

oreign-direct-investment-analytics

February 5, 2024

Importing the required libraries of Python

```
[1]: import numpy as np
import pandas as pd
import matplotlib.pyplot as mp
import seaborn as sn
import warnings
warnings.filterwarnings('ignore')
```

Reading the data

```
[2]: df = pd.read_csv(r'C:\Users\user\Downloads\Data Analyst Project\Foreign Direct_
Investment Analytics\FDI data.csv')
```

Checking the data by viewing top 10 rows

```
[3]: df.head(10)
```

```
[3]:
```

		Sector	2000-01	2001-02	2002-03	\			
0		METALLURGICAL INDUSTRIES	22.69	14.14	36.61				
1		MINING	1.32	6.52	10.06				
2		POWER	89.42	757.44	59.11				
3		NON-CONVENTIONAL ENERGY	0.00	0.00	1.70				
4		COAL PRODUCTION	0.00	0.00	0.00				
5		PETROLEUM & NATURAL GAS	9.35	211.07	56.78				
6		BOILERS AND STEAM GENERATING PLANTS	0.00	0.00	0.00				
7		PRIME MOVER (OTHER THAN ELECTRICAL GENERATORS)	0.00	0.00	0.00				
8		ELECTRICAL EQUIPMENTS	79.76	65.76	34.71				
9		COMPUTER SOFTWARE & HARDWARE	228.39	419.39	314.24				
	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	\
0	8.11	200.38	149.13	169.94	1175.75	959.94	419.88	1098.14	
1	23.48	9.92	7.40	6.62	444.36	34.16	174.40	79.51	
2	27.09	43.37	72.69	157.15	988.68	907.66	1271.79	1271.77	
3	4.14	1.27	1.35	2.44	58.82	125.88	622.52	214.40	
4	0.04	0.00	9.14	1.30	14.08	0.22	0.00	0.00	
5	80.64	102.78	12.09	87.71	1405.04	349.29	265.53	556.43	
6	0.04	0.54	0.00	3.31	1.51	0.00	3.96	0.63	
7	0.00	2.66	0.74	25.57	40.53	74.88	39.50	166.44	

8	73.20	97.40	39.50	76.85	653.74	417.35	728.27	153.90
9	368.32	527.90	1359.97	2613.33	1382.25	1543.34	871.86	779.81

	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
0	1786.14	1466.23	567.63	359.34	456.31	1440.18
1	142.65	57.89	12.73	684.39	520.67	55.75
2	1652.38	535.68	1066.08	707.04	868.80	1112.98
3	452.17	1106.52	414.25	615.95	776.51	783.57
4	0.00	0.00	2.96	0.00	0.00	0.00
5	2029.98	214.80	112.23	1079.02	103.02	180.40
6	31.79	20.05	0.17	1.33	77.91	53.91
7	313.75	184.60	212.78	230.70	159.13	286.88
8	566.39	195.87	134.31	574.83	444.88	2230.69
9	796.35	485.96	1126.27	2296.04	5904.36	3651.71

```
[4]: #Checking the columns names
df.columns
```

```
[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')
```

```
[5]: #Checking the number of rows and columns in the dataset
df.shape
```

```
[5]: (63, 18)
```

```
[6]: #Checking whether any columns contain null values
df.columns.isnull()
```

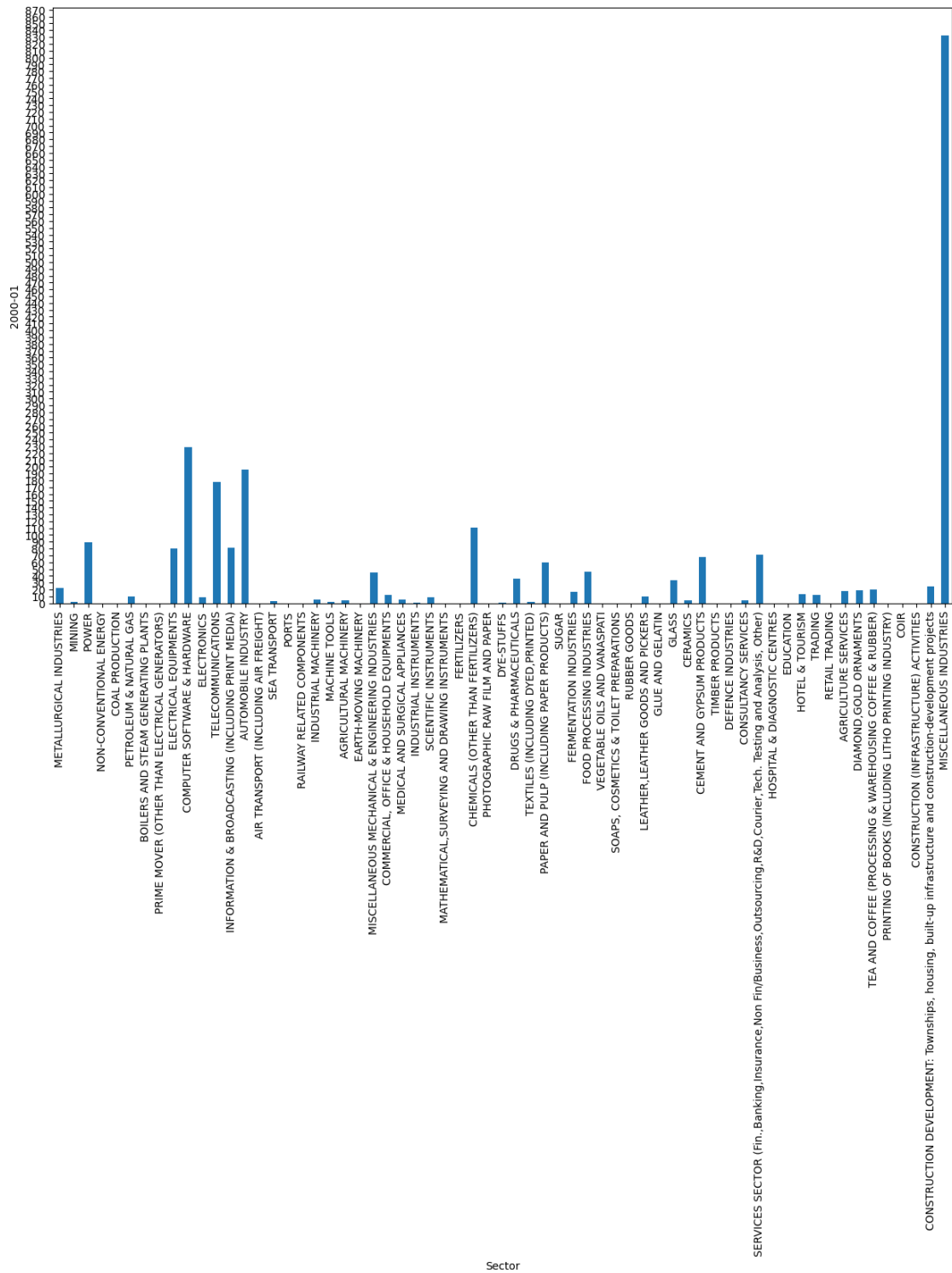
```
[6]: array([False, False, False, False, False, False, False, False, False,
          False, False, False, False, False, False, False, False, False])
```

```
[7]: Fy1=list(df['2000-01'])
Fy1.sort()
print(Fy1)
```

```
[0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0,
0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.1, 1.01, 1.05, 1.32, 1.42, 2.06, 2.41,
3.64, 4.03, 4.25, 5.42, 5.48, 8.07, 8.34, 9.35, 9.75, 11.49, 12.2, 13.2, 16.02,
17.52, 18.83, 20.23, 22.69, 24.33, 33.87, 35.94, 44.5, 45.75, 60.04, 67.72,
71.38, 79.76, 81.5, 89.42, 111.14, 177.69, 195.33, 228.39, 832.07]
```

```
[18]: df.plot.bar(x='Sector',y='2000-01',legend=None,figsize=(15,10),rot=0)
mp.ylabel('2000-01')
mp.xticks(rotation=90)
```

```
mp.locator_params(nbins=90)
```



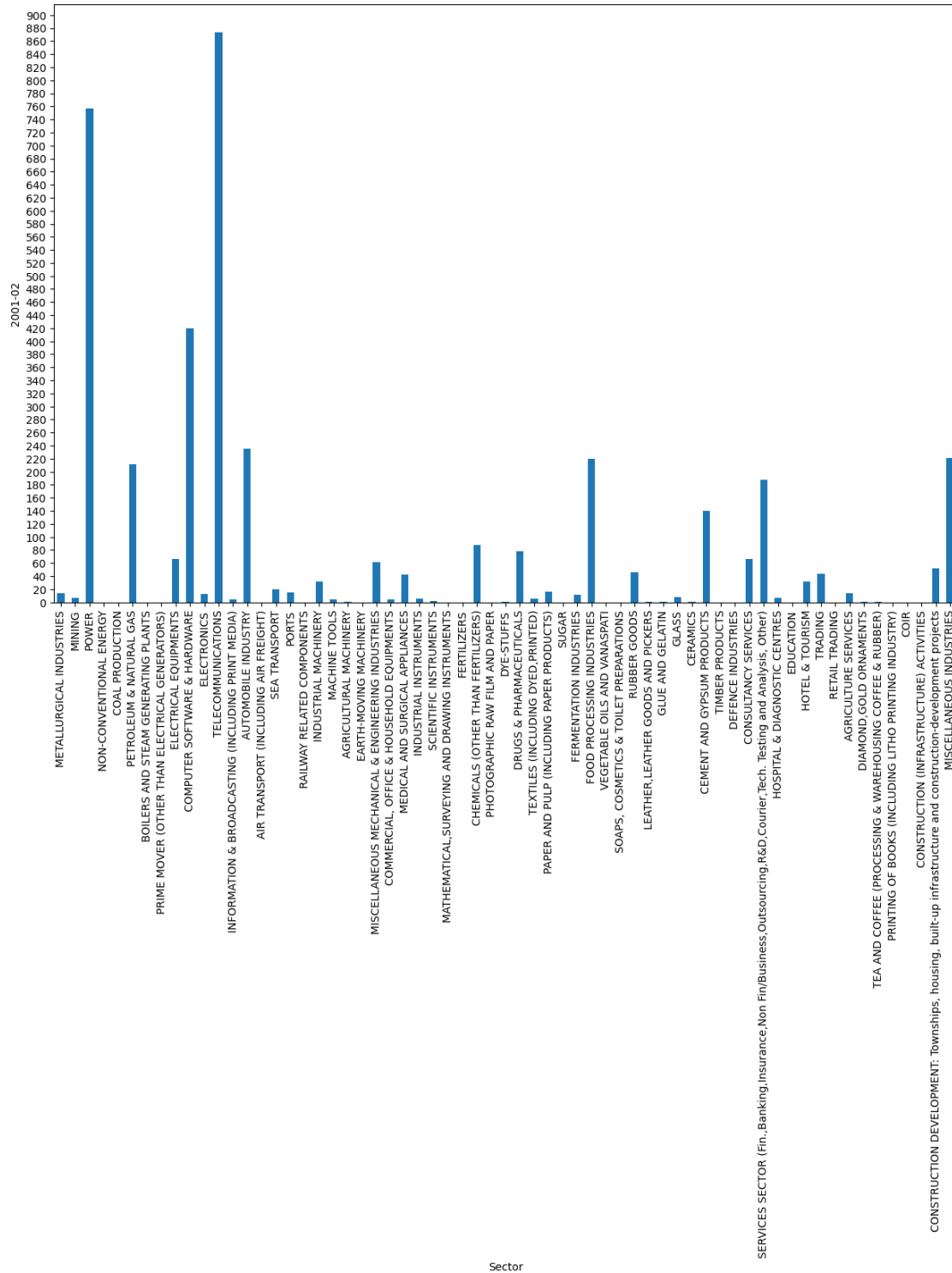
From the above bar plot we can conclude that in the financial year 2000-01 investment is high by

Miscellaneous Industries and low by Rubber Goods and some sectors have zero investment.

```
[17]: Fy2=list(df['2001-02'])
      Fy2.sort()
      print(Fy2)
```

```
[0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0,
0.0, 0.0, 0.05, 0.11, 0.14, 0.18, 0.2, 0.36, 0.78, 0.94, 1.04, 2.33, 4.31, 4.54,
4.87, 5.07, 5.28, 6.52, 6.93, 8.37, 11.04, 12.47, 14.06, 14.14, 15.48, 16.7,
19.81, 32.04, 32.12, 42.35, 43.27, 46.39, 51.75, 61.4, 65.76, 66.22, 77.94,
87.23, 139.9, 187.95, 211.07, 219.39, 221.37, 235.76, 419.39, 757.44, 873.23]
```

```
[10]: df.plot.bar(x='Sector',y='2001-02',legend=None,figsize=(15,10),rot=0)
      mp.ylabel('2001-02')
      mp.xticks(rotation=90)
      mp.locator_params(nbins=90)
```

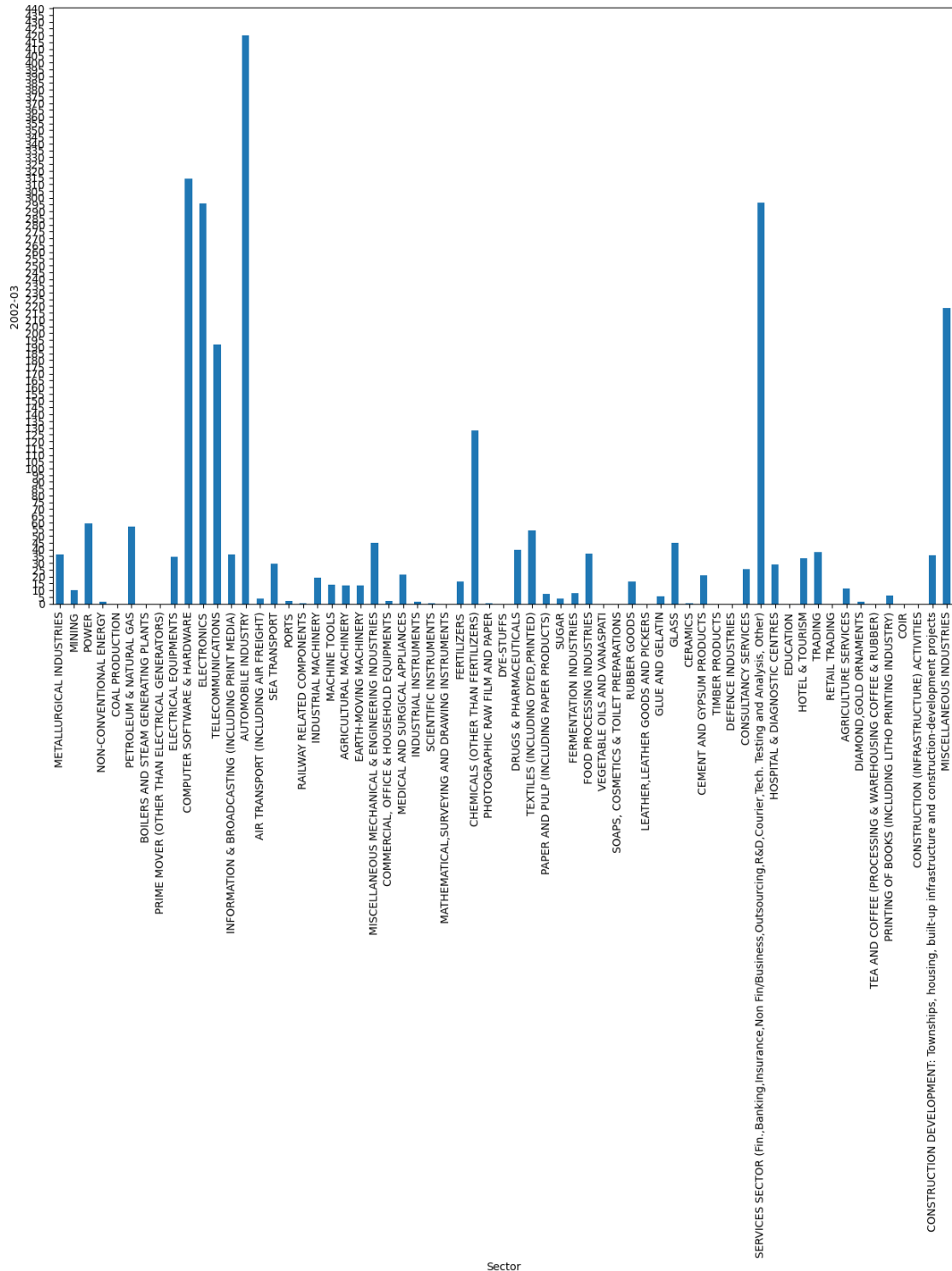


From the above bar plot we can conclude that in the financial year 2001-02 investment is high by Tele Communications and low by Timber Products and some sectors have zero investment.

```
[11]: Fy3=list(df['2002-03'])  
      Fy3.sort()  
      print(Fy3)
```

```
[0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.01, 0.04,  
0.19, 0.21, 0.56, 0.6, 1.3, 1.31, 1.7, 2.03, 2.33, 3.8, 3.97, 5.22, 6.3, 7.36,  
8.07, 10.06, 11.01, 13.48, 13.77, 14.17, 16.38, 16.42, 19.4, 21.08, 21.63, 25.7,  
29.13, 29.32, 33.75, 34.71, 36.1, 36.5, 36.61, 36.88, 38.13, 40.07, 44.98,  
45.07, 54.18, 56.78, 59.11, 128.12, 191.6, 218.76, 295.88, 296.34, 314.24,  
419.96]
```

```
[12]: df.plot.bar(x='Sector',y='2002-03',legend=None,figsize=(15,10),rot=0)  
      mp.ylabel('2002-03')  
      mp.xticks(rotation=90)  
      mp.locator_params(nbins=90)
```

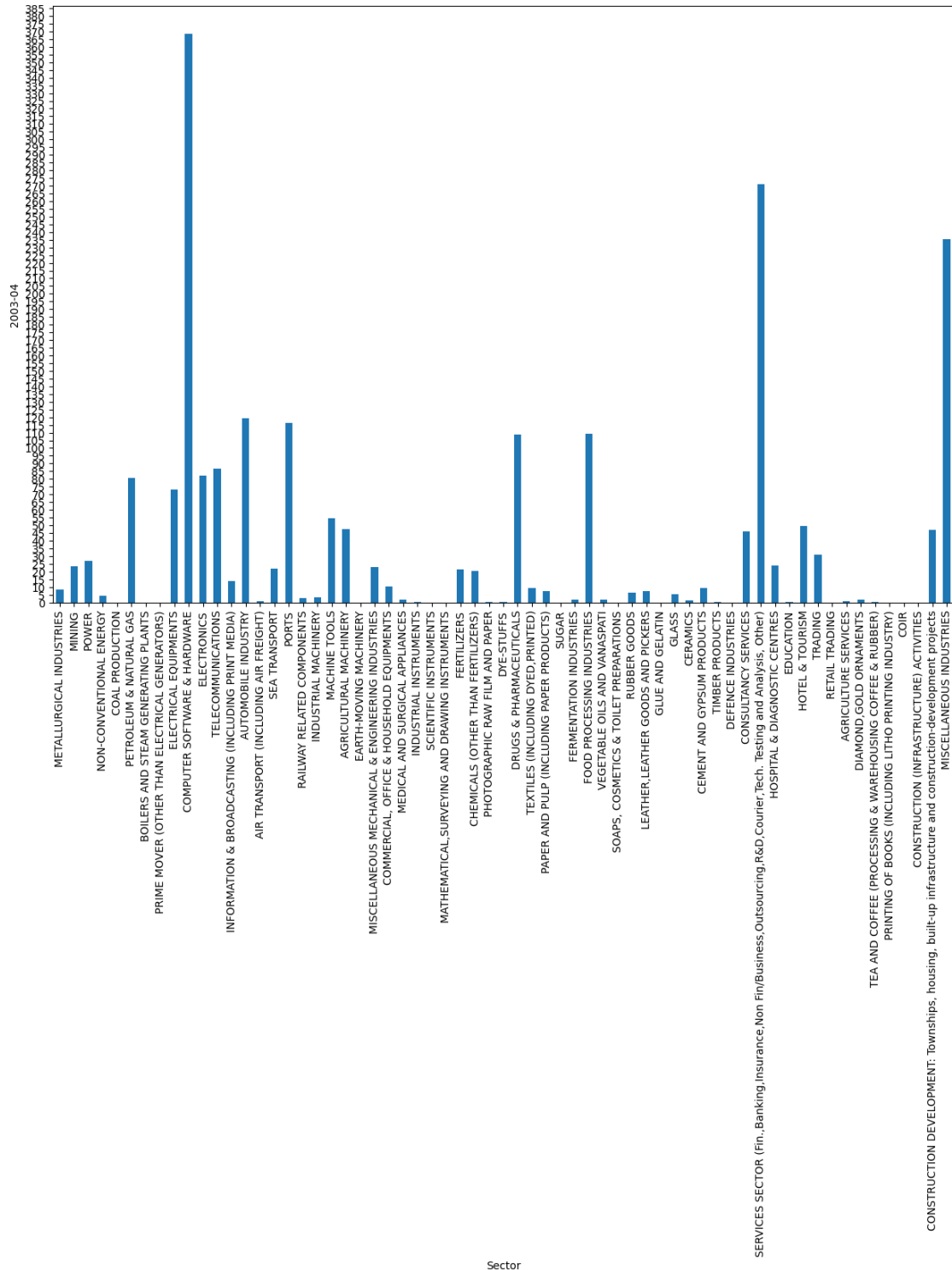


From the above bar plot we can conclude that in the financial year 2002-03 investment is high by Automobile Industry and low by Leather goods and pickers and some sectors have zero investment.

```
[13]: Fy4=list(df['2003-04'])  
      Fy4.sort()  
      print(Fy4)
```

```
[0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.01, 0.02, 0.04, 0.04, 0.11,  
0.19, 0.24, 0.3, 0.32, 0.43, 0.59, 0.94, 1.47, 1.69, 1.7, 1.96, 1.97, 2.95,  
3.18, 4.14, 5.24, 6.37, 7.15, 7.55, 8.11, 9.34, 9.58, 10.41, 13.72, 20.24,  
21.58, 21.95, 22.73, 23.48, 24.08, 27.09, 31.12, 46.2, 47.04, 47.54, 49.36,  
54.51, 73.2, 80.64, 82.31, 86.49, 108.91, 109.22, 116.36, 119.09, 235.48,  
271.15, 368.32]
```

```
[14]: df.plot.bar(x='Sector',y='2003-04',legend=None,figsize=(15,10),rot=0)  
      mp.ylabel('2003-04')  
      mp.xticks(rotation=90)  
      mp.locator_params(nbins=90)
```

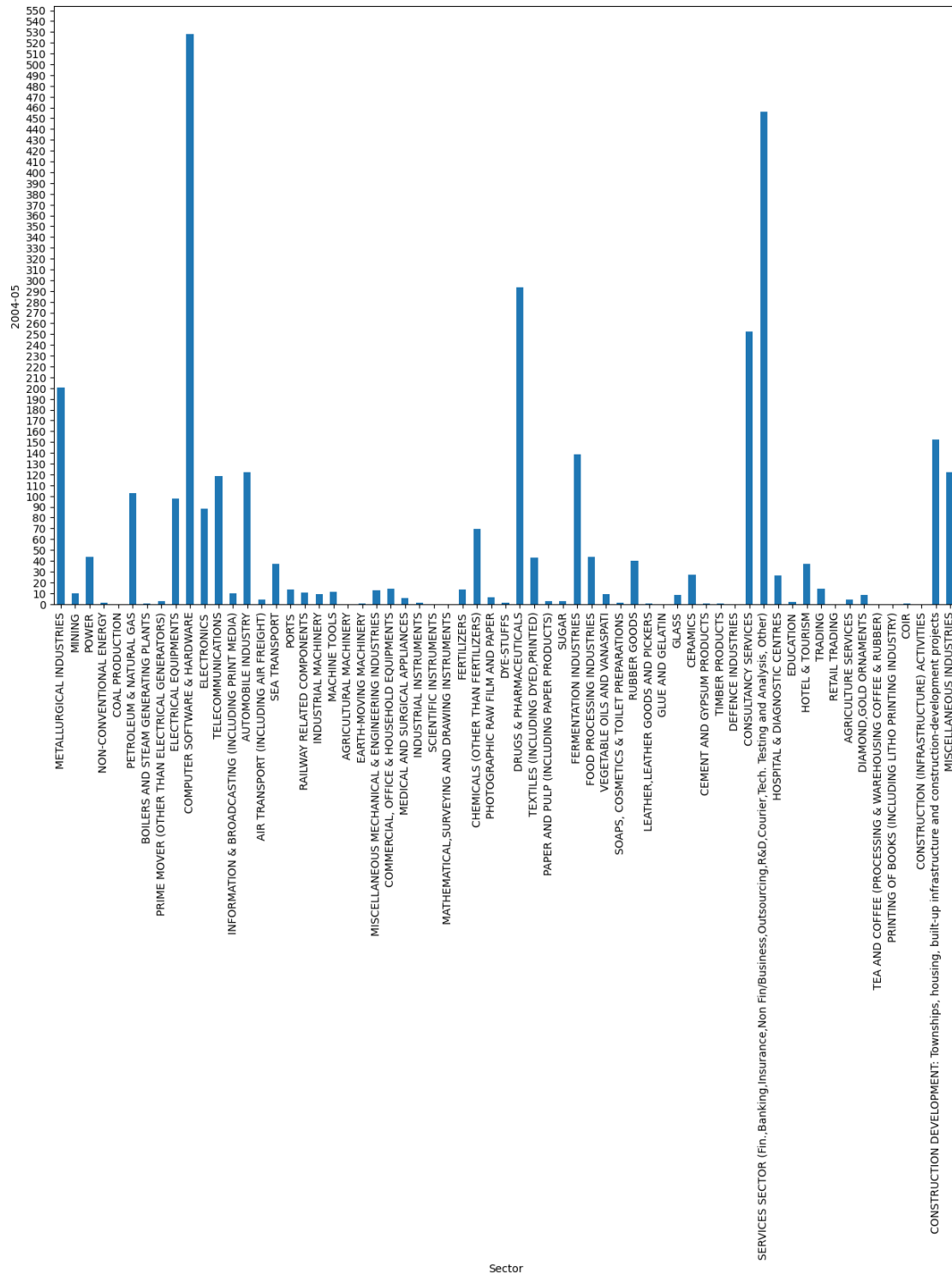



From the above bar plot we can conclude that in the financial year 2003-04 investment is high by Computer Software & Hardware and low by Earth-moving Machinery and some sectors have zero investment.

```
[15]: Fy5=list(df['2004-05'])  
      Fy5.sort()  
      print(Fy5)
```

```
[0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.01, 0.03, 0.05, 0.06, 0.07, 0.1, 0.16, 0.44,  
0.47, 0.54, 0.89, 1.08, 1.18, 1.27, 1.97, 2.66, 2.7, 2.94, 3.83, 4.11, 5.35,  
6.16, 8.36, 8.58, 8.89, 9.09, 9.85, 9.92, 10.75, 11.04, 12.83, 13.04, 13.46,  
14.13, 14.22, 26.19, 26.79, 36.95, 37.01, 40.06, 43.04, 43.37, 43.98, 69.39,  
88.1, 97.4, 102.78, 118.33, 121.83, 121.97, 139.0, 152.06, 200.38, 252.42,  
293.36, 456.15, 527.9]
```

```
[16]: df.plot.bar(x='Sector',y='2004-05',legend=None,figsize=(15,10),rot=0)  
      mp.ylabel('2004-05')  
      mp.xticks(rotation=90)  
      mp.locator_params(nbins=90)
```

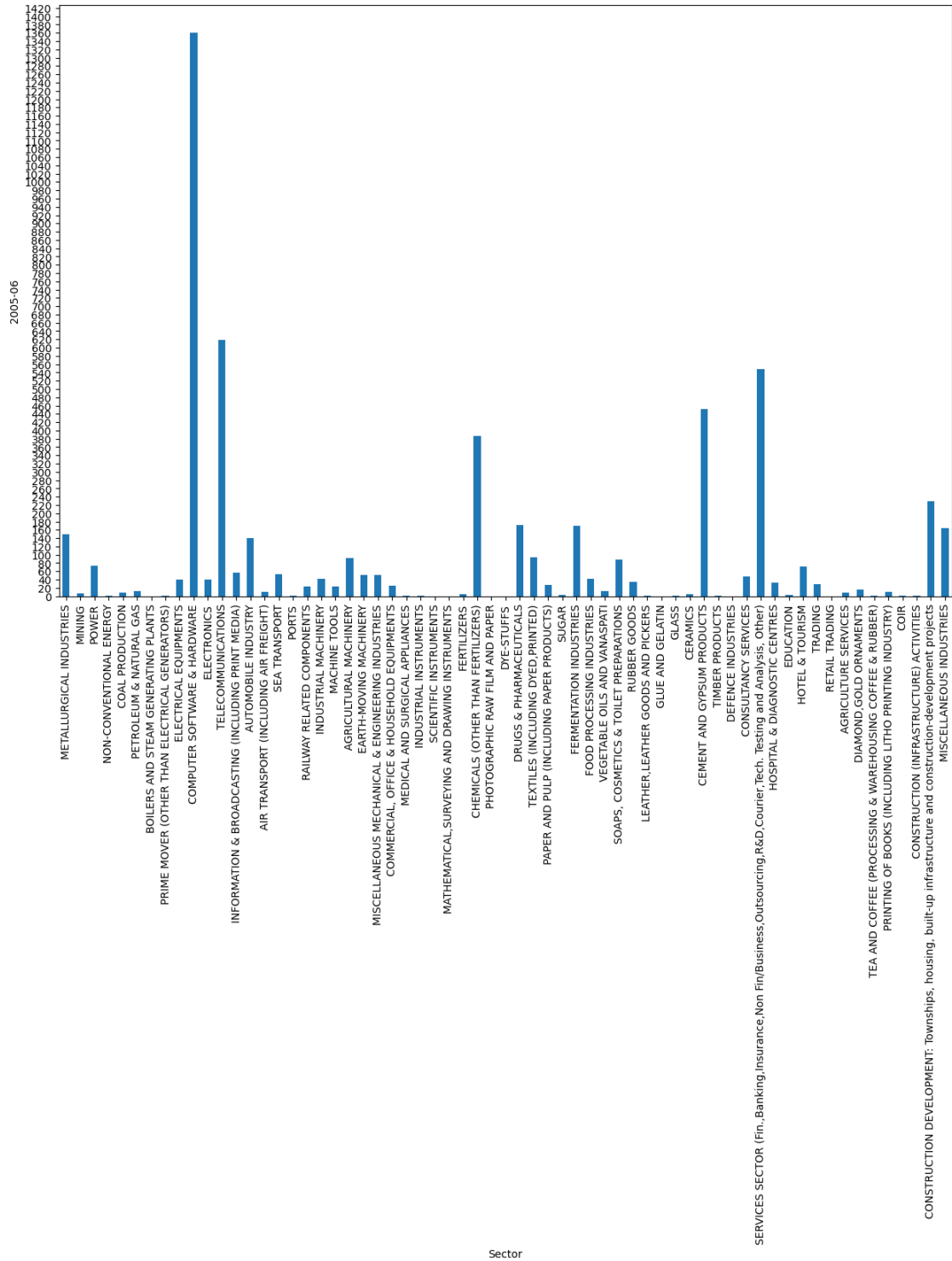


From the above bar plot we can conclude that in the financial year 2004-05 investment is high by Computer Software & Hardware and low by Tea and Coffee(Processing & Warehousing coffee & Rubber) and some sectors have zero investment.

```
[17]: Fy6=list(df['2005-06'])  
      Fy6.sort()  
      print(Fy6)
```

```
[0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.1, 0.33, 0.38, 0.5, 0.59, 0.74, 0.81,  
0.93, 1.11, 1.35, 1.43, 1.52, 3.0, 3.16, 4.24, 5.67, 7.4, 9.08, 9.14, 9.9,  
10.27, 12.09, 12.31, 15.52, 22.62, 23.0, 25.54, 27.38, 28.93, 32.53, 34.09,  
39.5, 40.91, 41.74, 42.8, 47.4, 50.87, 51.22, 53.63, 55.93, 71.78, 72.69, 87.42,  
92.71, 94.33, 139.93, 149.13, 164.76, 169.83, 172.44, 228.71, 387.72, 452.08,  
548.61, 617.98, 1359.97]
```

```
[18]: df.plot.bar(x='Sector',y='2005-06',legend=None,figsize=(15,10),rot=0)  
      mp.ylabel('2005-06')  
      mp.xticks(rotation=90)  
      mp.locator_params(nbins=90)
```

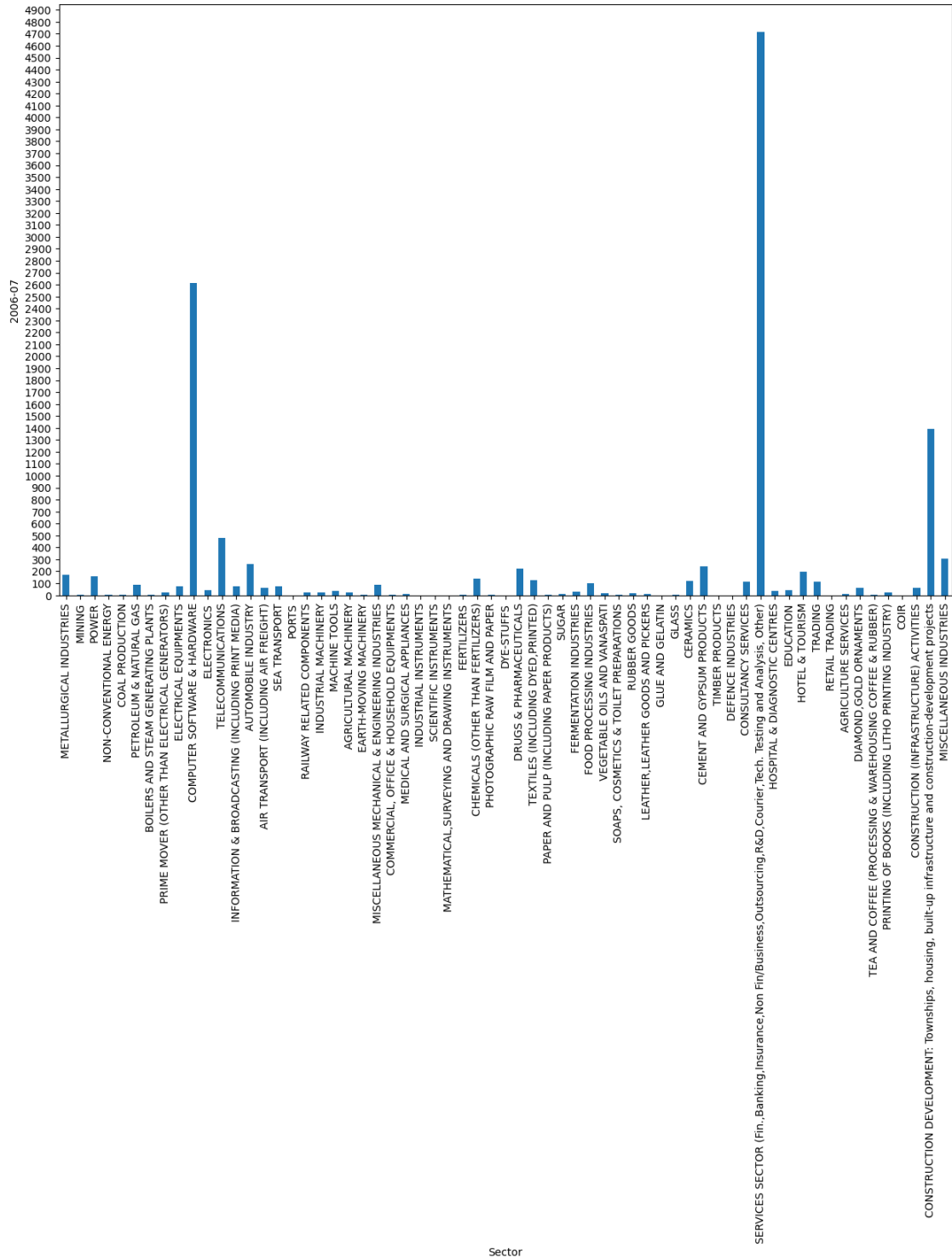


From the above bar plot we can conclude that in the financial year 2005-06 investment is high by Computer Software & Hardware and low by Scientific Instruments and some sectors have zero investment.

```
[19]: Fy7=list(df['2006-07'])  
      Fy7.sort()  
      print(Fy7)
```

```
[0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.04, 0.07, 0.99, 1.3, 1.43, 2.44,  
2.81, 3.31, 5.01, 5.08, 5.42, 6.04, 6.2, 6.62, 8.26, 9.85, 12.53, 13.43, 16.22,  
18.75, 20.04, 25.19, 25.57, 25.82, 25.96, 27.58, 37.28, 38.14, 41.81, 42.14,  
61.97, 62.29, 64.06, 72.52, 75.7, 76.85, 84.44, 87.71, 102.0, 114.65, 114.68,  
122.23, 126.9, 138.85, 157.15, 169.94, 195.66, 224.2, 242.47, 260.72, 304.87,  
476.51, 1392.95, 2613.33, 4713.78]
```

```
[20]: df.plot.bar(x='Sector',y='2006-07',legend=None,figsize=(15,10),rot=0)  
      mp.ylabel('2006-07')  
      mp.xticks(rotation=90)  
      mp.locator_params(nbins=90)
```

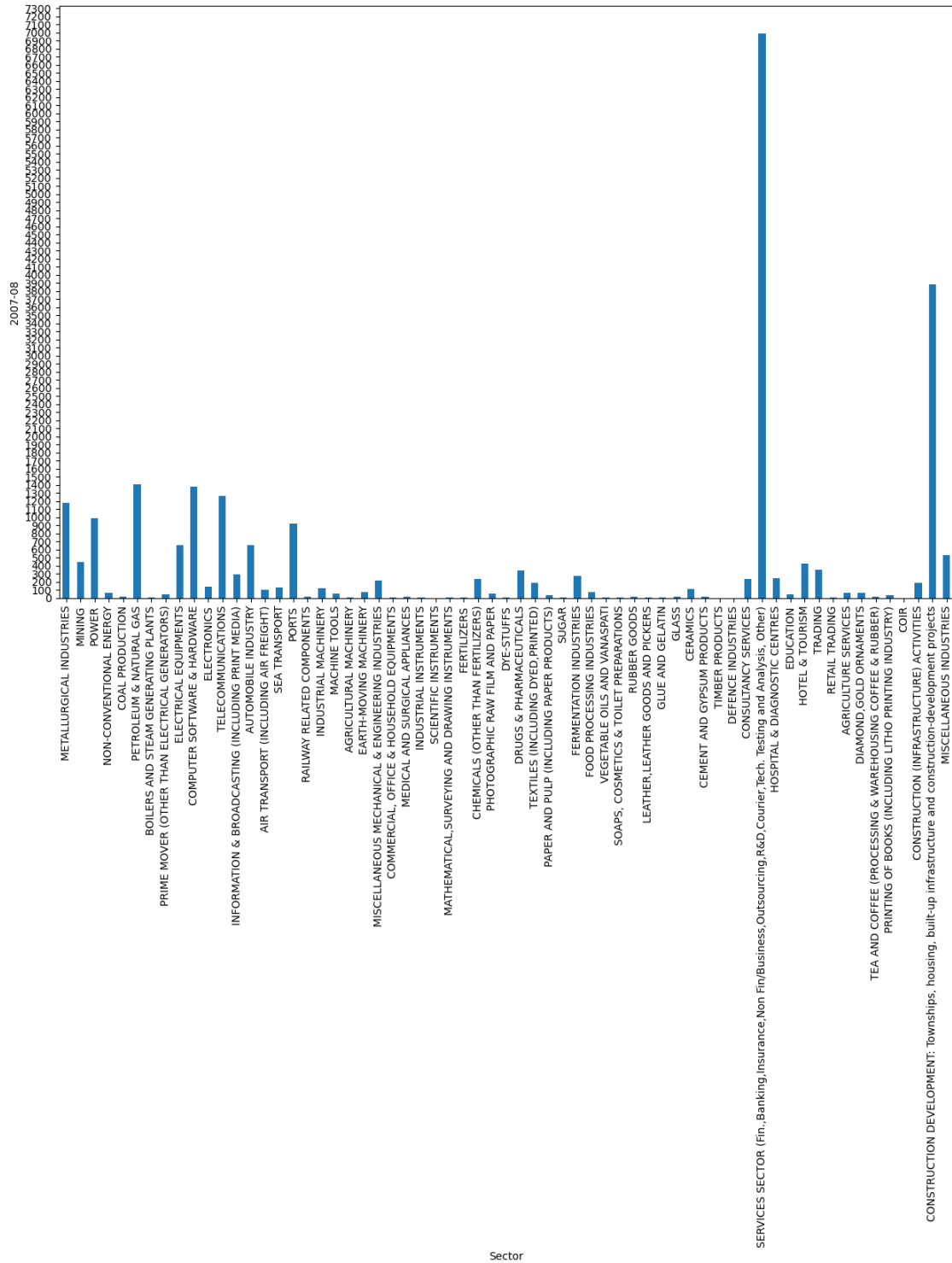


From the above bar plot we can conclude that in the financial year 2006-07 investment is high by Services Sector (Eg. Banking & Insurance etc) and low by coir and some sectors have zero investment.

```
[21]: Fy8=list(df['2007-08'])  
      Fy8.sort()  
      print(Fy8)
```

```
[0.0, 0.0, 0.01, 0.39, 1.27, 1.27, 1.51, 1.53, 1.95, 2.23, 2.28, 5.51, 6.38,  
6.72, 7.46, 9.83, 10.07, 11.04, 12.41, 13.17, 14.08, 15.12, 16.89, 18.94, 31.24,  
35.54, 40.53, 43.59, 54.86, 56.87, 58.13, 58.82, 59.15, 67.94, 70.17, 99.08,  
115.11, 119.57, 128.36, 136.03, 182.92, 185.4, 211.15, 233.32, 233.7, 241.76,  
270.05, 288.49, 340.35, 345.02, 421.47, 444.36, 528.42, 653.74, 656.1, 918.18,  
988.68, 1175.75, 1260.7, 1382.25, 1405.04, 3887.33, 6986.17]
```

```
[22]: df.plot.bar(x='Sector',y='2007-08',legend=None,figsize=(15,10),rot=0)  
      mp.ylabel('2007-08')  
      mp.xticks(rotation=90)  
      mp.locator_params(nbins=90)
```

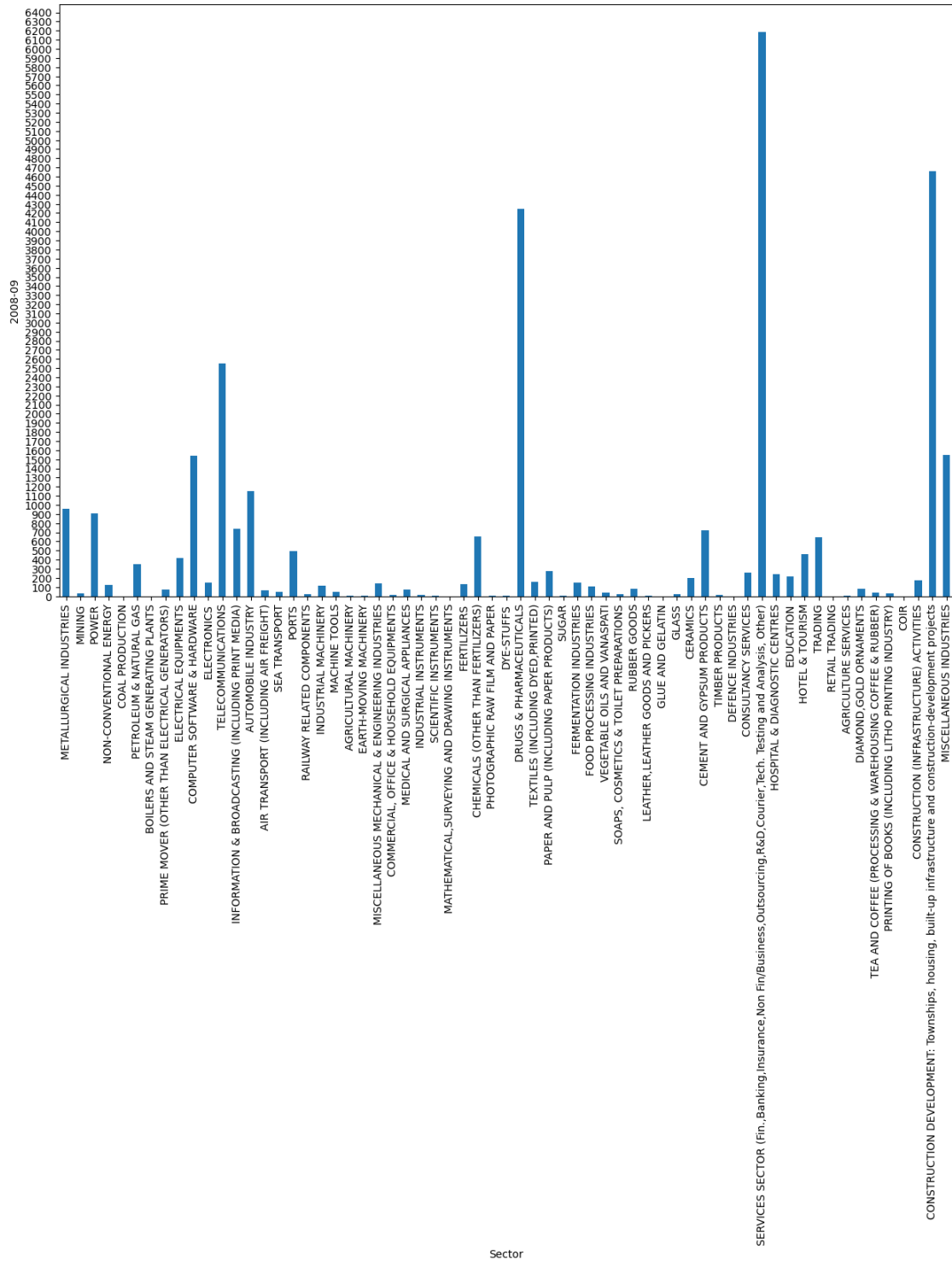



From the above bar plot we can conclude that in the financial year 2007-08 investment is high by Services Sector (Eg. banking & Finance etc) and low by Coir and some sectors have zero investment.

```
[23]: Fy9=list(df['2008-09'])  
      Fy9.sort()  
      print(Fy9)
```

```
[0.0, 0.0, 0.0, 0.0, 0.0, 0.09, 0.22, 0.83, 1.05, 1.17, 2.27, 3.32, 5.01, 5.35,  
5.57, 11.27, 12.63, 17.48, 18.01, 22.03, 23.16, 31.61, 34.16, 37.08, 42.88,  
45.66, 50.21, 61.37, 74.88, 75.42, 83.5, 84.88, 102.71, 110.54, 125.88, 133.75,  
142.31, 144.7, 147.51, 157.52, 172.7, 198.43, 214.52, 239.71, 256.59, 272.51,  
349.29, 417.35, 463.92, 493.15, 643.64, 651.22, 724.8, 735.04, 907.66, 959.94,  
1150.03, 1543.34, 1549.7, 2548.63, 4246.76, 4657.51, 6183.49]
```

```
[24]: df.plot.bar(x='Sector',y='2008-09',legend=None,figsize=(15,10),rot=0)  
      mp.ylabel('2008-09')  
      mp.xticks(rotation=90)  
      mp.locator_params(nbins=90)
```

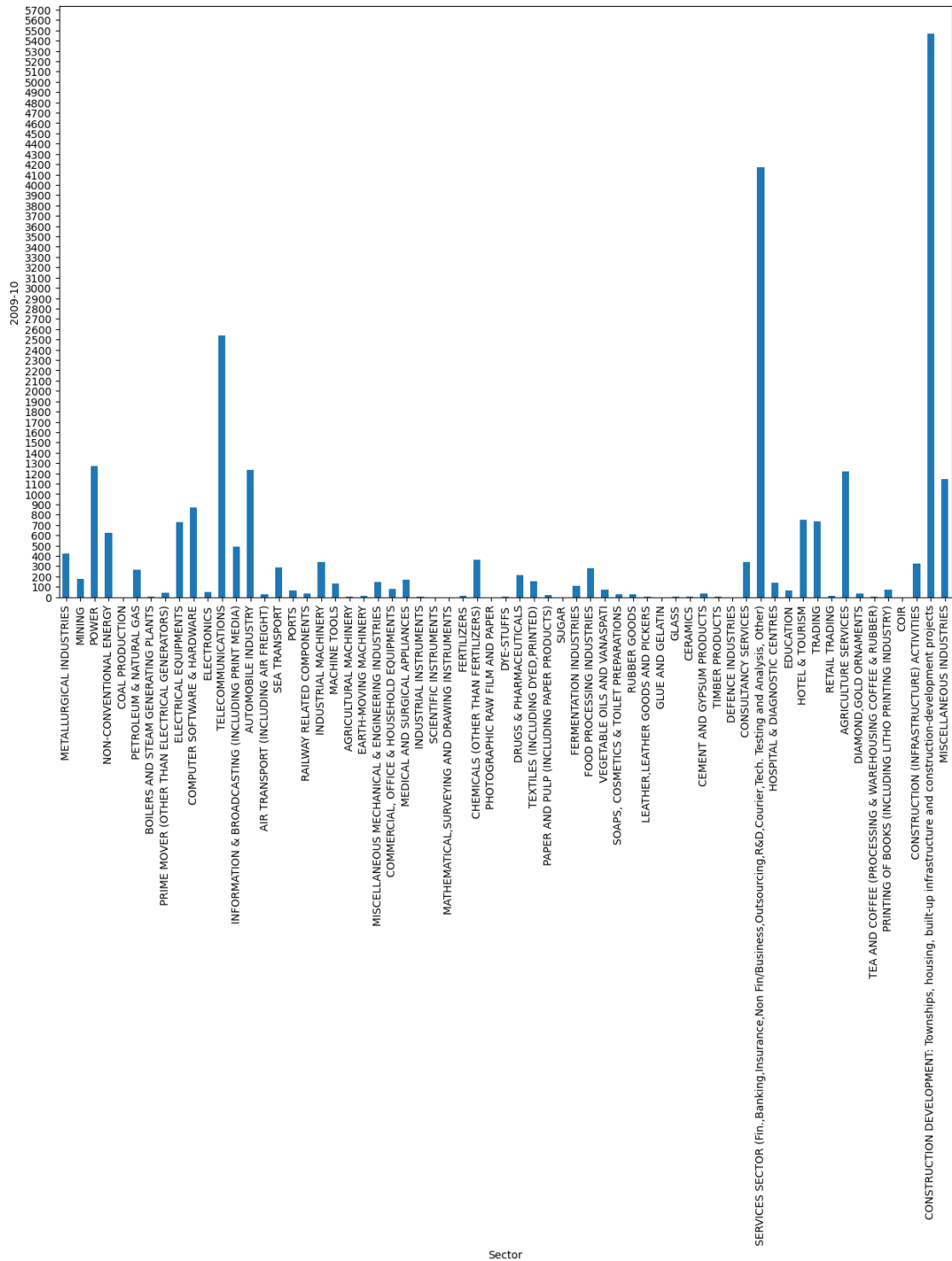


From the above bar plot we can conclude that in the financial year 2008-09 investment is high by Services Sector (Eg. Banking & Finance, etc) and low by Retail Trading and some sectors have zero investment.

```
[25]: Fy10=list(df['2009-10'])  
      Fy10.sort()  
      print(Fy10)
```

```
[0.0, 0.0, 0.0, 0.0, 0.0, 0.1, 0.25, 0.27, 1.88, 2.83, 3.96, 4.02, 5.06, 6.54,  
7.21, 7.61, 8.15, 8.2, 13.73, 15.62, 16.42, 23.71, 24.12, 24.58, 31.08, 33.8,  
34.43, 39.5, 52.14, 63.35, 65.41, 69.74, 70.51, 78.98, 112.02, 133.83, 135.57,  
149.59, 150.27, 167.35, 174.4, 213.08, 265.53, 278.89, 284.85, 324.56, 341.31,  
341.88, 365.94, 419.88, 490.83, 622.52, 728.27, 737.95, 753.02, 871.86, 1147.56,  
1222.22, 1236.29, 1271.79, 2539.26, 4174.53, 5466.13]
```

```
[26]: df.plot.bar(x='Sector',y='2009-10',legend=None,figsize=(15,10),rot=0)  
      mp.ylabel('2009-10')  
      mp.xticks(rotation=90)  
      mp.locator_params(nbins=90)
```

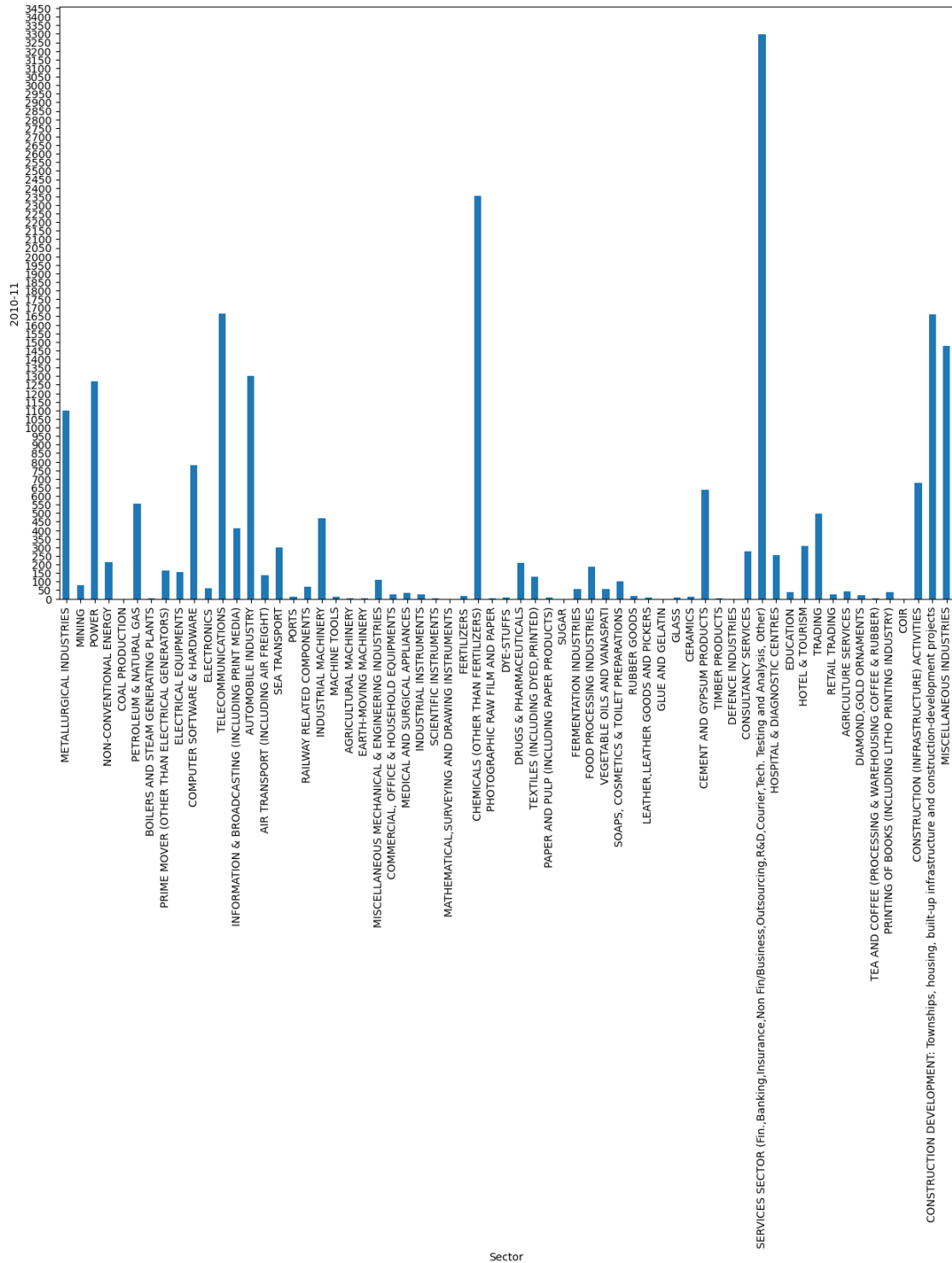


From the above bar plot we can conclude that in the financial year 2009-10 investment is high by Construction Development and low by Sugar and some sectors have zero investment.

```
[27]: Fy11=list(df['2010-11'])  
      Fy11.sort()  
      print(Fy11)
```

```
[0.0, 0.0, 0.0, 0.01, 0.1, 0.17, 0.49, 0.63, 0.81, 1.58, 1.77, 2.49, 3.12, 5.37,  
6.53, 7.6, 9.26, 10.92, 11.63, 12.0, 17.21, 18.18, 19.59, 25.12, 25.48, 26.27,  
32.22, 36.63, 37.94, 43.9, 57.71, 58.07, 59.72, 70.66, 79.51, 102.9, 108.67,  
129.65, 136.6, 153.9, 166.44, 188.67, 209.38, 214.4, 256.0, 274.84, 300.51,  
308.05, 412.11, 467.92, 498.04, 556.43, 637.68, 675.07, 779.81, 1098.14,  
1271.77, 1299.41, 1475.97, 1663.03, 1664.5, 2354.4, 3296.09]
```

```
[28]: df.plot.bar(x='Sector',y='2010-11',legend=None,figsize=(15,10),rot=0)  
      mp.ylabel('2010-11')  
      mp.xticks(rotation=90)  
      mp.locator_params(nbins=90)
```

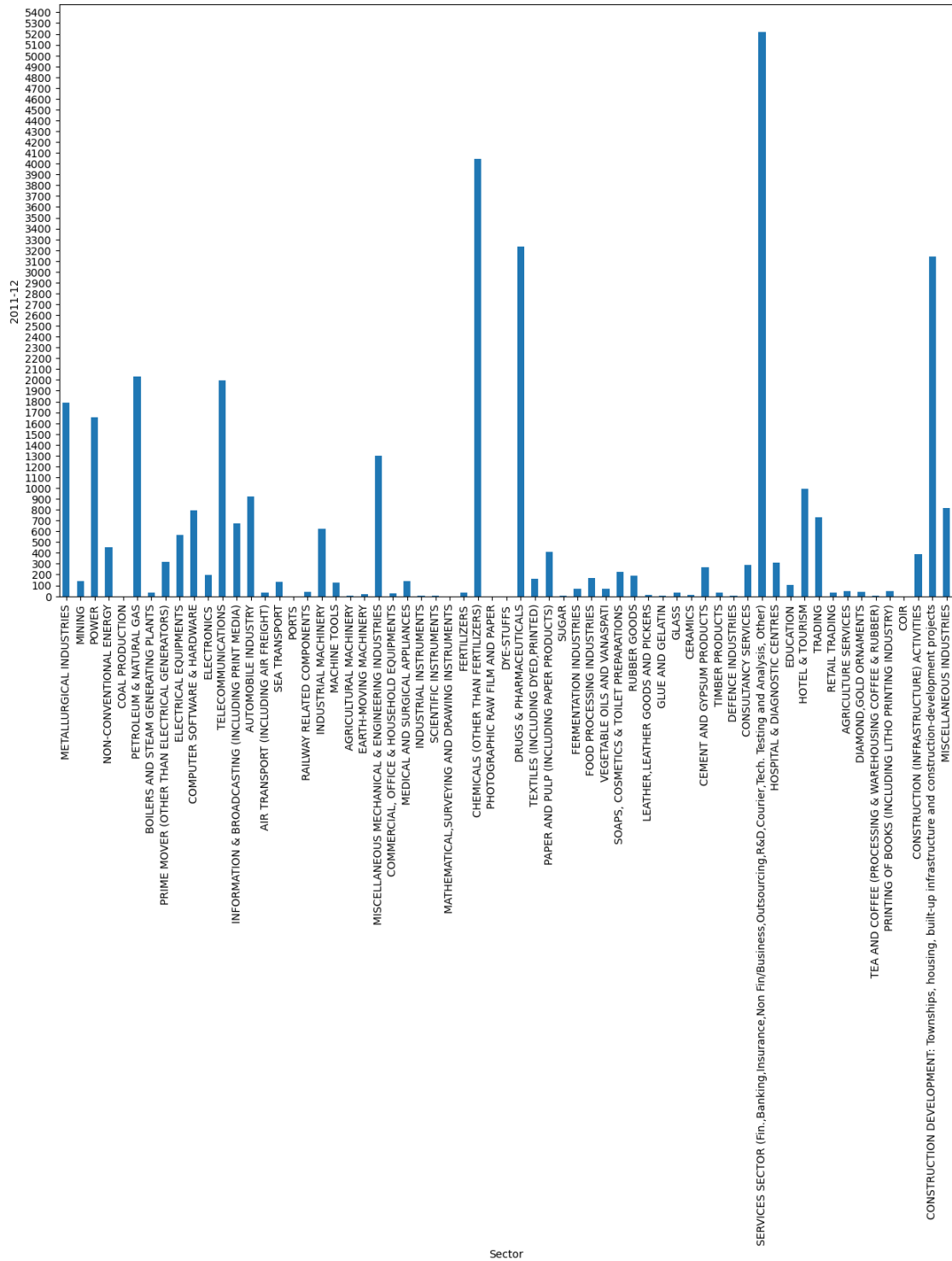


From the above bar plot we can conclude that in the financial year 2010-11 investment is high by services Sector (Eg. Banking & Finance) low by Coir and some sectors have zero investment.

```
[29]: Fy12=list(df['2011-12'])  
      Fy12.sort()  
      print(Fy12)
```

```
[0.0, 0.0, 0.0, 0.0, 0.55, 0.58, 2.77, 3.66, 3.99, 4.44, 5.32, 5.84, 7.08, 8.3,  
9.87, 16.4, 29.04, 29.6, 31.22, 31.7, 31.79, 32.22, 32.6, 36.3, 42.27, 47.39,  
49.02, 65.02, 69.7, 105.62, 127.87, 129.36, 141.61, 142.65, 164.19, 170.21,  
187.37, 194.41, 222.08, 267.9, 289.89, 310.43, 313.75, 386.28, 407.35, 452.17,  
566.39, 620.66, 675.96, 731.55, 796.35, 813.38, 922.99, 992.86, 1295.34,  
1652.38, 1786.14, 1997.24, 2029.98, 3140.78, 3232.28, 4040.71, 5215.98]
```

```
[30]: df.plot.bar(x='Sector',y='2011-12',legend=None,figsize=(15,10),rot=0)  
      mp.ylabel('2011-12')  
      mp.xticks(rotation=90)  
      mp.locator_params(nbins=90)
```

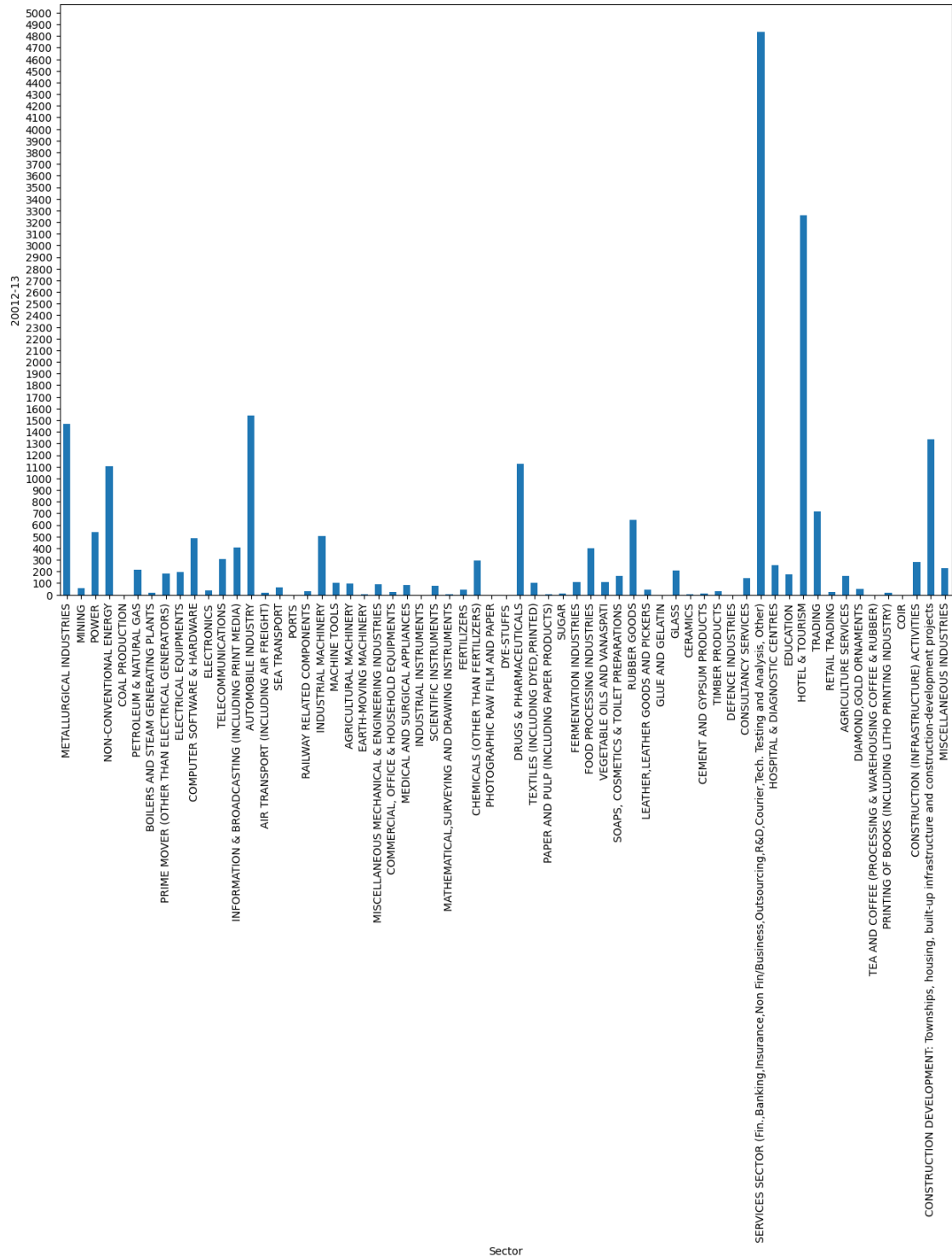



From the above bar plot we can conclude that in the financial year 2011-12 investment is high by Services Sector (Eg. banking & Finance. etc) and low by Coir and some sectors have zero investment.

```
[31]: Fy13=list(df['2012-13'])  
      Fy13.sort()  
      print(Fy13)
```

```
[0.0, 0.0, 0.0, 0.0, 0.0, 0.15, 0.27, 0.41, 0.58, 4.33, 5.09, 5.1, 6.71, 12.26,  
12.38, 14.34, 15.89, 20.05, 22.31, 24.33, 29.17, 29.85, 38.24, 42.55, 46.7,  
52.61, 57.89, 64.62, 73.28, 83.02, 89.45, 95.41, 101.39, 103.89, 107.21, 108.39,  
142.32, 160.07, 161.47, 172.2, 184.6, 195.87, 209.16, 214.8, 229.49, 256.86,  
283.89, 292.16, 303.87, 401.46, 404.04, 485.96, 503.83, 535.68, 642.18, 717.8,  
1106.52, 1123.46, 1332.49, 1466.23, 1537.28, 3259.05, 4832.98]
```

```
[32]: df.plot.bar(x='Sector',y='2012-13',legend=None,figsize=(15,10),rot=0)  
      mp.ylabel('20012-13')  
      mp.xticks(rotation=90)  
      mp.locator_params(nbins=90)
```

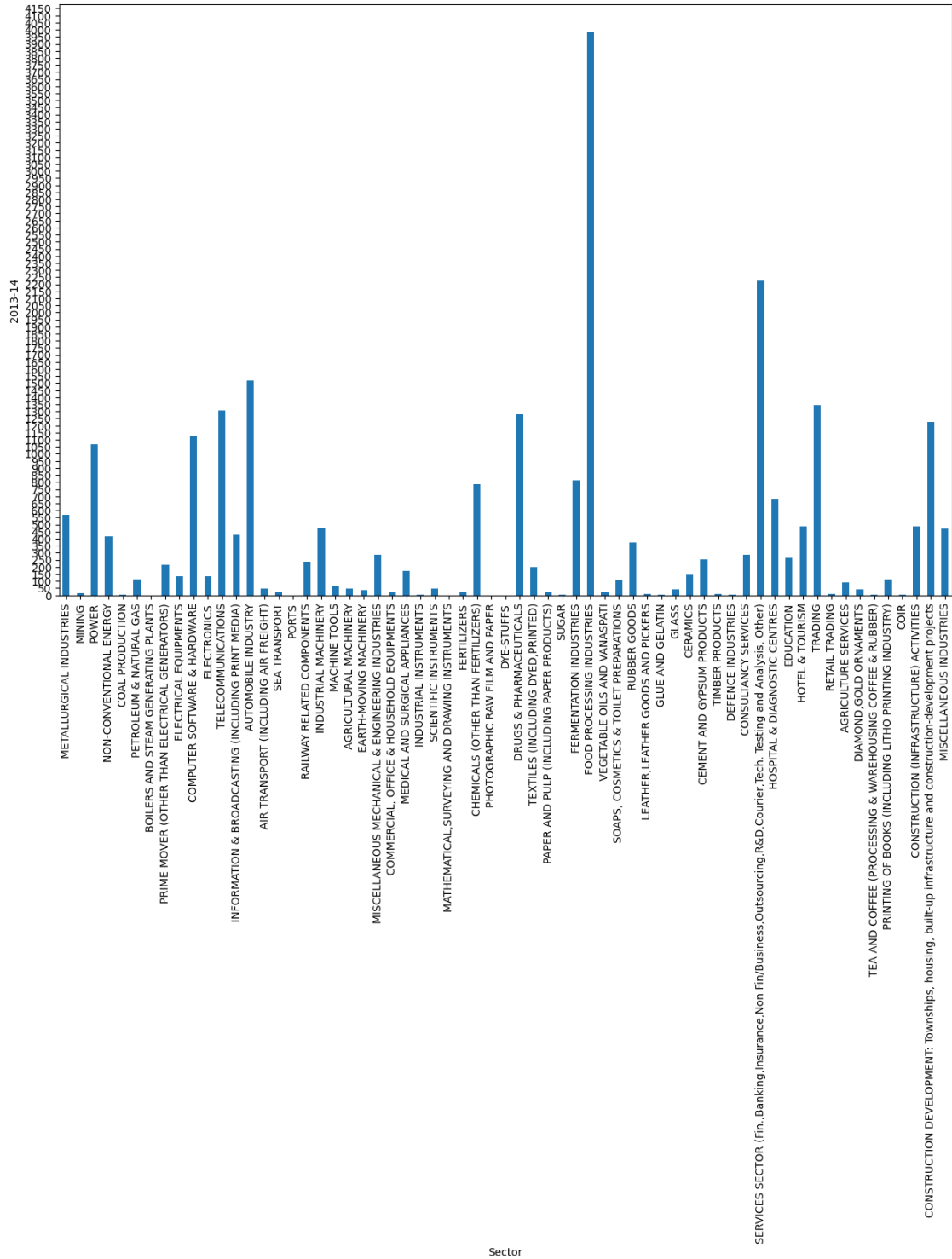


From the above bar plot we can conclude that in the financial year 2012-13 investment is high by Services Sector (Eg. banking & Finance. etc) and low by Coir and some sectors have zero investment.

```
[33]: Fy14=list(df['2013-14'])  
      Fy14.sort()  
      print(Fy14)
```

```
[0.0, 0.0, 0.0, 0.17, 0.31, 0.53, 0.54, 0.82, 0.97, 2.96, 3.08, 5.86, 6.14,  
6.16, 11.3, 12.73, 20.49, 20.65, 21.13, 21.55, 26.86, 34.44, 42.56, 43.09,  
45.08, 45.95, 48.78, 64.52, 91.01, 108.44, 112.23, 113.78, 132.58, 134.31,  
150.09, 173.48, 198.86, 212.78, 236.93, 254.01, 262.09, 285.85, 288.13, 370.54,  
414.25, 428.52, 468.74, 477.38, 485.37, 486.38, 567.63, 684.58, 786.76, 814.58,  
1066.08, 1126.27, 1226.05, 1279.34, 1306.95, 1343.39, 1517.28, 2225.1, 3982.89]
```

```
[34]: df.plot.bar(x='Sector',y='2013-14',legend=None,figsize=(15,10),rot=0)  
      mp.ylabel('2013-14')  
      mp.xticks(rotation=90)  
      mp.locator_params(nbins=90)
```

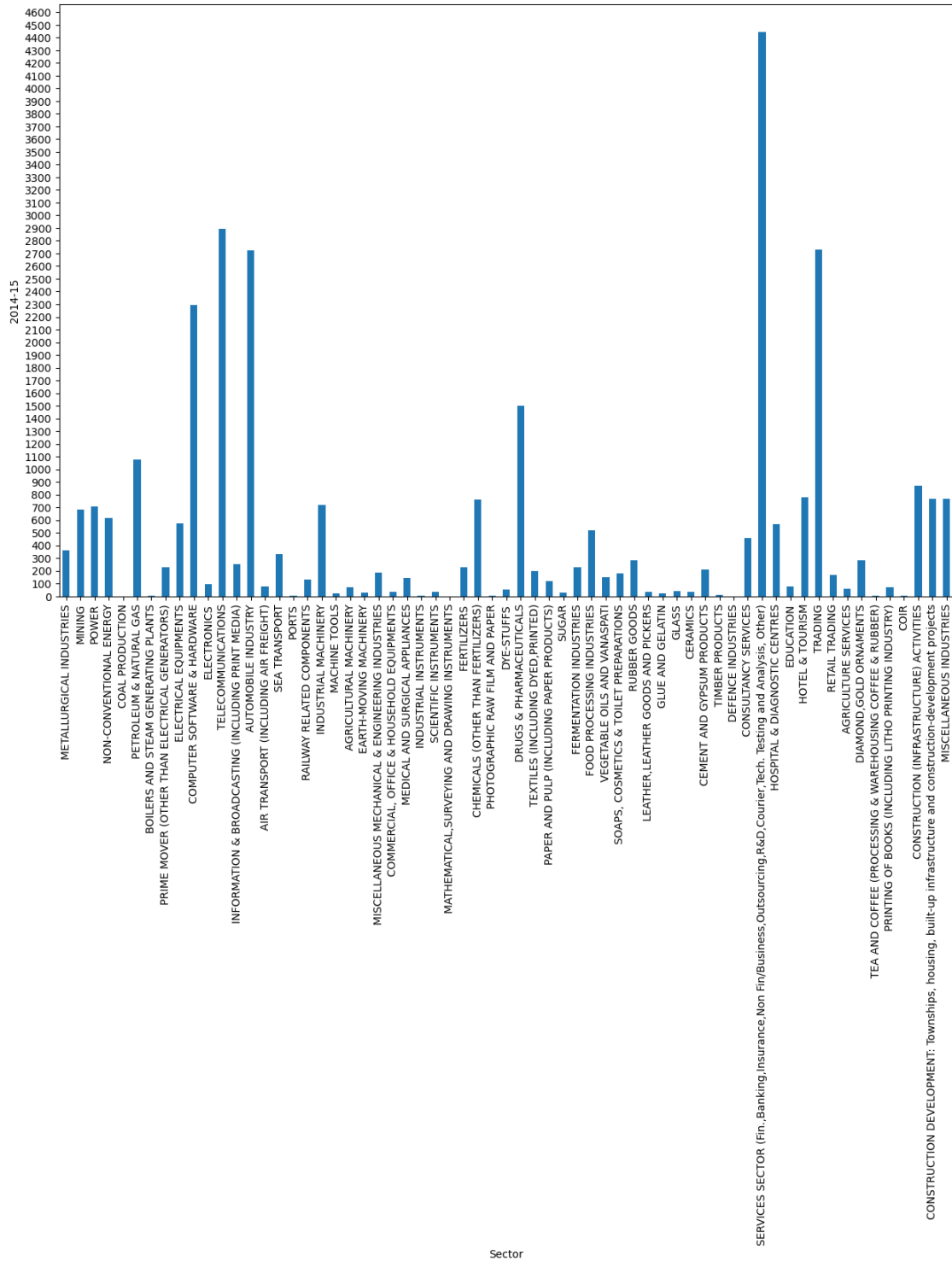


From the above bar plot we can conclude that in the financial year 2013-14 investment is high by Food Processing Industries and low by Boilers & Steam Generating Plants and some sectors have zero investment.

```
[35]: Fy15=list(df['2014-15'])  
      Fy15.sort()  
      print(Fy15)
```

```
[0.0, 0.0, 0.08, 0.75, 0.85, 1.33, 1.36, 1.43, 1.9, 8.97, 21.44, 24.06, 27.77,  
30.11, 32.34, 33.39, 34.21, 35.29, 41.82, 54.89, 59.95, 72.35, 72.58, 74.56,  
78.86, 96.84, 116.21, 129.73, 145.93, 148.34, 168.72, 177.22, 186.69, 197.42,  
208.99, 225.32, 225.38, 230.7, 254.96, 280.18, 284.51, 333.22, 359.34, 458.13,  
515.86, 567.85, 574.83, 615.95, 684.39, 707.04, 716.79, 762.76, 765.88, 769.14,  
777.01, 870.25, 1079.02, 1497.74, 2296.04, 2725.64, 2727.96, 2894.94, 4443.26]
```

```
[36]: df.plot.bar(x='Sector',y='2014-15',legend=None,figsize=(15,10),rot=0)  
      mp.ylabel('2014-15')  
      mp.xticks(rotation=90)  
      mp.locator_params(nbins=90)
```

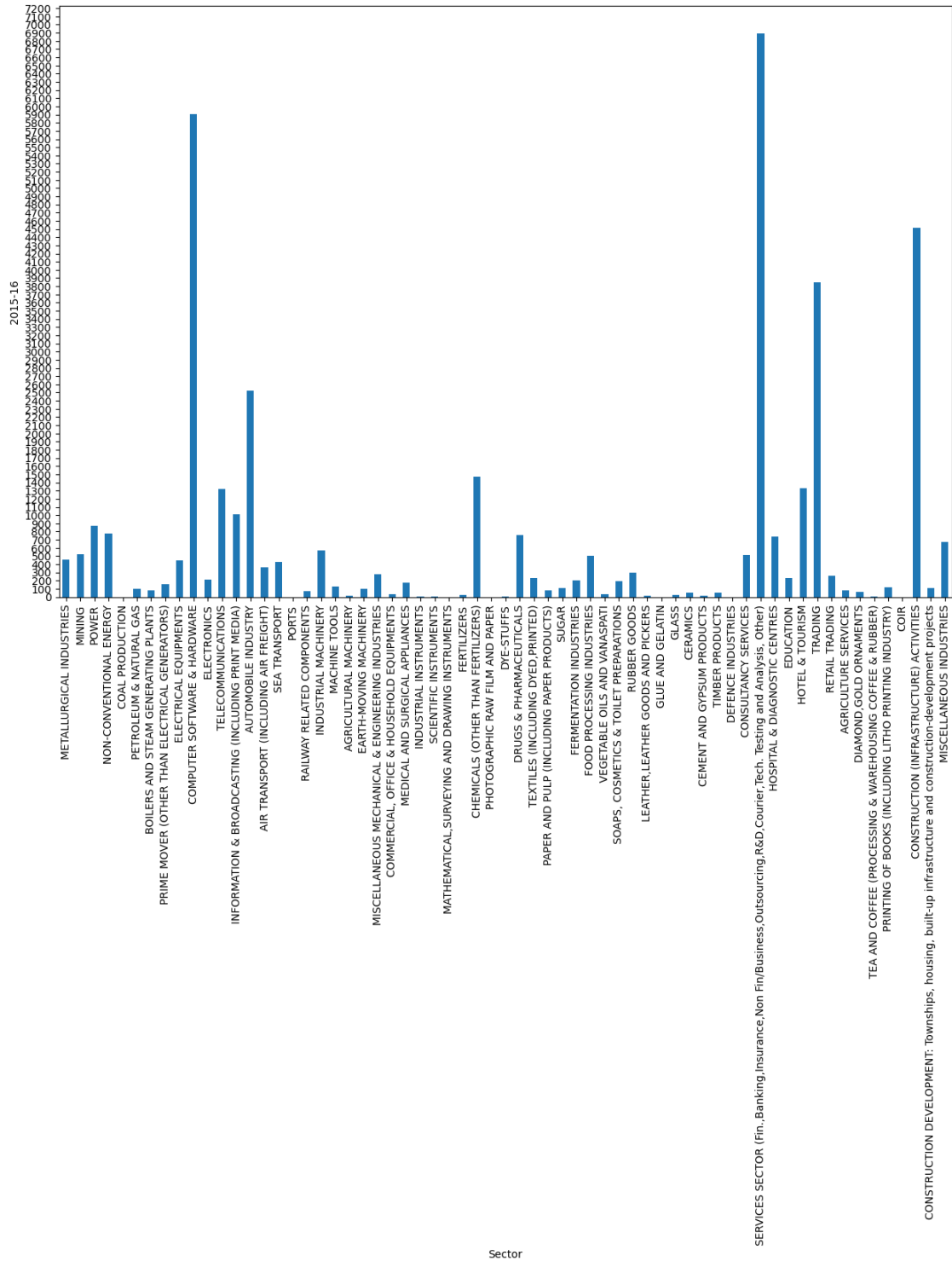


From the above bar plot we can conclude that in the financial year 2014-15 investment is high by Services Sector (Eg. banking & Finance etc) and low by Defence Industries and some sectors have zero investment.

```
[37]: Fy16=list(df['2015-16'])  
      Fy16.sort()  
      print(Fy16)
```

```
[0.0, 0.0, 0.0, 0.0, 0.0, 0.1, 0.82, 1.12, 3.32, 6.36, 7.42, 16.44, 17.13,  
19.69, 20.93, 25.78, 34.22, 36.68, 51.21, 53.17, 58.54, 73.99, 77.91, 84.65,  
85.21, 97.66, 103.02, 105.85, 112.55, 122.81, 126.38, 159.13, 173.26, 193.26,  
202.36, 208.39, 230.13, 230.78, 262.24, 274.57, 296.15, 361.25, 429.3, 444.88,  
456.31, 505.88, 517.47, 520.67, 568.26, 668.77, 742.35, 754.26, 776.51, 868.8,  
1009.34, 1324.4, 1332.69, 1469.95, 2526.82, 3845.32, 4510.71, 5904.36, 6889.46]
```

```
[38]: df.plot.bar(x='Sector',y='2015-16',legend=None,figsize=(15,10),rot=0)  
      mp.ylabel('2015-16')  
      mp.xticks(rotation=90)  
      mp.locator_params(nbins=90)
```

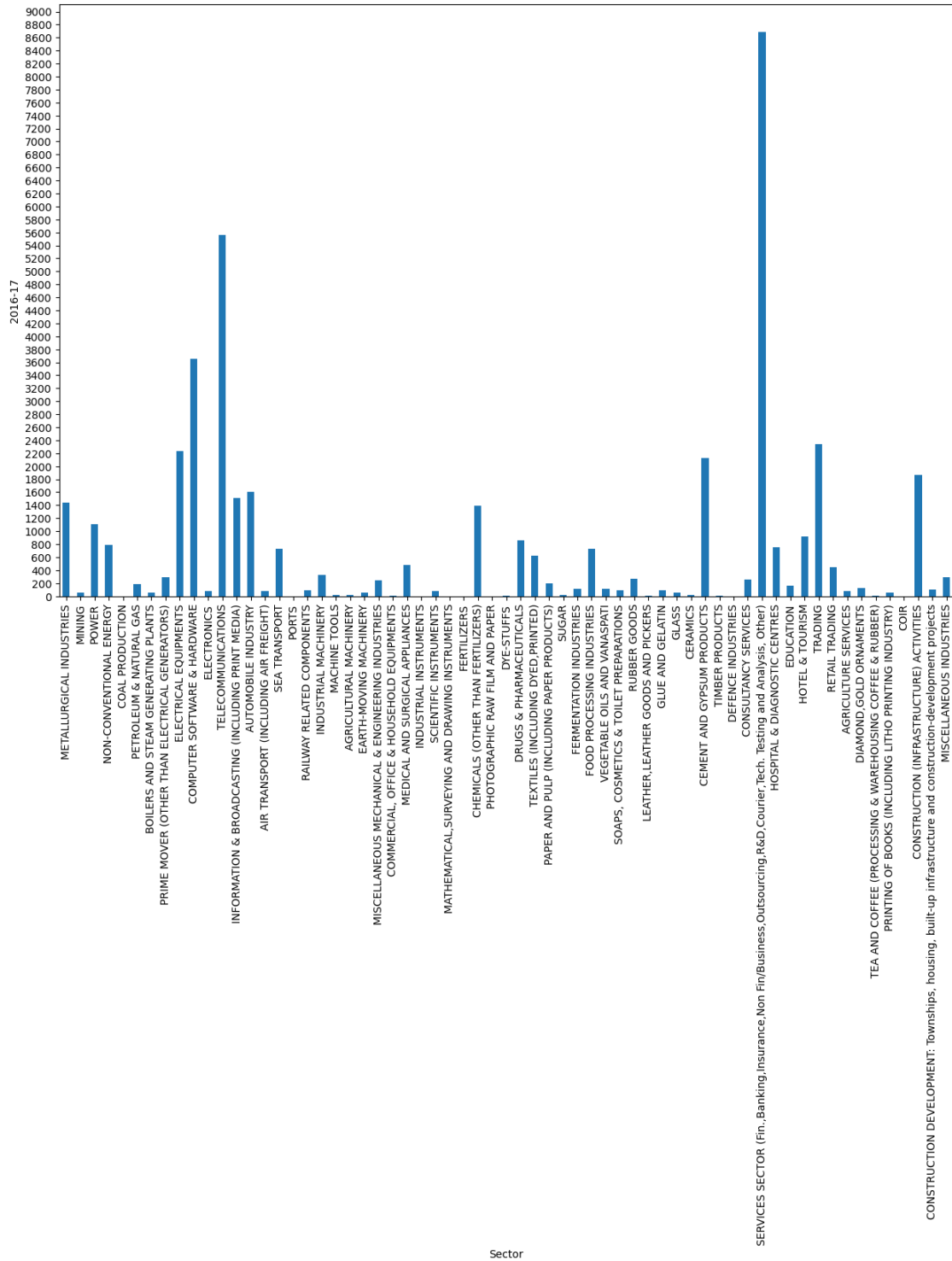



From the above bar plot we can conclude that in the financial year 2015-16 investment is high by Services Sector (Eg. banking & Finance. etc) and low by Defence Industries and some sectors have zero investment.

```
[39]: Fy17=list(df['2016-17'])  
      Fy17.sort()  
      print(Fy17)
```

```
[0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.8, 0.89, 1.6, 2.3, 7.44, 10.23, 10.7, 15.19,  
15.4, 15.92, 23.89, 51.69, 52.23, 53.17, 53.91, 55.75, 76.43, 76.66, 83.4,  
83.97, 87.57, 90.6, 92.6, 105.14, 108.45, 110.86, 123.92, 160.12, 180.4, 197.61,  
245.24, 261.14, 262.76, 286.88, 296.4, 329.3, 450.94, 479.71, 618.95, 727.22,  
735.06, 747.38, 783.57, 857.39, 916.13, 1112.98, 1392.8, 1440.18, 1516.68,  
1609.32, 1860.73, 2130.1, 2230.69, 2338.4, 3651.71, 5563.69, 8684.07]
```

```
[40]: df.plot.bar(x='Sector',y='2016-17',legend=None,figsize=(15,10),rot=0)  
      mp.ylabel('2016-17')  
      mp.xticks(rotation=90)  
      mp.locator_params(nbins=90)
```



From the above bar plot we can conclude that in the financial year 2016-17 investment is high by Services Sector (Eg. banking & insurance etc) and low by Industrial Instruments and some sectors have zero investment.

From the above all sector-wise vs financial year bar graphs and the Teableau visualizations we can conclude that Services Sector(Eg.Banking&Finance etc.) is the high investment sector in maximum number of financial years followed by Computers Software & Hardware sector and Coir is the low investment sector in maximum number of financial years and in every financial year some sectors have zero investment.