University of Warsaw
Faculty of Economic Sciences

International Trade

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Contact informations

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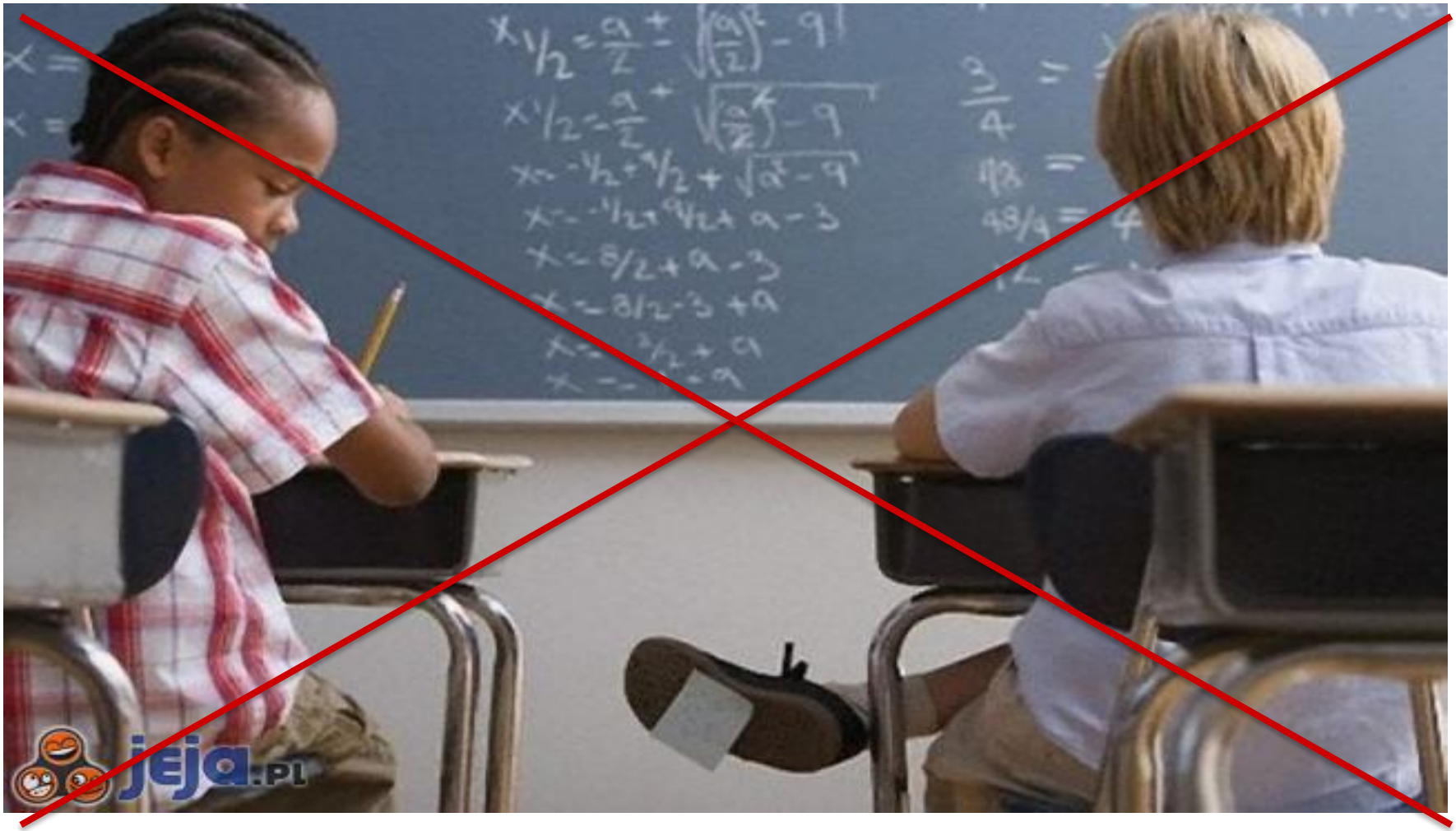
The course grade

- The grade:
  - 2 tests with the value of 50%
  - The first one will concern trade part
  - The second one will concern trade policy
- Activity points:
  - When 50% is reached you can get 10% of additional point (if you get 0% from activity 100% from the course is still available)

Positive grade is from 50%

Cheating is strictly prohibited



Agenda

- Introduction and gravity equation of trade
- Ricardo model, 2 meetings
- Specific factor model
- Heckscher-Ohlin (H-O), 2 meetings
- The new international trade theory, 2 meetings
- First test
- Trade policy, 2 meetings
- Strategic trade policy
- Second test

Recommended literature

- [KO]: Paul R. Krugman, Maurice Obstfeld, Marc Melitz: *International Economics, Theory and Policy, vol. 1.,* Eleventh Edition, Pearson, 2018

- [ChM] Ch. Van Marrewijk, *International Trade and the World Economy, Oxford UniversityPress*

What is the subject of todays meeting?

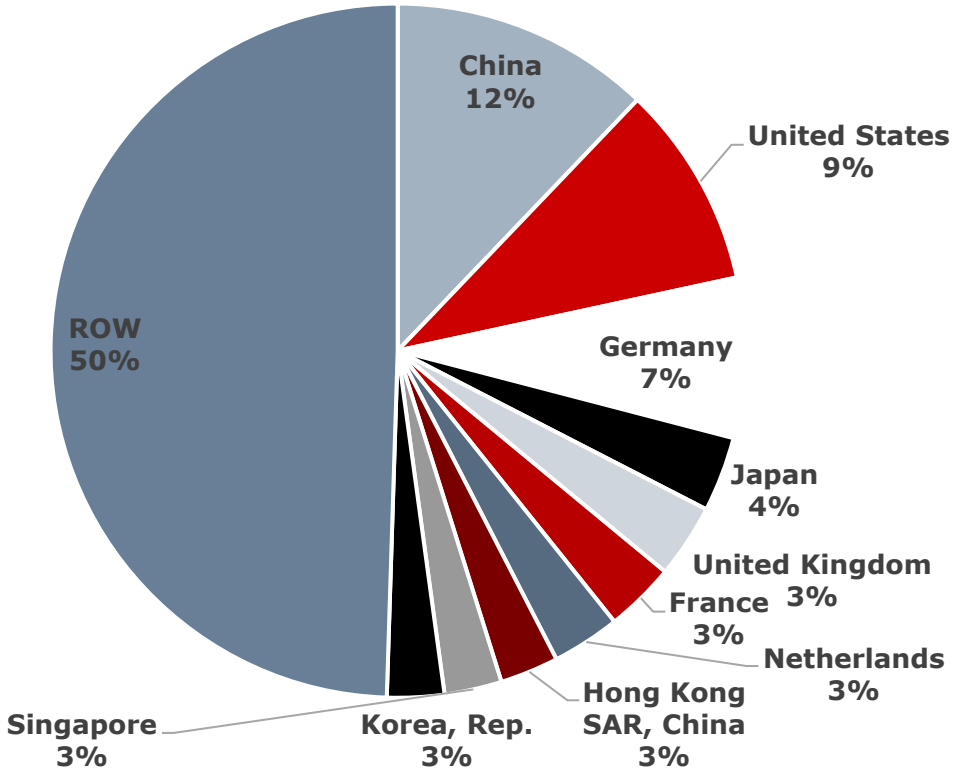
- *What is the international trade about*
- *A few fact about international trade*
- *International trade – the case of Poland*

- *The use of the gravity equation in international trade analysis*

A few fact about international trade

Who is trading?

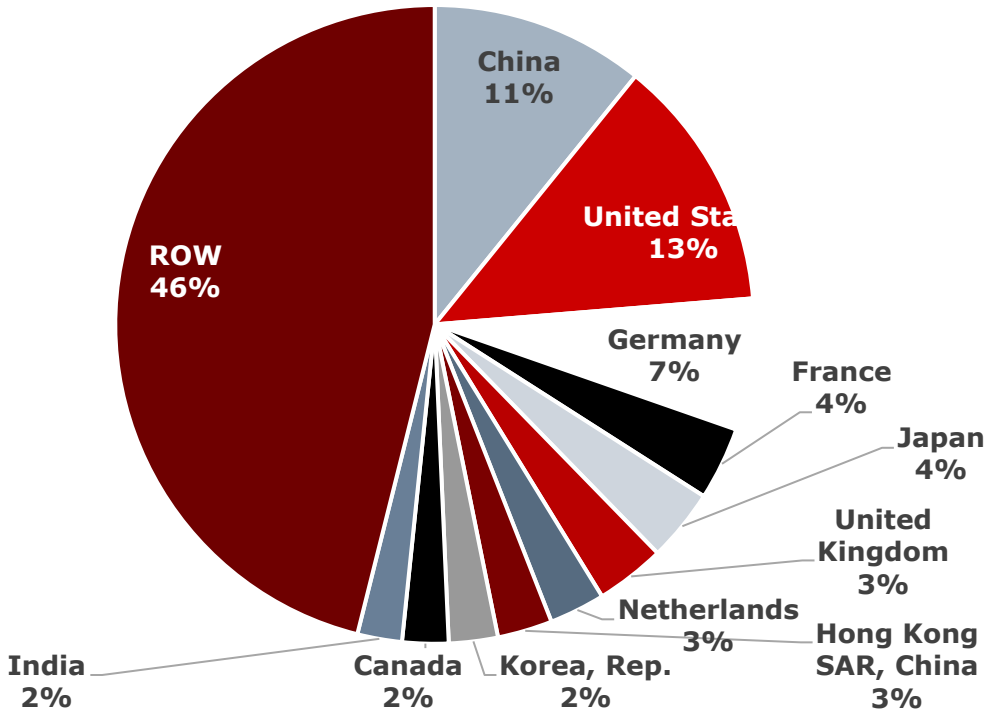
The value of global exports the year 2020 (goods and services)



Source: World Bank BX.GSR.GNFS.CD

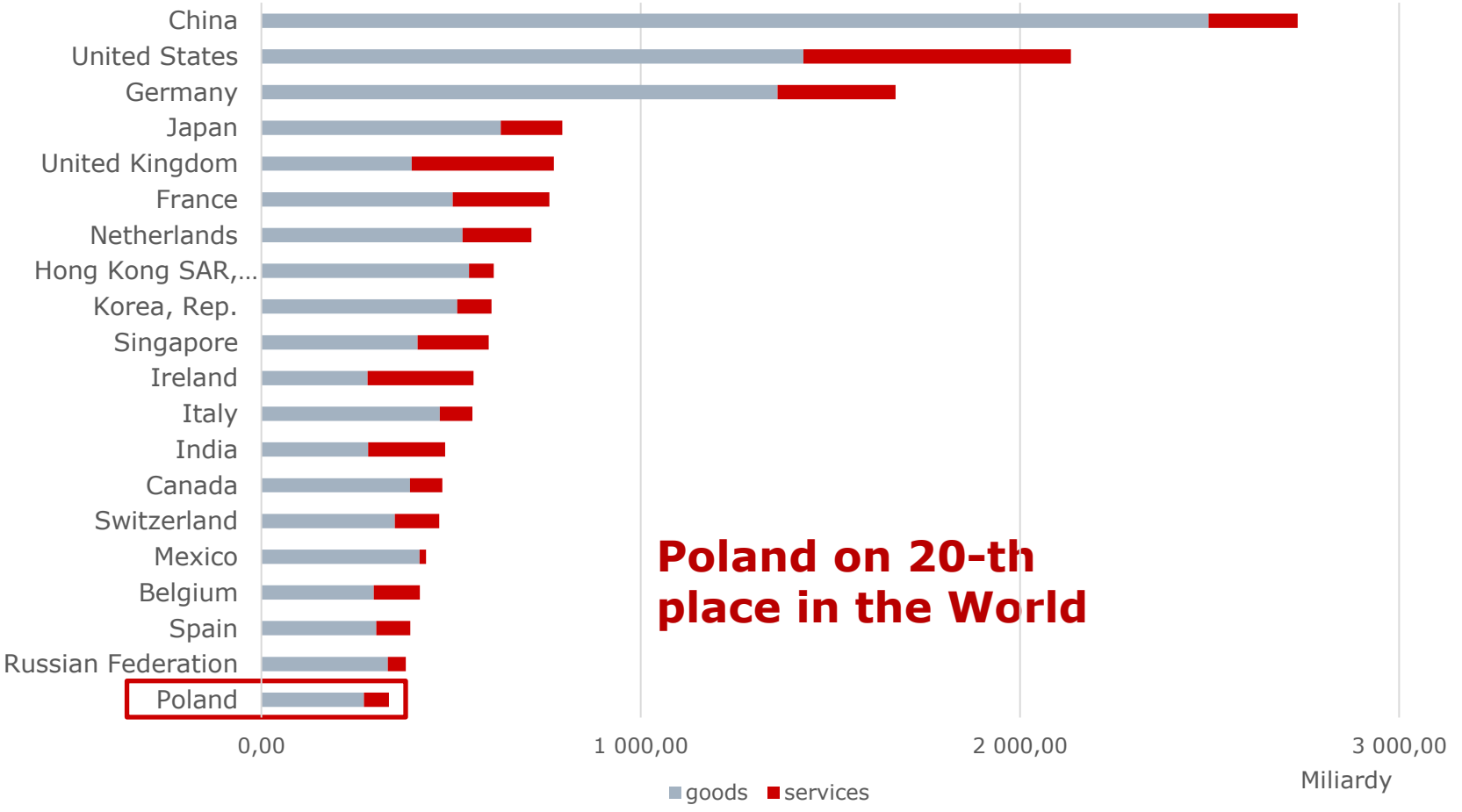
Who is trading?

The value of global imports the year 2020 (goods and services)



Source: World Bank BM.GSR.GNFS.CD

Global exports (in mild USD, the year 2020)



Poland on 20-th place in the World

Why do we trade?

- *The costs of producing certain goods is relatively lower in some country than in other (Ricardo, comparative advantage of labor productivity)*
- *Some of the country are relatively more abundand in some production factors then the other countries (Heckscher-Ohlin, International trade and comparative advantage based on production factors endowment).*
- *The consumers like big variety of consumed goods (Krugman-Dixit-Stiglitz and the new trade theory)*
- *Thanks to trade the level of competition is rising as well as the wealth of nations. International trade provides also to lower level of prices (e.g. Brander-Krugman and other – the new trade theory)*
- *Firms from some countries are much more productive than in other (Melitz – the new new trade theory)*

Is there anybody who is loosing?

- *International trade can negatively affect groups of production factors owners located in imports competing industries, which cannot find employment in other industries (in short run)*
- *International trade could affect the distribution income among social groups such as employees and capital owners.*

What is the subject of trade (2019)?

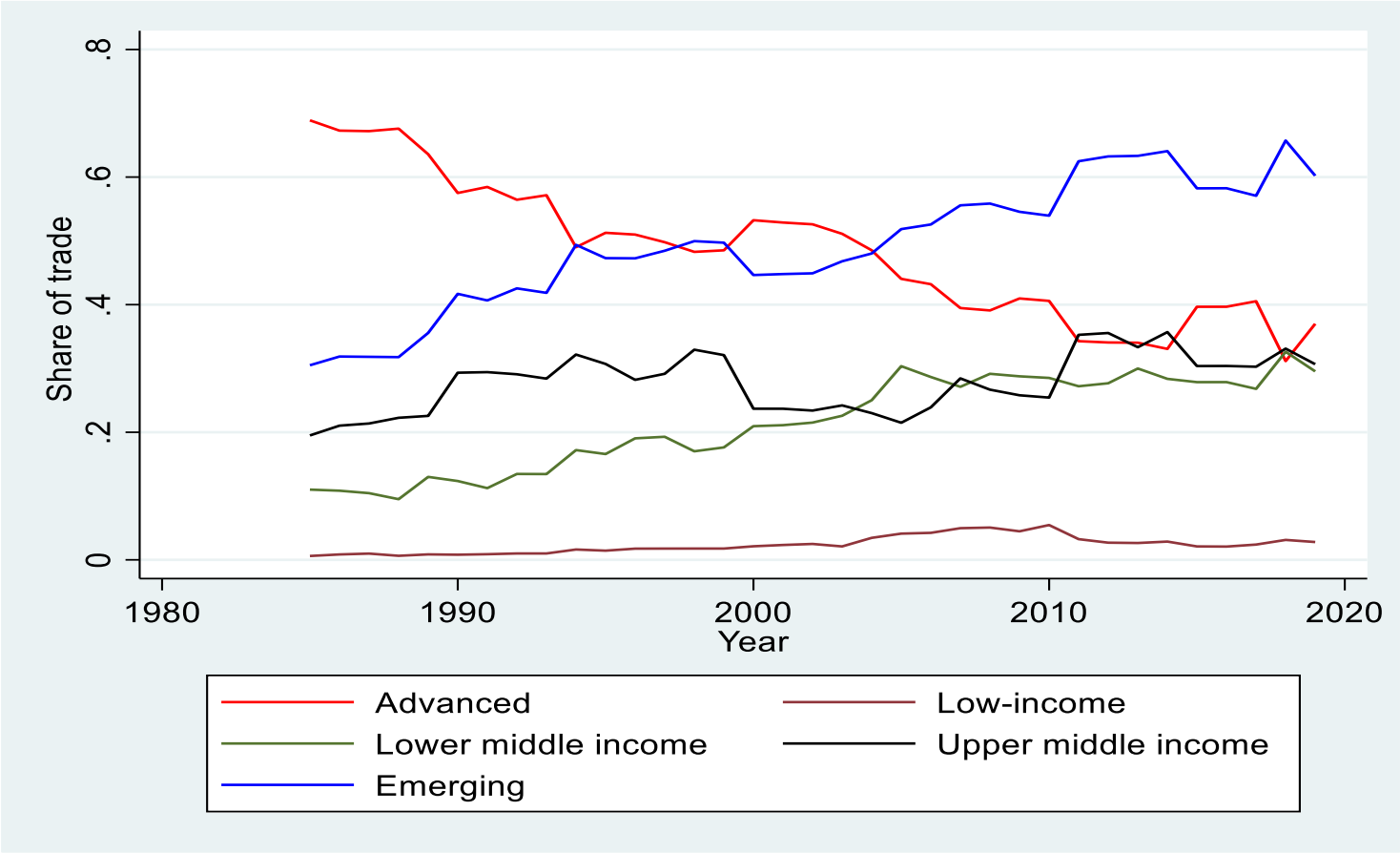
Farming products:
Animal,Products,Vegetable Products,Animal and Vegetable BiProducts,Foodstuffs

Minerals and natural resources: Mineral Products, Chemical Products, Plastics and Rubbers, Precious Metals, Metals

Manufacturing goods: Animal Hides, Wood Products, Paper Goods, Textiles, Footwear and Headwear, Stone And Glass, Machines, Transportation, Weapons, Miscellaneous

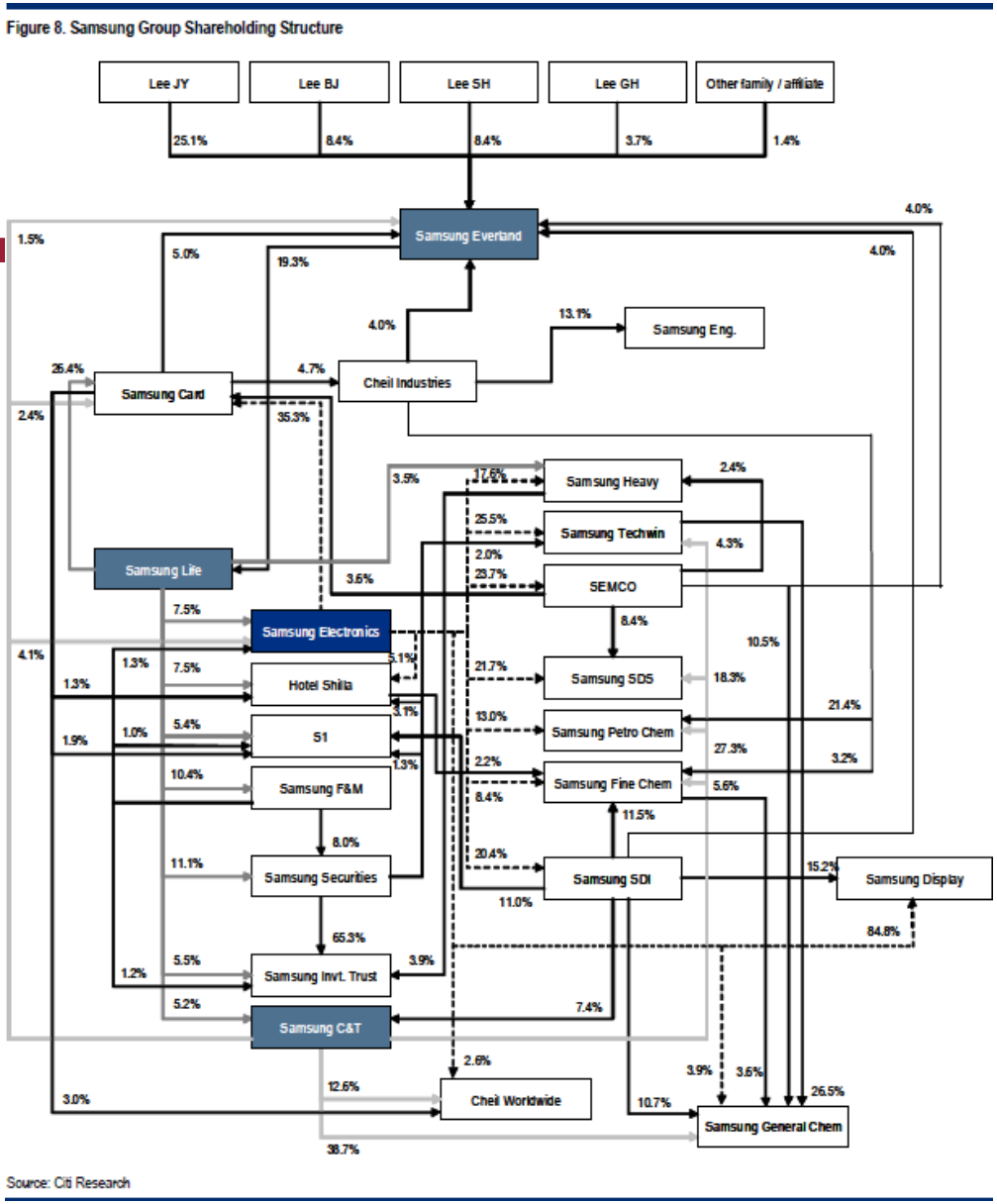
Entertainment goods: Arts and Antiques, Arts and Antiques

The geographical structure of international trade



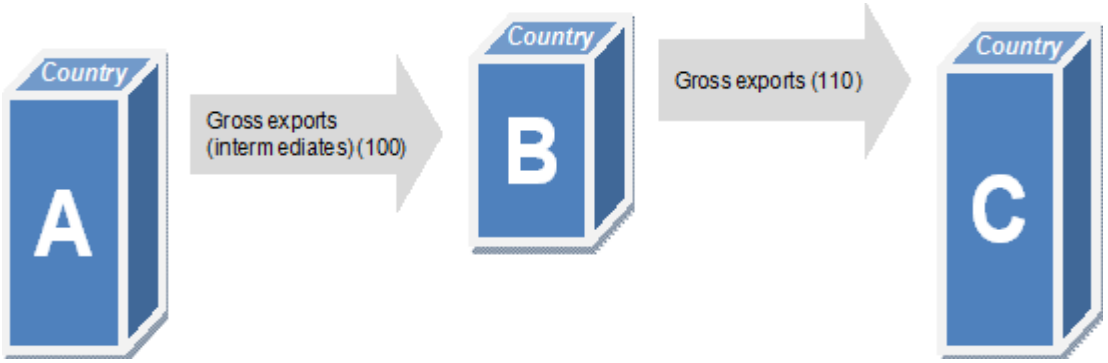
Source: Own calculation on World Bank Data

FDI structure



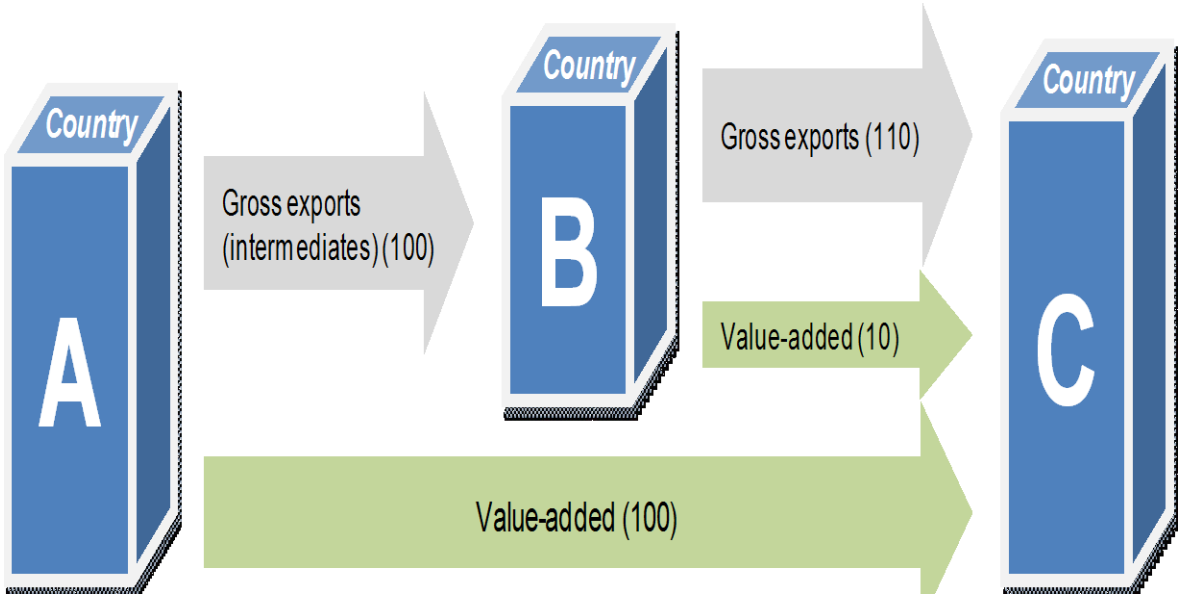
The imperfection of traditional trade statistics

- *Traditional statistics include the trade of intermediated goods and services multiple Times (the value of mentioned goods and services is calculating each time when it cross the border)*
- *We do not know who is really benefitting form trade*



Source: Trade in Value Added: Poland, OECD-WTO, 2015

From bilateral data to the trade in value added



Source: Trade in Value Added, Jobs and Investment; Nadim Ahmad and Jennifer Ribarsky, OECD

From bilateral data to the trade in value added

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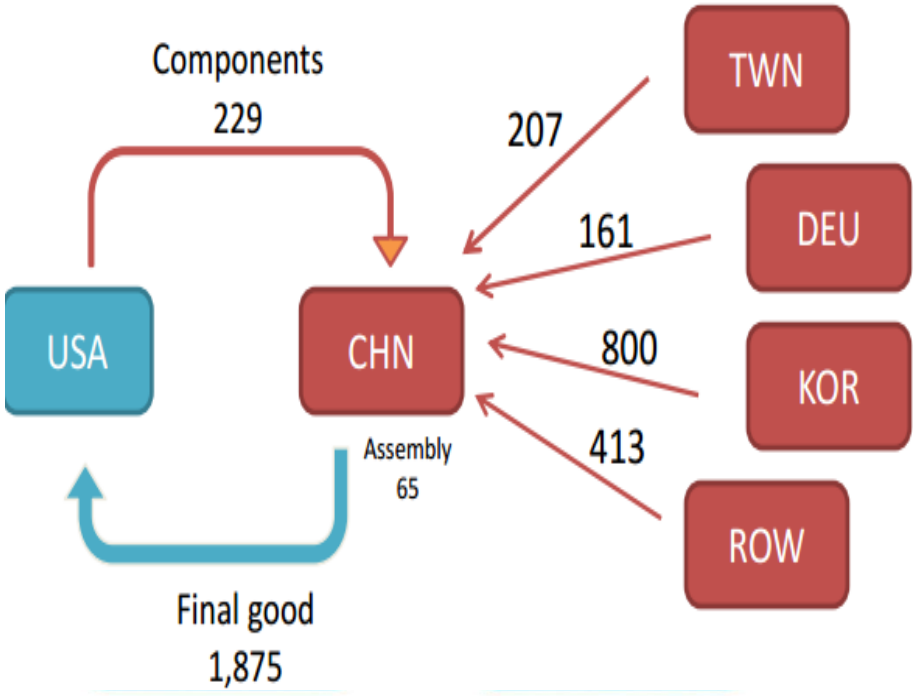
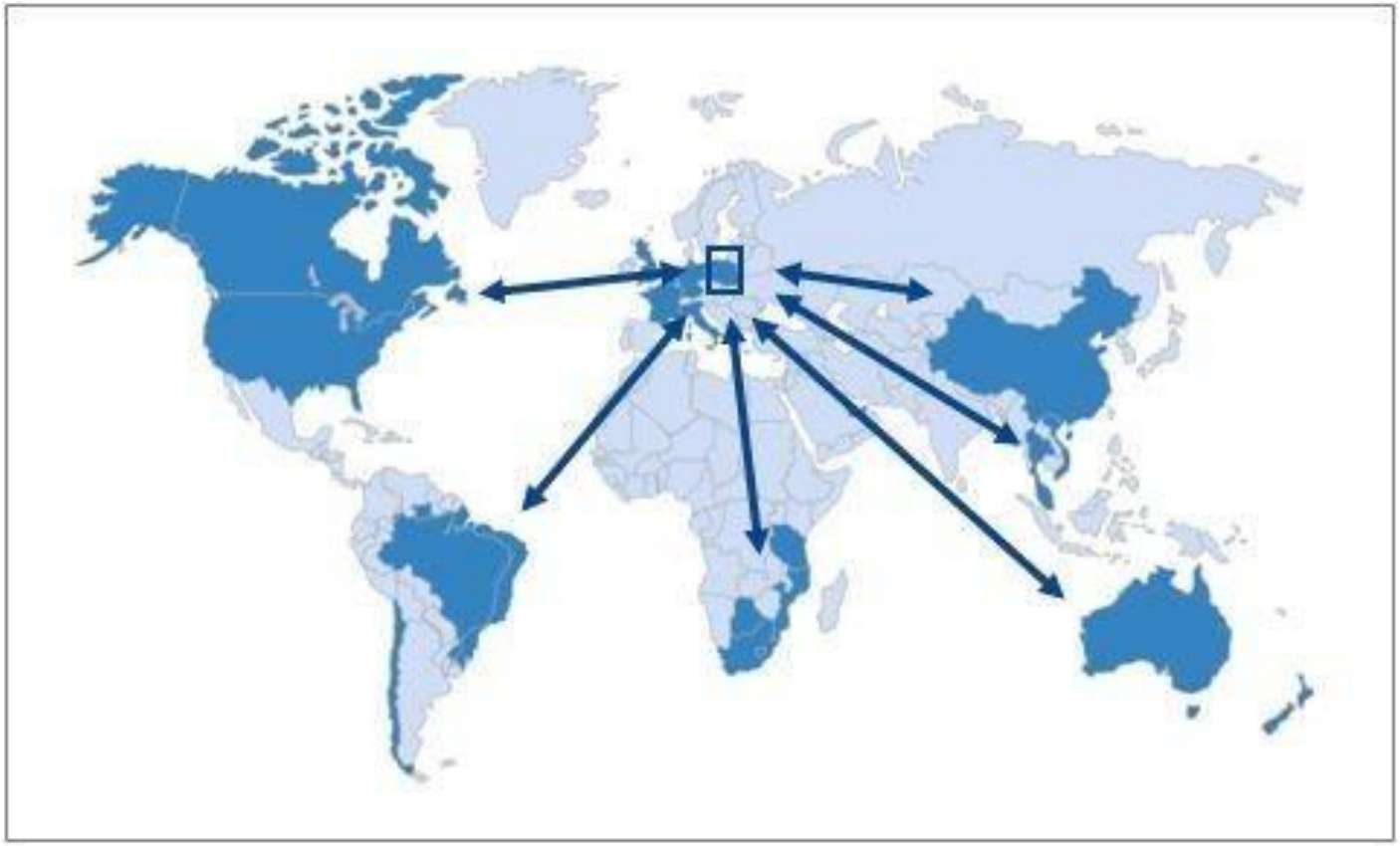


Source: Trade in Value Added: concepts, methodologies and challenges (joint OECD-WTO note), 2012

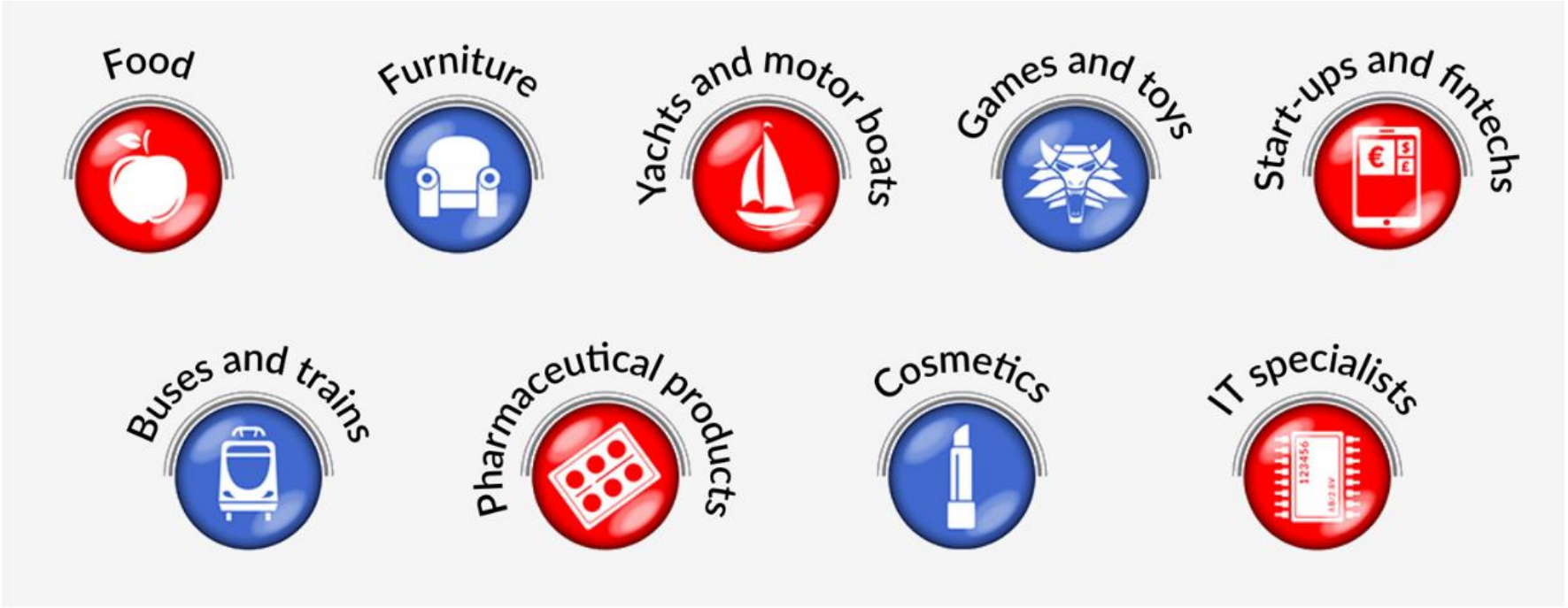
The TiVa approach does not change the trade balance of each country

US trade balance in iPhones with:	CHN	TWN	DEU	KOR	ROW	World
Gross	-1,646	0	0	0	0	-1,646
Value added	-65	-207	-161	-800	-413	-1,646

Poland in international trade

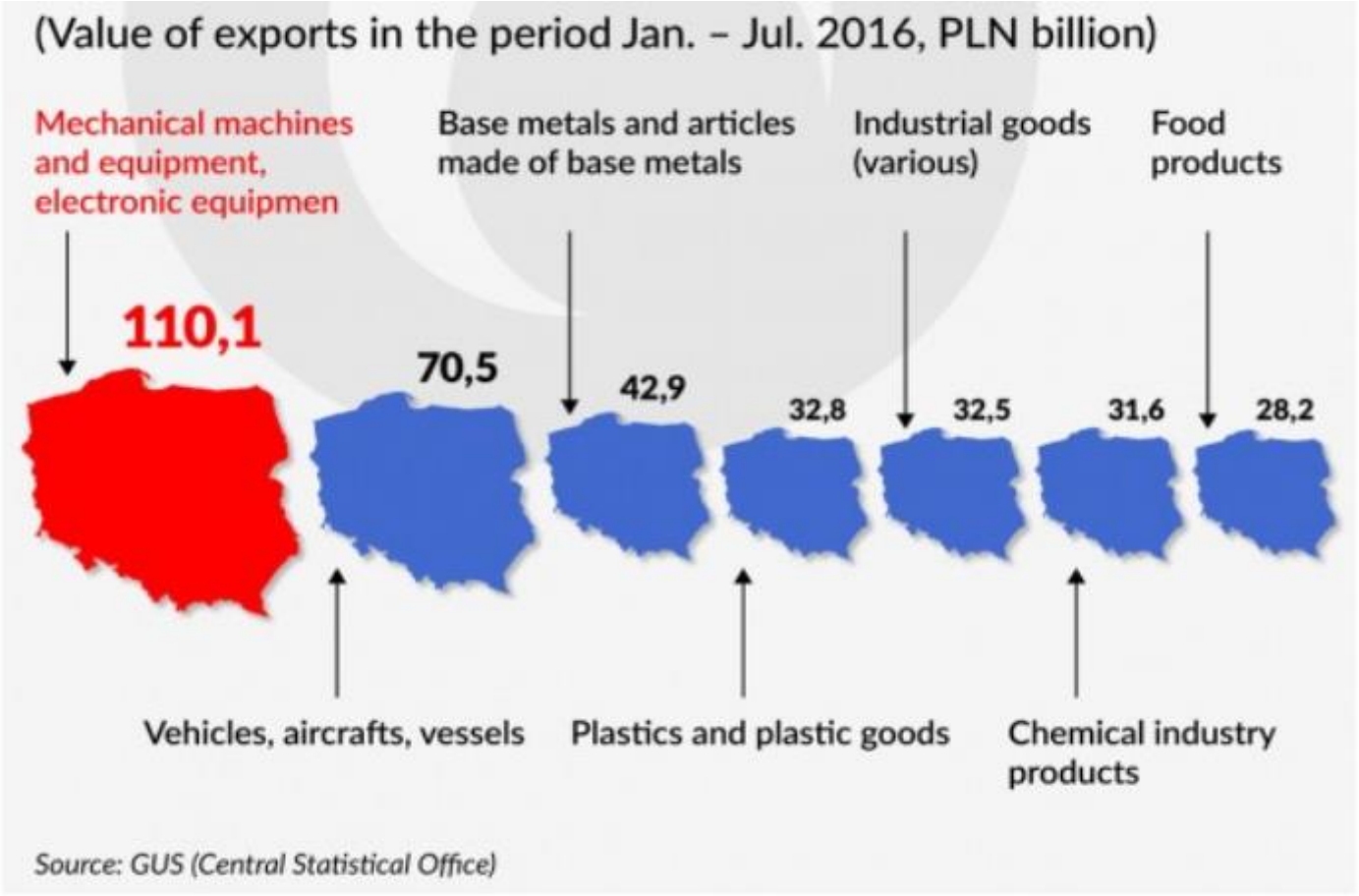


Polish exports hits

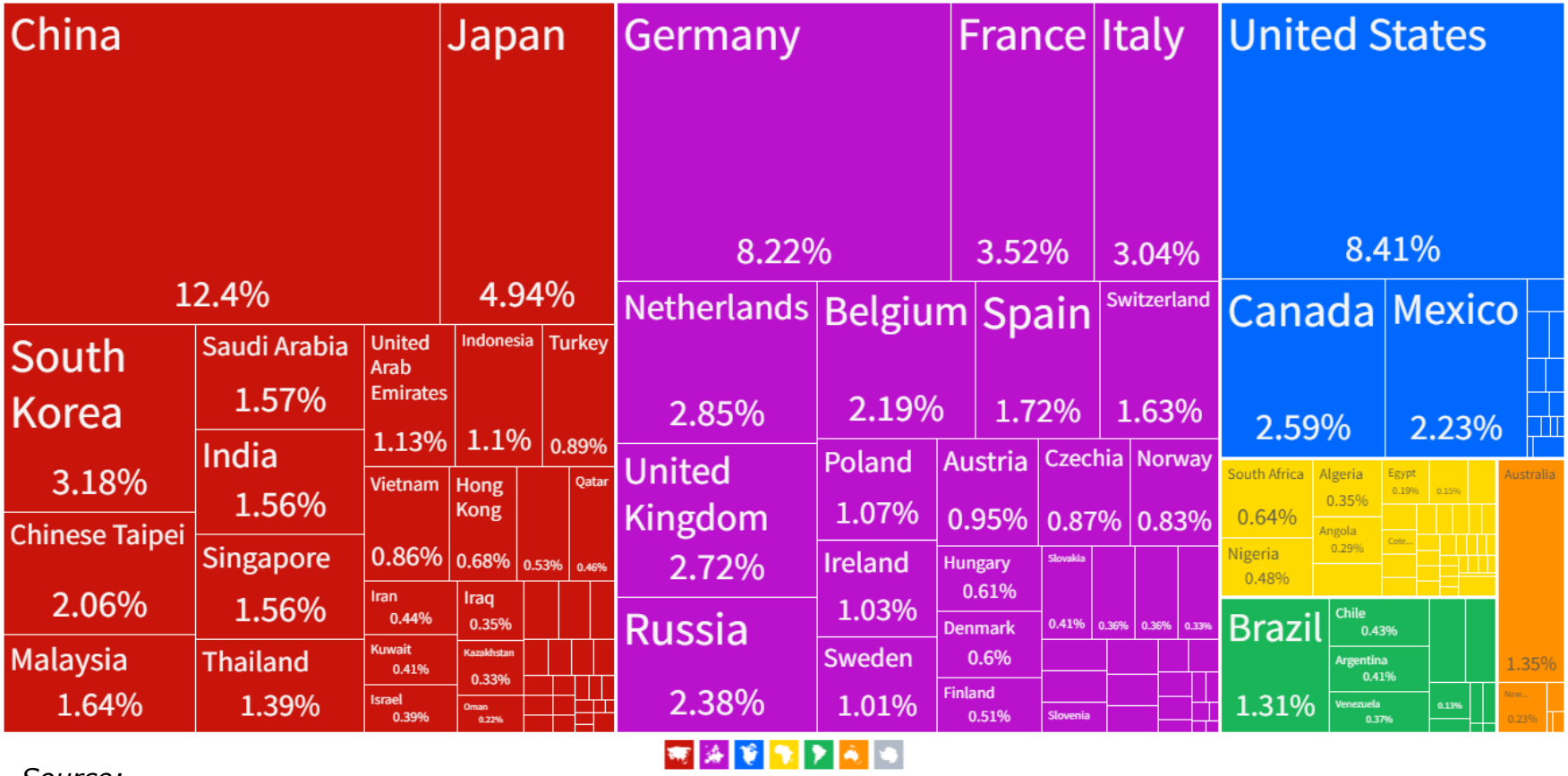


Source: https://www.obserwatorfinansowy.pl/in-english/new-trends/poles-quickly-learnt-how-to-earn-on-export-of-knowledge/

Polish exports hits

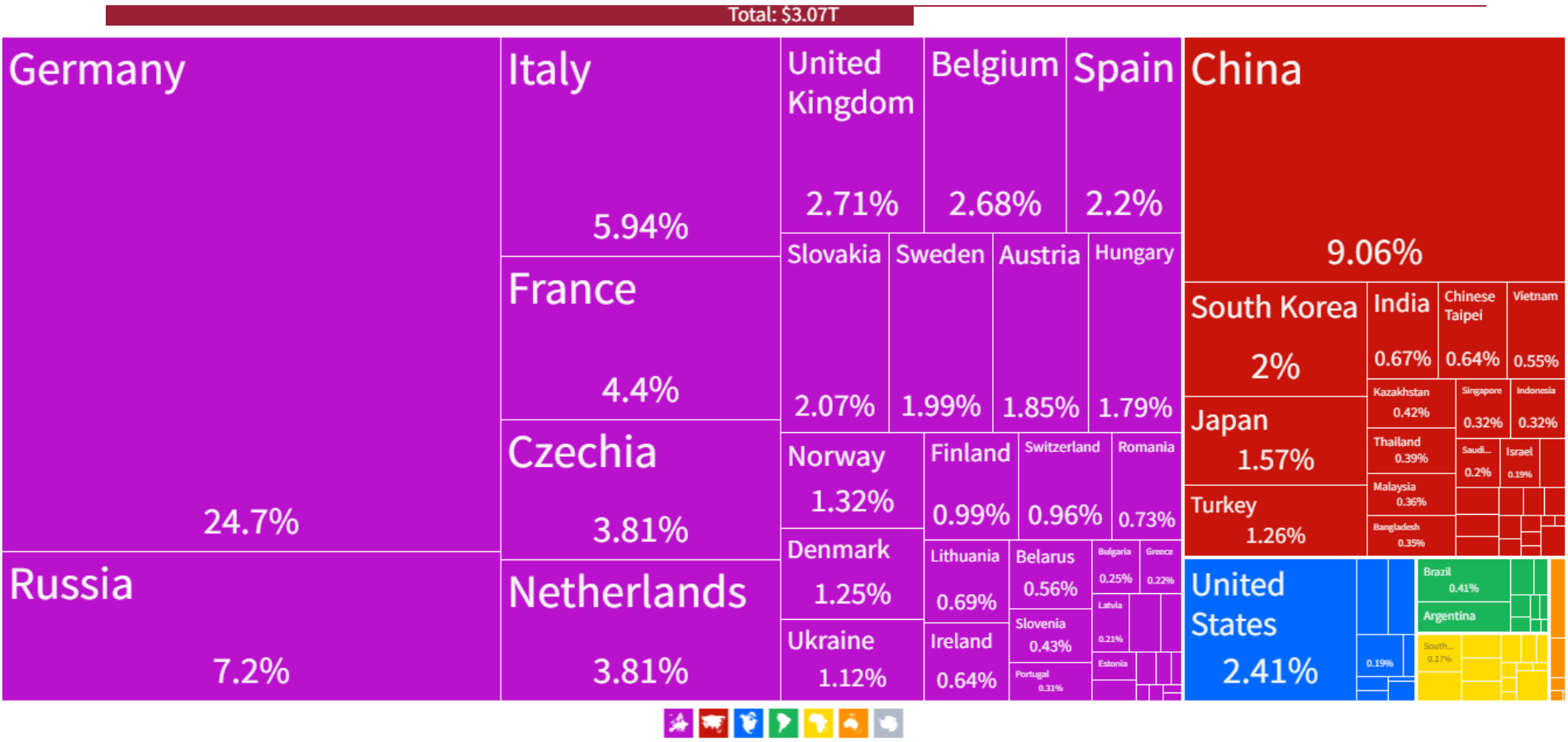


To whoom the world is selling?



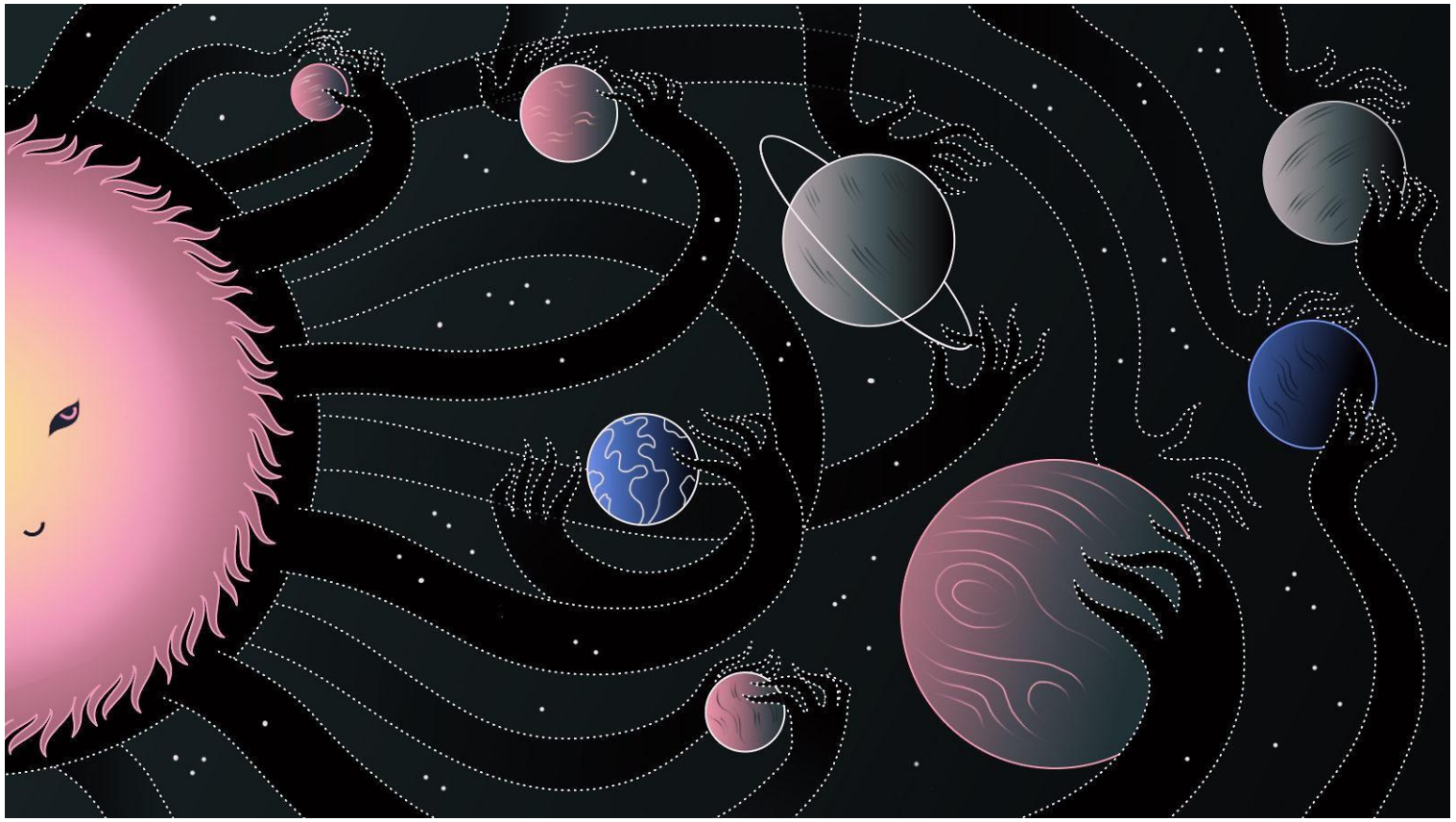
Source: https://oec.world/en/visualize/tree_map/hs02/export/wld/show/all/2020/

From whoom we buy?



Source:
https://oec.world/en/visualize/tree_map/hs02/import/pol/show/all/2020/

The gravity model



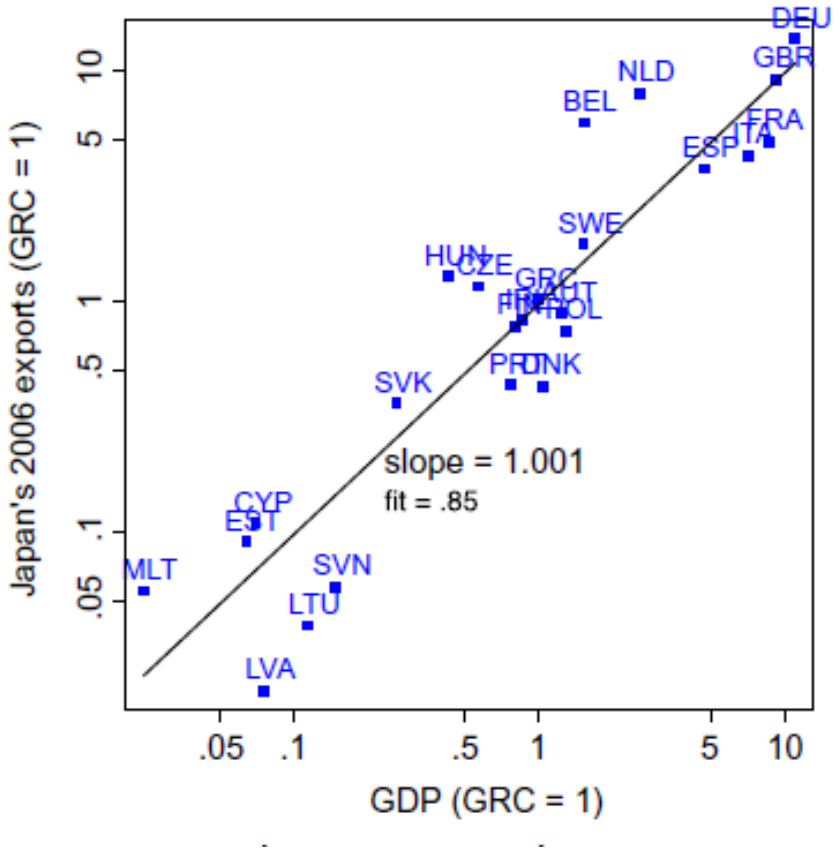
The size does metter (2019)

Trade partner	Trade (Export+ Import)*
1. China	579 000,00
2. Canada	518 140,60
3. Mexico	459 013,40
4. Japan	155 877,60
5. Germany	140 834,60
6. Korea	118 939,80
7. U.K	113 413,70
8. Holand	93 486,59
9. Singapour	75 368,48
10. France	73 887,71

Source: http://www.cepii.fr/CEPII/en/bdd_modele/download.asp?id=8

*In US $ mln

The size does metter



Source: Gravity Equations: Workhorse, Toolkit and Cookbook – Head i Mayer 2014

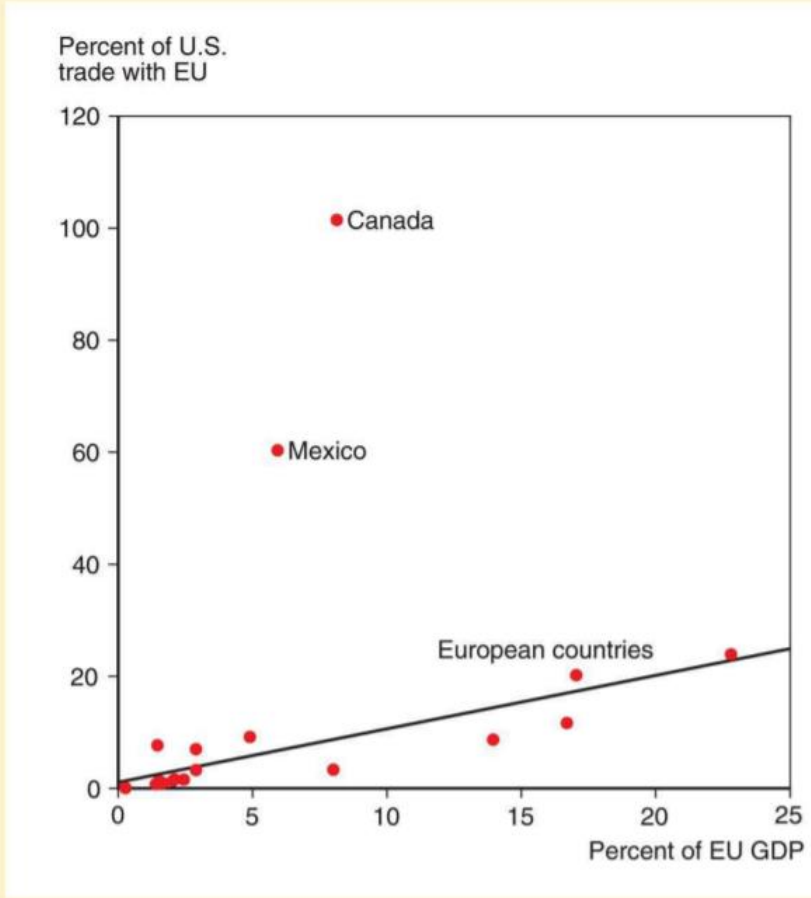
Distance and presence of borders has the influence on trade

Figure 2-3

Economic Size and Trade with the United States

The United States does markedly more trade with its neighbors than it does with European economies of the same size.

Source: U.S. Department of Commerce, European Commission.



(Naive) Gravity model of trade

$$T_{ij} = A * Y_i * Y_j / D_{ij}$$

Where:

- T_{ij} – *the value of trade between country i and j*
- Y_i *–the size of country i [GDP]*
- Y_j *–the size of country j [GDP]*
- D_{ij} *–Geographicall distance between i and j*
- *A - constat*

Hhy does gravity equation works?

Hypothetical global GDP and trade expenditure

Country	The share of global expenditure	GDP (USD billion)
A	40	4
B	40	4
C	10	1
D	10	1

- *Assumptions: Country A spends on goods from countries A,B,C,D a part of its income equal to their share in global GDP*
- *Thesame is true for other countries*

The value of trade

Exports value (USD billion)

To	A	B	C	D
A	-	1,6	0,4	0,4
B	1,6	-	0,4	0,4
C	0,4	0,4	-	0,1
D	0,4	0,4	0,1	-

- *In our example we have:*

$$T_{ij} = u_i * u_j * Y_w = \frac{Y_i}{Y_w} * \frac{Y_j}{Y_w} * Y_w = \frac{1}{10} * Y_i * Y_j$$

- *Assumption: I am buying from other countries in the shares equal to their shares in global production*

Gravity equation once more

$$T_{ij} = A * Y_i * Y_j / D_{ij}$$

- *After log transformation:*

$$lnT_{ij} = lnA + lnY_i + lnY_j - lnD_{ij}$$

- *More general form:*

$$ln(T_{ij}^t) = stała + b_1 ln(Y_i^t) + b_2 ln(Y_j^t) + b_3 Z_i^t + b_4 Z_i^t + b_5 A_{ij}^t + \cdots + b_n A_{ij}^t + \epsilon_{ij}^t$$

Gravity equation once more

$$ln(T_{ij}^t) = stała + b_1 ln(Y_i^t) + b_2 ln(Y_j^t) + b_3 Z_i^t + b_4 Z_i^t + b_5 A_{ij}^t + \cdots + b_n A_{ij}^t + \epsilon_{ij}^t$$

Where:

- *Variable A are time invariant (constant) – eg. A_{ij} could express the geographical distance,*
- *On the other hand Z could be expressing RTA*
- *Thous we have logs therefore b could be understand as elasticities*
- *The literature on Gravity model is very wide.*

Literature example

Variable	Estimate
GDP Partner	0.93***
	(0.024)
GDP Reporter	1.25***
	(0.044)
T/L Partner	-0.086**
	(0.038)
T/L Reporter	-0.74***
	(0.068)
Distance	-0.74***
	(0.050)
Colonial relationship	0.43
	(0.48)
Common colonizer	2.88***
	(0.26)
Contiguity	1.28***
	(0.26)
Common language	0.77*
	(0.46)

- *Source: Cieślik, Hagemejer (2011) The Eectiveness of Preferential Trade Liberalization in Central and Eastern Europe, International Trade Journal, także WP WNE UW 21/2011*
- *Estimates consistent with the intuition:*
  - *GDP (+)*
  - *The distance (-); being a neighbour country(+)*
  - *Colonial past (+) and common language (+)*

Literature example

Variable	Estimate
NMS-EU15 Integration	0.30***
	(0.094)
Intra NMS Integration	-0.39**
	(0.16)
Association Agreement	0.83***
	(0.065)
FTA EFTA	0.88***
	(0.12)
CEFTA	0.61***
	(0.098)
BAFTA	1.09***
	(0.41)
FTA with Turkey	0.94***
	(0.18)
FTA with Israel	0.13
	(0.22)
FTA with Croatia	-0.68
	(0.78)
Baltics/CEFTA FTA	0.58***
	(0.10)
FTA with Albania	0.48
	(0.64)
FTA with Macedonia	-1.01***
	(0.39)
FTA with Ukraine	0.75
	(0.88)
Constant	-38.8***
	(1.21)
Observations	9950
R-squared	0.62

- *The EU15 integration results in possitive way, but not with the new members*
- *The results of RTA's in Europe – rather possitive*
- *The results for others RTA's – with little influance on trade (exception of Turkey).*
- *The equation explains 62% of variance of Middle East Europe trade*