



TURKISH EXPORT AND IMPORT ANALYSIS

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Project location:

<https://github.com/L4wr3nd/TradeTR>

<https://public.tableau.com/app/profile/lawrick>

PROJECT OBJECTIVES

- Thematic
 - Identify basic characteristics of Turkish export and import
 - Check latest results of leading countries in generating Turkish export and import in 2021
- Technical
 - Use various tools/software to achieve thematical objectives

- Datasets' names:
 - Imports by Countries
 - Exports by Countries
- Publish date:
 - 31.12.2021 (thus without data from December 2021)
- Source:
 - <https://data.tuik.gov.tr/Kategori/GetKategori?p=dis-ticaret-104&dil=2>

SOFTWARE USED

- **MS Excel**
 - Python 3
(Jupyter Notebook & Pandas)
 - MySQL
Workbench
8.0
 - Tableau
Public 2021.4
- Data overview
 - Data preparation for further analysis in other software
 - Data visualisation and analysis

SOFTWARE USED

- MS Excel
 - **Python 3**
(Jupyter
Notebook &
Pandas)
 - MySQL
Workbench
8.0
 - Tableau
Public 2021.4
- Data overview
 - Placing missing data in records
 - Creating records of all countries in years where they are missing
 - Creating new dataframe/table with year/year change
 - Data visualisation and analysis

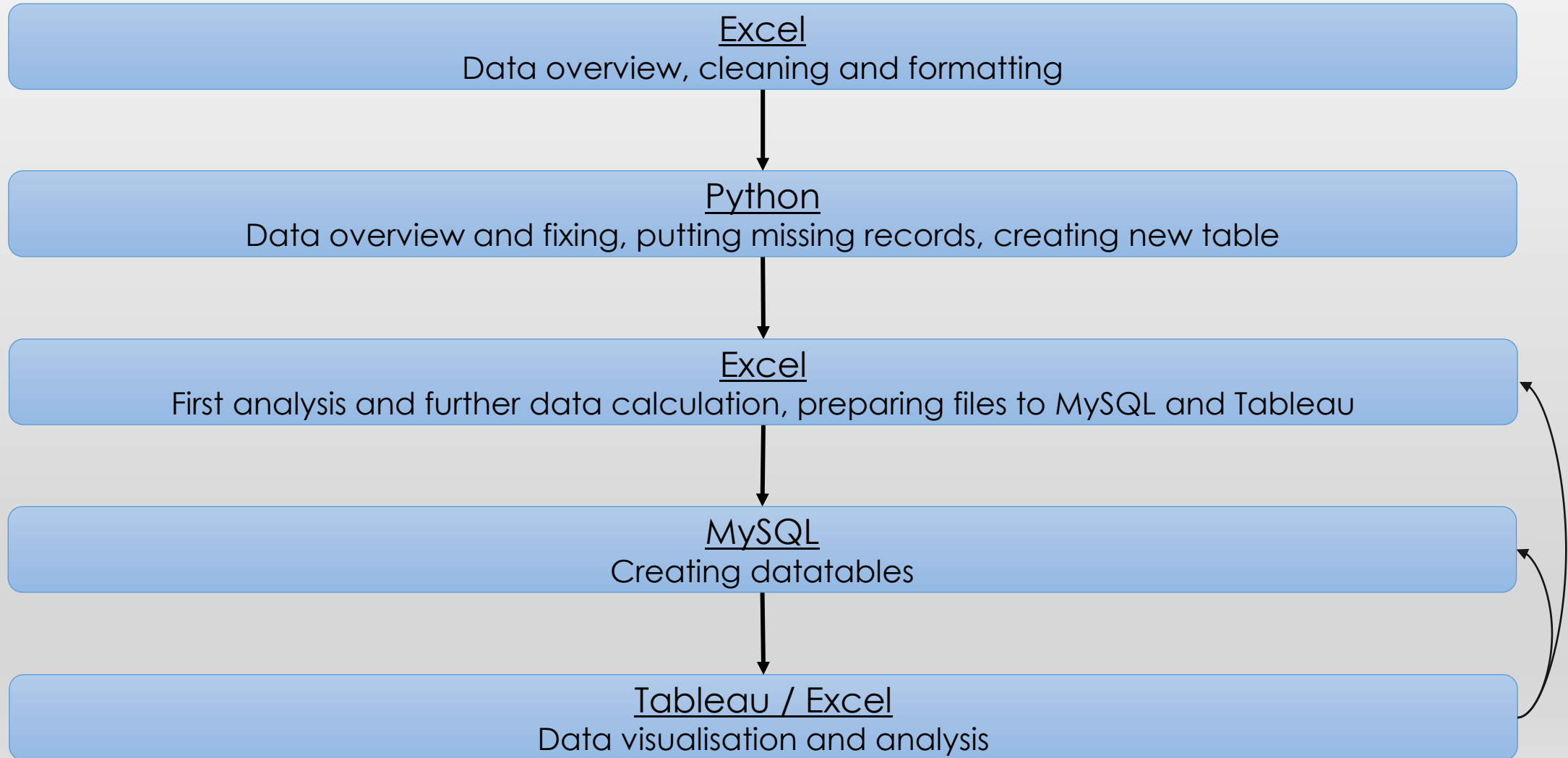
SOFTWARE USED

- MS Excel
 - Python 3
(Jupyter Notebook & Pandas)
 - **MySQL Workbench 8.0**
 - Tableau Public 2021.4
- Merging data from different tables
 - Creating final datatables for analysis

SOFTWARE USED

- MS Excel
 - Python 3
(Jupyter Notebook & Pandas)
 - MySQL Workbench 8.0
 - **Tableau Public 2021.4**
- Data visualisation and analysis

METHODOLOGY



METHODOLOGY – PYTHON SAMPLE CODE

```
In [13]: 1 countries = [state for state in data['Country'].unique()]
2 years = [x for x in range(2013, 2022)]
3 years_change = ['13/14', '14/15', '15/16', '16/17', '17/18', '18/19', '19/20', '20/21']
4 dfGDPchange = pd.DataFrame(columns = ['Country', '13/14', '14/15', '15/16', '16/17', '17/18', '18/19', '19/20',
5
```

```
In [14]: 1 #data = data.drop(columns = 'Country code')
         2 data.columns
```

```
Out[14]: Index(['Year', 'Country', 'Total', 'January', 'February', 'March', 'April',
               'May', 'June', 'July', 'August', 'September', 'October', 'November',
               'December'],
              dtype='object')
```

```
In [15]: 1 pdata = data
2
3 keylist = ['Year', 'Country', 'Total'] + calendar
4 dict_country = {}
5 for i in keylist:
6     dict_country[i] = None
7
8 for state in countries:
9     for y in years:
10         if state not in pdata[pdata['Year'] == y]['Country'].unique():
11             dict_country['Year'] = y
12             dict_country['Country'] = state
13             dict_country['Total'] = 0
14             for m in calendar:
15                 dict_country[m] = 0
16             #print(dict_country, '\n')
17             pdata = pdata.append(dict_country, ignore_index = True)
18 pdata.tail()
```

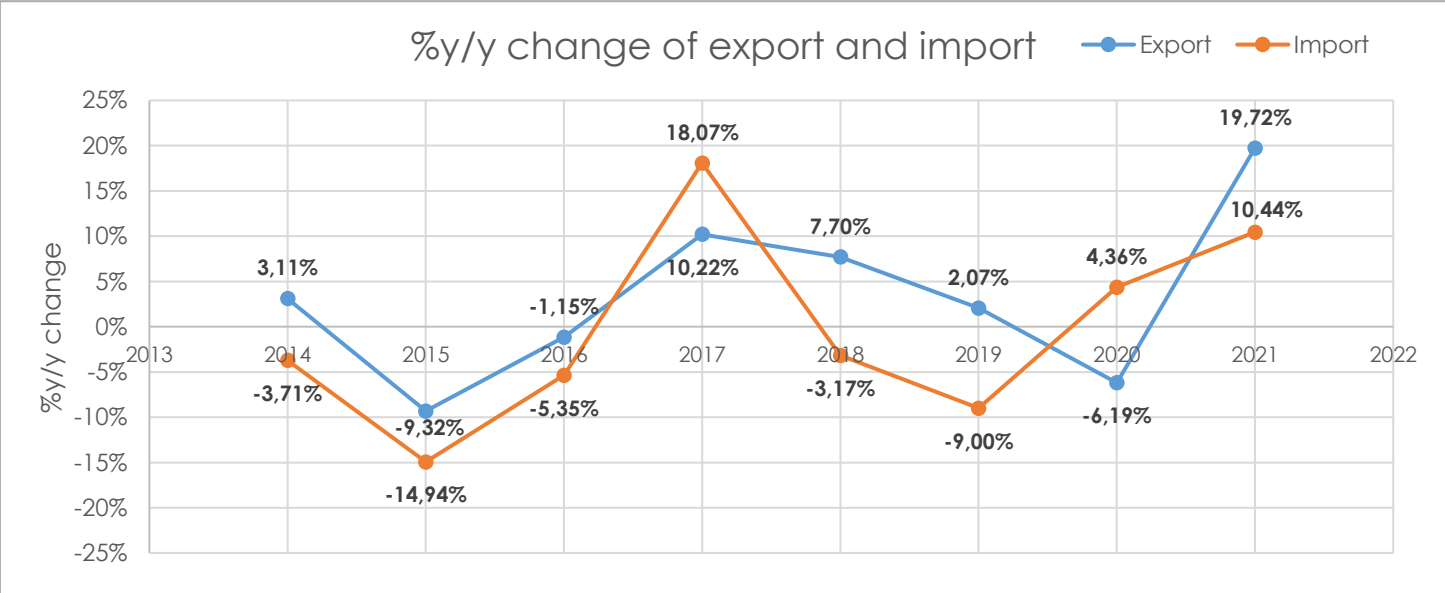
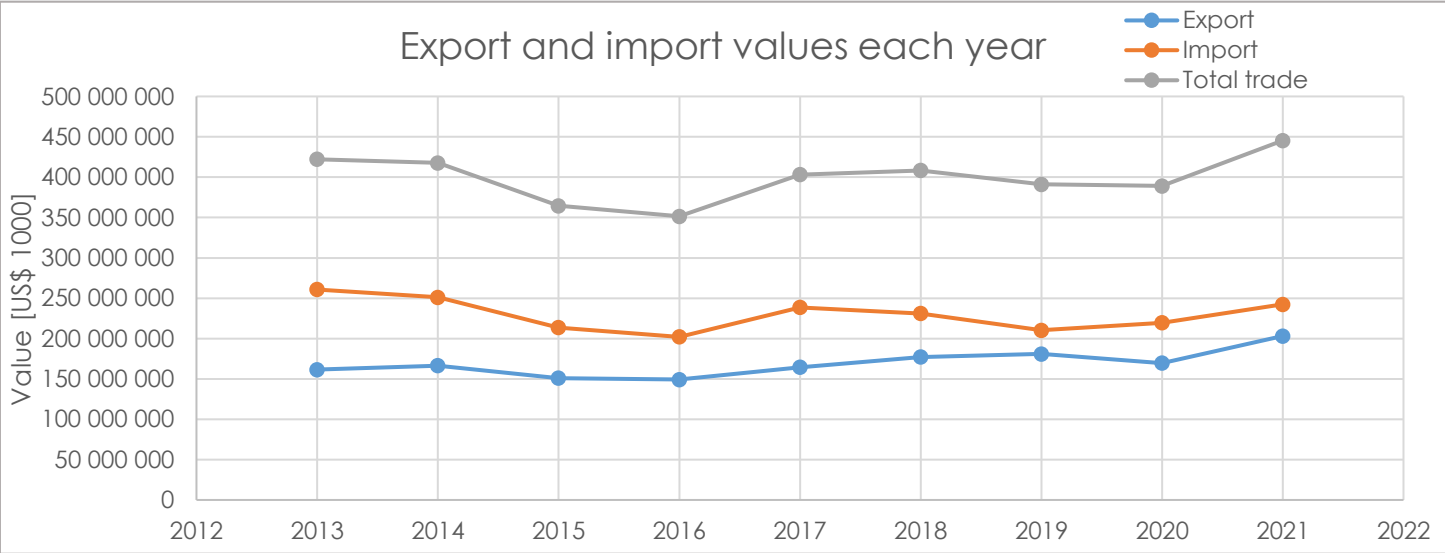
Out[15]:

[illegible]

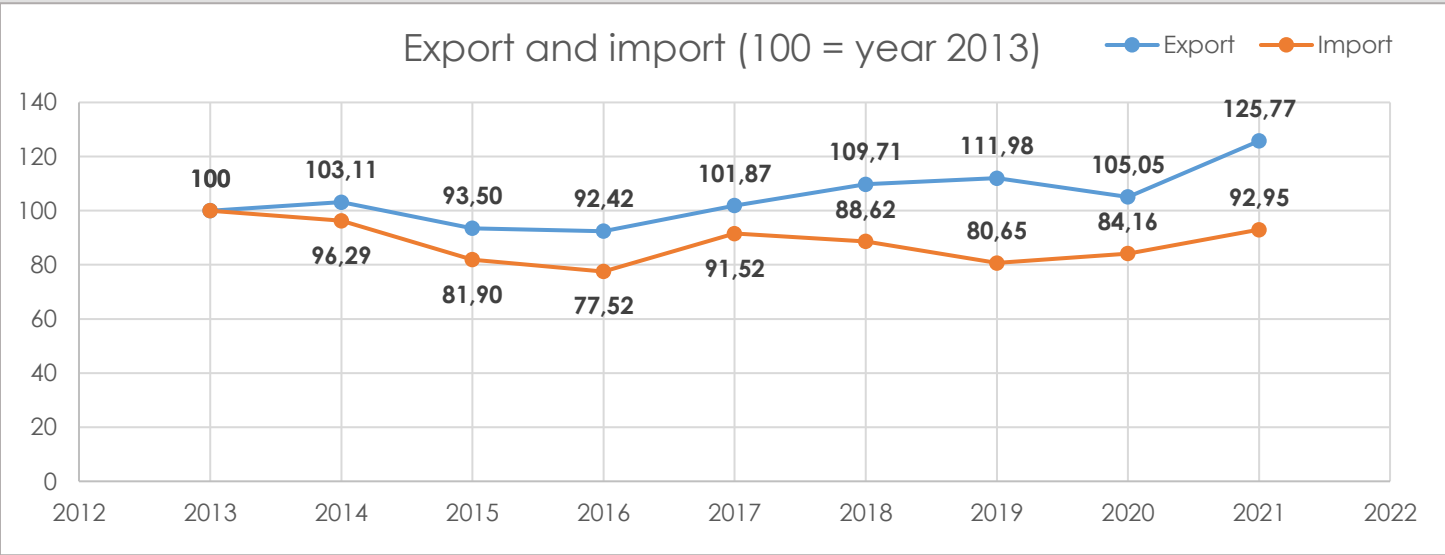
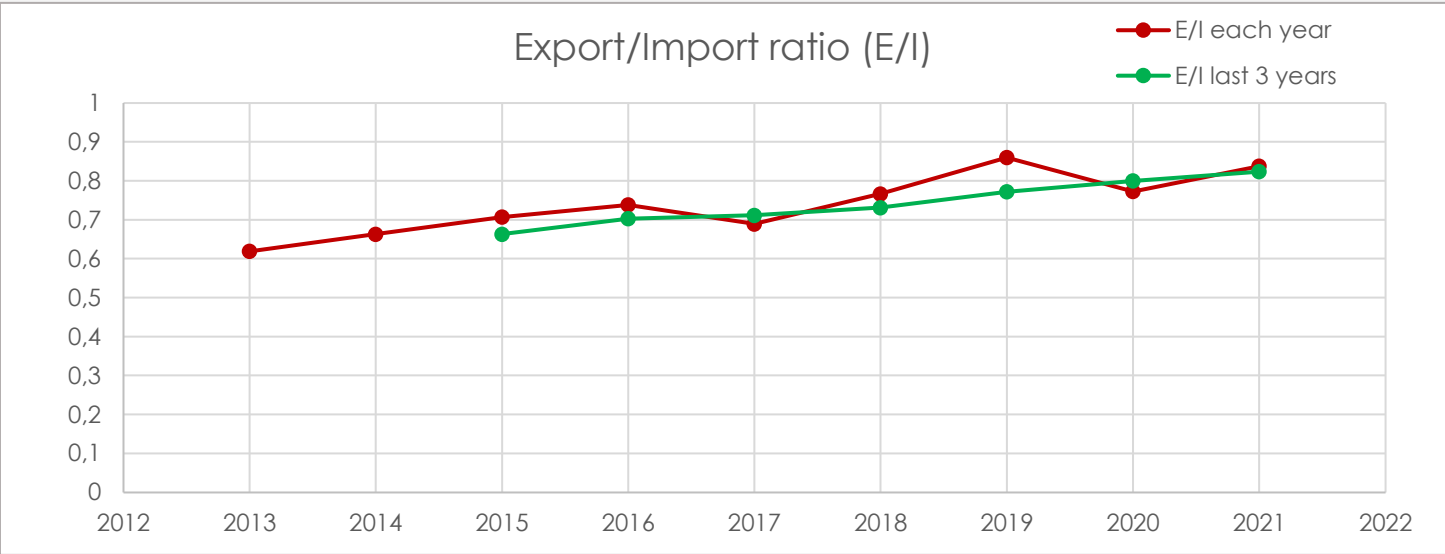
METHODOLOGY – MYSQL SAMPLE CODE

```
115 • CREATE TABLE total_import (  
116     ID_Code INT PRIMARY KEY,  
117     Country VARCHAR(255),  
118     I_Year INT,  
119     I_Total DECIMAL(20, 3)  
120 );  
121 #DROP TABLE total_import;  
122 • SELECT * FROM total_import;  
123 #imported import_all_countries.csv data  
124 #data verification below  
125 • select avg(I_Total), count(I_Total), sum(I_Total) from total_import;  
126  
127 • select * from total_export;  
128 • select * from total_import;  
129  
130  
131 #WORKING WITH TABLES (JOINS, UNION) AND CREATING FINAL DATA FILES  
132 • select me.*, IFNULL(i.I_Total, 0) as I_Total  
133 from 80export me  
134 left join import i  
135 on me.ID_Code = i.ID_Code  
136 #order by me.E_Total desc, i.I_Total desc;  
137 union  
138 select mi.ID_Code, mi.Country, IFNULL(e.E_Total, 0) as E_Total, mi.I_Total  
139 from 80import mi  
140 left join export e  
141 on mi.ID_Code = e.ID_Code  
142 order by ID_Code asc;  
143
```

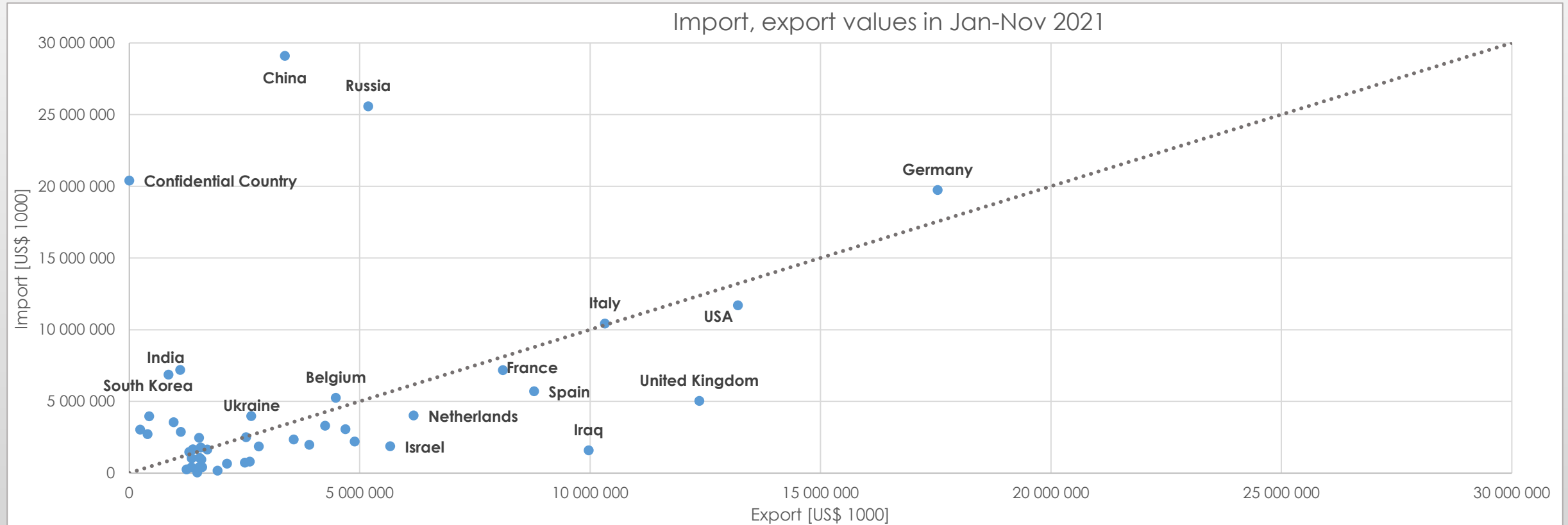
RESULTS – EXPORT AND IMPORT IN 2013-2021 (DEC 2021 EXCLUDED)



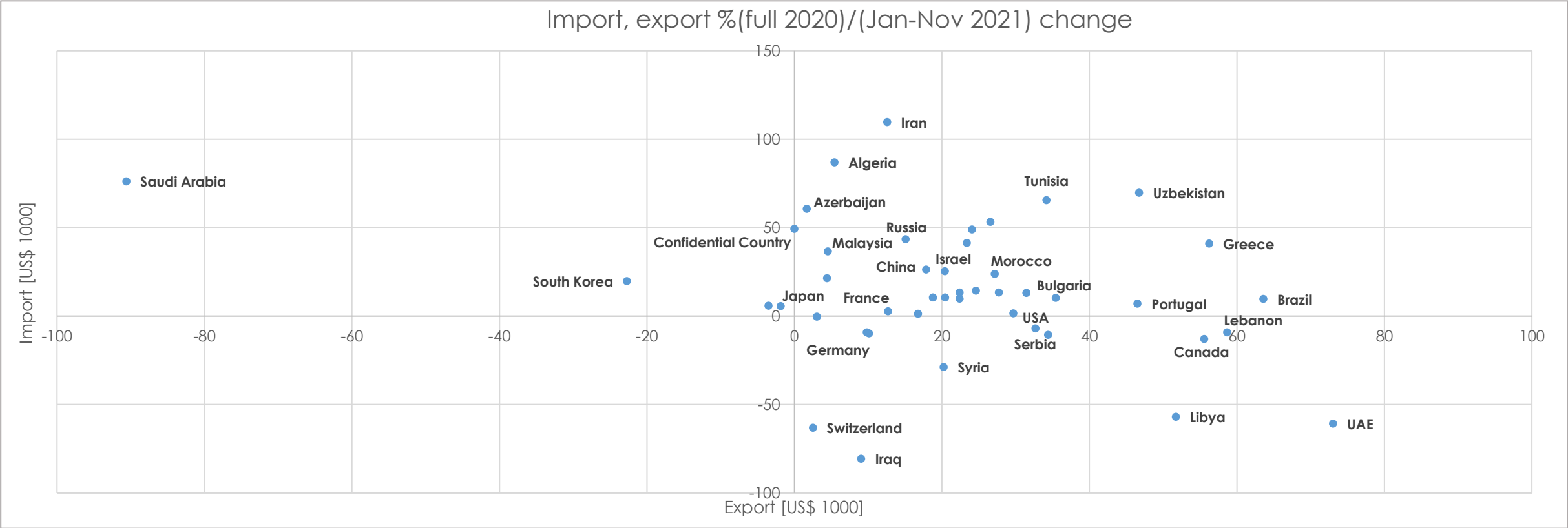
RESULTS – EXPORT AND IMPORT IN 2013-2021 (DEC 2021 EXCLUDED)



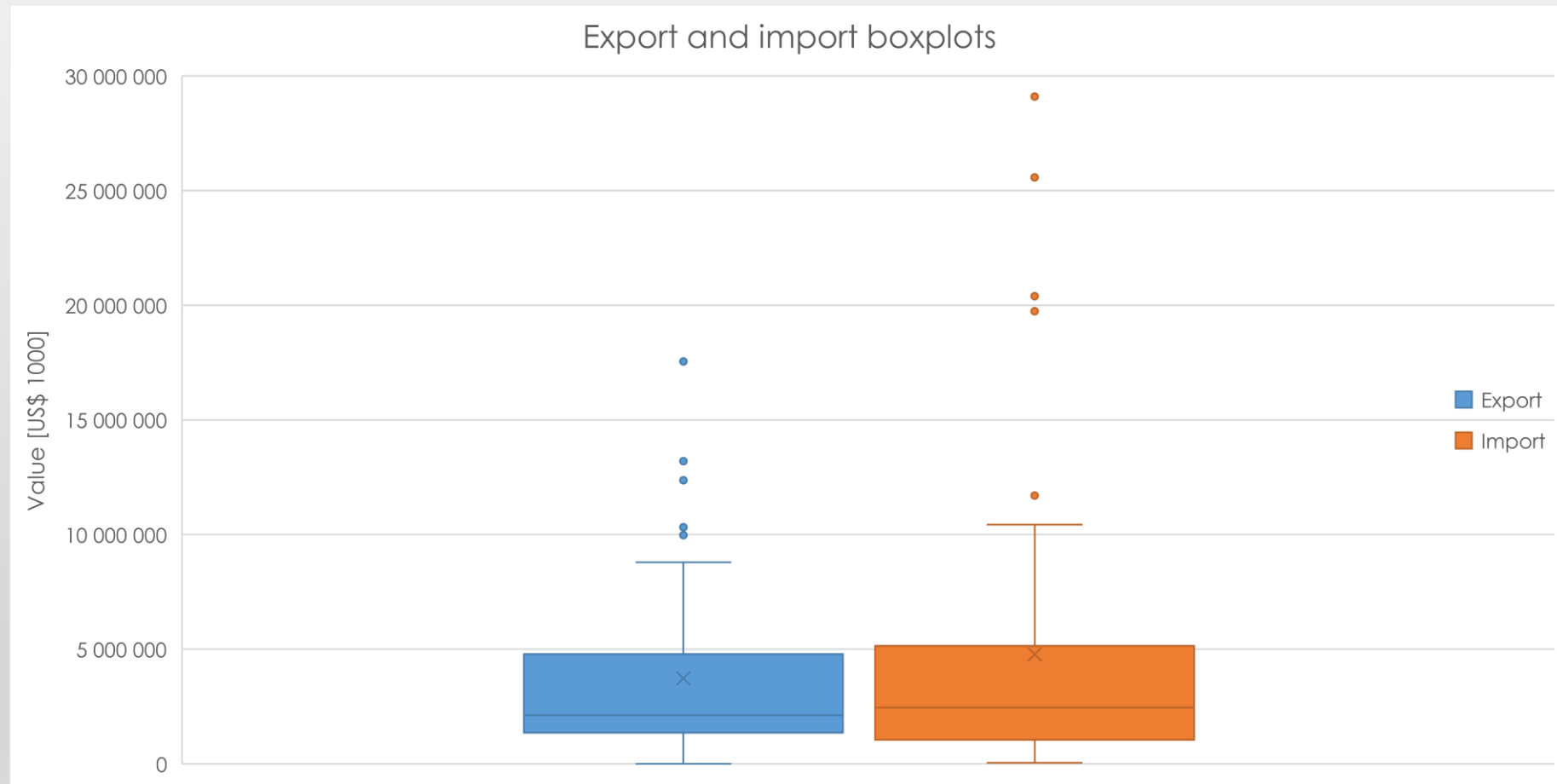
RESULTS - TOP COUNTRIES GENERATING 80% OF EXPORT OR IMPORT



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DISCUSSION

- Notable year/year growth of both export and import in 2021 even without December results
- Apart from 2017, import declined until 2020 since it began to rise
- Highly variable changes in annual export and import values each year
- Gradual increase of export/import ratio over the years from long-period perspective
- Significant share of Confidential Country in import and total trade (2021)
- Strong import influence from China and Russia with notable results of Confidential Country and Germany (2021)
- Export to majority of leading trade countries is higher than or close to import (2021)
- Low amount of import decline among leading trade countries (2021)
- Mostly a growth of export to leading trade countries (2021)
- Germany has the highest value of total trade and exports. The next highest in total trade value are China, Russia, the US and Italy (2021)
- No simultaneous decline of import and export in any leading trade country (2021)

CONCLUSIONS

- Turkish export is gradually getting closer to import
- Trade's annual changes are unstable
- In short-term, Turkish international trade experienced growth in both import and export
- Turkish import in 2021 was strongly influenced by few particular trading partners and was more scattered than export

FURTHER RESEARCH PERSPECTIVES

- Investigation of trade with the biggest trading partners individually during longer period either from only-import, only-export and general perspectives
- Checking information sources (media) about both clear (e.g. inflation, COVID-19, political instability incl. coup) and unclear causes of Turkish trade instability
- Import and export analysis from different context (e.g. type of goods)
- Analysis update using data including Dec 2021 results