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Vellore Institute of Technology
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Digital Assignmant - 2

Submitted by

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CASE STUDY : Forensic Direct Investment (FDI)

1. Introduction

A foreign direct investment (FDI) is a purchase of an interest in a company by a company or an investor located outside its borders.

Generally, the term is used to describe a business decision to acquire a substantial stake in a foreign business or to buy it outright in order to expand its operations to a new region. It is not usually used to describe a stock investment in a foreign company.

- Foreign direct investments (FDI) are substantial investments made by a company into a foreign concern.
- The investment may involve acquiring a source of materials, expanding a company's footprint, or developing a multinational presence.
- As of 2020, the U.S. is second to China in attracting FDI.

How Foreign Direct Investments (FDI) Work

Companies considering a foreign direct investment generally look only at companies in open economies that offer a skilled workforce and above-average growth prospects for the investor. Light government regulation also tends to be prized.

Foreign direct investment frequently goes beyond capital investment. It may include the provision of management, technology, and equipment as well.

A key feature of foreign direct investment is that it establishes effective control of the foreign business or at least substantial influence over its decision-making.

In 2020, foreign direct investment tanked globally due to the COVID-19 pandemic, according to the United Nations Conference on Trade and Development. The total \$859 billion global investment compares with \$1.5 trillion the previous year.¹

And, China dislodged the U.S. in 2020 as the top draw for total investment, attracting \$163 billion compared to investment in the U.S. of \$134 billion.²

Special Considerations

Foreign direct investments can be made in a variety of ways, including opening a subsidiary or associate company in a foreign country, acquiring a controlling interest in an existing foreign company, or by means of a merger or joint venture with a foreign company.

The threshold for a foreign direct investment that establishes a controlling interest, per guidelines established by the Organisation of Economic Co-operation and Development (OECD), is a minimum 10% ownership stake in a foreign-based company.

That definition is flexible. There are instances in which effective controlling interest in a firm can be established by acquiring less than 10% of the company's voting shares.

2. Tools Used :-

Tableau :

Tableau is a data visualization and analytics platform that allows users to create reports and share them across desktop and mobile platforms, within a browser, or embedded in an application. It can run on the cloud or on-premises. Much of the Tableau platform runs on top of its core query language, VizQL. This translates drag-and-drop dashboard and visualization components into efficient back-end queries and minimizes the need for end-user performance optimizations. However, Tableau lacks support for advanced SQL queries.

Microsoft Power BI :

Microsoft Power BI is a top business intelligence platform with support for dozens of data sources. It allows users to create and share reports, visualizations, and dashboards. Users can combine a group of dashboards and reports into a Power BI app for simple distribution. Power BI also allows users to build automated machine learning models and integrates with Azure Machine Learning.

3. Metrics:

In this case study, we will explore FDI Dataset and Analyze it from the perspective of a Business. We shall look at various sectors to determine which sector will prove most beneficial to collaborate with, for the company.

1. Which sector receive the maximum direct funding for a given Year?
2. Which sector receive the minimum direct funding for a given year?
3. Is there a trend for Direct Investments for Individual sectors?
4. In what fashion can the sectors be grouped for comparisons?
5. Which sectors reported the Highest Growth in the Past 5 years?
6. Which sectors reported the Highest Decline in the Past 5 years?
7. Which sectors reported the most variation overall?
8. What is the proportion of investment between sectors from the FDI perspective?
9. Are there any specific clusters present in the Data?
10. Can we Forecast the trend for the following years?

4. Explanation

First we open Tableau Public and Power BI tool and connect our Data . In order to clean our dataset, we click on Data Interpreter. It cleans our microsoft Excel workbook. We can add filters to exclude unnecessary rows and columns. We can reduce the number of columns by convert our dataset from wide format to long format by using Pivot option. Here we can rename the columns using rename options. We can manipulate our dataset using various options which are available here.

Changed Type

Untitled - Power Query Editor

File Home Transform Add Column View Tools Help

Close & Apply New Source Recent Sources Enter Data Data source settings Manage Parameters Refresh Preview Properties Advanced Editor Manage Query Choose Columns Remove Columns Keep Rows Remove Rows Sort Split Column Group By Data Type: Text Use First Row as Headers Replace Values

fx = Table.TransformColumnTypes(Source,{{"Column1", type text}, {"Column2", type text}, {"Column3", type text}, {"Column4", type text},

Column1	Column2	Column3	Column4	Column5	Column6
1	Sector	2000-01	2001-02	2002-03	2003-04
2	METALLURGICAL INDUSTRIES	22.69	14.14	36.61	200.38
3	MINING	1.32	6.52	10.06	23.48
4	POWER	89.42	757.44	59.11	43.37
5	NON-CONVENTIONAL ENERGY	0	0	1.7	4.14
6	COAL PRODUCTION	0	0	0	0.04
7	PETROLEUM & NATURAL GAS	9.35	211.07	56.78	80.64
8	BOILERS AND STEAM GENERATING PLANTS	0	0	0	0.04
9	PRIME MOVER (OTHER THAN ELECTRICAL GENERATORS)	0	0	0	0
10	ELECTRICAL EQUIPMENTS	79.76	65.76	34.71	73.2
11	COMPUTER SOFTWARE & HARDWARE	228.39	419.39	314.24	368.32
12	ELECTRONICS	8.34	12.47	295.88	82.31
13	TELECOMMUNICATIONS	177.69	873.23	191.6	86.49
14	INFORMATION & BROADCASTING (INCLUDING PRINT ...	81.5	4.54	36.5	13.72
15	AUTOMOBILE INDUSTRY	195.33	235.76	419.96	119.09
16	AIR TRANSPORT (INCLUDING AIR FREIGHT)	0	0	3.8	0.94
17	SEA TRANSPORT	2.41	19.81	29.32	21.95
18					

195.33

Unpivoted columns

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File Home Transform Add Column View Tools Help

Close & Apply New Source Recent Sources Enter Data Data source settings Manage Parameters Refresh Preview Properties Advanced Editor Manage Query Choose Columns Remove Columns Keep Rows Remove Rows Sort Split Column Group By Data Type: Text Use First Row as Headers Replace Values

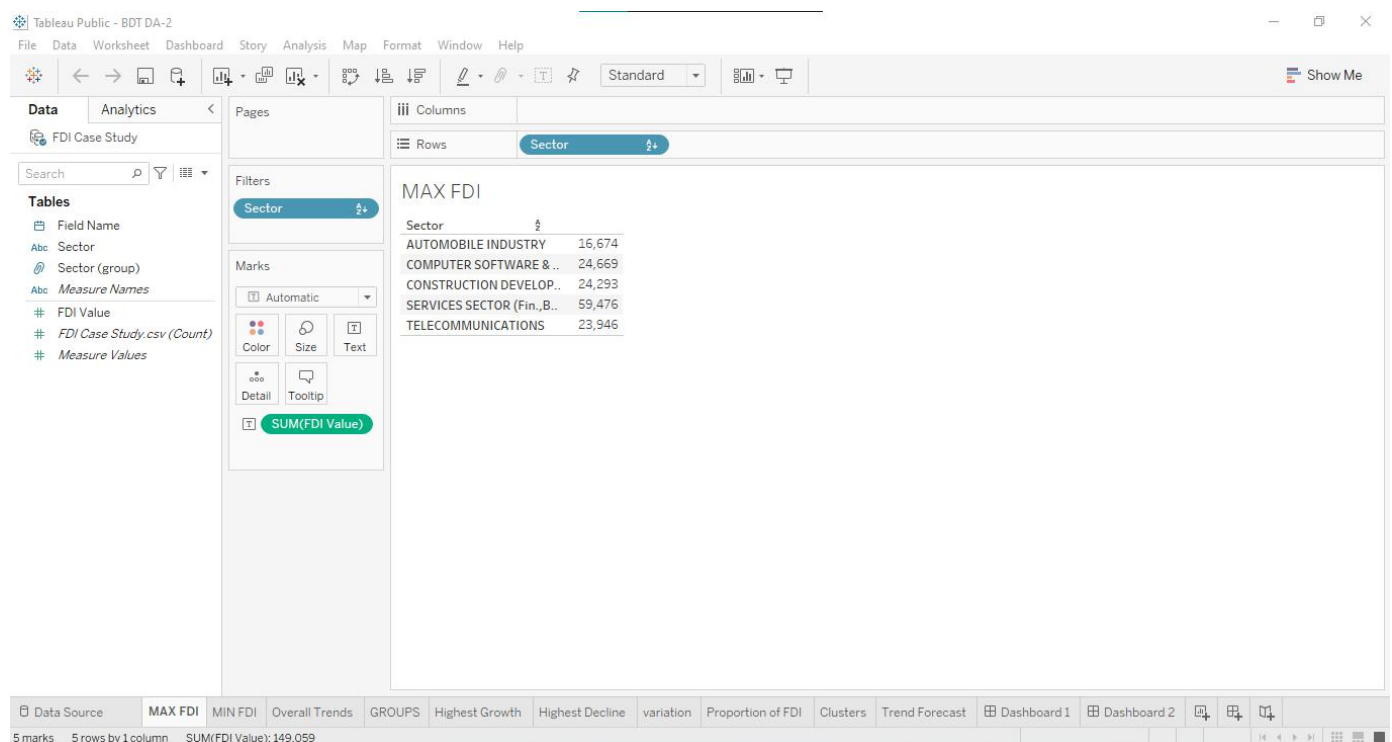
fx = Table.UnpivotOtherColumns("#Changed Type", {"Column1"}, "Attribute", "Value")

Column1	Attribute	Value
18	METALLURGICAL INDUSTRIES	Column2
19	METALLURGICAL INDUSTRIES	Column3
20	METALLURGICAL INDUSTRIES	Column4
21	METALLURGICAL INDUSTRIES	Column5
22	METALLURGICAL INDUSTRIES	Column6
23	METALLURGICAL INDUSTRIES	Column7
24	METALLURGICAL INDUSTRIES	Column8
25	METALLURGICAL INDUSTRIES	Column9
26	METALLURGICAL INDUSTRIES	Column10
27	METALLURGICAL INDUSTRIES	Column11
28	METALLURGICAL INDUSTRIES	Column12
29	METALLURGICAL INDUSTRIES	Column13
30	METALLURGICAL INDUSTRIES	Column14
31	METALLURGICAL INDUSTRIES	Column15
32	METALLURGICAL INDUSTRIES	Column16
33	METALLURGICAL INDUSTRIES	Column17
34	METALLURGICAL INDUSTRIES	Column18
35	MINING	Column2
36	MINING	Column3
37	MINING	Column4
38	MINING	Column5
39	MINING	Column6
40	MINING	Column7
41	MINING	Column8

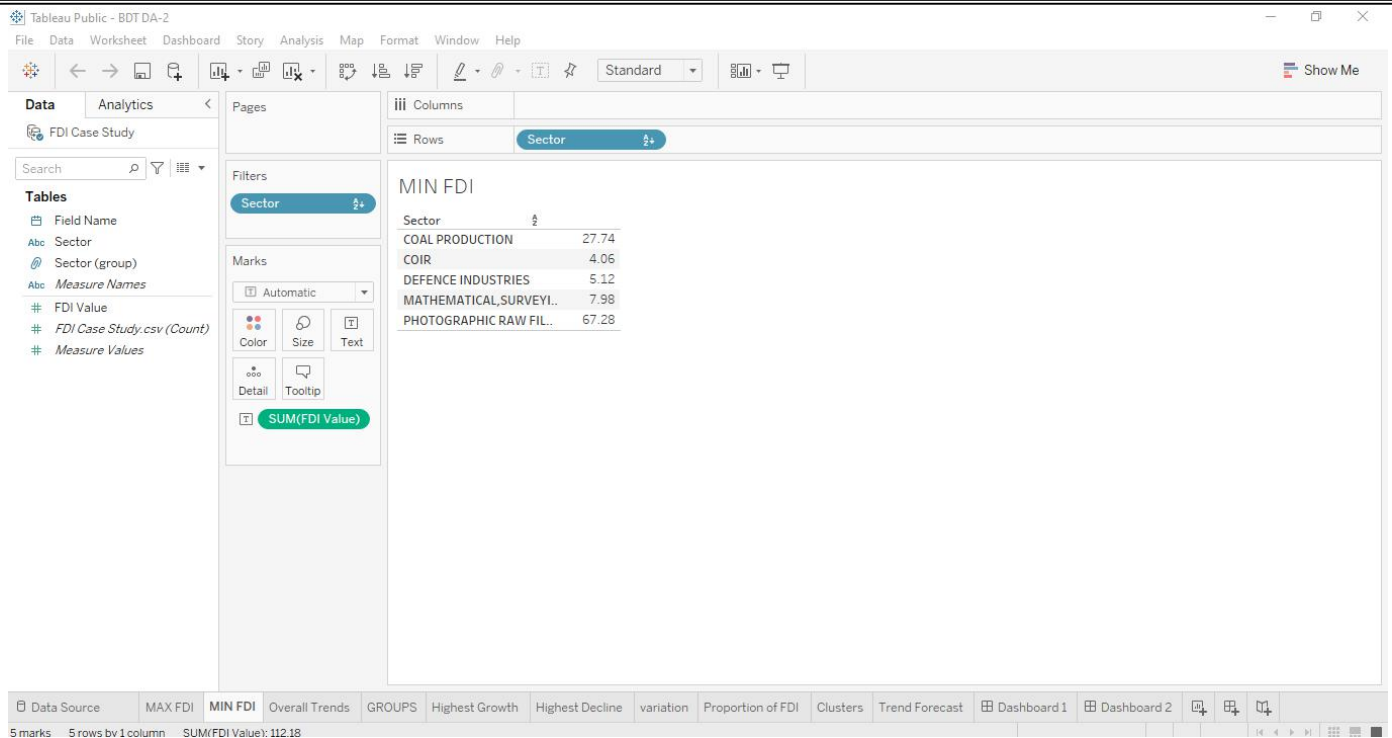
3 COLUMNS, 999+ ROWS Column profiling based on top 1000 rows

We can work on the worksheets where the visualizations are to be viewed and on the left we have filter, measures, dimensions etc. Once we provide appropriate inputs for the rows and columns shelves, it will highlight the graphs that we can make out of it.

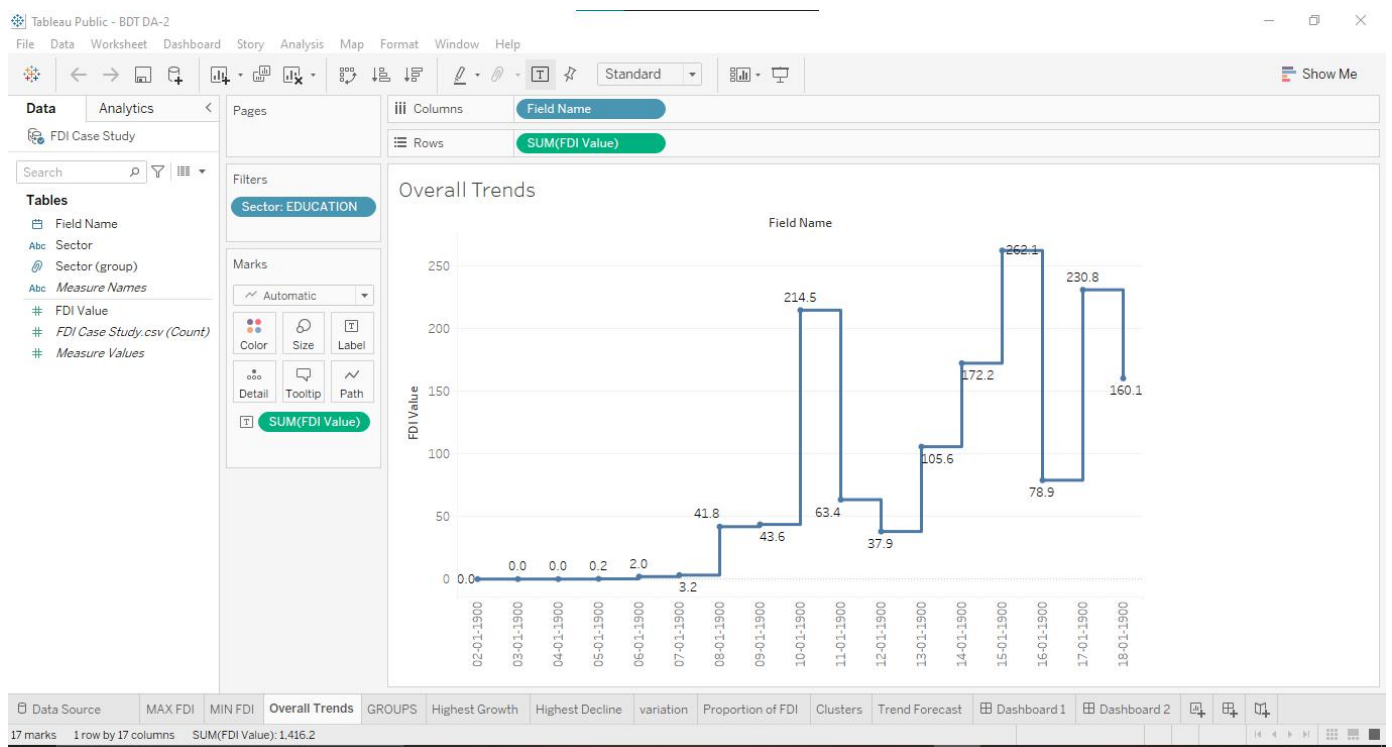
1. By providing sector in rows, FDI Value in labels, and Field Name in Filters, we can edit filter by field and we can set to maximum and assign the value to 5 , we get top 5 sectors receiving the max. Direct funding for the given year.



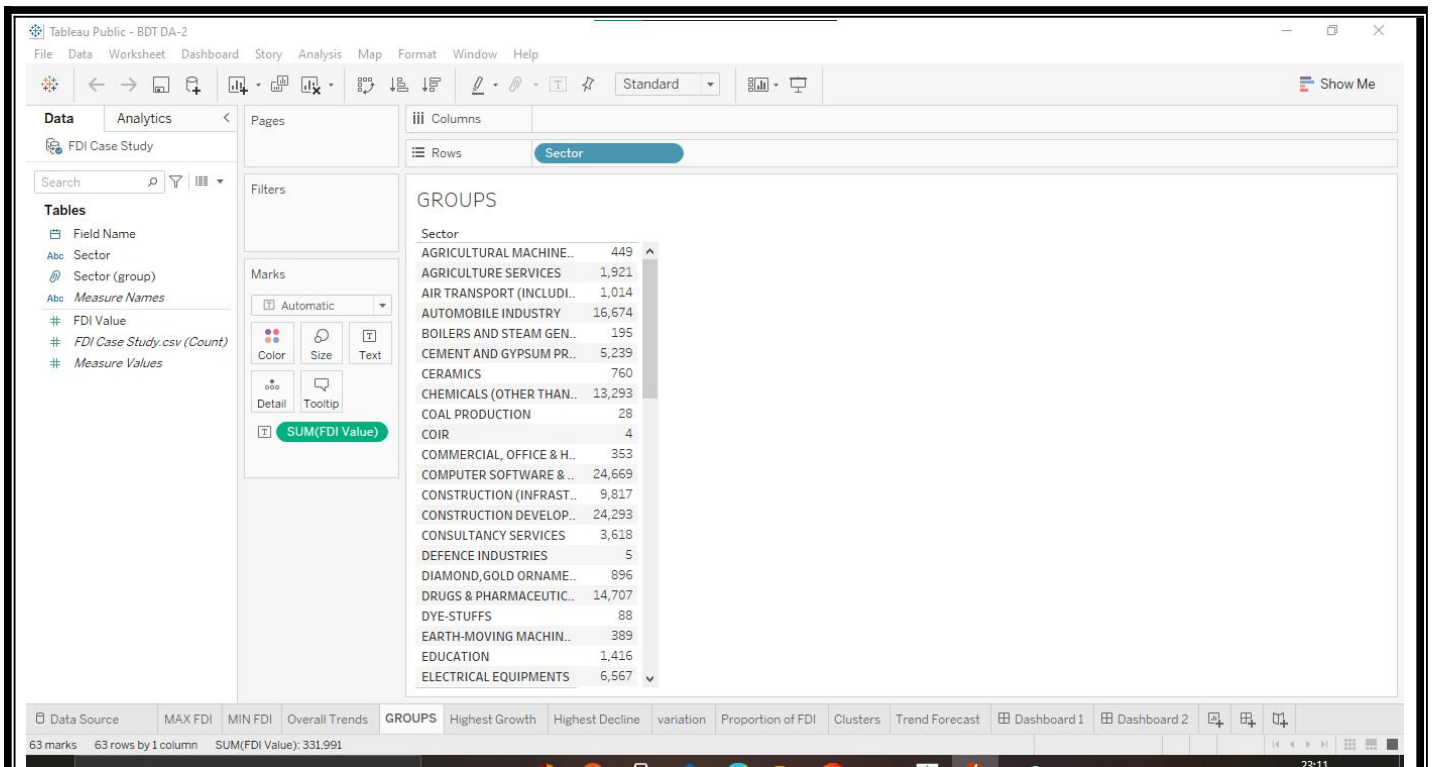
2. By providing sector in rows, FDI Value in labels, and Field Name in Filters, we can edit filter by field and we can set to maximum and assign the value to 5 , we get top 5 sectors receiving the max. Direct funding for the given year.



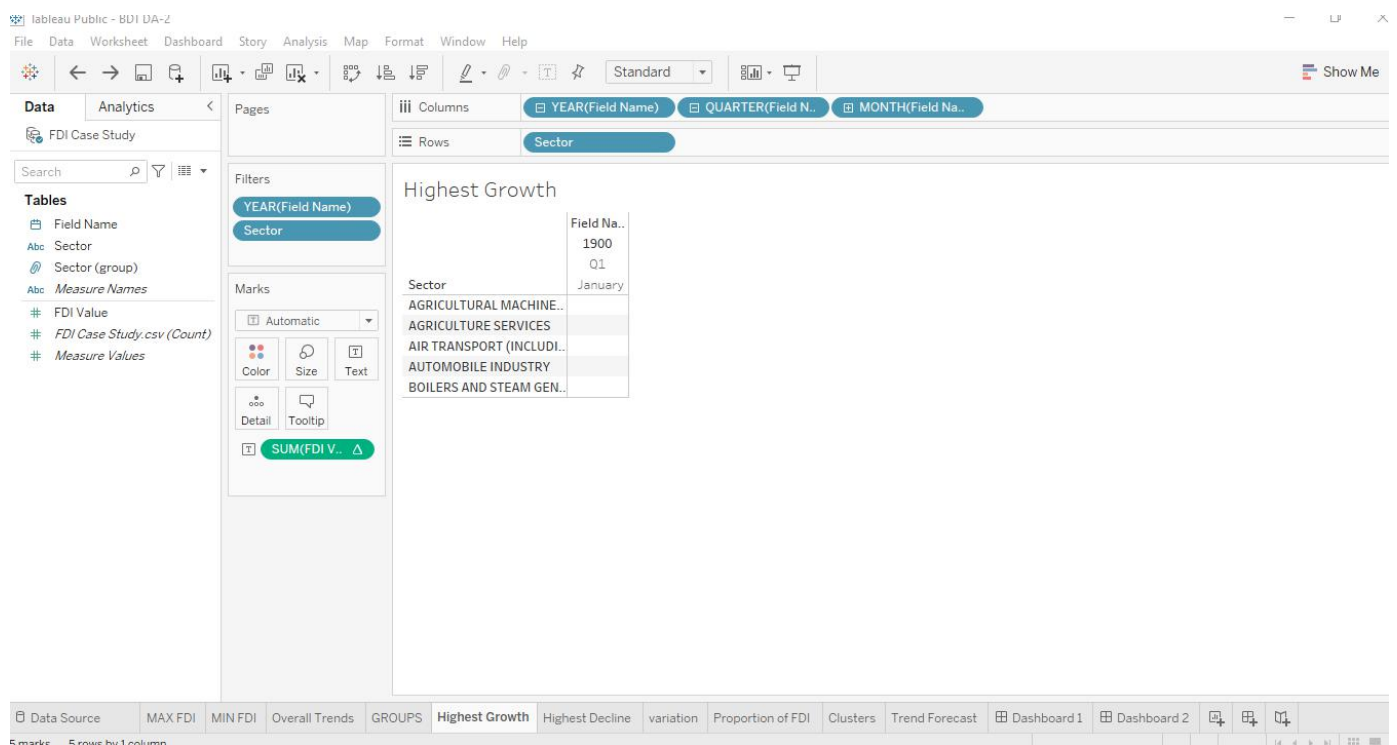
3. By providing FDI Values in rows, Field Name in columns, and changing the data type into Date, we get a line chart.



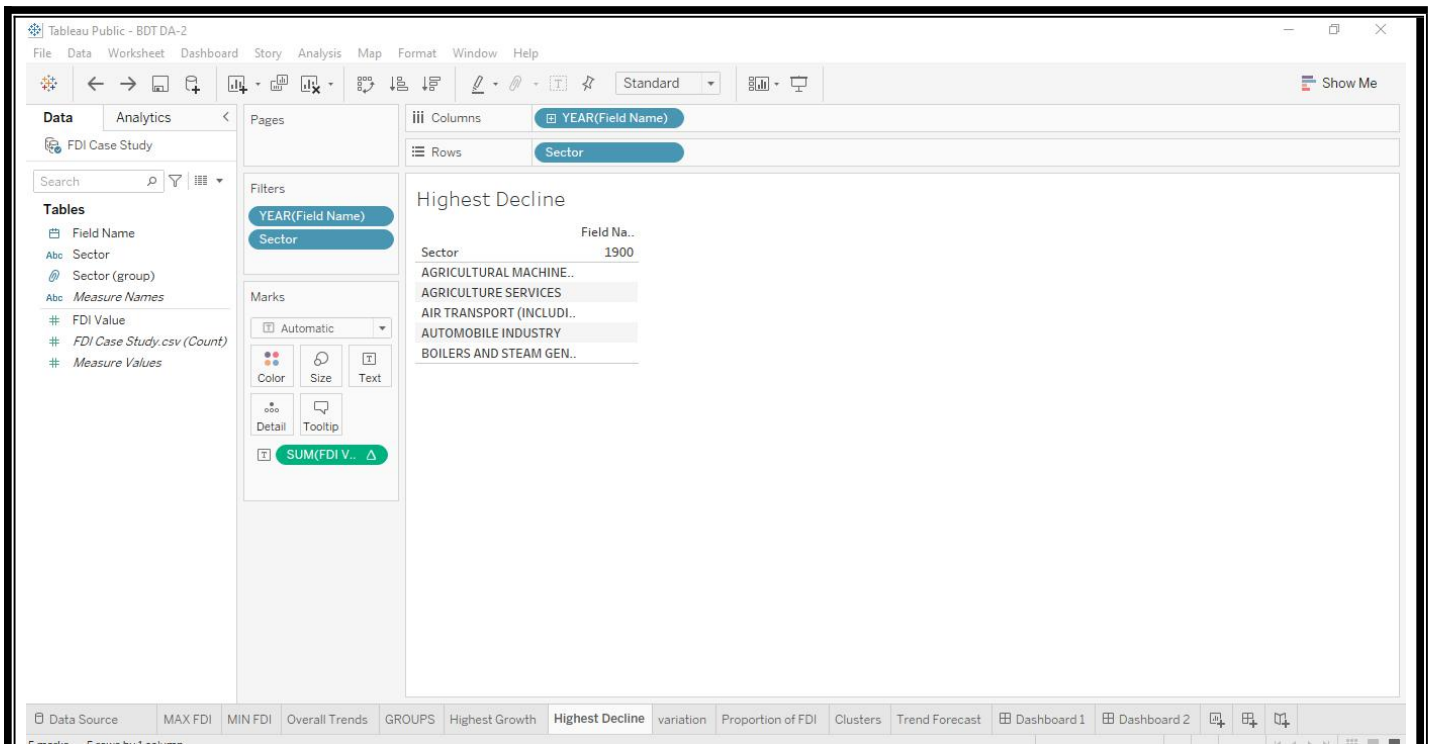
4. We can group the similar looking sector into a single group and create several groups. By providing sector in rows, FDI Value in labels, we get the data of comparison of the groups.



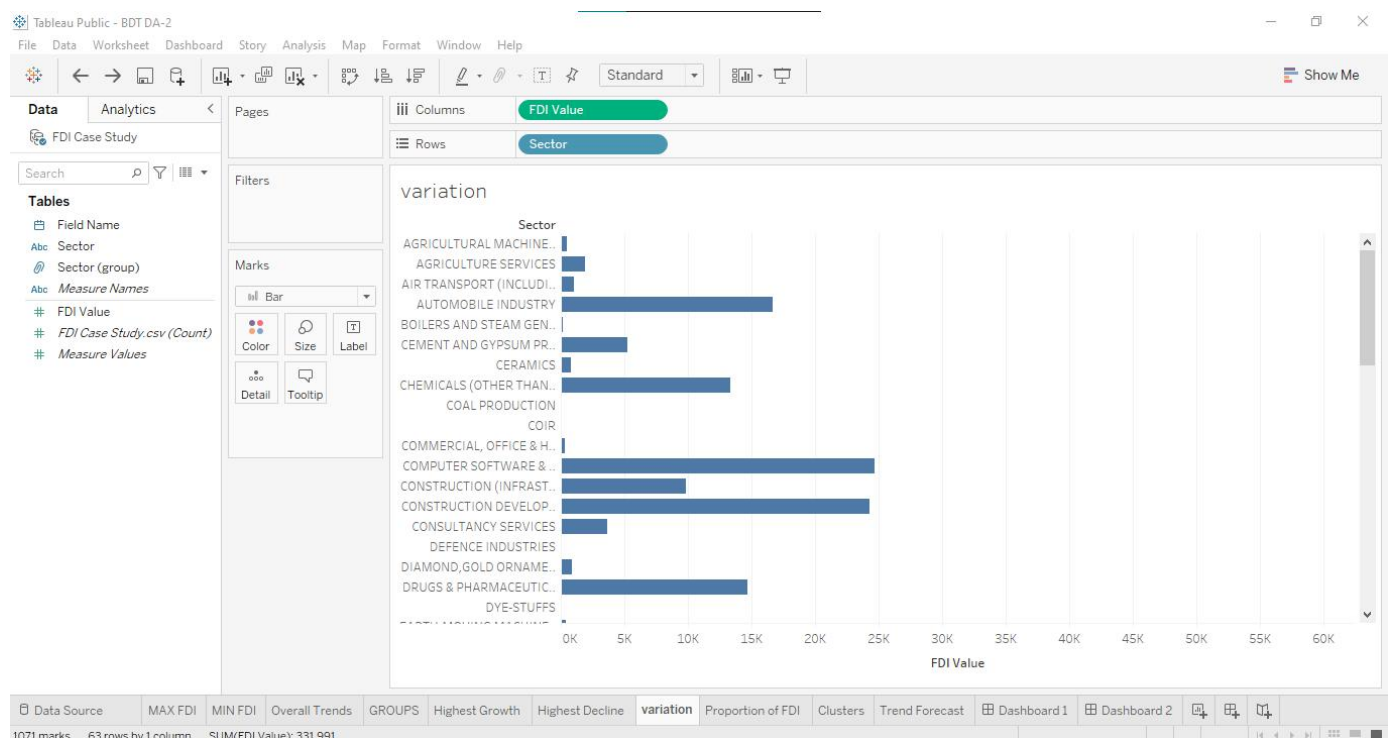
5. By providing sector in rows, Field Name in columns, FDI Value in labels, and setting by field to top, Field Name, Maximum, and assigning the value 5, we get the data table of Highest Growth.



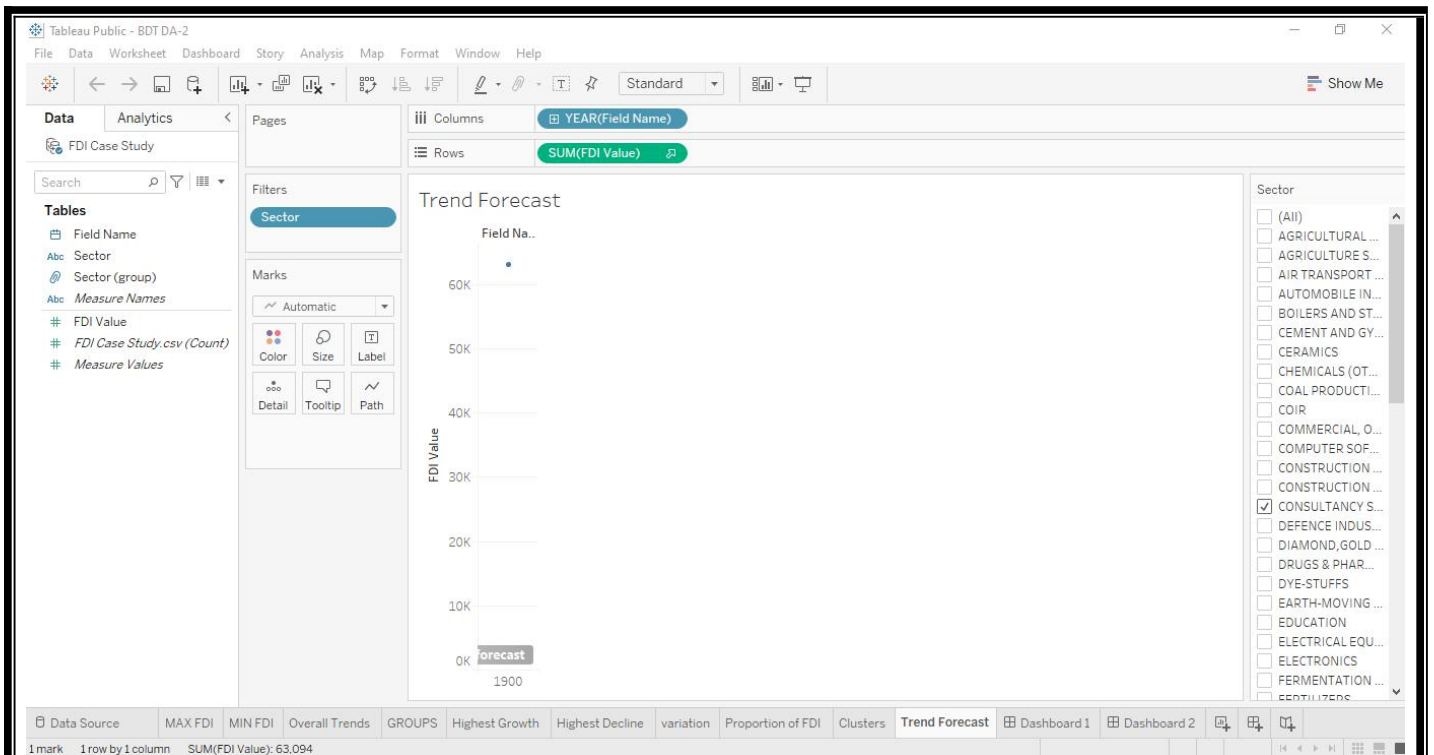
6. By providing sector in rows, Field Name in columns, FDI Value in labels, and setting by field to Bottom, Field Name, Minimum, and assigning the value 5, we get the data table of Highest Decline.



7. By providing FDI Values in rows, sector in columns, we get the overall variation.



8. By providing sector and FDI Value in rows, and by clicking on the Treemap, we get the Proportion of FDI.



Conclusion:

Now, we have finished discussing all the above mentioned metrics/questions by analyzing and visualizing the datasets for the Forensic Direct Investment Casestudy.

Thank You

