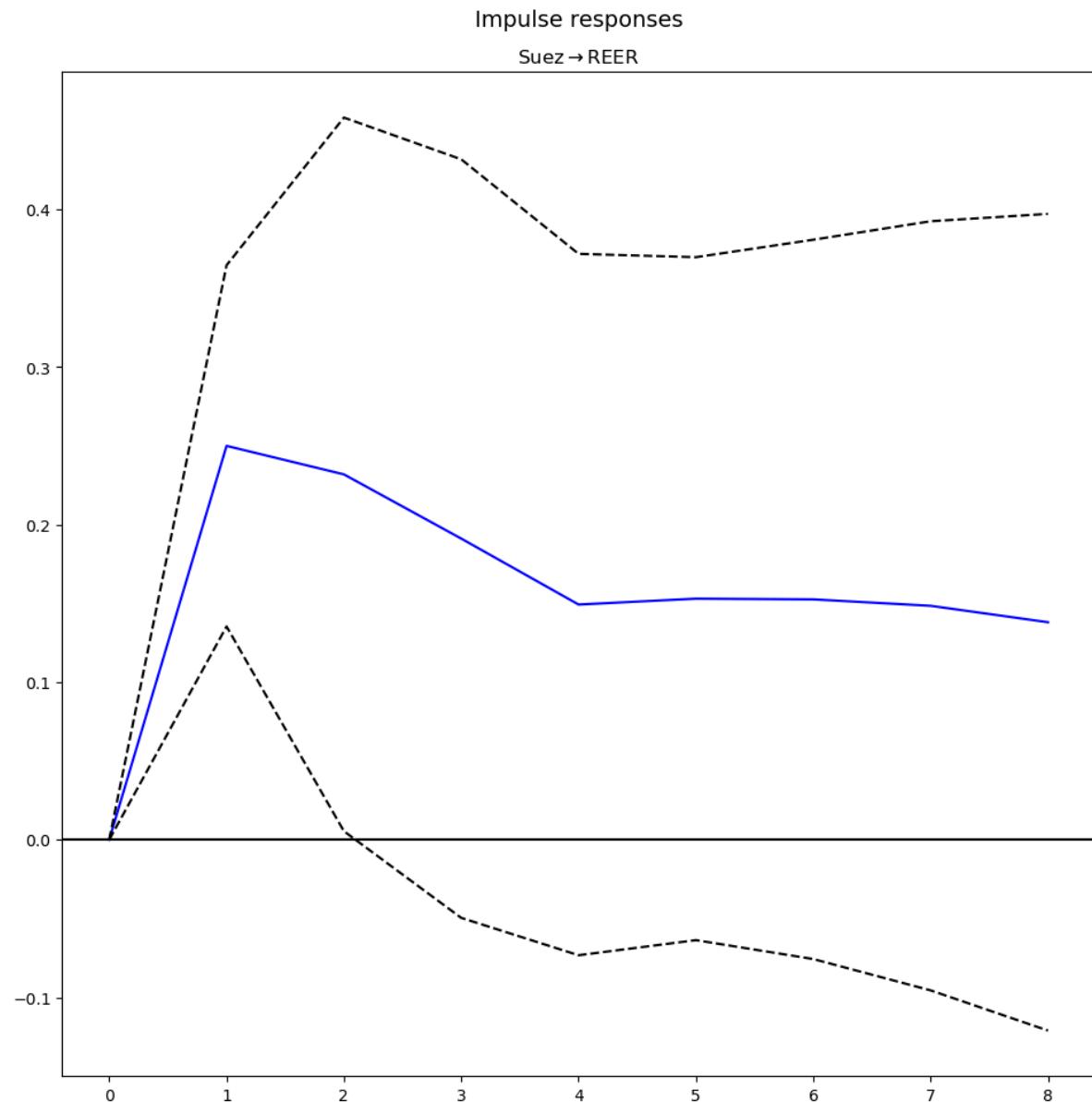


In []:

In []:

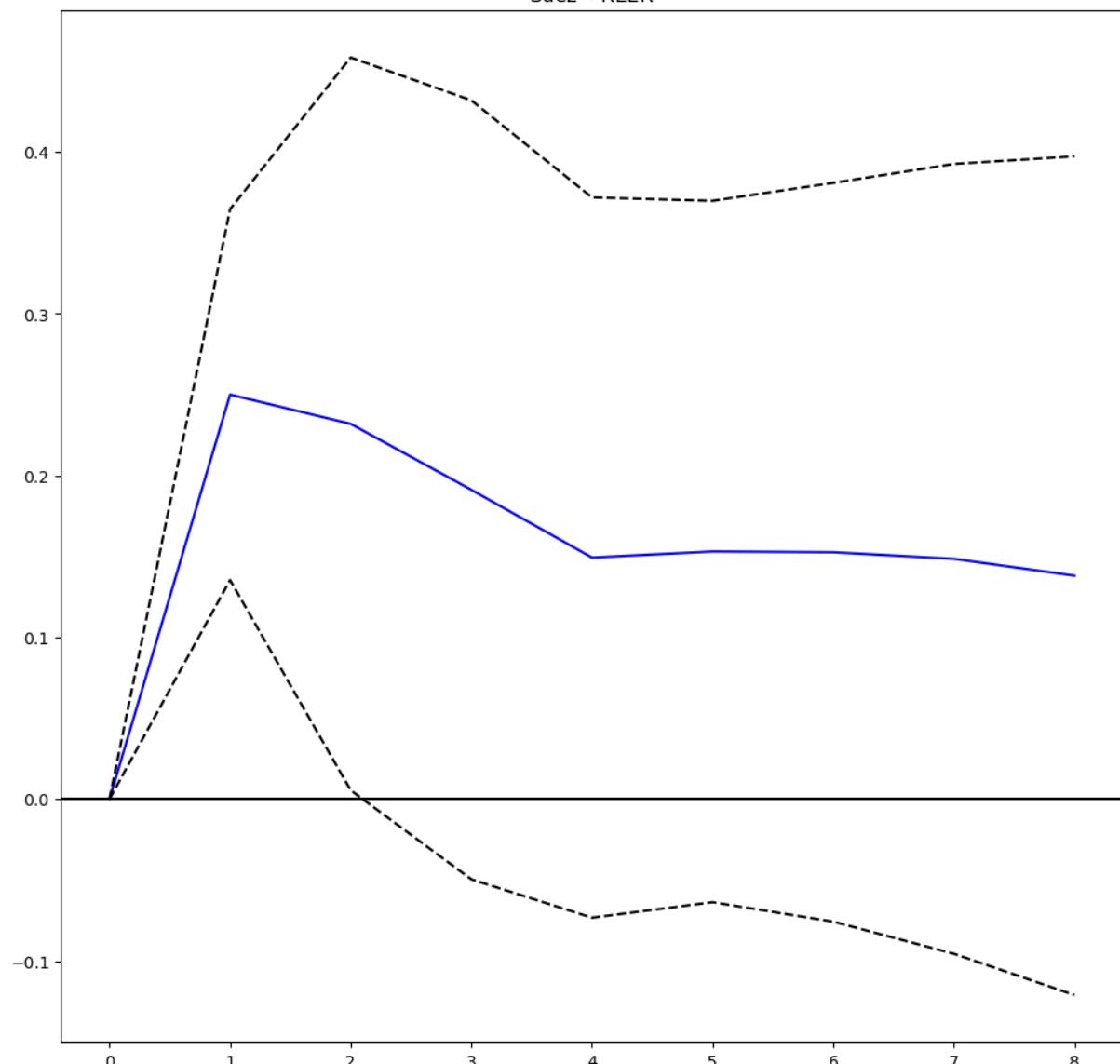
In [433]: `irf.plot(impulse='Suez', response='REER')`

Out[433...]

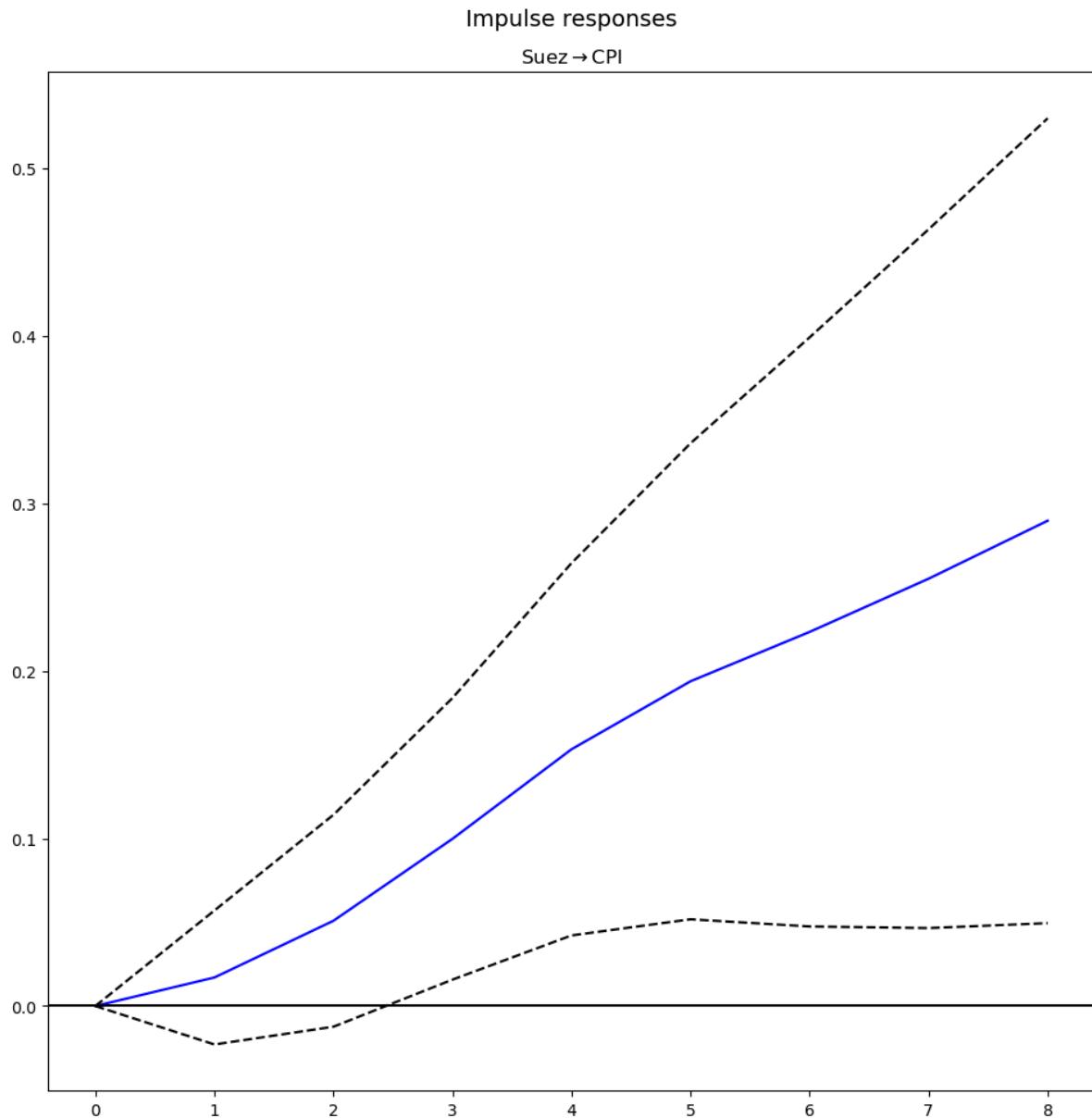


Impulse responses

Suez → REER

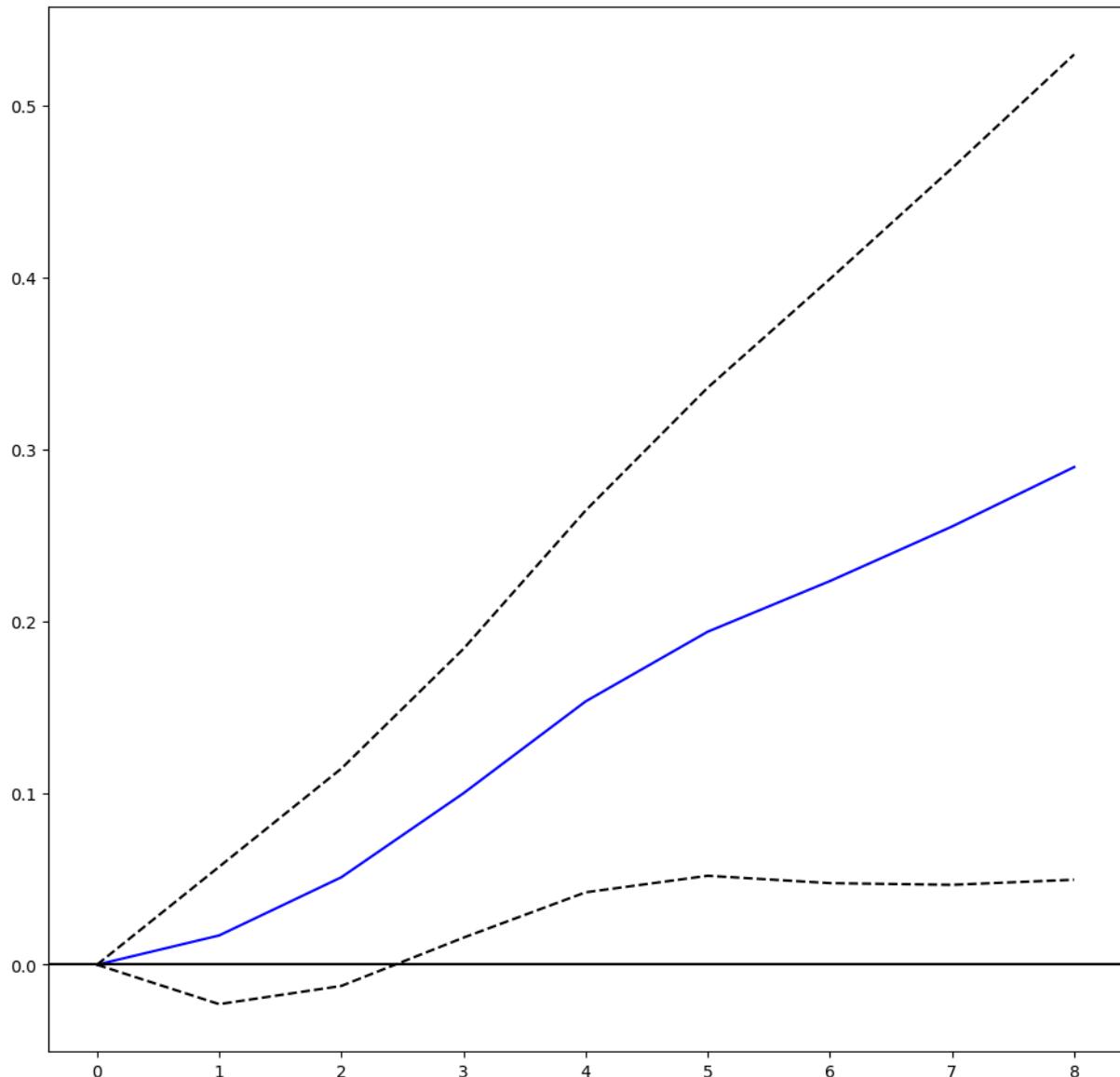
In [434]: `irf.plot(impulse='Suez', response='CPI')`

Out[434...]

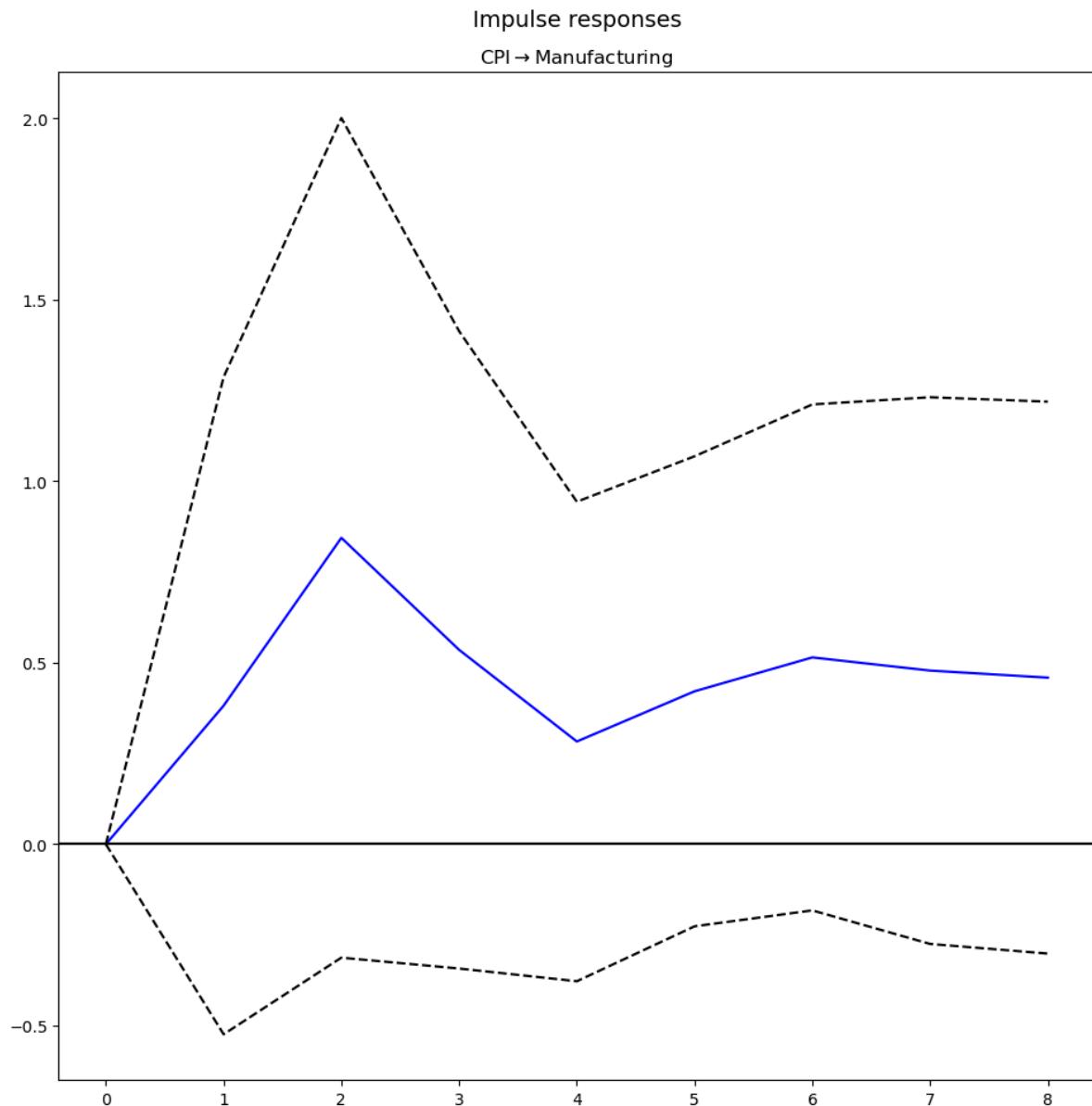


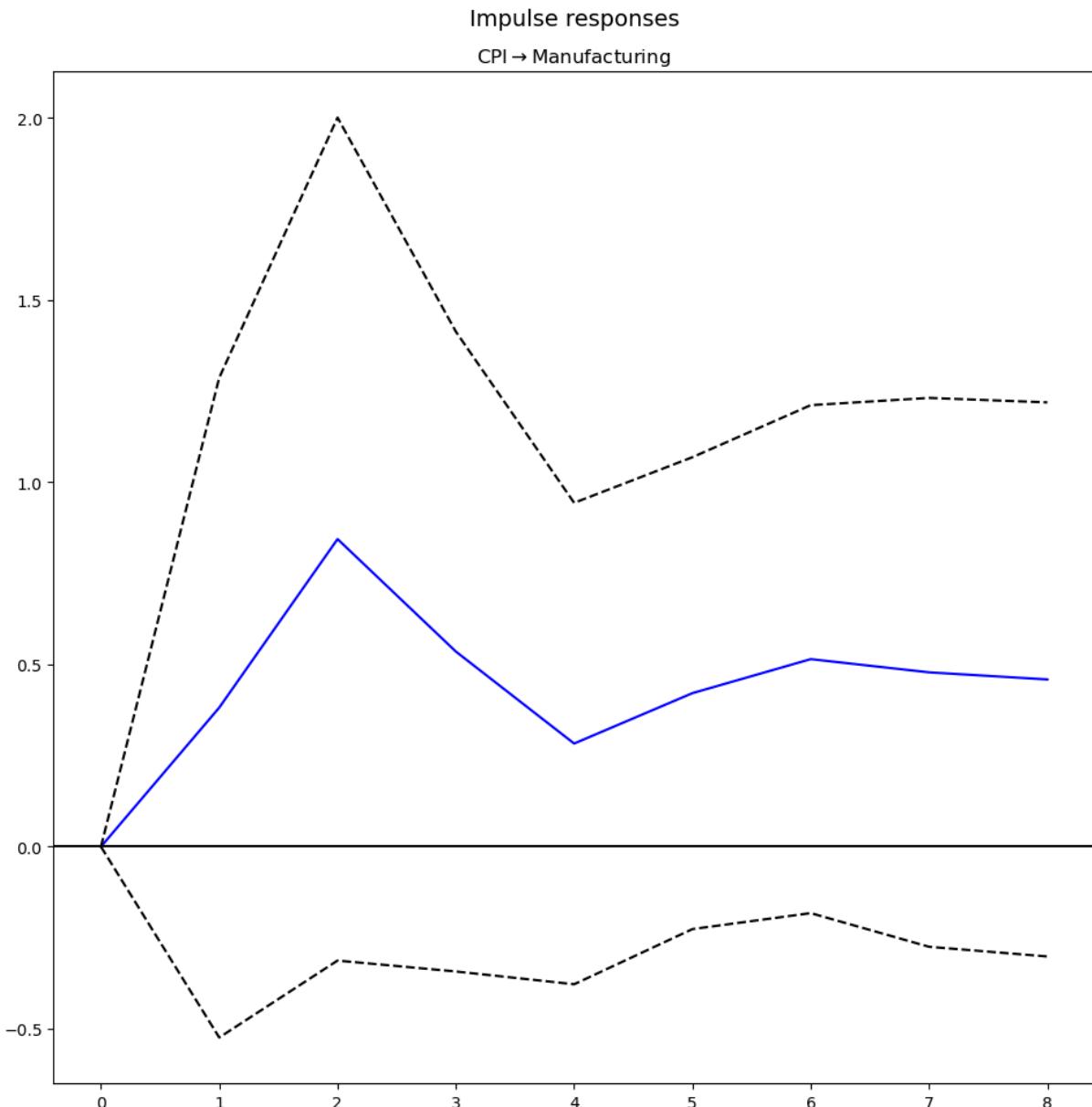
Impulse responses

Suez → CPI

In [435...]: `irf.plot(impulse='CPI', response='Manufacturing')`

Out[435...]





```
In [436...]: 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 [437...]: 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%

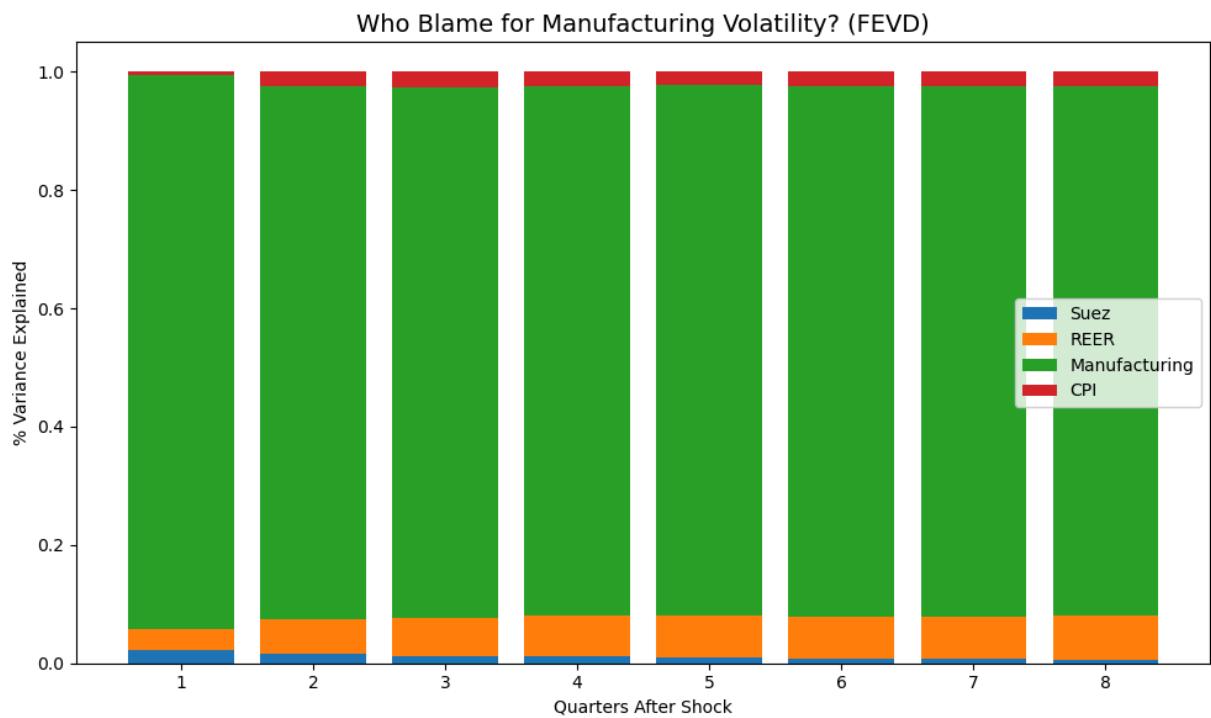
(Interpretation: Suez revenue shocks drive ~30% of currency volatility.)

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 []: