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

DATA

- 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
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- Data overview
- Placing missing data in records
- Creating records of all countries in years where they are missing
- Creating new datatable 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

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- MS Excel
- Python 3 (Jupyter Notebook & Pandas)
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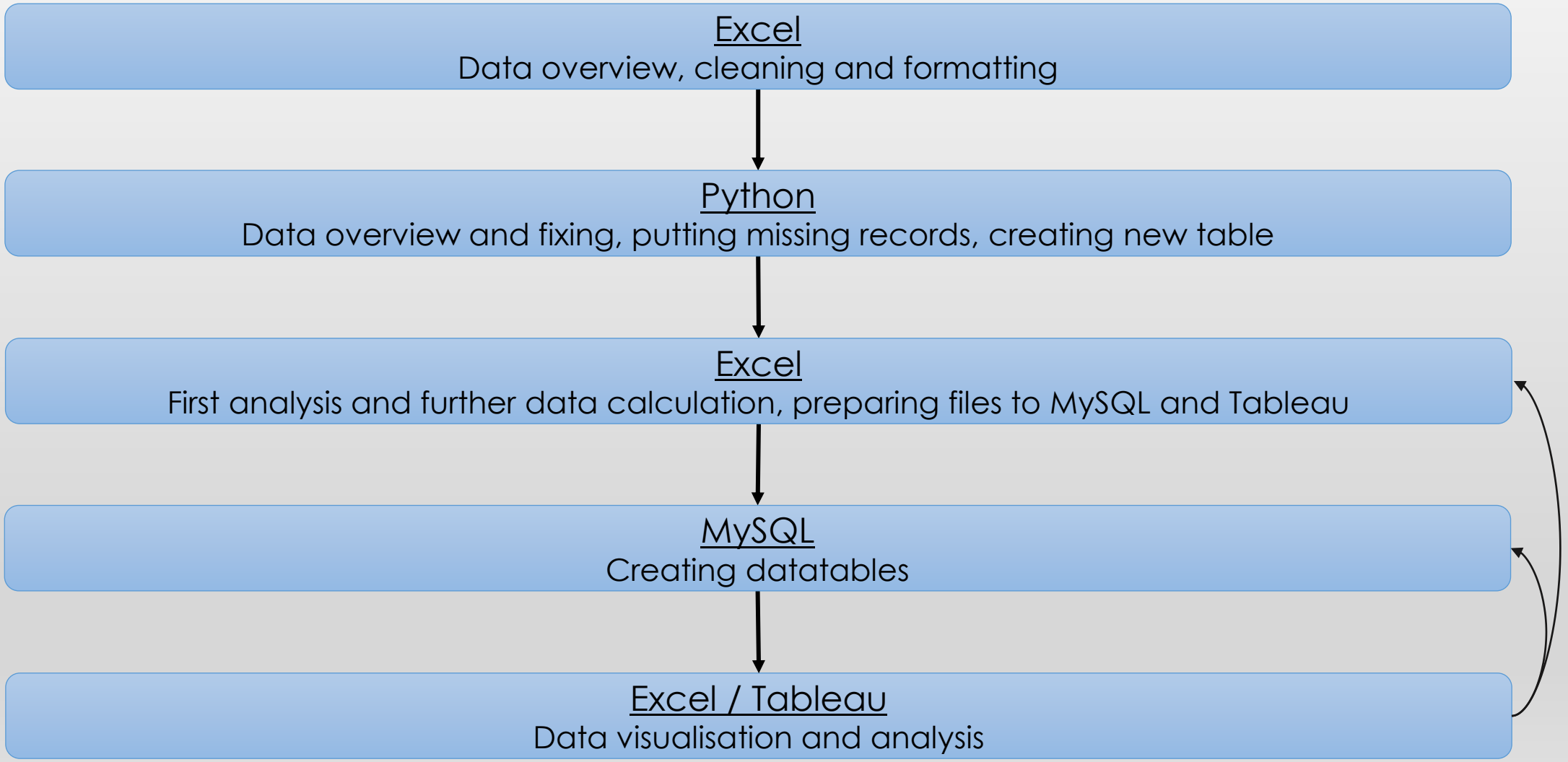
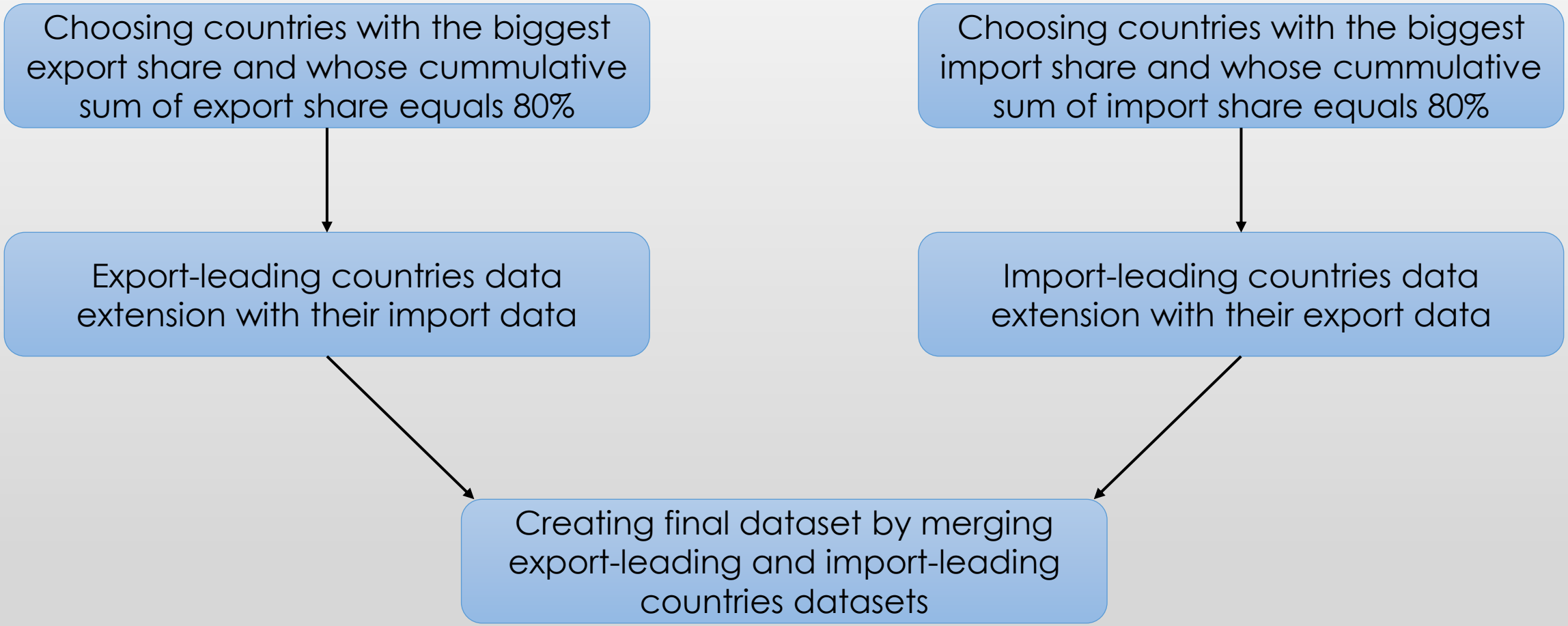
- **Tableau Public 2021.4**

- Data visualisation and analysis

METHODOLOGY



METHODOLOGY – LEADING COUNTRIES DATA



METHODOLOGY – PYTHON SAMPLE CODE

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

```

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

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

In [15]:
```
pdata = data

keylist = ['Year', 'Country', 'Total'] + calendar
dict_country = {}
for i in keylist:
    dict_country[i] = None

for state in countries:
    for y in years:
        if state not in pdata[pdata['Year'] == y]['Country'].unique():
            dict_country['Year'] = y
            dict_country['Country'] = state
            dict_country['Total'] = 0
            for m in calendar:
                dict_country[m] = 0
            #print(dict_country, '\n')
            pdata = pdata.append(dict_country, ignore_index = True)
pdata.tail()
```

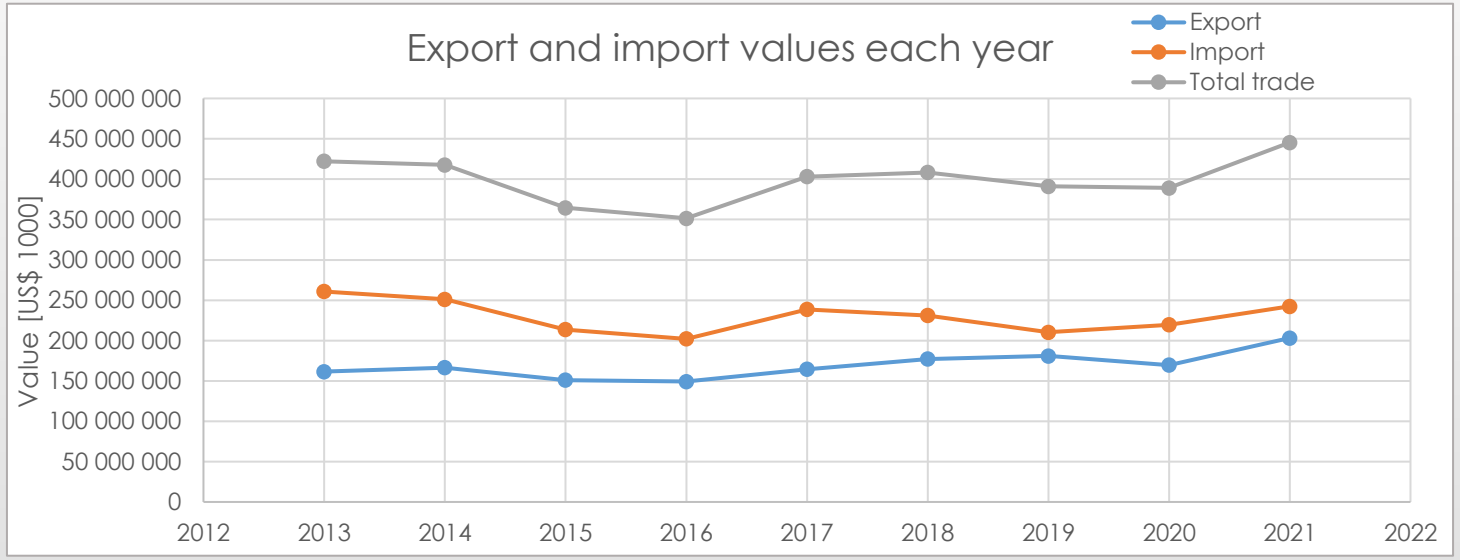
Out[15]:

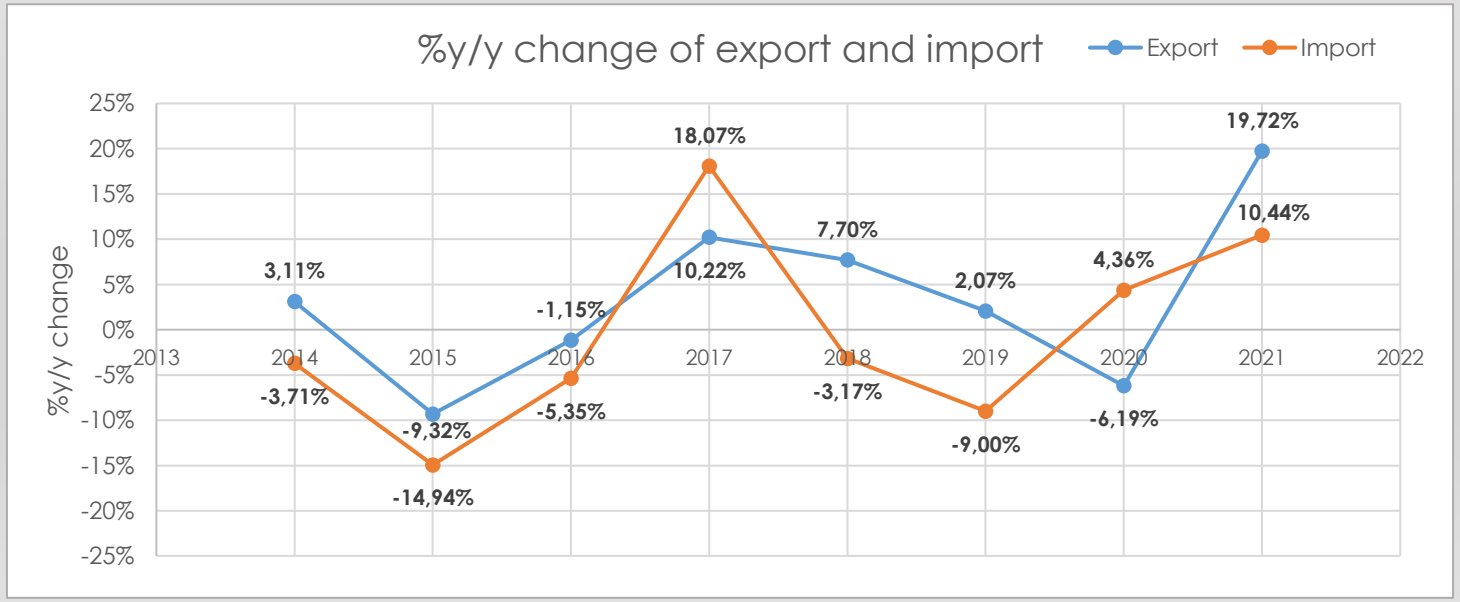
	Year	Country	Total	January	February	March	April	May	June	July	August	September	October	November	December
2137	2017	Stores and Provinces	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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)





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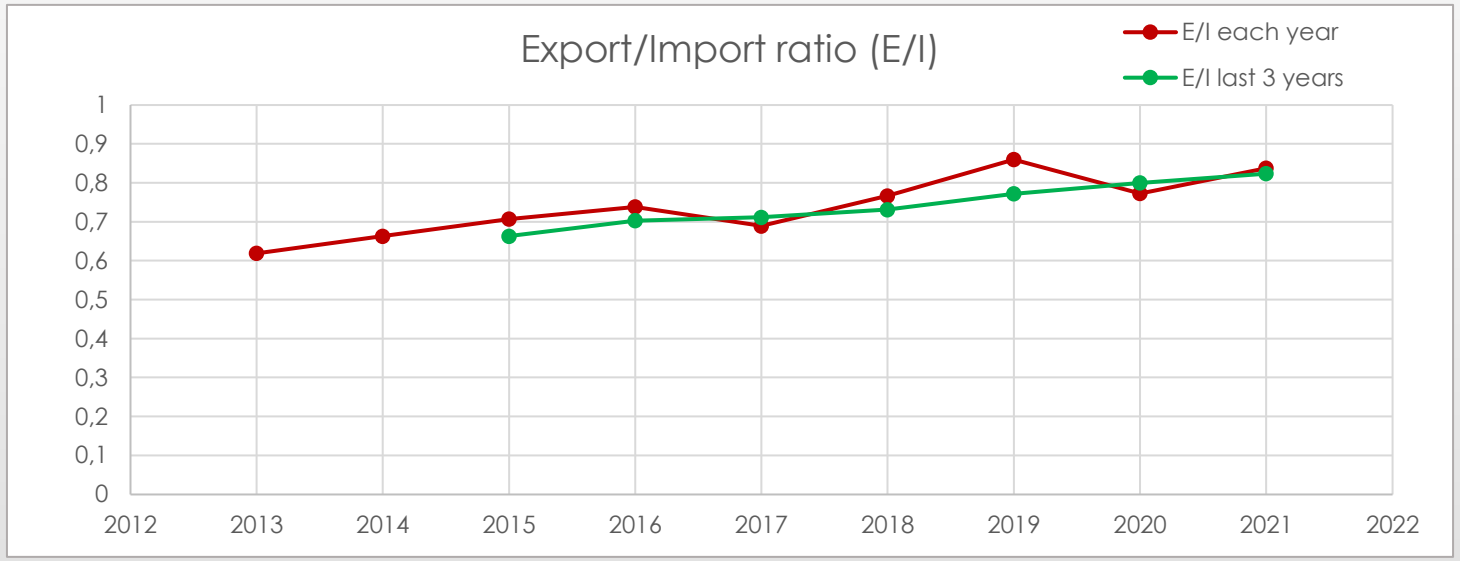
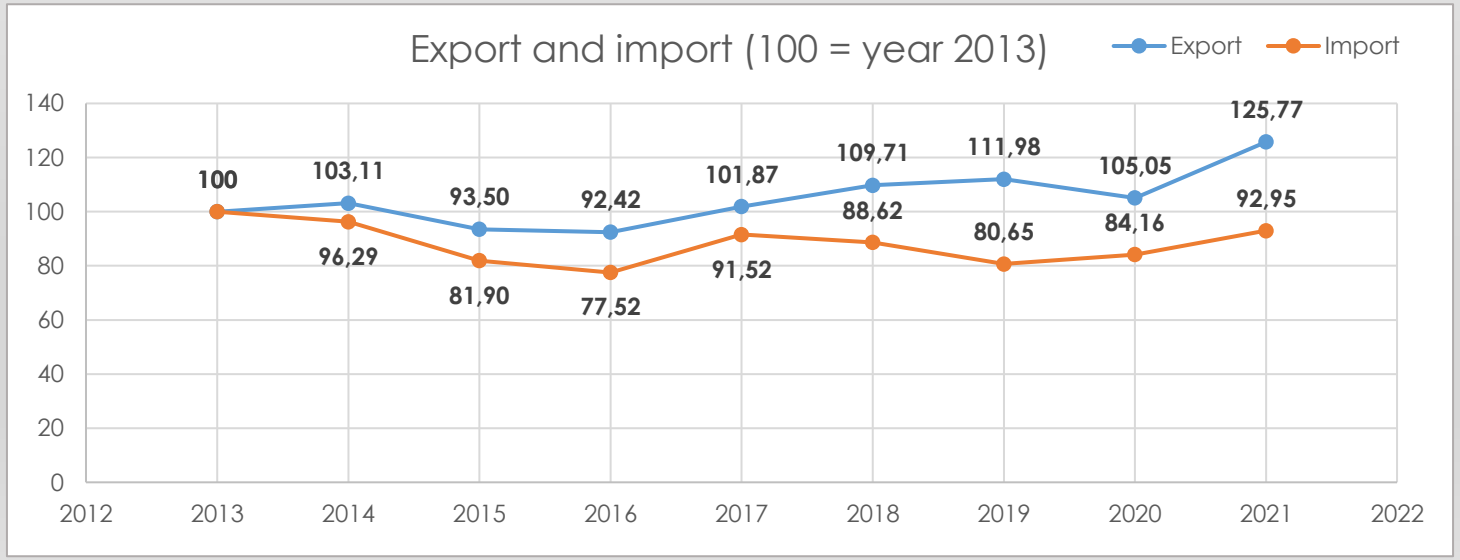
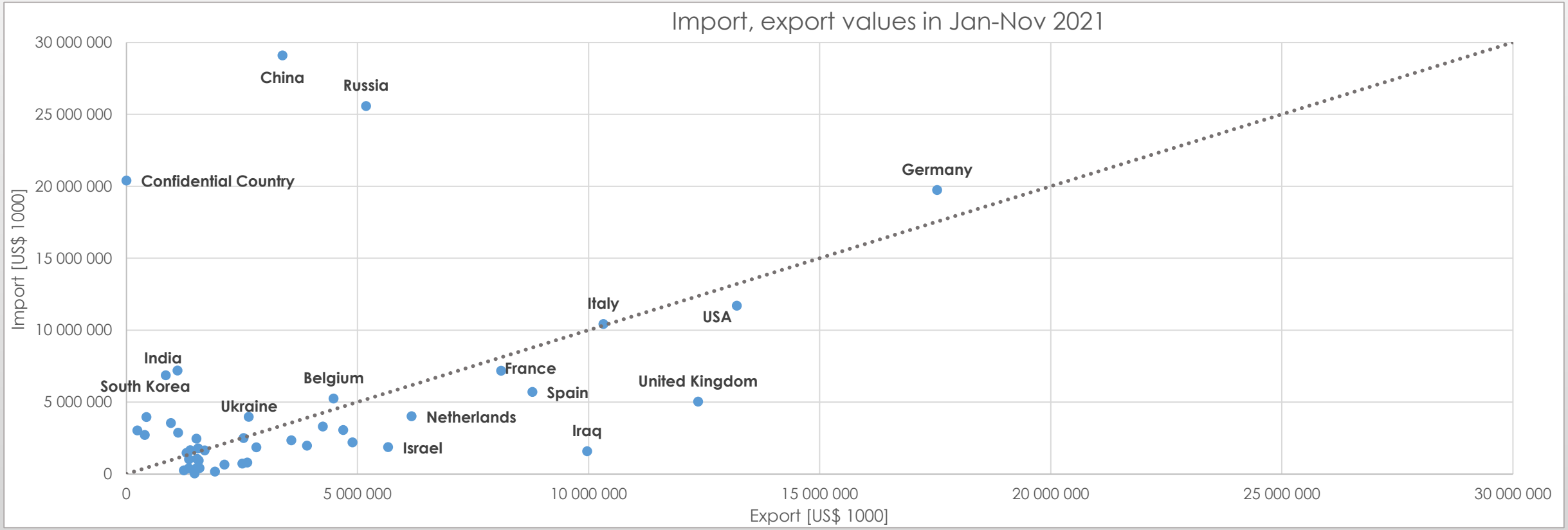




RESULTS - TOP COUNTRIES GENERATING 80% OF EXPORT OR IMPORT



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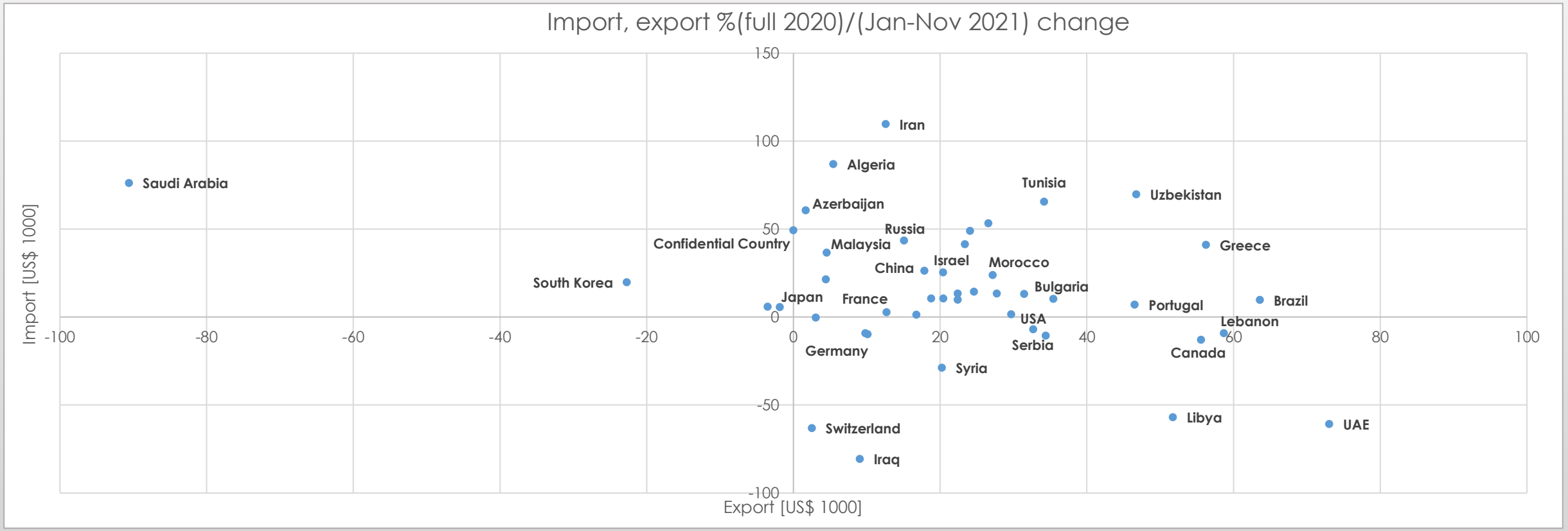

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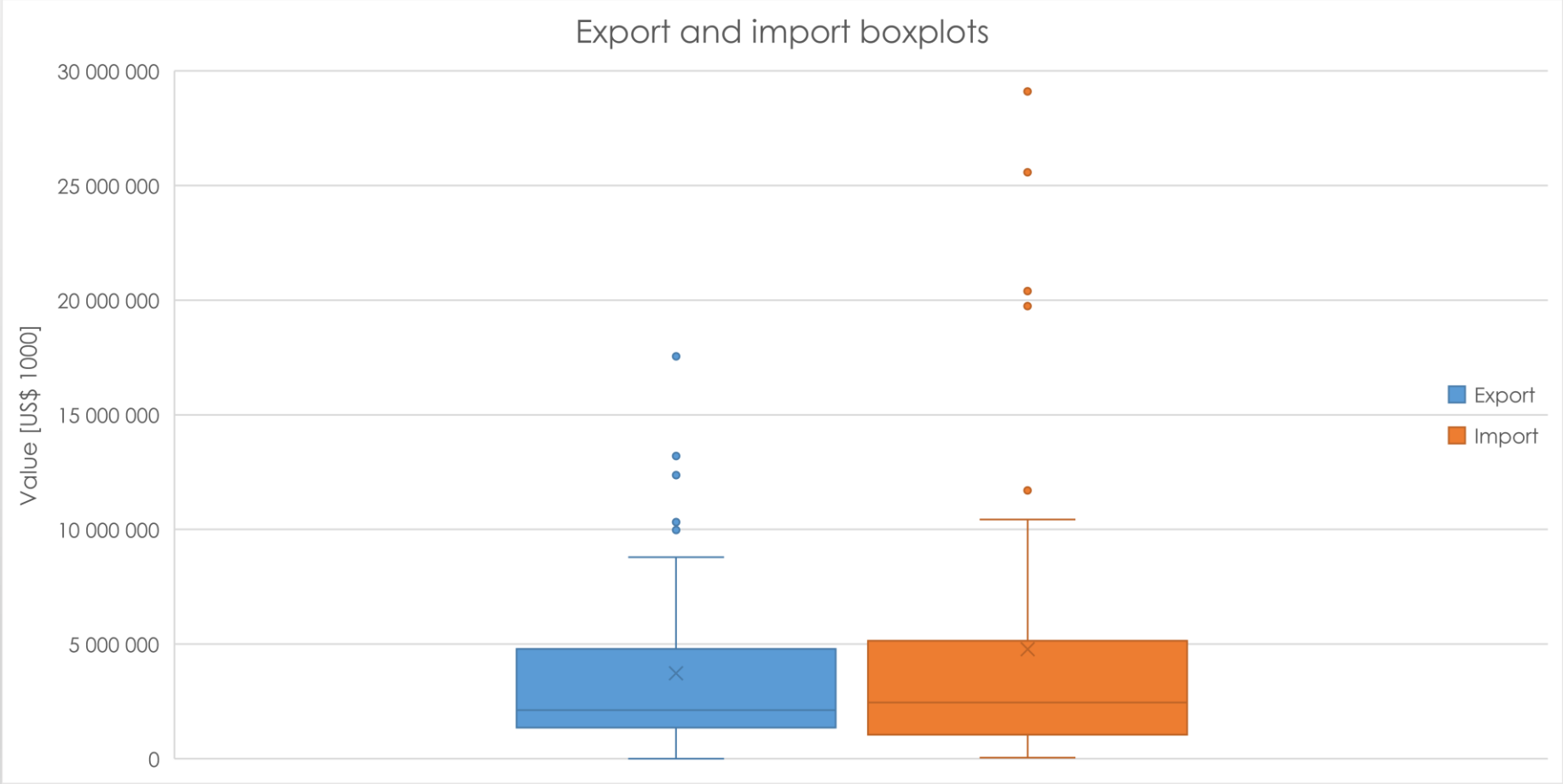

DISCUSSION

- 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 (mentioned above) and Germany (2021)
- Export to majority of leading trade countries is higher than or close to import (2021)
- Low amout 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 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