

# Foreign Direct Investment Analysis

```
In [1]: # Importing required Libraries
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
```

```
In [3]: FDI = pd.read_csv('FDI data.csv')
FDI.style.set_caption("Amount in US$ Millions").format(precision=2)
```

Out[3]:

		Sector	2000-01	2001-02	2002-03	2003-04	2004-05	Amount 2005-06
0	METALLURGICAL INDUSTRIES		22.69	14.14	36.61	8.11	200.38	149.13
1	MINING		1.32	6.52	10.06	23.48	9.92	7.40
2	POWER		89.42	757.44	59.11	27.09	43.37	72.69
3	NON-CONVENTIONAL ENERGY		0.00	0.00	1.70	4.14	1.27	1.35
4	COAL PRODUCTION		0.00	0.00	0.00	0.04	0.00	9.14
5	PETROLEUM & NATURAL GAS		9.35	211.07	56.78	80.64	102.78	12.09
6	BOILERS AND STEAM GENERATING PLANTS		0.00	0.00	0.00	0.04	0.54	0.00
7	PRIME MOVER (OTHER THAN ELECTRICAL GENERATORS)		0.00	0.00	0.00	0.00	2.66	0.74
8	ELECTRICAL EQUIPMENTS		79.76	65.76	34.71	73.20	97.40	39.50
9	COMPUTER SOFTWARE & HARDWARE		228.39	419.39	314.24	368.32	527.90	1359.97
10	ELECTRONICS		8.34	12.47	295.88	82.31	88.10	40.91
11	TELECOMMUNICATIONS		177.69	873.23	191.60	86.49	118.33	617.98
12	INFORMATION & BROADCASTING (INCLUDING PRINT MEDIA)		81.50	4.54	36.50	13.72	9.85	55.93
13	AUTOMOBILE INDUSTRY		195.33	235.76	419.96	119.09	121.97	139.93
14	AIR TRANSPORT (INCLUDING AIR FREIGHT)		0.00	0.00	3.80	0.94	4.11	10.27
15	SEA TRANSPORT		2.41	19.81	29.32	21.95	36.95	53.63
16	PORTS		0.00	15.48	2.03	116.36	13.04	0.50
17	RAILWAY RELATED COMPONENTS		0.00	0.00	0.56	2.95	10.75	22.62
18	INDUSTRIAL MACHINERY		5.48	32.04	19.40	3.18	8.89	42.80
19	MACHINE TOOLS		1.42	4.31	14.17	54.51	11.04	23.00
20	AGRICULTURAL MACHINERY		3.64	1.04	13.48	47.54	0.00	92.71
21	EARTH-MOVING MACHINERY		0.00	0.11	13.77	0.01	0.10	50.87
22	MISCELLANEOUS MECHANICAL & ENGINEERING INDUSTRIES		44.50	61.40	45.07	22.73	12.83	51.22
23	COMMERCIAL, OFFICE & HOUSEHOLD EQUIPMENTS		12.20	4.87	2.33	10.41	14.13	25.54
24	MEDICAL AND SURGICAL APPLIANCES		5.42	42.35	21.63	1.97	5.35	1.52
25	INDUSTRIAL INSTRUMENTS		1.01	5.07	1.31	0.30	1.08	0.38

	Sector	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06
26	SCIENTIFIC INSTRUMENTS	8.07	2.33	0.19	0.02	0.03	0.10
27	MATHEMATICAL,SURVEYING AND DRAWING INSTRUMENTS	0.00	0.00	0.00	0.00	0.00	0.00
28	FERTILIZERS	0.00	0.00	16.38	21.58	13.46	4.24
29	CHEMICALS (OTHER THAN FERTILIZERS)	111.14	87.23	128.12	20.24	69.39	387.72
30	PHOTOGRAPHIC RAW FILM AND PAPER	0.00	0.00	0.60	0.24	6.16	0.00
31	DYE-STUFFS	1.05	0.18	0.00	0.43	1.18	0.00
32	DRUGS & PHARMACEUTICALS	35.94	77.94	40.07	108.91	293.36	172.44
33	TEXTILES (INCLUDING DYED,PRINTED)	2.06	5.28	54.18	9.34	43.04	94.33
34	PAPER AND PULP (INCLUDING PAPER PRODUCTS)	60.04	16.70	7.36	7.15	2.70	27.38
35	SUGAR	0.00	0.00	3.97	0.00	2.94	3.00
36	FERMENTATION INDUSTRIES	16.02	11.04	8.07	1.70	139.00	169.83
37	FOOD PROCESSING INDUSTRIES	45.75	219.39	36.88	109.22	43.98	41.74
38	VEGETABLE OILS AND VANASPATI	0.00	0.00	0.00	1.69	9.09	12.31
39	SOAPS, COSMETICS & TOILET PREPARATIONS	0.00	0.00	0.00	0.00	0.89	87.42
40	RUBBER GOODS	0.10	46.39	16.42	6.37	40.06	34.09
41	LEATHER,LEATHER GOODS AND PICKERS	9.75	0.20	0.01	7.55	0.44	1.11
42	GLUE AND GELATIN	0.00	0.94	5.22	0.00	0.00	0.00
43	GLASS	33.87	8.37	44.98	5.24	8.36	0.81
44	CERAMICS	4.03	0.78	0.21	1.47	26.79	5.67
45	CEMENT AND GYPSUM PRODUCTS	67.72	139.90	21.08	9.58	0.16	452.08
46	TIMBER PRODUCTS	0.00	0.05	0.04	0.11	0.07	0.33
47	DEFENCE INDUSTRIES	0.00	0.00	0.00	0.00	0.05	0.00
48	CONSULTANCY SERVICES	4.25	66.22	25.70	46.20	252.42	47.40
49	SERVICES SECTOR (Fin.,Banking,Insurance,Non Fin/Business,Outsourcing,R&D,Courier,Tech. Testing and Analysis, Other)	71.38	187.95	296.34	271.15	456.15	548.61
50	HOSPITAL & DIAGNOSTIC CENTRES	0.00	6.93	29.13	24.08	26.19	32.53
51	EDUCATION	0.00	0.00	0.00	0.19	1.97	3.16
52	HOTEL & TOURISM	13.20	32.12	33.75	49.36	37.01	71.78

	Sector	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06
53	TRADING	11.49	43.27	38.13	31.12	14.22	28.93
54	RETAIL TRADING	0.00	0.00	0.00	0.00	0.00	0.00
55	AGRICULTURE SERVICES	17.52	14.06	11.01	0.59	3.83	9.08
56	DIAMOND,GOLD ORNAMENTS	18.83	0.36	1.30	1.96	8.58	15.52
57	TEA AND COFFEE (PROCESSING & WAREHOUSING COFFEE & RUBBER)	20.23	0.14	0.00	0.32	0.01	1.43
58	PRINTING OF BOOKS (INCLUDING LITHO PRINTING INDUSTRY)	0.00	0.00	6.30	0.00	0.06	9.90
59	COIR	0.00	0.00	0.00	0.00	0.47	0.59
60	CONSTRUCTION (INFRASTRUCTURE) ACTIVITIES	0.00	0.00	0.00	0.00	0.00	0.93
61	CONSTRUCTION DEVELOPMENT: Townships, housing, built-up infrastructure and construction-development projects	24.33	51.75	36.10	47.04	152.06	228.71
62	MISCELLANEOUS INDUSTRIES	832.07	221.37	218.76	235.48	121.83	164.76

In [4]: FDI.columns

Out[4]: Index(['Sector', '2000-01', '2001-02', '2002-03', '2003-04', '2004-05', '2005-06', '2006-07', '2007-08', '2008-09', '2009-10', '2010-11', '2011-12', '2012-13', '2013-14', '2014-15', '2015-16', '2016-17'], dtype='object')

## Columns Details:

Their are two types of Columns

1. First Column is the 'Sector' Column in which there are 63 different Sectors that have received FDI from 2000-01 to 2016-17.
2. Other columns are Year-wise columns in which we can see how much different sectors received investment from 2000-01 to 2016-17.

In [5]: Year = ['2000-01', '2001-02', '2002-03', '2003-04', '2004-05', '2005-06', '2006-07', '2007-08', '2008-09', '2009-10', '2010-11', '2011-12', '2012-13', '2013-14', '2014-15', '2015-16', '2016-17']  
Sectors = ['Sector']

In [5]: #Extracting Detailed Information  
FDI.info()

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 63 entries, 0 to 62
Data columns (total 18 columns):
 #   Column   Non-Null Count  Dtype  
 ---  -- 
 0   Sector    63 non-null    object  
 1   2000-01   63 non-null    float64 
 2   2001-02   63 non-null    float64 
 3   2002-03   63 non-null    float64 
 4   2003-04   63 non-null    float64 
 5   2004-05   63 non-null    float64 
 6   2005-06   63 non-null    float64 
 7   2006-07   63 non-null    float64 
 8   2007-08   63 non-null    float64 
 9   2008-09   63 non-null    float64 
 10  2009-10   63 non-null    float64 
 11  2010-11   63 non-null    float64 
 12  2011-12   63 non-null    float64 
 13  2012-13   63 non-null    float64 
 14  2013-14   63 non-null    float64 
 15  2014-15   63 non-null    float64 
 16  2015-16   63 non-null    float64 
 17  2016-17   63 non-null    float64 
dtypes: float64(17), object(1)
memory usage: 9.0+ KB
```

```
In [6]: #Checking the null Values
FDI.isnull().sum()
```

```
Out[6]: Sector      0
2000-01    0
2001-02    0
2002-03    0
2003-04    0
2004-05    0
2005-06    0
2006-07    0
2007-08    0
2008-09    0
2009-10    0
2010-11    0
2011-12    0
2012-13    0
2013-14    0
2014-15    0
2015-16    0
2016-17    0
dtype: int64
```

```
In [7]: #Creating Average Exchange Rate List :- Reference(Rbi website)
Rates = [45.68,47.69,48.39,45.95,44.93,44.27,45.24,40.26,45.99,
        47.44,45.56,47.92,54.40,60.50,61.14,65.46,67.07]
```

```
In [8]: #Creating a function to Convert FDI's value from USD to INR
def multiply_columns(df, col_list, num):
    for col in col_list:
```

```
        df[col] = df[col] * Rates[col_list.index(col)]/10
    return df
```

```
In [9]: FDI_InUSD=FDI.copy()
FDI_02 = multiply_columns(FDI, Year, Rates)
```

```
In [10]: #FDI INFLOWS (Amount in ₹ Crores)
FDI_02.style.set_caption("FDI INFLOWS (Amount in ₹ Crores)").format(precision=2)
```

Out[10]:

		Sector	2000-01	2001-02	2002-03	2003-04	2004-05	FDI
0	METALLURGICAL INDUSTRIES		103.65	67.43	177.16	37.27	900.31	€
1	MINING		6.03	31.09	48.68	107.89	44.57	
2	POWER		408.47	3612.23	286.03	124.48	194.86	£
3	NON-CONVENTIONAL ENERGY		0.00	0.00	8.23	19.02	5.71	
4	COAL PRODUCTION		0.00	0.00	0.00	0.18	0.00	
5	PETROLEUM & NATURAL GAS		42.71	1006.59	274.76	370.54	461.79	
6	BOILERS AND STEAM GENERATING PLANTS		0.00	0.00	0.00	0.18	2.43	
7	PRIME MOVER (OTHER THAN ELECTRICAL GENERATORS)		0.00	0.00	0.00	0.00	11.95	
8	ELECTRICAL EQUIPMENTS		364.34	313.61	167.96	336.35	437.62	£
9	COMPUTER SOFTWARE & HARDWARE		1043.29	2000.07	1520.61	1692.43	2371.85	£
10	ELECTRONICS		38.10	59.47	1431.76	378.21	395.83	£
11	TELECOMMUNICATIONS		811.69	4164.43	927.15	397.42	531.66	£
12	INFORMATION & BROADCASTING (INCLUDING PRINT MEDIA)		372.29	21.65	176.62	63.04	44.26	£
13	AUTOMOBILE INDUSTRY		892.27	1124.34	2032.19	547.22	548.01	€
14	AIR TRANSPORT (INCLUDING AIR FREIGHT)		0.00	0.00	18.39	4.32	18.47	
15	SEA TRANSPORT		11.01	94.47	141.88	100.86	166.02	£
16	PORTS		0.00	73.82	9.82	534.67	58.59	
17	RAILWAY RELATED COMPONENTS		0.00	0.00	2.71	13.56	48.30	£
18	INDUSTRIAL MACHINERY		25.03	152.80	93.88	14.61	39.94	£
19	MACHINE TOOLS		6.49	20.55	68.57	250.47	49.60	£
20	AGRICULTURAL MACHINERY		16.63	4.96	65.23	218.45	0.00	£
21	EARTH-MOVING MACHINERY		0.00	0.52	66.63	0.05	0.45	£
22	MISCELLANEOUS MECHANICAL & ENGINEERING INDUSTRIES		203.28	292.82	218.09	104.44	57.65	£
23	COMMERCIAL, OFFICE & HOUSEHOLD EQUIPMENTS		55.73	23.23	11.27	47.83	63.49	£
24	MEDICAL AND SURGICAL APPLIANCES		24.76	201.97	104.67	9.05	24.04	
25	INDUSTRIAL INSTRUMENTS		4.61	24.18	6.34	1.38	4.85	

	Sector	2000-01	2001-02	2002-03	2003-04	2004-05	
26	SCIENTIFIC INSTRUMENTS	36.86	11.11	0.92	0.09	0.13	
27	MATHEMATICAL,SURVEYING AND DRAWING INSTRUMENTS	0.00	0.00	0.00	0.00	0.00	
28	FERTILIZERS	0.00	0.00	79.26	99.16	60.48	
29	CHEMICALS (OTHER THAN FERTILIZERS)	507.69	416.00	619.97	93.00	311.77	17
30	PHOTOGRAPHIC RAW FILM AND PAPER	0.00	0.00	2.90	1.10	27.68	
31	DYE-STUFFS	4.80	0.86	0.00	1.98	5.30	
32	DRUGS & PHARMACEUTICALS	164.17	371.70	193.90	500.44	1318.07	7
33	TEXTILES (INCLUDING DYED,PRINTED)	9.41	25.18	262.18	42.92	193.38	2
34	PAPER AND PULP (INCLUDING PAPER PRODUCTS)	274.26	79.64	35.62	32.85	12.13	1
35	SUGAR	0.00	0.00	19.21	0.00	13.21	
36	FERMENTATION INDUSTRIES	73.18	52.65	39.05	7.81	624.53	7
37	FOOD PROCESSING INDUSTRIES	208.99	1046.27	178.46	501.87	197.60	1
38	VEGETABLE OILS AND VANASPATI	0.00	0.00	0.00	7.77	40.84	
39	SOAPS, COSMETICS & TOILET PREPARATIONS	0.00	0.00	0.00	0.00	4.00	3
40	RUBBER GOODS	0.46	221.23	79.46	29.27	179.99	1
41	LEATHER,LEATHER GOODS AND PICKERS	44.54	0.95	0.05	34.69	1.98	
42	GLUE AND GELATIN	0.00	4.48	25.26	0.00	0.00	
43	GLASS	154.72	39.92	217.66	24.08	37.56	
44	CERAMICS	18.41	3.72	1.02	6.75	120.37	
45	CEMENT AND GYPSUM PRODUCTS	309.34	667.18	102.01	44.02	0.72	20
46	TIMBER PRODUCTS	0.00	0.24	0.19	0.51	0.31	
47	DEFENCE INDUSTRIES	0.00	0.00	0.00	0.00	0.22	
48	CONSULTANCY SERVICES	19.41	315.80	124.36	212.29	1134.12	2
49	SERVICES SECTOR (Fin.,Banking,Insurance,Non Fin/Business,Outsourcing,R&D,Courier,Tech. Testing and Analysis, Other)	326.06	896.33	1433.99	1245.93	2049.48	24
50	HOSPITAL & DIAGNOSTIC CENTRES	0.00	33.05	140.96	110.65	117.67	1
51	EDUCATION	0.00	0.00	0.00	0.87	8.85	
52	HOTEL & TOURISM	60.30	153.18	163.32	226.81	166.29	3

	Sector	2000-01	2001-02	2002-03	2003-04	2004-05	
53	TRADING	52.49	206.35	184.51	143.00	63.89	1
54	RETAIL TRADING	0.00	0.00	0.00	0.00	0.00	
55	AGRICULTURE SERVICES	80.03	67.05	53.28	2.71	17.21	
56	DIAMOND,GOLD ORNAMENTS	86.02	1.72	6.29	9.01	38.55	
57	TEA AND COFFEE (PROCESSING & WAREHOUSING COFFEE & RUBBER)	92.41	0.67	0.00	1.47	0.04	
58	PRINTING OF BOOKS (INCLUDING LITHO PRINTING INDUSTRY)	0.00	0.00	30.49	0.00	0.27	
59	COIR	0.00	0.00	0.00	0.00	2.11	
60	CONSTRUCTION (INFRASTRUCTURE) ACTIVITIES	0.00	0.00	0.00	0.00	0.00	
61	CONSTRUCTION DEVELOPMENT: Townships, housing, built-up infrastructure and construction-development projects	111.14	246.80	174.69	216.15	683.21	10
62	MISCELLANEOUS INDUSTRIES	3800.90	1055.71	1058.58	1082.03	547.38	7

In [13]:

```
# Unpivoting melt Dataframe
melt = pd.melt(FDI_InUSD, id_vars = Sectors, value_vars = Year, var_name='Year',
               value_name='FDI(US$ Million)', ignore_index=True)
melt
```

Out[13]:

		Sector	Year	FDI(US\$ Million)
0		METALLURGICAL INDUSTRIES	2000-01	22.69
1		MINING	2000-01	1.32
2		POWER	2000-01	89.42
3		NON-CONVENTIONAL ENERGY	2000-01	0.00
4		COAL PRODUCTION	2000-01	0.00
...		...	...	...
1066	PRINTING OF BOOKS (INCLUDING LITHO PRINTING IN...		2016-17	53.17
1067		COIR	2016-17	0.00
1068	CONSTRUCTION (INFRASTRUCTURE) ACTIVITIES		2016-17	1860.73
1069	CONSTRUCTION DEVELOPMENT: Townships, housing, ...		2016-17	105.14
1070	MISCELLANEOUS INDUSTRIES		2016-17	296.40

1071 rows × 3 columns

In [16]:

```
#Unpivoting melt01 Dataframe
melt01 = pd.melt(FDI_02, id_vars = Sectors, value_vars = Year, var_name='Year',
                 value_name='FDI(₹ Crores)', ignore_index=True)
melt01=round(melt01,2)
melt01
```

Out[16]:

		Sector	Year	FDI(₹ Crores)
0		METALLURGICAL INDUSTRIES	2000-01	103.65
1		MINING	2000-01	6.03
2		POWER	2000-01	408.47
3		NON-CONVENTIONAL ENERGY	2000-01	0.00
4		COAL PRODUCTION	2000-01	0.00
...		...	...	...
1066	PRINTING OF BOOKS (INCLUDING LITHO PRINTING IN...		2016-17	356.61
1067		COIR	2016-17	0.00
1068	CONSTRUCTION (INFRASTRUCTURE) ACTIVITIES		2016-17	12479.92
1069	CONSTRUCTION DEVELOPMENT: Townships, housing, ...		2016-17	705.17
1070	MISCELLANEOUS INDUSTRIES		2016-17	1987.95

1071 rows × 3 columns

```
In [17]: # Merging the FDI(US$ Million) column of melt Dataframe into melt01 Dataframe
Merged=melt01.merge(melt,how='left')
Merged
```

Out[17]:

		Sector	Year	FDI(₹ Crores)	FDI(US\$ Million)
0		METALLURGICAL INDUSTRIES	2000-01	103.65	22.69
1		MINING	2000-01	6.03	1.32
2		POWER	2000-01	408.47	89.42
3		NON-CONVENTIONAL ENERGY	2000-01	0.00	0.00
4		COAL PRODUCTION	2000-01	0.00	0.00
...		...	...	...	...
1066	PRINTING OF BOOKS (INCLUDING LITHO PRINTING IN...		2016-17	356.61	53.17
1067		COIR	2016-17	0.00	0.00
1068	CONSTRUCTION (INFRASTRUCTURE) ACTIVITIES		2016-17	12479.92	1860.73
1069	CONSTRUCTION DEVELOPMENT: Townships, housing, ...		2016-17	705.17	105.14
1070	MISCELLANEOUS INDUSTRIES		2016-17	1987.95	296.40

1071 rows × 4 columns

```
In [18]: #Sorting the Sectors and Year columns
Sorted = Merged.sort_values(['Sector','Year'], ignore_index=True)
Sorted
```

Out[18]:

	Sector	Year	FDI(₹ Crores)	FDI(US\$ Million)
0	AGRICULTURAL MACHINERY	2000-01	16.63	3.64
1	AGRICULTURAL MACHINERY	2001-02	4.96	1.04
2	AGRICULTURAL MACHINERY	2002-03	65.23	13.48
3	AGRICULTURAL MACHINERY	2003-04	218.45	47.54
4	AGRICULTURAL MACHINERY	2004-05	0.00	0.00
...	...	...	...	...
1066	VEGETABLE OILS AND VANASPATI	2012-13	589.64	108.39
1067	VEGETABLE OILS AND VANASPATI	2013-14	130.38	21.55
1068	VEGETABLE OILS AND VANASPATI	2014-15	906.95	148.34
1069	VEGETABLE OILS AND VANASPATI	2015-16	224.00	34.22
1070	VEGETABLE OILS AND VANASPATI	2016-17	727.37	108.45

1071 rows × 4 columns

In [19]:

```
print("\nStats for Sectors\n", '-'*65, sep=' ')
print(pd.DataFrame(Sorted.groupby('Sector').describe().loc[:, :]).transpose())
```

## Stats for Sectors

Sector		AGRICULTURAL MACHINERY	AGRICULTURE SERVICES	\
FDI(₹ Crores)	count	17.000000	17.000000	
	mean	139.573529	568.894118	
	std	172.900782	1370.805206	
	min	0.000000	2.710000	
	25%	13.270000	53.280000	
	50%	65.230000	200.010000	
	75%	218.450000	512.620000	
	max	519.030000	5798.210000	
FDI(US\$ Million)	count	17.000000	17.000000	
	mean	26.423529	112.985294	
	std	32.712807	289.004756	
	min	0.000000	0.590000	
	25%	2.770000	11.010000	
	50%	13.480000	43.900000	
	75%	47.540000	76.430000	
	max	95.410000	1222.220000	
Sector		AIR TRANSPORT (INCLUDING AIR FREIGHT)	\	
FDI(₹ Crores)	count		17.000000	
	mean		334.025294	
	std		561.472152	
	min		0.000000	
	25%		18.470000	
	50%		149.610000	
	75%		398.900000	
	max		2364.740000	
FDI(US\$ Million)	count		17.000000	
	mean		59.672941	
	std		87.551007	
	min		0.000000	
	25%		4.110000	
	50%		31.220000	
	75%		74.560000	
	max		361.250000	
Sector		AUTOMOBILE INDUSTRY	\	
FDI(₹ Crores)	count	17.000000		
	mean	5448.391765		
	std	5302.601717		
	min	547.220000		
	25%	1124.340000		
	50%	4422.970000		
	75%	8362.800000		
	max	16664.560000		
FDI(US\$ Million)	count	17.000000		
	mean	980.818824		
	std	826.274049		
	min	119.090000		
	25%	235.760000		
	50%	922.990000		
	75%	1517.280000		
	max	2725.640000		

Sector		BOILERS AND STEAM GENERATING PLANTS	\
FDI(₹ Crores)	count	17.000000	
	mean	69.850588	
	std	146.562122	
	min	0.000000	
	25%	0.000000	
	50%	2.870000	
	75%	18.790000	
	max	510.000000	
FDI(US\$ Million)	count	17.000000	
	mean	11.479412	
	std	22.610923	
	min	0.000000	
	25%	0.000000	
	50%	0.630000	
	75%	3.960000	
	max	77.910000	
Sector		CEMENT AND GYPSUM PRODUCTS	CERAMICS \
FDI(₹ Crores)	count	17.000000	17.000000
	mean	1721.744706	225.081765
	std	3397.785201	307.072289
	min	0.720000	1.020000
	25%	102.010000	23.560000
	50%	667.180000	54.670000
	75%	1536.760000	335.220000
	max	14286.580000	912.580000
FDI(US\$ Million)	count	17.000000	17.000000
	mean	308.190000	44.712941
	std	519.880859	61.892458
	min	0.160000	0.210000
	25%	19.690000	4.330000
	50%	139.900000	12.000000
	75%	267.900000	51.210000
	max	2130.100000	198.430000
Sector		CHEMICALS (OTHER THAN FERTILIZERS)	COAL PRODUCTION \
FDI(₹ Crores)	count	17.000000	17.000000
	mean	4119.481176	7.184118
	std	5276.194267	16.450240
	min	93.000000	0.000000
	25%	619.970000	0.000000
	50%	1716.440000	0.000000
	75%	4759.900000	1.010000
	max	19363.080000	56.690000
FDI(US\$ Million)	count	17.000000	17.000000
	mean	781.946471	1.631765
	std	1051.388076	3.929237
	min	20.240000	0.000000
	25%	128.120000	0.000000
	50%	365.940000	0.000000
	75%	786.760000	0.220000
	max	4040.710000	14.080000
Sector		COIR	... SEA TRANSPORT \
FDI(₹ Crores)	count	17.000000	17.000000

	mean	1.272941	...	907.107647
	std	2.135075	...	1302.401223
	min	0.000000	...	11.010000
	25%	0.000000	...	141.880000
	50%	0.180000	...	328.080000
	75%	2.110000	...	1351.330000
	max	8.320000	...	4930.050000
FDI(US\$ Million)	count	17.000000	...	17.000000
	mean	0.238824	...	159.562941
	std	0.365699	...	197.774282
	min	0.000000	...	2.410000
	25%	0.000000	...	29.320000
	50%	0.040000	...	64.620000
	75%	0.470000	...	284.850000
	max	1.360000	...	735.060000

Sector	SERVICES SECTOR (Fin., Banking, Insurance, Non Fin/Business, Outourcing, R&D, Courier, Tech. Testing and Analysis, Other) \			
FDI(₹ Crores)	count		17.000000	
	mean		18608.681765	
	std		16698.651422	
	min		326.060000	
	25%		2049.480000	
	50%		19803.970000	
	75%		27166.090000	
	max		58244.060000	
FDI(US\$ Million)	count		17.000000	
	mean		3498.617059	
	std		2831.889810	
	min		71.380000	
	25%		456.150000	
	50%		4174.530000	
	75%		5215.980000	
	max		8684.070000	

Sector	SOAPs, COSMETICS & TOILET PREPARATIONS			SUGAR \
FDI(₹ Crores)	count		17.000000	17.000000
	mean		393.616471	72.420000
	std		450.163526	166.075304
	min		0.000000	0.000000
	25%		4.000000	0.770000
	50%		116.610000	19.210000
	75%		656.060000	44.560000
	max		1265.080000	692.890000
FDI(US\$ Million)	count		17.000000	17.000000
	mean		70.818235	12.025294
	std		78.330885	25.257412
	min		0.000000	0.000000
	25%		0.890000	0.170000
	50%		24.580000	3.970000
	75%		108.440000	10.070000
	max		222.080000	105.850000

Sector	TEA AND COFFEE (PROCESSING & WAREHOUSING COFFEE & RUBBER) \		
FDI(₹ Crores)	count		17.000000
	mean		30.460588

		std	44.958731
		min	0.000000
		25%	1.470000
		50%	10.730000
		75%	35.450000
		max	170.530000
FDI(US\$ Million)	count		17.000000
		mean	6.542353
		std	10.001876
		min	0.000000
		25%	0.320000
		50%	1.600000
		75%	6.200000
		max	37.080000
Sector		TELECOMMUNICATIONS	TEXTILES ( INCLUDING DYED, PRINTED ) \
FDI(₹ Crores)	count	17.000000	17.000000
		mean	7703.884706
		std	9103.589012
		min	397.420000
		25%	1653.050000
		50%	5075.580000
		75%	9570.770000
		max	37315.670000
FDI(US\$ Million)	count	17.000000	17.000000
		mean	1408.588824
		std	1412.295111
		min	86.490000
		25%	303.870000
		50%	1260.700000
		75%	1997.240000
		max	5563.690000
Sector		TIMBER PRODUCTS	TRADING \
FDI(₹ Crores)	count	17.000000	17.000000
		mean	53.154706
		std	4969.872353
		min	90.558838
		25%	7331.204739
		50%	0.000000
		75%	52.490000
		max	0.310000
FDI(US\$ Million)	count	17.000000	184.510000
		mean	7.200000
		std	2269.070000
		min	54.840000
		25%	3904.830000
		50%	348.050000
		75%	25171.460000
		max	
FDI(US\$ Million)	count	17.000000	17.000000
		mean	9.275294
		std	835.934118
		min	14.763112
		25%	1118.499035
		50%	0.000000
		75%	11.490000
		max	0.070000
			38.130000
			1.580000
			498.040000
			10.230000
			737.950000
			53.170000
			3845.320000
Sector		VEGETABLE OILS AND VANASPATI	
FDI(₹ Crores)	count	17.000000	
		mean	227.364706
		std	275.365623
		min	0.000000

```
25%           7.770000
50%          130.380000
75%          311.580000
max          906.950000
FDI(US$ Million) count      17.000000
                           mean      41.029412
                           std       45.645703
                           min       0.000000
                           25%      1.690000
                           50%      21.550000
                           75%      65.020000
                           max      148.340000
```

[16 rows x 63 columns]

```
In [20]: #Grouping by Sector column to find Total FDI Inflow per Sector from FY2000-01 to FY
Sectorwise_fdi = Sorted.groupby('Sector').sum()
Sectorwise_fdi.sort_values(by='FDI(US$ Million)', ascending=False)
```

Out[20]:

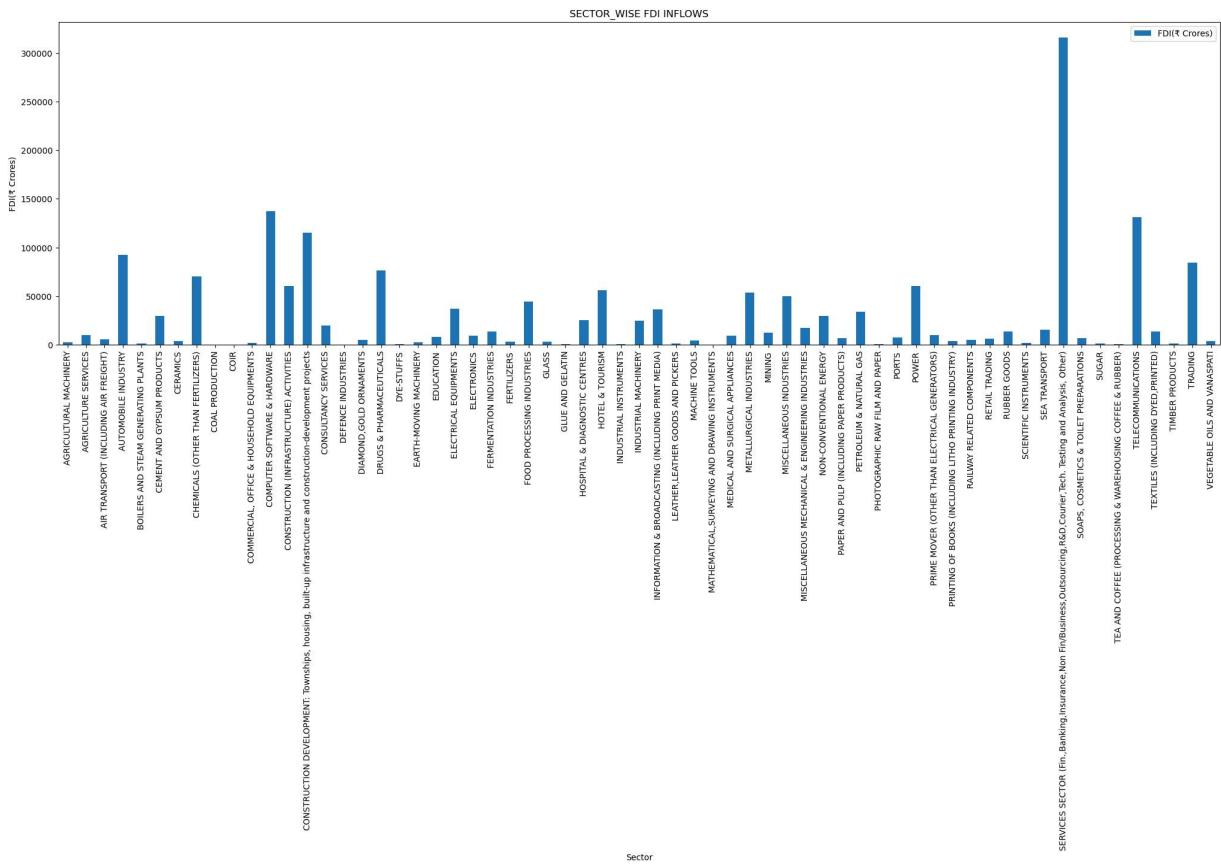
Sector	Year	FDI(₹ Crores)	FDI(US\$ Million)
<b>SERVICES SECTOR (Fin.,Banking,Insurance,Non Fin/Business,Outsourcing,R&amp;D,Courier,Tech. Testing and Analysis, Other)</b>	2000-012001-022002-032003-042004-052005-062006...	316347.59	59476.49
<b>COMPUTER SOFTWARE &amp; HARDWARE</b>	2000-012001-022002-032003-042004-052005-062006...	137276.82	24669.49
<b>CONSTRUCTION DEVELOPMENT: Townships, housing, built-up infrastructure and construction-development projects</b>	2000-012001-022002-032003-042004-052005-062006...	115185.97	24293.09
<b>TELECOMMUNICATIONS</b>	2000-012001-022002-032003-042004-052005-062006...	130966.04	23946.01
<b>AUTOMOBILE INDUSTRY</b>	2000-012001-022002-032003-042004-052005-062006...	92622.66	16673.92
...			
<b>PHOTOGRAPHIC RAW FILM AND PAPER</b>	2000-012001-022002-032003-042004-052005-062006...	278.37	67.28
<b>COAL PRODUCTION</b>	2000-012001-022002-032003-042004-052005-062006...	122.13	27.74
<b>MATHEMATICAL,SURVEYING AND DRAWING INSTRUMENTS</b>	2000-012001-022002-	41.61	7.98

Sector	Year	FDI(₹ Crores)	FDI(US\$ Million)
	032003-		
	042004-		
	052005-		
	062006...		
	2000-012001-		
	022002-		
<b>DEFENCE INDUSTRIES</b>	032003-	26.09	5.12
	042004-		
	052005-		
	062006...		
	2000-012001-		
	022002-		
<b>COIR</b>	032003-	21.64	4.06
	042004-		
	052005-		
	062006...		

63 rows × 3 columns

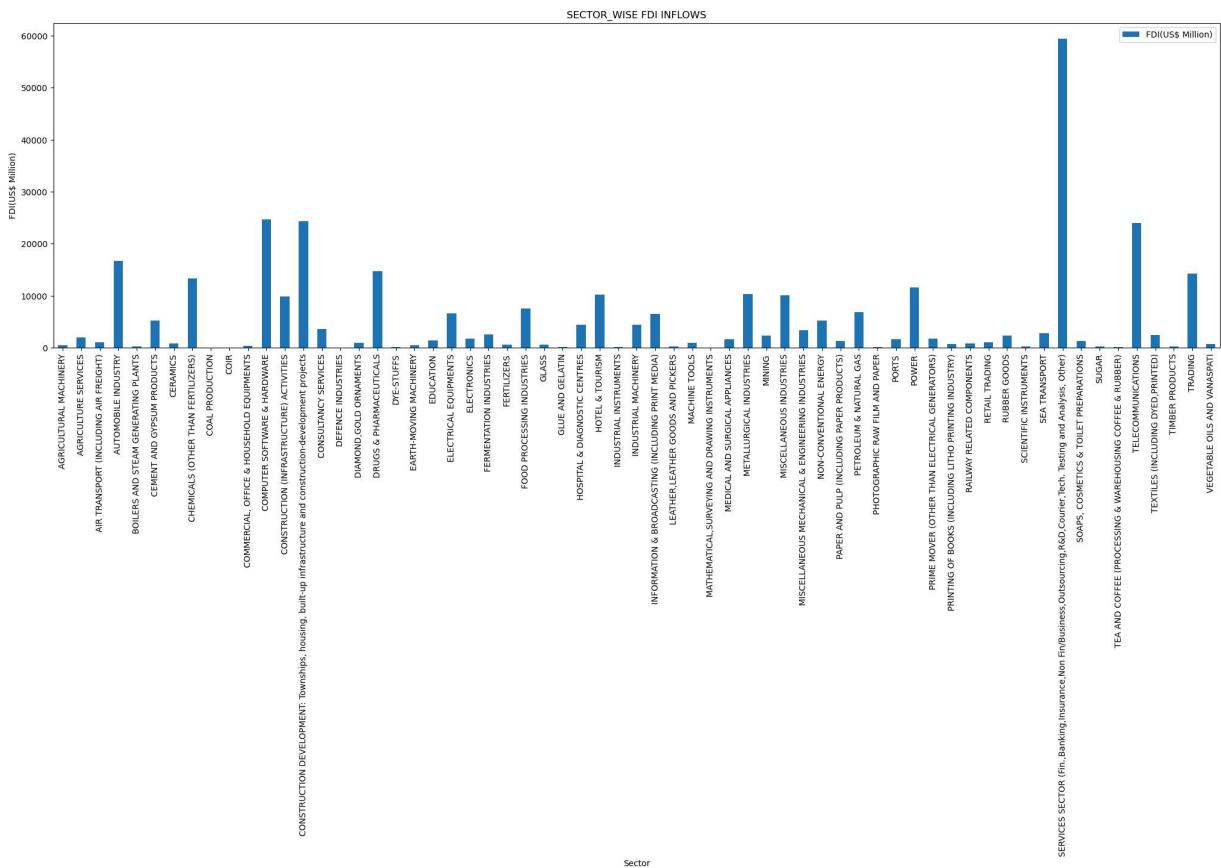
## Visualisation:

```
In [21]: Sectorwise_fdi.plot(kind='bar',y='FDI(₹ Crores)',figsize = (25,7), legend= True, ti
Out[21]: <Axes: title={'center': 'SECTOR_WISE FDI INFLOWS'}, xlabel='Sector', ylabel='FDI(₹
Crores)'>
```



```
In [22]: Sectorwise_fdi.plot(kind='bar',y='FDI(US$ Million)',figsize = (25,7), legend= True,
```

```
Out[22]: <Axes: title={'center': 'SECTOR_WISE FDI INFLOWS'}, xlabel='Sector', ylabel='FDI(U S$ Million)'>
```



```
In [23]: #Top 10 and bottom 10 sectors
```

```
Top_10_Sectors = Sectorwise_fdi.nlargest(10,['FDI(₹ Crores)'])
```

```
In [24]: #Calculating percentage-wise FDI share among top 10 sectors and among all sectors  
Total_fdi = round(melt01['FDI(₹ Crores)'].sum(),2)  
Sum = Top_10_Sectors['FDI(₹ Crores)'].sum()  
Top_10_Sectors['In %age'] = round(Top_10_Sectors['FDI(₹ Crores)']/Sum*100,2)  
Top_10_Sectors['%age to Total Inflows'] = round((Top_10_Sectors['FDI(₹ Crores)']/To  
Top_10_Sectors
```

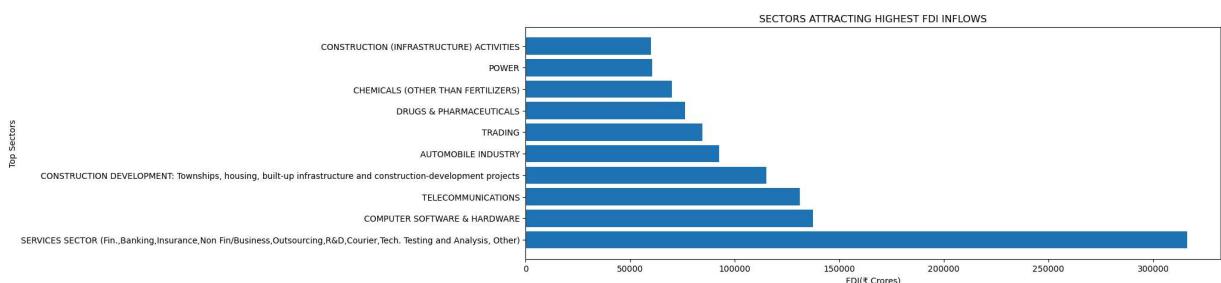
Out[24]:

Sector	Year	FDI(₹ Crores)	FDI(US\$ Million)	In %age	%age to Total Inflows
<b>SERVICES SECTOR</b> <b>(Fin., Banking, Insurance, Non Fin/Business, Outsourcing, R&amp;D, Courier, Tech. Testing and Analysis, Other)</b>	2000-012001-022002-032003-042004-052005-062006...	316347.59	59476.49	27.66	17.65
<b>COMPUTER SOFTWARE &amp; HARDWARE</b>	2000-012001-022002-032003-042004-052005-062006...	137276.82	24669.49	12.00	7.66
<b>TELECOMMUNICATIONS</b>	2000-012001-022002-032003-042004-052005-062006...	130966.04	23946.01	11.45	7.31
<b>CONSTRUCTION DEVELOPMENT:</b> <b>Townships, housing, built-up infrastructure and construction-development projects</b>	2000-012001-022002-032003-042004-052005-062006...	115185.97	24293.09	10.07	6.43
<b>AUTOMOBILE INDUSTRY</b>	2000-012001-022002-032003-042004-052005-062006...	92622.66	16673.92	8.10	5.17
<b>TRADING</b>	2000-012001-022002-032003-042004-052005-062006...	84487.83	14210.88	7.39	4.72
<b>DRUGS &amp; PHARMACEUTICALS</b>	2000-012001-	76377.64	14706.90	6.68	4.26

Sector	Year	FDI(₹ Crores)	FDI(US\$ Million)	In %age	%age to Total Inflows
	022002-				
	032003-				
	042004-				
	052005-				
	062006...				
<b>CHEMICALS (OTHER THAN FERTILIZERS)</b>	2000-				
	012001-				
	022002-				
	032003-	70031.18	13293.09	6.12	3.91
	042004-				
	052005-				
	062006...				
<b>POWER</b>	2000-				
	012001-				
	022002-				
	032003-	60397.97	11589.13	5.28	3.37
	042004-				
	052005-				
	062006...				
<b>CONSTRUCTION (INFRASTRUCTURE) ACTIVITIES</b>	2000-				
	012001-				
	022002-				
	032003-	60099.59	9817.47	5.25	3.35
	042004-				
	052005-				
	062006...				

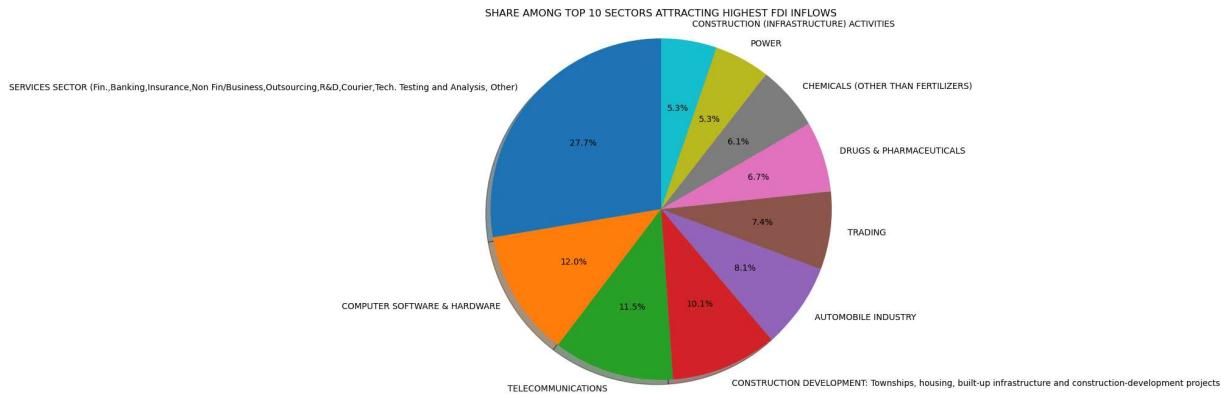
In [25]: *##Creating bar chart to visualise Total FDI inflow in top 10 sectors using Matplotlib*

```
plt.figure(figsize=(15,5))
plt.barh(Top_10_Sectors.index,Top_10_Sectors['FDI(₹ Crores)'])
plt.title('SECTORS ATTRACTING HIGHEST FDI INFLOWS')
plt.xlabel('FDI(₹ Crores)')
plt.ylabel('Top Sectors')
plt.show()
```



```
In [26]: #Creating pie chart to visualise percentage share of FDI among top 10 sectors using
```

```
plt.figure(figsize=(20,8))
plt.pie(Top_10_Sectors['FDI(₹ Crores)'],labels=Top_10_Sectors.index,autopct='%.1f%'
plt.axis('equal')
plt.title('SHARE AMONG TOP 10 SECTORS ATTRACTING HIGHEST FDI INFLOWS ')
plt.show()
```



From the above Chart, we can understand that Service Sector Managed to Attract highest FDI which was ₹316347.59Cr greater than any other Sector and among top 10 Sectors it has 27.7% share and among all it has 17.65%.

## BOTTOM 5 SECTORS

```
In [27]: #Calculating share among Bottom sectors and as a whole
```

```
Bottom_5_Sectors = Sectorwise_fdi.nsmallest(5,['FDI(₹ Crores)'])
Sum = Bottom_5_Sectors['FDI(₹ Crores)'].sum()
Bottom_5_Sectors['In %age'] = round(Bottom_5_Sectors['FDI(₹ Crores)']/Sum*100,2)
Bottom_5_Sectors['%age to Total Inflows'] = round((Bottom_5_Sectors['FDI(₹ Crores)']
Bottom_5_Sectors
```

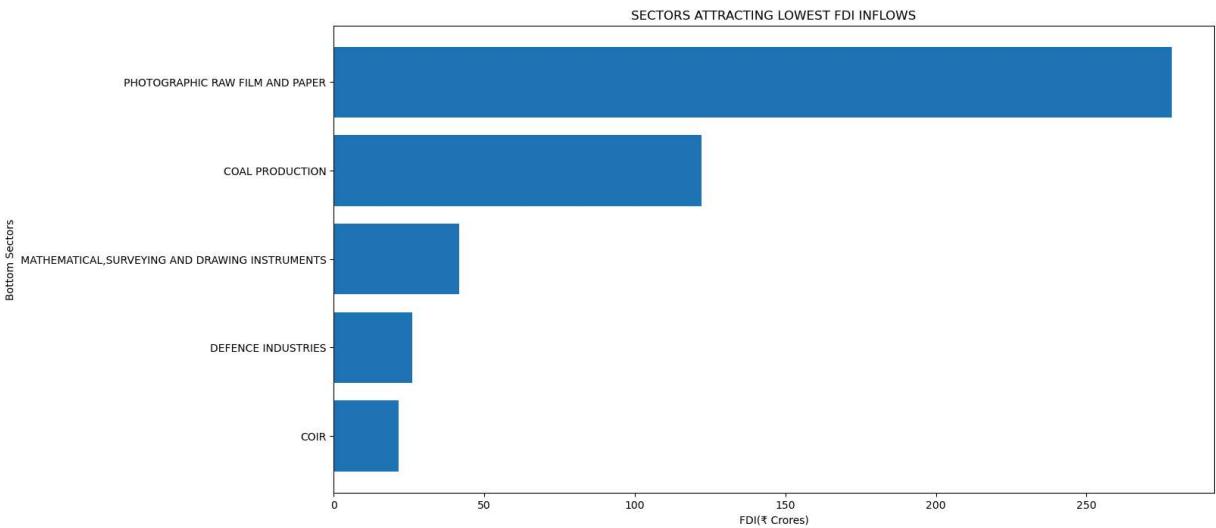
Out[27]:

Sector	Year	FDI(₹ Crores)	FDI(US\$ Million)	In %age	%age to Total Inflows
<b>COIR</b>	2000-012001-022002-032003-042004-052005-062006...	21.64	4.06	4.42	0.001
<b>DEFENCE INDUSTRIES</b>	2000-012001-022002-032003-042004-052005-062006...	26.09	5.12	5.33	0.001
<b>MATHEMATICAL,SURVEYING AND DRAWING INSTRUMENTS</b>	2000-012001-022002-032003-042004-052005-062006...	41.61	7.98	8.49	0.002
<b>COAL PRODUCTION</b>	2000-012001-022002-032003-042004-052005-062006...	122.13	27.74	24.93	0.007
<b>PHOTOGRAPHIC RAW FILM AND PAPER</b>	2000-012001-022002-032003-042004-052005-062006...	278.37	67.28	56.83	0.016

## Visualisation:

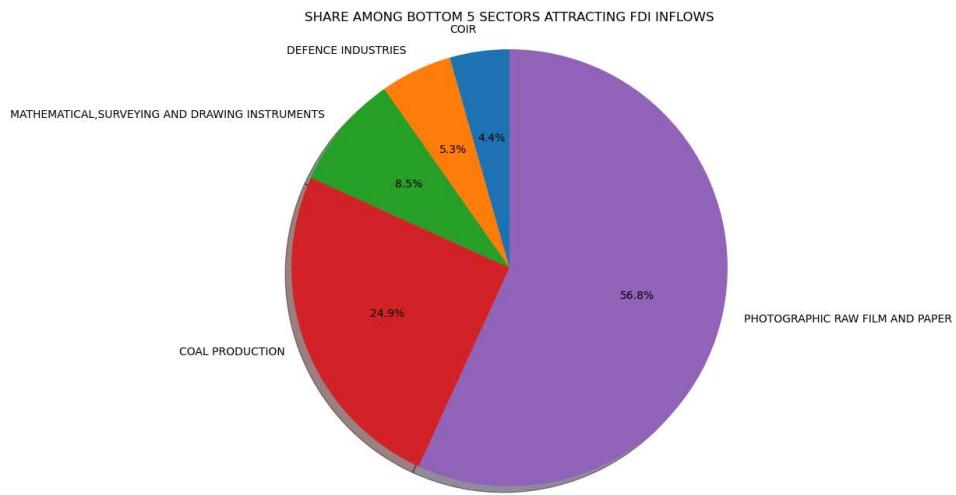
In [28]: #Creating bar chart to visualise Total FDI inflow in Bottom 5 sectors using Matplotlib

```
plt.figure(figsize=(15,8))
plt.barh(Bottom_5_Sectors.index,Bottom_5_Sectors['FDI(₹ Crores)'])
plt.title('SECTORS ATTRACTING LOWEST FDI INFLOWS')
plt.xlabel('FDI(₹ Crores)')
plt.ylabel('Bottom Sectors')
plt.show()
```



```
In [33]: #Creating pie chart to visualise percentage share of FDI among top 10 sectors using

plt.figure(figsize=(20,8))
plt.pie(Bottom_5_Sectors['FDI(₹ Crores)'],labels=Bottom_5_Sectors.index,autopct='%1.1f%%')
plt.axis('equal')
plt.title('SHARE AMONG BOTTOM 5 SECTORS ATTRACTING FDI INFLOWS')
plt.show()
```



Among Bottom 5 sectors, Coir has the lowest FDI of ₹21.64Cr having only 4.4% share among bottom 5 sectors and among all it has only 0.001208%.

```
In [35]: ## Year wise FDI inflow
#Creating Dataframe
melt02 = melt01[['Year', 'FDI(₹ Crores)']]
melt02=round(melt02.groupby('Year').sum(),2)
```

```
In [36]: #reating new column of % growth over previous year
melt02['% growth over previous year'] = round(melt02.pct_change()*100,2)
```

```
In [29]: print('\n'*8+"Details on Variation of FDI INFLOW Year-wise"+'*'*8) #Year-wise F
melt02.fillna('-')
```

\*\*\*\*\*Details on Variation of FDI INFLOW Year-wise\*\*\*\*\*

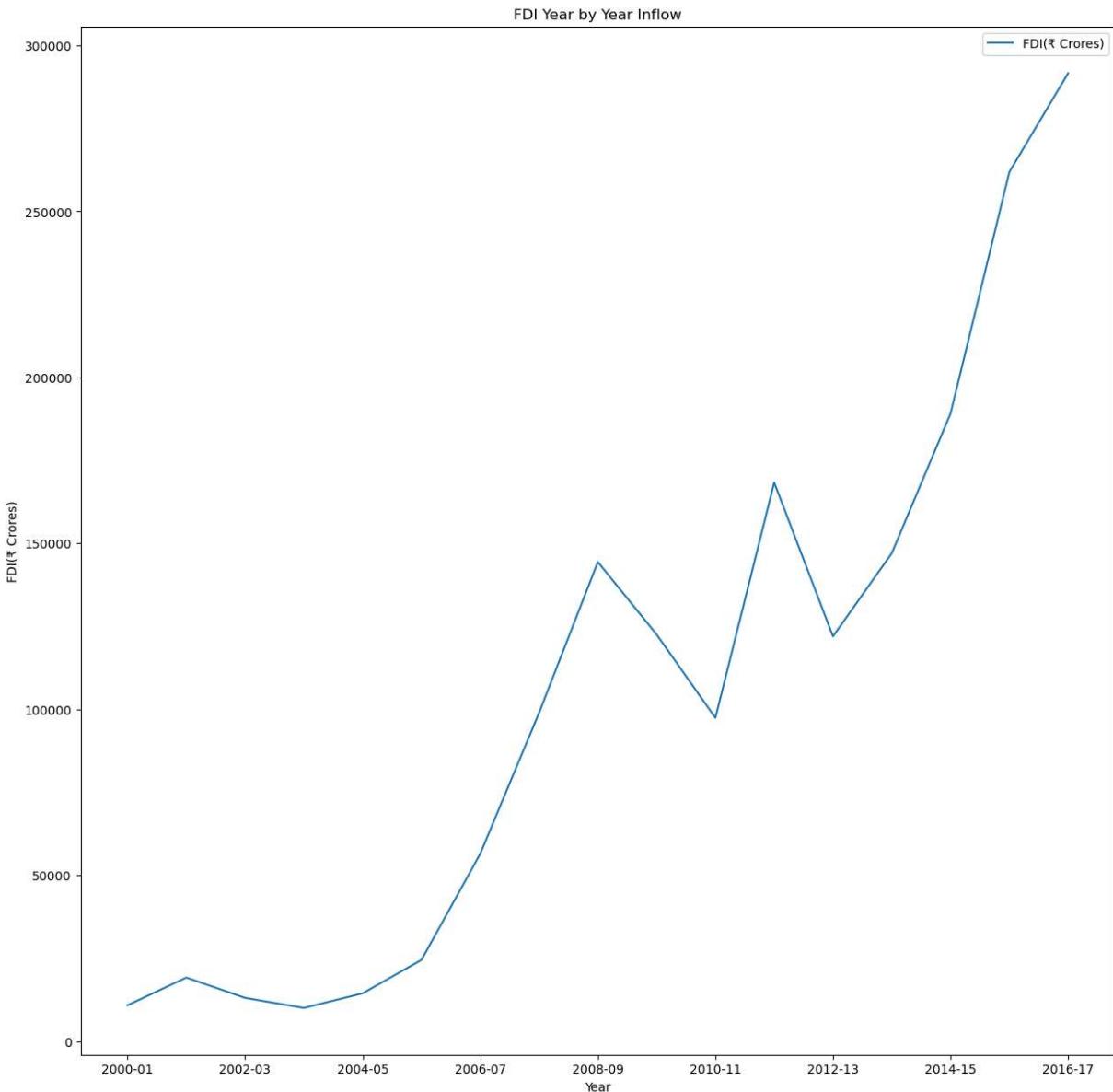
Out[29]:

**FDI(₹ Crores) % growth over previous year**

<b>Year</b>		
<b>2000-01</b>	10865.97	-
<b>2001-02</b>	19208.02	76.77
<b>2002-03</b>	13086.22	-31.87
<b>2003-04</b>	10053.15	-23.18
<b>2004-05</b>	14461.59	43.85
<b>2005-06</b>	24524.51	69.58
<b>2006-07</b>	56512.74	130.43
<b>2007-08</b>	98940.57	75.08
<b>2008-09</b>	144390.03	45.94
<b>2009-10</b>	122558.27	-15.12
<b>2010-11</b>	97421.29	-20.51
<b>2011-12</b>	168298.80	72.75
<b>2012-13</b>	121984.32	-27.52
<b>2013-14</b>	147010.90	20.52
<b>2014-15</b>	189108.88	28.64
<b>2015-16</b>	261846.45	38.46
<b>2016-17</b>	291608.67	11.37

In [37]:

```
#plotting to show Year by Year FDI Inflow
melt02.plot.line(y='FDI(₹ Crores)', figsize=(15,15))
plt.ylabel('FDI(₹ Crores)')
plt.title('FDI Year by Year Inflow')
plt.show()
```



The above graph shows the total amount of FDI inflows in India during the last 17 years i.e. 2000 to 2017.

The FDI inflow from 2000-2001 i.e. ₹10865.97Cr. in 2001-02 it was ₹19208.02Cr. It shows the Good result in the FDI inflows in India. Little bit ups and downs in FDI inflows up to 2005-06, but after that great hike in the year 2007-08 and FDI was ₹98940.57Cr. In 2008-2009 there was a huge investment in FDI in ₹144390.03Cr. But then there was a downfall in Inflow of FDI in two consecutive years 2009-2010 and 2010-2011, with figures 122558.27 and 97421.29 respectively. We can analysis from the graph that in the year 2011-2012 the inflow of FDI was second highest of last 15 years i.e. 168298.80. Year 2012-13 and 2013-14 the FDI inflow fluctuated from 121984.32 to 147010.90respectively. In last Financial Year i.e.2016-2017 the amount of FDI Inflow were ₹291608.67Cr which is the highest FDI inflow in last 17 years.

```
In [38]: Sectorwise_fdi['Year'] = '2000-17' #Creating a new column with year 2000-17 in Sec
```

```
In [39]: Sectorwise_fdi = Sectorwise_fdi[['Year', 'FDI(₹ Crores)', 'FDI(US$ Million)']]
```

```
Sectorwise_fdi['% of Total Inflows'] = (Sectorwise_fdi['FDI(₹ Crores)']/ Sectorwise  
In [40]: Sort_val1 = Sectorwise_fdi.sort_values('FDI(₹ Crores)', ascending=False)  
Sort_val= Sort_val1.style.set_caption("SECTOR-WISE FDI INFLOWS").format(precision=3  
Sort_val
```

Out[40]:

## SECTOR-WISE FDI INFLOWS

Sector	Year	FDI(₹ Crores)	FDI(US\$ Million)	% of Total Inflows
<b>SERVICES SECTOR (Fin.,Banking,Insurance,Non Fin/Business,Outsourcing,R&amp;D,Courier,Tech. Testing and Analysis, Other)</b>	2000-17	316347.590	59476.490	17.655
<b>COMPUTER SOFTWARE &amp; HARDWARE</b>	2000-17	137276.820	24669.490	7.661
<b>TELECOMMUNICATIONS</b>	2000-17	130966.040	23946.010	7.309
<b>CONSTRUCTION DEVELOPMENT: Townships, housing, built-up infrastructure and construction-development projects</b>	2000-17	115185.970	24293.090	6.428
<b>AUTOMOBILE INDUSTRY</b>	2000-17	92622.660	16673.920	5.169
<b>TRADING</b>	2000-17	84487.830	14210.880	4.715
<b>DRUGS &amp; PHARMACEUTICALS</b>	2000-17	76377.640	14706.900	4.262
<b>CHEMICALS (OTHER THAN FERTILIZERS)</b>	2000-17	70031.180	13293.090	3.908
<b>POWER</b>	2000-17	60397.970	11589.130	3.371
<b>CONSTRUCTION (INFRASTRUCTURE) ACTIVITIES</b>	2000-17	60099.590	9817.470	3.354
<b>HOTEL &amp; TOURISM</b>	2000-17	55827.590	10143.460	3.116
<b>METALLURGICAL INDUSTRIES</b>	2000-17	53671.130	10330.540	2.995
<b>MISCELLANEOUS INDUSTRIES</b>	2000-17	50106.590	10043.450	2.796
<b>FOOD PROCESSING INDUSTRIES</b>	2000-17	44155.900	7542.920	2.464
<b>ELECTRICAL EQUIPMENTS</b>	2000-17	36830.030	6567.410	2.055
<b>INFORMATION &amp; BROADCASTING (INCLUDING PRINT MEDIA)</b>	2000-17	36383.980	6493.710	2.030
<b>PETROLEUM &amp; NATURAL GAS</b>	2000-17	33721.150	6856.160	1.882

Sector	Year	FDI(₹ Crores)	FDI(US\$ Million)	% of Total Inflows
<b>NON-CONVENTIONAL ENERGY</b>	2000-17	29592.580	5181.490	1.651
<b>CEMENT AND GYPSUM PRODUCTS</b>	2000-17	29269.660	5239.230	1.633
<b>HOSPITAL &amp; DIAGNOSTIC CENTRES</b>	2000-17	24974.670	4339.490	1.394
<b>INDUSTRIAL MACHINERY</b>	2000-17	24290.750	4393.880	1.356
<b>CONSULTANCY SERVICES</b>	2000-17	19357.980	3617.730	1.080
<b>MISCELLANEOUS MECHANICAL &amp; ENGINEERING INDUSTRIES</b>	2000-17	17215.010	3313.330	0.961
<b>SEA TRANSPORT</b>	2000-17	15420.830	2712.570	0.861
<b>TEXTILES (INCLUDING DYED,PRINTED)</b>	2000-17	13719.010	2471.410	0.766
<b>FERMENTATION INDUSTRIES</b>	2000-17	13512.470	2487.810	0.754
<b>RUBBER GOODS</b>	2000-17	13463.750	2347.020	0.751
<b>MINING</b>	2000-17	12478.770	2271.830	0.696
<b>PRIME MOVER (OTHER THAN ELECTRICAL GENERATORS)</b>	2000-17	9755.430	1738.160	0.544
<b>AGRICULTURE SERVICES</b>	2000-17	9671.200	1920.750	0.540
<b>MEDICAL AND SURGICAL APPLIANCES</b>	2000-17	9196.130	1576.840	0.513
<b>ELECTRONICS</b>	2000-17	8881.750	1719.980	0.496
<b>EDUCATION</b>	2000-17	7943.610	1416.200	0.443
<b>PORTS</b>	2000-17	7017.260	1637.280	0.392
<b>PAPER AND PULP (INCLUDING PAPER PRODUCTS)</b>	2000-17	6801.250	1291.440	0.380

Sector	Year	FDI(₹ Crores)	FDI(US\$ Million)	% of Total Inflows
<b>SOAPS, COSMETICS &amp; TOILET PREPARATIONS</b>	2000-17	6691.480	1203.910	0.373
<b>RETAIL TRADING</b>	2000-17	6304.620	988.570	0.352
<b>AIR TRANSPORT (INCLUDING AIR FREIGHT)</b>	2000-17	5678.430	1014.440	0.317
<b>DIAMOND,GOLD ORNAMENTS</b>	2000-17	4994.490	895.950	0.279
<b>RAILWAY RELATED COMPONENTS</b>	2000-17	4562.790	798.550	0.255
<b>MACHINE TOOLS</b>	2000-17	4482.250	861.830	0.250
<b>VEGETABLE OILS AND VANASPATI</b>	2000-17	3865.200	697.500	0.216
<b>CERAMICS</b>	2000-17	3826.390	760.120	0.214
<b>PRINTING OF BOOKS (INCLUDING LITHO PRINTING INDUSTRY)</b>	2000-17	3552.830	634.660	0.198
<b>FERTILIZERS</b>	2000-17	3058.250	565.690	0.171
<b>GLASS</b>	2000-17	3007.070	551.450	0.168
<b>AGRICULTURAL MACHINERY</b>	2000-17	2372.750	449.200	0.132
<b>EARTH-MOVING MACHINERY</b>	2000-17	2151.830	389.390	0.120
<b>COMMERCIAL, OFFICE &amp; HOUSEHOLD EQUIPMENTS</b>	2000-17	1819.460	353.470	0.102
<b>SCIENTIFIC INSTRUMENTS</b>	2000-17	1523.850	254.930	0.085
<b>SUGAR</b>	2000-17	1231.140	204.430	0.069
<b>BOILERS AND STEAM GENERATING PLANTS</b>	2000-17	1187.460	195.150	0.066
<b>LEATHER,LEATHER GOODS AND PICKERS</b>	2000-17	903.670	167.200	0.050

Sector	Year	FDI(₹ Crores)	FDI(US\$ Million)	% of Total Inflows
<b>TIMBER PRODUCTS</b>	2000-17	903.630	157.680	0.050
<b>GLUE AND GELATIN</b>	2000-17	818.210	128.390	0.046
<b>TEA AND COFFEE (PROCESSING &amp; WAREHOUSING COFFEE &amp; RUBBER)</b>	2000-17	517.830	111.220	0.029
<b>DYE-STUFFS</b>	2000-17	515.910	88.400	0.029
<b>INDUSTRIAL INSTRUMENTS</b>	2000-17	369.230	76.120	0.021
<b>PHOTOGRAPHIC RAW FILM AND PAPER</b>	2000-17	278.370	67.280	0.016
<b>COAL PRODUCTION</b>	2000-17	122.130	27.740	0.007
<b>MATHEMATICAL,SURVEYING AND DRAWING INSTRUMENTS</b>	2000-17	41.610	7.980	0.002
<b>DEFENCE INDUSTRIES</b>	2000-17	26.090	5.120	0.001
<b>COIR</b>	2000-17	21.640	4.060	0.001

In [42]: `#Saving as Excel file for further Use  
Merged.to_excel('FDI.xlsx')`

Insights:

Top 10 and bottom 5 Sectors:

- 1.The Service sector Managed to Attract highest FDI which was ₹ 316347.59Cr greater than any other Sector & among top 10 Sectors it has 27.7% share and among all it has 17.65%.
- 2.Among Bottom 5 sectors, Coir has the lowest FDI of ₹21.64Cr having only 4.4% share among bottom 5 sectors and among all it has only 0.001208%. FDI Year By Year Inflows:
- 3.The above graph shows the total amount of FDI inflows in India during the last 17 years i.e. 2000 to 2017. 2.The FDI inflow from 2000-2001 i.e. ₹10865.97Cr. in 2001-02 it was ₹19208.02Cr. It shows the Good result in the FDI inflows in India. Little bit ups and downs in FDI inflows up to 2005-06, but after that great hike in the year 2007-08 and FDI was ₹98940.57Cr. In 2008-2009 there was a huge investment in FDI in ₹144390.03Cr. But then there was a downfall in Inflow of FDI in two consecutive years 2009-2010 and 2010-2011, with figures 122558.27 and 97421.29 respectively. We can analysis from the graph that in the

year 2011-2012 the inflow of FDI was second highest of last 15 years i.e. 168298.80. Year 2012-13 and 2013-14 the FDI inflow fluctuated from 121984.32 to 147010.90 respectively. In last Financial Year i.e. 2016-2017 the amount of FDI Inflow were ₹291608.67Cr which is the highest FDI inflow in last 17 years. 4. The Sectoral composition of FDI over the period of April 2000 to June 2017, we can find that the largest recipient of such investment is service sector (Financial and non-financial services). The share of this sector in FDI flows is 17 % of the inflow total foreign direct investment. 5. The foreign investors are interested in mainly financial services due its profit generating advantage. This sector gives scope for the foreign investor to takes back the profits to the home country. As service sector the services are consumed in the host country and there by generating outflow of funds from the host country. 6. The second recipient is Computer software and hardware which shares 7% of total FDI. Telecommunication,, Construction Development , Automobile industry, Trade, Drugs and pharmaceuticals, Chemical ( Other than Fertilizers), Power, Construction, Hotel and tourism contribute around 7%, 6%, 5%, 4.7%, 4%, 4%, 3%, 3% . Their is very low interset towards sectors like Coir, Defence Industries, Mathematical,surveying and drawing Instruments, Coal Production and there are around 28 to 30 sectors where share is less than or equal to 1%.