

Europe: Competition or Cooperation?

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Table of contents

1. Overview	2
2. Background information	4
Cooperation and competition	4
Comparative advantage.....	4
Ricardian model of trade – example	5
European Single Market	8
Free trade effects	10
International trade analysis.....	12
Additional exercise	14
Advices for further studies	14
Glossary	15
References	16
3. Training material.....	18
Activity: EU trade patterns analysis.....	18
4. Interactive learning.....	21
Quiz.....	21

1. Overview

In general cooperation can be understood as joint production (activity) or consumption by a group of people for their mutual benefit. It is the opposite of competition which is based on individual efforts to achieve a goal. There are different approaches regarding how to deal with the concepts of cooperation and competition in economics. International trade is a comprehensive solution to deal with it. International trade is about the purchasing, selling or exchanging of goods and services across national borders.

Trade is the all-time basis for forming economic relations. Key trade economic theory explains that trade offers welfare gains and that countries involved in international trade can gain substantially from cooperation. The free movement and exchange of goods was one of the primary reasons to establish the European Union. Currently the EU has progressed from a customs union to a single market and the euro area of nineteen countries. Also European integration has increased the European economy covering almost the whole continent with membership of twenty-seven countries. The notion of an internal market is built on the principle that market participants should operate with the greatest possible degree of economic freedom, unhindered by any (national) barriers to competition. Single Market establishes the EU as one economic entity with international trade agreements as the main external competence of the EU. The aim of EU competition policy is to safeguard the correct functioning of the single market. In essence, it ensures that enterprises have the possibility to compete on equal terms on the markets of all Member States.

Table 1. Evidence for economic results of competition and cooperation

	Competition	Cooperation
Intra-EU trade	What is the trade balance (export-import) for any country within Europe? Is the country gaining or losing economically? How has its trade changed during the last 3-5 years?	Exports and imports within EU: effects on employment and income
Extra-EU trade	EU exports to the world: effects on employment and income	How EU membership helps with trade development for any country? Is the country gaining or losing economically? How has its trade changed during the last 3-5 years?

Rising growth of exports in the world and a steady increase in trade as a share of the size of the world economy prove that trade has become ever important. The growth of international trade has been stimulated by the steady decline of trade barriers after World War II. There are arguments that support a free trade policy as well as arguments that support various types of protectionist policies. However, the Ricardian model of international trade introduces the principle of comparative advantage, which helps to understand reasons supporting international trade. This model explains for example how less productive nations can benefit from free trade with their more productive neighbors.

Exploration of the international trade flows helps to discover effects of economic cooperation and competition. Eurostat provides data and an interactive data visualization on trade in goods and trade effects on employment and income in the EU. There are different ways of conducting trade analysis. First, one should start from a general description and then go into details. Next, the current situation should be compared to the past to find out if trade growth promotes economic competition

and cooperation. Some suggestions on how to do trade analysis for competition and cooperation examinations in the EU are presented in Table 1.

This learning scenario is an opportunity for students to become aware of their countries trade characteristics. They can realize how people from different countries benefit from their country's export and how important it is to keep economic openness. Finally, students can discover how trade promotes economic cooperation and competition in the European economy.

2. Background information

Cooperation and competition

In general, cooperation can be understood as joint production (activity) or consumption by a group of people for their mutual benefit.¹ It is the opposite of competition which is based on individual efforts to achieve a goal. Some people perceive competition as morally suspect in comparison to virtuous cooperation. However as Timothy Taylor says: “..competition and cooperation are not polar opposites.(...) Competition refers to a situation in which people or organizations (such as firms) apply their efforts and talents toward a certain goal, and they receive results based substantially on their performance relative to each other. (...) Cooperation refers to a situation in which the participants seek out win-win outcomes from working together.” If carried out in an unethical or illegal way, competition and cooperation are both unjustified, for example when criminals cooperate or sportspersons compete in an unfair way. Whereas when consumers seek the best deal and companies seek higher profits, only competition can provide optimal solutions.² And only through cooperation can market participants get the most out of exchange, as the modern market is a network of mutually beneficial interdependencies.³ Therefore markets are a blend of competition and cooperation which are both beneficial for societal development.

There are different approaches as to how to deal with the concepts of cooperation and competition in economics. Depending on the point of reference, one can talk about cooperation and competition between citizens, companies, cities, regions, nations or states. At the national level, cooperation and competition concepts can be analyzed internally (within Europe), or externally (the relation between Europe and the rest of the world). As complicated as it may be, there is a solution to treat it in a comprehensive way; international trade analysis. International trade analysis helps to examine the processes of economic cooperation and competition between countries, as these are both aspects of economic exchange. International trade is about purchasing, selling or exchanging goods and services across national borders. An additional form of international trade is foreign direct investment (FDI), which means acquiring the ownership control of a company in another country.

Comparative advantage

Trade has always been the basis for forming economic relations. Key trade economic theory (Ricardian model of absolute and comparative advantage) explains that trade offers welfare gains and that countries involved in international trade can gain substantially from cooperation. According to this classical trade theory, countries can build their wealth through trade in the long term. Wealth could be acquired if the country runs a positive balance of trade, that is, if the country's exports are bigger than imports (the country sells more goods and services to foreigners than it purchases from foreigners). Modern trade theory focuses on gains from trade achieved through specialization in production, lower prices and market access. However the crucial factor is that through innovation and knowledge spillovers, trade enables productivity rise, which is a basic source of economic growth.

Rising growth of exports in the world and a steady increase in trade as a share of the world economy prove that trade has become ever important. The growth of international trade has been stimulated by the steady decline of trade barriers after World War II. The Ricardian model of

¹ Rutherford, D. (2007), *Economics: The Key Concepts*, New York: Routledge, p.34

² Taylor T., *The Blurry Line Between Competition and Cooperation*, Available at:
<https://www.econlib.org/library/Columns/y2015/Taylorcompetition.html>

³ Horwitz S., *Economics as the Study of Peaceful Human Cooperation and Progress*, Speech, Available at:
<https://www.econlib.org/economics-as-the-study-of-peaceful-human-cooperation-and-progress/>

international trade introduces the principle of comparative advantage which helps to understand reasons supporting international trade. This model explains for example, how less productive nations can benefit from free trade with their more productive neighbors.⁴

Adam Smith in his book *The Wealth of Nations* (1776) stated that the real wealth of a country consists of the goods and services available to its citizens. Smith developed the theory of absolute advantage, which holds that different countries can produce some goods more efficiently than others, thus global efficiency can be increased through free trade. Smith reasoned that if trade were unrestricted, each country would specialize in those products that resulted in a competitive advantage for it, which would be either natural or acquired. A country then could use its specialized production excess to buy more imports than it could have otherwise produced.⁵ In 1817, David Ricardo expanded Adam Smith's theory of absolute advantage to develop the theory of comparative advantage. He reasoned that there may still be global efficiency from trade if a country specializes in those products that it can produce more efficiently than other products without regard to absolute advantage.

The Ricardian model of trade was a real breakthrough. Up until then, world resources were considered to be limited and static. As a result, one country's economic gain was achieved at the expense of another. This situation is called a zero-sum game. However, David Ricardo proved that international trade is a positive-sum game (win-win situation). Any country can export the goods in which it has the greatest relative productivity and in exchange receive goods which domestically are more expensive to produce. Furthermore, exporting by an industry can increase its productivity as a result of learning-by-doing, economies of scale, or other factors.⁶ Therefore comparative advantage becomes dynamic and may evolve because of the country's economic development. It means that countries' relative advantages are changing over time because of knowledge spillovers, technology transfers or factor accumulation.

Since then other trade theories have appeared, but the theory of comparative advantages is still valid as a simple explanation of a country's international trade performance.⁷ A New Trade Theory included the assumptions of economies of scale, product differentiation and imperfect competition into a trade theory. In short, the increasing returns made from the large production of tradable goods make it easier to sell them abroad at competitive prices.⁸ Gravity theory also adds a spatial context, in which geographical location influences the volume of trade, and distance factor limits the trade. Nevertheless, how much countries gain depends mainly on the nature of comparative advantage, which is related to sector-level productivity. Countries produce and export a wide variety of goods, which differ greatly by characteristics and by quality. That is why if any country is successful and achieves high export performance for some of these goods, it is most likely a result of its comparative advantage in their production.

Ricardian model of trade – example

The following example shows how the theory of comparative advantage works with a fictitious example of international trade. Suppose that Czechia and Poland currently produce beer and apples. Citizens consume their own domestic products. In Poland 1 hour of labour is needed to produce 1

⁴ International Economics - Theory and Policy, p.53, Available at:
<https://open.umn.edu/opentextbooks/textbooks/international-economics-theory-and-policy>

⁵ Daniels J.D., Radebaugh L.H., (1994), International business Environments and Operations, 7th edition, Addison-Wesley Publishing Company, p.170-171

⁶ Appleyard D., Field A., (2014), International Economics, 8th edition , McGraw-Hill/Irwin, p.58

⁷ Fernandez-Nunez T., Marquez M.A., (2014), The dynamics of trade composition: Do trade-type interdependencies matter?, The Journal of International Trade & Economic Development, Taylor & Francis Journals, vol. 23(5), pages 710-734, p.3

⁸ Rutherford D., (2007)... p.209

bottle of beer or 2 kg of apples. In Czechia 1 hour of labour is needed to produce 4 bottles of beer or 3 kg of apples. The table shows each nations efficiency in the production of beer and apples (labour productivity).

Table 1. Beer and apple productivity in Czechia and Poland.

	Beer	Apples
Czechia	4	3
Poland	1	2

Clearly the Czechia workers' productivity is higher than that of Polish workers, as during 1 hour they are able to produce more beer and more apples (Tab.1). It can be said that 1 bottle of beer is cheaper in Czechia, because it costs 0,25 of labour hour in comparison to Poland where 1 bottle of beer costs 1 labour hour. Similarly 1 kg of apples is cheaper in Czechia with the price of 0,33 labour hour than in Poland where the cost is 0,5 labour hour.

It is evident that Czechia has got an absolute advantage in production of beer and apples (Tab.2). Both of these products are just cheaper to produce in Czechia than in Poland (assuming equal cost of labour). In this situation the question arises whether Czechia should decide to produce both products domestically, or if it is still possible to achieve some gains from specialization and trade.

Table 2. Cost production (in labour hours) of one bottle of beer and one kilogram of apples in Czechia and Poland.

	Beer	Apples
Czechia	0,25	0,33
Poland	1	0,5

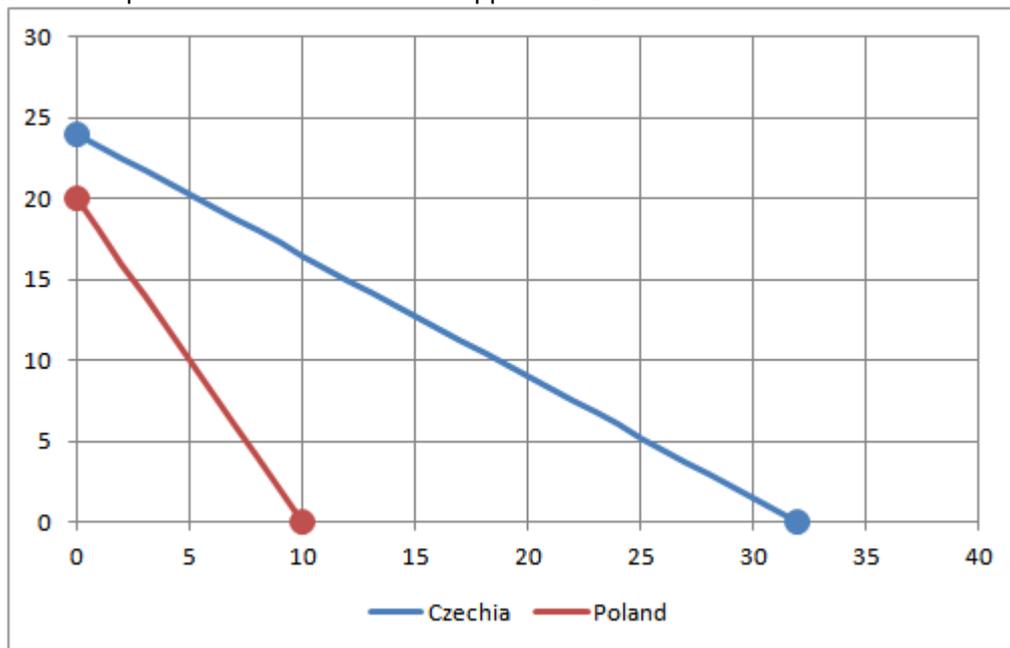
Table 3. Maximal production of beer or apples in Czechia and Poland under specialization.

	Productivity		Labour hours available	Maximal production	
	Beer	Apples		Beer	Apples
Czechia	4	3	8	32	24
Poland	1	2	10	10	20

Let's assume that Czechia has got 8 hours of labour and Poland has got 10 hours of labour available. With these resources Czechia and Poland can achieve different maximal production outcomes (Tab. 3).

The results of all possible production outcomes are shown on a graph (Fig.1). Although Czechia has less resources (8 labour hours) than Poland (10 labour hours), Czechia is able to produce more beer or apples than Poland. It is so, because Czechia has got higher productivity (absolute advantage).

Figure 1. Possible production mix of beer and apples in Czechia and Poland.



Let's say that initially both countries were producing a mixed outcome of beer and apples. Czechia was producing 20 bottles of beer and 9 kg of apples. Poland was producing 5 bottles of beer and 10 kg of apples. Total production was 25 bottles of beer and 19 kg of apples. (Tab.3) Now each country decides to specialize in production of only one product. Looking at the cost of production it is clear that in Czechia, beer is relatively cheaper to produce than apples. It is Czechia's comparative advantage. The situation is quite opposite in Poland, where production of apples is relatively cheaper than beer (Tab.2). Therefore it is Poland's comparative advantage. Therefore it seems obvious that Czechia chooses to produce beer and Poland chooses to produce apples.

Table 3. Initial mixed production of beer and apples in Czechia and Poland.

	Beer	Apples
Czechia	20	9
Poland	5	10
Total production	25	19

After specialization, total production of beer and apples rises (Tab.4). In total there are 32 bottles of beer in comparison to 25 before, and 20 kg of apples in comparison to 19kg before. The question is how to exchange goods between countries to fulfill their domestic demand. If Czechia wanted to have 20 bottles of beer and Poland wanted to have 10 kg of apples, the excess production can be traded. With this assumption an excess production of beer in Czechia ($32 - 20 = 12$) can be exchanged for apples. Similarly in Poland an excess production of apples ($20 - 10 = 10$) can be exchanged for beer. As a result, Czechia can export up to 12 bottles of beer to Poland and Poland can export up to 10 kg of apples (Tab. 5).

Table 4. Production of beer and apples in Czechia and Poland after specialization.

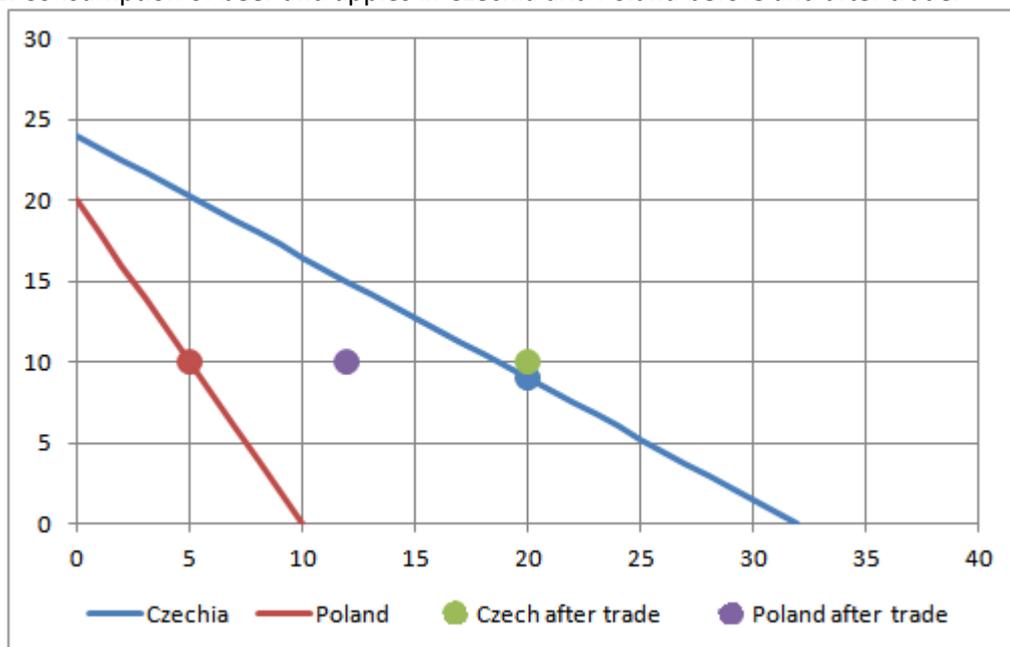
	Beer	Apples
Czechia	32	0
Poland	0	20
Total production	32	20

Finally, it is a matter of negotiations how many bottles of beer Czechia sends to Poland in exchange for 10 kg of apples. Czechia can decide to export 12 bottles of beer or less for 10 kg of apples from Poland. Nevertheless, with specialization and international trade both countries are in a better situation than before. The volume of consumption in Czechia and Poland is higher than was possible without exchange (Fig.2).

Table 5. Initial supply, export and supply after exchange.

	Initial supply		Export		Supply after exchange	
	Beer	Apples	Beer	Apples	Beer	Apples
Czechia	20	9	12	0	20	10
Poland	5	10	0	10	12	10
Total	25	19	12	10	32	20

Figure 2. Consumption of beer and apples in Czechia and Poland before and after trade.



European Single Market

The European Union (EU) is the world's most developed model of regional cooperation and integration. The free movement and exchange of goods was one of the primary reasons to establish the European Union. The EU has progressed from a customs union to a Single Market and the euro area of nineteen countries. European countries have proceeded gradually along the various steps required to create a regional community such as a free trade area, a customs union, a single market, a single currency, a common passport area, and a common foreign policy.⁹ Currently the European integration process has grown the European economy to a point in which it covers almost the whole continent, with twenty-seven countries now members. Within this integrated market, several policies have been harmonized or transferred to the European level. Introduction of a common European competition policy enabled fair competition among the member states. Given this market situation,

⁹ Cameron F., (2010), The European Union as a Model for Regional Integration, Council on Foreign Relations, cdn.cfr.org, p.2

companies within the European Union market can compete on the basis of their real comparative advantages rather than being protected by discriminating barriers to trade.¹⁰

In fact the EU has one of the strongest competition policy systems worldwide. The aim of the EU competition policy is to safeguard the correct functioning of the single market. In essence, it ensures that enterprises have the possibility to compete on equal terms on the markets of all Member States. European competition rules are established principally to protect competition, prevent distortions in the market and ensure fairness for market participants. The framework strives to ensure that governments and companies obey EU rules on fair competition, while providing sufficient space for innovation, unified internal market standards and the development of small businesses. EU competition rules also apply to agreements concluded outside the Union if they have effects within the internal market. The EU competition law applies to all the Member States as well as to other countries that form the European Economic Area: Iceland, Liechtenstein and Norway. The policy also applies to non-EU companies operating on the single market.¹¹

Setting the EU's common trade policy and tariffs enables cooperation between nations. The Single Market of the EU is established as one economic entity and international trade agreements are the main external competence of the EU.¹² The EU helps its members to protect themselves against the dominant economic powers of their outside trading partners and continues to open up markets outside Europe in the midst of rising protectionism.¹³ The EU's market access policies help to improve conditions for European companies to export worldwide and to make sure that their trading partners follow international trade rules. The EU enforces its rights under international trade rules alongside the EU's trade agreements with partner countries. The EU also uses trade defense instruments to stop imports of artificially cheap goods from flooding the EU market, and imposes additional import duties so that competition is fair. The Commission negotiates with trading partners to raise the standards of intellectual property in non-EU countries, protect the intellectual property of EU companies and to stop the trade in counterfeit and pirated goods and services.¹⁴ The latest Trade Barriers Report provides examples of the EU supporting actions in 2019, for example the following:¹⁵

- Beef exporters from France, Ireland and the Netherlands regained access to China, producers from Ireland and Croatia recovered access to Japan, and Dutch pork producers can export also to Mexico.
- Polish producers of baby milk powder can export again to Egypt (check for detailed case description at the EC site).¹⁶
- Belgian pear producers regained access to the Mexican market.

¹⁰ Van Hove J., (2010), Variety and quality in intra-European manufacturing trade: the impact of innovation and technological spillovers, *Journal of Economic Policy Reform*, Taylor & Francis Journals, Vol. 13, No. 1, 43–59, p. 45

¹¹ Szczepański M., (2019), EU competition policy Key to a fair single market, European Parliamentary Research Service, Available at:

[https://www.europarl.europa.eu/thinktank/en/document.html?reference=EPRS_IDA\(2019\)642209](https://www.europarl.europa.eu/thinktank/en/document.html?reference=EPRS_IDA(2019)642209), p.1-2

¹² Congressional Research Service, (2019), The European Union: Questions and Answers, Available at: <https://fas.org/sgp/crs/row/RS21372.pdf>, p.2

¹³ EC, Trade Barriers Report, Available at: <https://trade.ec.europa.eu/doclib/press/index.cfm?id=2159>

¹⁴ EC, Enforcement and protection, Available at: <https://ec.europa.eu/trade/policy/policy-making/enforcement-and-protection/>

¹⁵ EC, Trade Barriers Report ...

¹⁶ EC, Success story: Polish baby milk producer gains access to Egyptian market Available at: https://trade.ec.europa.eu/doclib/docs/2020/june/tradoc_158791.pdf

According to the French Council of Economic Analysis, European competition policy is rather successful in achieving its current goals: promoting investment, productivity and purchasing power.¹⁷ An earlier study commissioned by the European Parliament has proved that antitrust policy, merger control, State aid control and liberalisation contributed significantly to economic growth in Europe. Effective competition was found to be a driver of an efficient internal market that delivers growth and jobs. Therefore the Commission firmly supports its long-standing view that competitiveness is improved through the exposure of businesses to merit-based competition, which needs to be open and take place on a level playing field.¹⁸

Free trade effects

There are arguments that support a free trade policy as well as arguments that support various types of protectionist policies. Cross-country evidence suggests however that more open economies have higher income levels and also grow faster. Therefore, openness is important for economic growth both in the short and long term. In the short term, net exports are a source of demand. In the long term, trade is a channel for knowledge transfer and for specialization according to comparative advantage, thereby improving resource allocation and supporting higher economic growth and welfare over time.¹⁹

One of the main EU goals is to improve Europe's economic performance. It can be achieved by increasing both European competitiveness and cooperation in international trade. The evidence of the EU trade policy results can be observed on the European job market as international trade is an important engine for job creation. According to the Eurostat:

- EU exports support 36 million jobs, up two thirds from 2000. Nearly 14 million of these workers are women. 1 in 7 jobs in the EU depends on exports.
- EU exports support a significant share of jobs in all countries across the EU.
- Exports create opportunities for everyone, both skilled and unskilled workers.
- These jobs are better paid on average.
- Thanks to the EU Single Market, one fifth of the export-supported jobs are located in a different Member State than the one exporting.²⁰

Some people oppose the benefits of trade in spite of a large body of literature, which documents the link between growth and openness to trade.²¹ It happens, because opening any economy creates both winners and losers. For example, after enlarging the EU with Eastern European countries, some Western European high-wage countries experienced an unemployment rise among the lower-qualified workers.²² The "Polish plumber" even became an iconic example of cheap labour,

¹⁷ Jean S., Perrot A., Philippon T., Competition and trade: Which policies for Europe?, Available at: https://www.cairn-int.info/article-E_NCAE_051_0001--competition-and-trade-whichpolicies.htm

¹⁸ Szczepański M., (2019)... p.30-31

¹⁹ Hoekman B., (2015), Trade and growth – end of an era? [in:] The Global Trade Slowdown: A New Normal? A VoxEU.org eBook, Centre for Economic Policy Research, CEPR Press, London, www.cepr.org, p.6

²⁰ EC, Trade means jobs, Available at: <https://ec.europa.eu/trade/policy/in-focus/trade-and-jobs/>

²¹ Lind N., Ramondo N., (2019), The Economics of Innovation, Knowledge Diffusion, and Globalization, Oxford Research Encyclopedia of Economics and Finance, p.2

²² Zeddies G., (2013), Skill Content of Intra-European Trade Flows, European Journal of Comparative Economics, Cattaneo University (LIUC), vol. 10(1), pages 81-107, p.99

who might contribute to lower social standards in Germany or even come and steal French jobs.²³ At the same time, Eastern European countries were afraid of becoming just a market extension for Western economies on the one hand and of being bought out by wealthier nations on the other. In fact in 2004, after joining the EU, Poland experienced an inflation rise caused by a higher demand for consumer goods from Western countries (Tab. 6).

One of the main arguments against free trade is that the gains and pains of trade are spread unevenly among citizens and between industries. For example, one of the reasons for Brexit was a poor assessment of the EU's trade policy among British citizens. The EU protects sectors of clothes and other labour-intensive goods which are produced in some Southern and Eastern EU countries. Britain advocated less protective trade policies for the benefit of the consumers but had been outvoted by other EU members.²⁴ Therefore unless there is a general belief that the gains and pains of trade are shared fairly, it is difficult to maintain a social consensus for liberal trade policy.²⁵

Table 6. Consumer Price Index and Food and non-alcoholic beverages Price Index in Poland 2003 - 2006

Year	2003	2004	2005	2006
Consumer Price Index	0,8%	3,5%	2,1%	1,0%
Food and non-alcoholic beverages Price Index	-1,0%	6,3%	2,1%	0,6%

Source: Statistical Office of Poland GUS, www.stat.gov.pl

The other problem arises if trade partners do not cooperate in a fair manner. In 2013, the Transatlantic Trade and Investment Partnership (TTIP) negotiations between the EU and USA were launched and ended without conclusion at the end of 2016. Despite potentially benefiting millions of consumers by facilitating trade conditions through the removal of technical and non-tariff barriers and the harmonization of legislative regulations and standards, the TTIP had been long contested by lobbyists in the NGO sector. Although the TTIP was a proposed free trade agreement reducing the regulatory barriers to trade, the TTIP negotiations were criticized mainly for going far beyond standard trade settlements. The proposed TTIP agreement generated widespread public debate on its potential impact on citizens, consumers and businesses including the risk of contamination with genetically modified organisms, toxic chemicals exposure, and lower American standards for specific products or the lack of transparency regarding the talks.²⁶ Finally, after the United States had withdrawn from the Paris Agreement on climate change and past efforts had demonstrated difficulties in negotiating mutually acceptable commitments in areas identified as priorities by the Union, the negotiations were cancelled by the EU.²⁷

²³ Czech Radio, (2005), Polish plumber and nurse feature in ads countering perception of cheap labour from East, 07/29/2005, Available at: <https://english.radio.cz/polish-plumber-and-nurse-feature-ads-countering-perception-cheap-labour-east-8629252>

²⁴ Baldwin R., Collier P., Venables A., (2017), Post-Brexit trade and development policy, Policy Insight No.88, CEPR, Available at: https://cepr.org/sites/default/files/policy_insights/PolicyInsight88.pdf p.2

²⁵ Baldwin R., Collier P., Venables A., (2017)..., p.6

²⁶ Ghidiu I.A., (2020), Contemporary patterns of transatlantic trade cooperation in a post-Brexit European Union (dis)order, CES Working Papers, Centre for European Studies, Alexandru Ioan Cuza University, vol. 11(4), pages 302-319, p.303

²⁷ Council of the European Union , (2019), Council decision of 15 April 2019, Available at: <https://www.consilium.europa.eu/media/39180/st06052-en19.pdf>

International trade analysis

Exploration of international trade flows helps to uncover effects of economic cooperation and competition. There are different ways of conducting trade analysis. To begin with, one can start from a general description, like a trade volume and main trade partners. The analysis can be conducted in absolute and relative terms (percentages). Then the analysis can be focused on bilateral trade among selected countries (for instance top trading partners).

It is important to describe both the current situation and refer it to the past. To analyze trends one should check data in a longer period of time (at least three years). To find out if trade promotes economic competition and cooperation one should assess trade balance (export minus import) for the last one or more years and calculate its cumulative sum.

Some suggestions regarding how to do trade analysis to examine competition and cooperation in the EU are presented in Table 7.

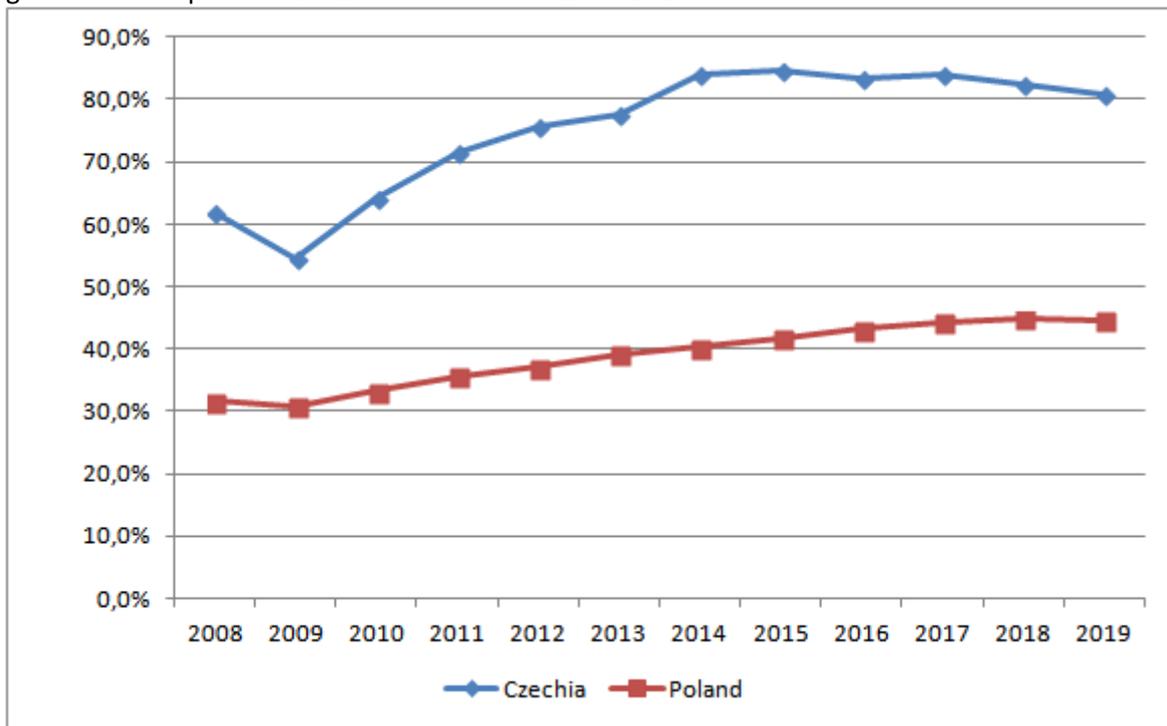
Table 7. Evidence for economic results of competition and cooperation

	Competition	Cooperation
Intra-EU trade	What is the trade balance (export-import) for any country within Europe? Is the country gaining or losing economically? How has its trade balance changed during the last 3-5 years?	Exports and imports within EU: effects on employment and income
Extra-EU trade	EU exports to the world: effects on employment and income	How EU membership helps with trade development for any country? Is the country gaining or losing economically? How has its trade / trade balance changed during the last 3-5 years?

To assess to what extent any country is engaged in international trade or in other words how open its economy is, one can use a ratio of export value (or sum of export and import) to GDP. The measure is simple and easy to calculate but it is not a perfect one. For example, it is not suitable for comparison between small and big economies, because the bigger the country's economy is, the smaller its trade as a percentage of GDP.

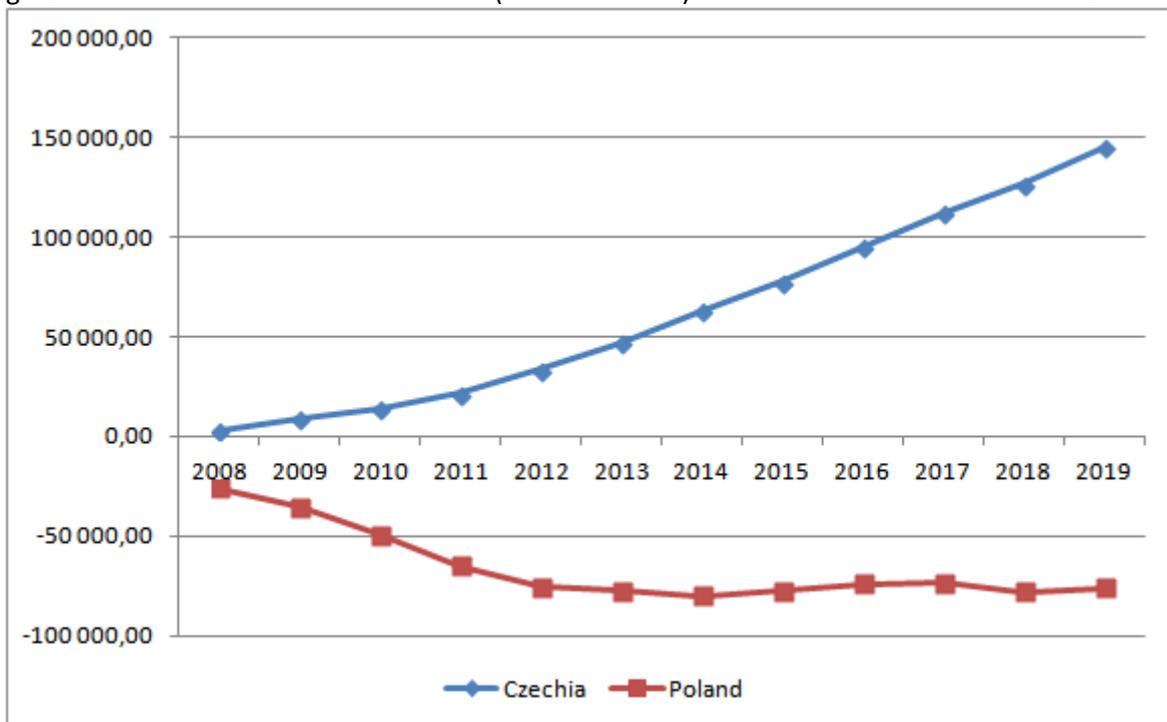
For example, overall trade effects can be shown using real data in the Czechia and Poland case. First, in terms of openness Czechia is more trade-oriented than Poland. In 2019 Czechia openness level (exports/GDP) was 80,7% in comparison to 44,6% in Poland (Fig.3). Then the overall trade effect is visible after calculating a cumulative sum of trade balance for Czechia and Poland from 2008 to 2019. While Poland struggles with its negative trade balance, international trade became a success factor for Czechia's economy, which reaps the gains of a positive trade balance in a systematic way (Fig.4).

Figure 3. Trade openness in Czechia and Poland 2008-2019



Source: Calculated with Eurostat data.

Figure 4. Cumulative sum of trade balance (millions of EUR) for Czechia and Poland from 2008 to 2019



Source: Calculated with Eurostat data

Additional exercise

Find out what is the level of openness (0-100%) and the share of exports for one or more top trading partners (0-100%) now and in the past (the longer the period, the more clear the results, so use at least a 3 or 5 years time period). Illustrate data for different EU countries with a chart (XY type): past and present. To download data for all EU countries check following resources:

- GDP from Gross domestic product at market prices, Available at:
<https://ec.europa.eu/eurostat/databrowser/view/tec00001/default/table?lang=en>
- Trade balance, Exports, Imports from International trade by reporting country in total 2013-2019, Available at:
<https://ec.europa.eu/eurostat/databrowser/view/tet00002/default/table?lang=en>

Compare and discuss the results. Can you identify any patterns of intra-EU trade flows? If so, can you explain it by referring to a country's characteristics like size, wealth, cultural similarities etc.? Check the trade balance for the selected countries. How has it changed for the chosen period?

Advices for further studies

Possible extensions are as follows:

- Shifting a place of focus from general trade to goods and services and their types.
- Updating data to study the effects of current circumstances caused by Covid-19.
- Identifying trade patterns within the EU.

With the analysis of trade as a whole one can overlook some interesting features. Therefore it is advisable to look into details like trade of goods vs. trade of services or different manufacturing groups.

The recent Covid-19 epidemic has had a tremendously negative impact on the EU economy and trade. However, the analysis of the current situation is highly limited at present as publicly available data is delayed (usually for one year or more). Nevertheless, as access to economic data increases in coming months, 2020/2021 circumstances can be also included into the lesson scenario.

One can observe some trade patterns in the intra-EU trade. Looking for trade patterns with statistics can be an intellectually stimulating exercise. Here are some examples of the EU trade patterns:

- The large majority of Eastern European trade is with Western Europe. For Western Europe, however, Eastern Europe is still a minor trade partner.
- The EU dominates trade with Greece and Portugal despite their long EU membership.

Glossary

- Absolute and comparative advantage - Absolute and comparative advantage is the primary explanation for trade among countries. When a country has the best technology for producing a good, it has an absolute advantage in the production of that good. When a country produces some goods in the best way compared with how well it produces other goods then it has comparative advantage in producing those goods.
- Competition - Competition can be understood as individual activity which is aimed at an individual achievement.
- Cooperation - Cooperation can be understood as joint production (activity) or consumption by a group of people for their mutual benefit.
- European Union - The EU is a single market which is more than a customs union. The Single Market establishes the EU as one economic entity, with international trade agreements as the main external competence of the EU. Export - Goods leaving the statistical territory of a country.
- Import - Goods which add to the stock of material resources of a country by entering its economic territory.
- International Trade - International trade is about purchasing, selling or exchanging goods and services across national borders. An additional form of international trade is foreign direct investment (FDI), which means acquiring the ownership control of a company in another country.
- Openness – Economic openness shows to what extent any country is engaged in international trade or, in other words, how much its economy is open. This measure is based on a ratio of export value (or sum of export and import) to GDP.
- Ricardian model - The Ricardian model explains how a country's technology (productivity) affects its trade pattern. Ricardo showed that countries could benefit from international trade without having to use tariffs and that free trade between countries brings gains for all trading partners.
- Win-win situation - A win-win situation or result is one that is good for everyone who is involved. For instance, supporters of globalization assert that it is a win-win proposition for the rich and the poor.²⁸

²⁸ win-win [in:] Cambridge Dictionary Online, Available at:
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3. Training material

Activity: EU trade patterns analysis

Activity title	EU trade patterns analysis
Overview	<p>The purpose of this lesson is to guide students into the economic perspective of international trade in the context of European cooperation and competition. The lesson is based on freely available resources provided by Eurostat. Students analyze the state of EU trade in various ways and changes that occur during their chosen period of time.</p> <p>It is a knowledge-based type of learning which is combined with analytical skills development. The learning scenario improves students' critical thinking skills, communication skills and use of ICT resources.</p>
Objectives	The objective is to introduce concepts of European cooperation and competition in economics. This learning scenario should create an educational experience which reflects the complexity of the economy in the real world.
Materials	Computers with Internet access and preferably spreadsheet software (Ms Excel)
Time	<ol style="list-style-type: none"> 1. Teachers presentation: 90 min 2. Students individual analysis: 60 min 3. Students presentation: 30 min 4. Discussion: 30 min 5. Final thoughts description: 30 min
Introductory requirements	The level of economic knowledge needed for this lesson depends on the planned depth of analysis. For an introductory level, an understanding of common economic concepts like GDP, export, and import is required.
Limitations	For the purpose of the workshop, simple analysis of trade is used to illustrate cooperation and competition issues. However, international trade is a matter of an advanced level of study in economics which requires a significant amount of time and effort. This analysis is limited in scope, both in theory and analysis. The analysis focuses only on the balance of trade (exports and imports) and does not include balance of payment investigation nor exchange-rate impact. Therefore the workshop should be treated only as an introduction to the subject.
Group size	10-15
Instructions for trainers	<ol style="list-style-type: none"> 1. At the beginning, general trade theory and the EU's economic position in the world should be presented. 2. Students should individually analyze trade in their chosen countries using the Eurostat resources and present a description of their work. They are asked to examine exports, imports, 1-5 top trade partners and balance of trade.

	<p>3. Students can also individually analyze trade patterns (changes in a longer period of time like 5-10 years or between selected countries).</p> <p>4. After identifying and analyzing different trading patterns students should present their discoveries. Next they should discuss if presented results provide confirmation of economic cooperation and/or competition in the EU.</p>
Debriefing and evaluation	After discussion students should write down their opinion on the subject (up to 500 words). They should answer what they have learned and if their opinion about benefits of international trade and its economic effects on cooperation and competition has changed after workshops.
Tips for trainers	Like many relevant subjects linked to economics and politics, the subject of economic cooperation and competition in the context of international trade may be controversial. Trainers should be aware that some people may have a strong opinion about the subject of economic cooperation and competition and/or emotionally engage in discussion.
More on http://economic-literacy.eu	

Background information

Workshops should be prepared mainly with reference to: Globalisation patterns in EU trade and investment. It is an online Eurostat publication presenting a summary of recent European Union (EU) statistics on economic aspects of globalisation, focusing on patterns of EU trade and investment. Statistics about trade (like how data are collected) are explained in the User guide on European statistics on international trade in goods.²⁹

Eurostat resources for workshop activity:

- Globalisation patterns in trade and investment, Available at:
https://ec.europa.eu/eurostat/statistics-explained/index.php/Globalisation_patterns_in_trade_and_investment_-_introduction
- General information about trade in EU, Available at: <https://ec.europa.eu/trade/>
- More EU trade websites, Available at: <https://trade.ec.europa.eu/>
- International trade in goods - a statistical picture, Available at:
https://ec.europa.eu/eurostat/statistics-explained/index.php?title=International_trade_in_goods_-_a_statistical_picture

Eurostat provides an interactive data visualisation on trade in goods and on trade effects in the EU:

- Trade in 2019, Available at: <https://ec.europa.eu/eurostat/news/themes-in-the-spotlight/trade-in-goods-2019>
- Trade in 2018, Available at: <https://ec.europa.eu/eurostat/news/themes-in-the-spotlight/trade-in-goods-2018>
- Trade in 2017, Available at: <https://ec.europa.eu/eurostat/news/themes-in-the-spotlight/trade-in-goods-2017>

²⁹ User guide on European statistics on international trade in goods 2016 edition, Eurostat, Available at: <http://ec.europa.eu/eurostat/>

- Trade in 2016, Available at: <https://ec.europa.eu/eurostat/news/themes-in-the-spotlight/trade-in-goods-2016>
- Trade in 2015, Available at: <https://ec.europa.eu/eurostat/news/themes-in-the-spotlight/trade-in-goods-2015>
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- Trade means jobs, Available at: <https://ec.europa.eu/trade/policy/in-focus/trade-and-jobs/>
- Effects of EU Exports On Employment And Income, Available at:
<https://ec.europa.eu/jrc/en/research-topic/economic-environmental-and-social-effects-of-globalisation/effects-eu-exports-employment-income>

Class organization outline

1. Teacher starts with an introduction based on the long version.
2. Each student makes a list of elements that characterize the trading position of a selected country.
3. After presentation of their findings students will discuss together the benefits and drawbacks of trade.
4. The lesson ends with a debate on economic cooperation and competition in the European Union.
5. By the end of the lesson, students should be able to describe the economic impact of trade in the EU. They should also be able to identify countries which benefit the most and the least from trade in the EU.
6. Students discover how economic cooperation and competition in the EU helps their national economies to grow in a globalized world.

4. Interactive learning

Quiz

1	<p>Cooperation can be understood as joint production (activity) or consumption by a group of people for their benefit.</p> <p>a) mutual b) individual</p>
2	<p>Competition is based on ... efforts to achieve a goal.</p> <p>a) common b) individual</p>
3	<p>Competition and cooperation ... polar opposites.</p> <p>a) are b) are not</p>
4	<p>If acted in unethical or illegal way competition and cooperation are both... .</p> <p>a) unjustified b) justified</p>
5	<p>Markets are a blend of competition and cooperation which are both ... for societal development.</p> <p>a) harmful b) beneficial</p>
6	<p>International trade is about purchasing, selling or exchanging of goods and services ... national borders.</p> <p>a) across b) within</p>
7	<p>Countries involved in international trade can ... substantially from cooperation.</p> <p>a) gain b) lose</p>
8	<p>Wealth could be acquired, if the country runs a ... balance of trade, that is, if the country export is bigger than import.</p> <p>a) positive b) negative</p>
9	<p>Through innovation and knowledge spillovers trade ... productivity rise.</p> <p>a) disables b) enables</p>
10	<p>The theory of absolute advantage holds that different countries can produce some goods more efficiently than others, thus global efficiency can be ... through free trade.</p> <p>a) increased b) decreased</p>

11	<p>According to the theory of comparative advantage there may still be global efficiency from trade if a country specializes in those products that it can produce more efficiently than other products ... regard to absolute advantage.</p> <p>a) with b) without</p>
12	<p>International trade is a positive-sum game (win-win situation), because any country can export the goods in which it has the ... relative productivity and in exchange receive goods which domestically are ... expensive to produce.</p> <p>a) smallest, less b) greatest, more</p>
13	<p>... by an industry can increase its productivity as a result of learning-by-doing, economies of scale, or other factors.</p> <p>a) Exporting b) Importing</p>
14	<p>The free movement and exchange of goods was one of the ... reasons to establish the European Union.</p> <p>a) less important b) primary</p>
15	<p>Introduction of a common European competition policy enabled ... competition among the member states.</p> <p>a) a fair a) an unfair</p>
16	<p>Companies within the European Union market can compete on the basis of their real comparative advantages ... being protected by discriminating barriers to trade.</p> <p>a) without b) while</p>
17	<p>The aim of the EU competition policy is to safeguard the correct functioning of the</p> <p>a) national markets b) single market</p>
18	<p>Setting the EU's common trade policy and tariffs enables ... between nations.</p> <p>a) cooperation b) competition</p>
19	<p>One of the main arguments ... free trade is that, the gains and pains of trade are spread unevenly among citizens and between industries.</p> <p>a) for b) against</p>
20	<p>To assess to what extent any ... is engaged in international trade or in other words how open its economy is, one can use a ratio of export value (or sum of export and import) to GDP.</p> <p>a) company b) country</p>