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***ASSESSMENT OF THE EFFECTS OF SANCTIONS ON
TRADE BETWEEN THE EU AND RUSSIA***

Master dissertation

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Declaration of authorship

I, Andrea Kolářová, hereby declare that the thesis *“ASSESSMENT OF THE EFFECTS OF SANCTIONS ON TRADE BETWEEN THE EU AND RUSSIA”* was written by myself and that all presented results are my own, unless stated otherwise. The literature sources are listed in the References section.

Prague, September 30th, 2016

.....
Signature

Abstract

This thesis is trying to assess the effects of sanctions imposed on Russia in 2014 by the European Union and other countries, with respect to the changes in the trade flows among the two participants (EU and Russia). Firstly, the theoretical background for sanctions is provided, explaining their meaning and instruments which they use. Secondly, the overview of the Ukrainian conflict is conducted together with a brief review of the economic restrictions which were implemented, as well as the Russian counter-sanctions. The empirical part is firstly explaining the effects of the restrictions on the both economies and then introducing the state of the bilateral trade flows between the EU and Russia before the imposition of the sanctions. The most important part of the thesis is the gravity model conducted in the third chapter, which is trying to estimate the effects of the sanctions on the EU-Russian trade flows using two approaches. One of them is conducted with the help of regression analysis and a dummy variable which controls for the sanctions effect. The other one is predicting the values of exports without the disturbance of the sanctions and then comparing the results with the real values of the export for the years examined. The results of these analyses have proven the expectations about the negative impact of the sanctions on the trade flows between the EU and Russia.

Key words:

sanctions, Russia, EU, EU- Russia trade flows, Ukrainian conflict, gravity model, regression analysis

List of abbreviations

BC	Before Christ
EU	European Union
AA	Association Agreement
DCFTA	Deep and Comprehensive Free Trade Area
USA	United States of America
US	United States
OSCE	Organization for Security and Co-operation in Europe
OECD	Organization for Economic Co-operation and Development
GDP	Gross Domestic Product
FDI	Foreign Direct Investment
WDI	World Development Indicators
ING	International Netherlands Group
IMF	International Monetary Fund
PCA	Partnership and Co-operation Agreement
USSR	The Union of Soviet Socialist Republics
CES	Common Economic Space
WTO	World Trade Organisation
SITC	Standard International Trade Classification
MTR	Multilateral Trade-Resistance
OLS	Ordinary Least Squares method
UN	United Nations
RE	Random Effects
FE	Fixed Effects
UK	United Kingdom

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Introduction

In the past few decades, there has been an increase in the use of economic sanctions as a political tool and the issues concerning these instruments are a current topic. The sanctions are often applied by world powers or international organizations. However, not always are the applied measures effective.

This thesis concerns the analysis of the sanctions which were imposed on Russia by the EU as well as other western countries. The indicated topic has been recently broadly discussed, since the sanctions are still an on-going phenomenon, especially with the respect to the economic consequences on the concerned countries. Nonetheless the effects of such restrictive measures are not always easy to assess and its political or economic impacts might be various.

Trade relations between the European Union and the Russian Federation have been developing for many years, it could be said that they started with the dissolution of the USSR. Mutual trade is very important for both parties. European entrepreneurs consider the Russian market as very lucrative, since it is not as oversaturated as the European one. Therefore it is a suitable place for the sales of goods and services, of which the European market has more than enough. For the Russian side, the EU is an important business partner as an importer of energy resources, such as oil and natural gas, while at the same time Russia is dependent on the earnings that are coming from the EU for these raw materials. For the EU, on the other hand, these energy resources coming from Russia are vital as well, which is also why the EU is currently making efforts to change this fact.

In connection to the recent events in Ukraine, which began in November 2013 and which were followed by military intervention of the Russian Federation into the Ukrainian territory, many countries including the EU expressed its disapproval of such external policy of Russia and imposed various kinds of sanctions. Firstly, the USA along with the EU and other states have tried to influence the Russian government and people close to the president Putin through targeted sanctions because of their direct contributions to the destabilized situation in the east Ukraine. However, it turned out that these measures were not effective enough so that the Russian government would

stop interfering in the internal affairs of its neighbouring state. Thus more extensive restrictions had to be implemented.

These events have had many consequences, including the decline of ruble and the resulting crisis in Russia. The situation in the eastern Ukraine has not calmed down either and the war in these regions is still ongoing. With the aforementioned importance of Russia for the European supply of energy, the sanctions are negatively affecting the EU as well. Thus the Ukrainian crisis and its outcomes are causing disturbances to all participants and it is important to analyse what the concrete impacts are. That is why the main goal of this paper is to assess the effects of the sanctions which were imposed on Russia with the respect to changes in the trade flows between the EU and Russia.

This thesis will be carried out as an empirical study with two approaches towards the examination of the trade flows between Russia and the EU. Other effects which might have an impact on the trade relations such as oil prices or the ruble collapse will be discussed as well, however not directly examined since the focus is on the sanctions effects.

To have a complete analysis of the sanctions and a better overview of the effects, this work is divided into theoretical and empirical parts. First chapter is solely theoretical, with the literature overview of the sanctions provided at the beginning, then continuing with a theoretical definition of sanctions and its instruments, together with a brief historical review of the sanctions imposed and concluding with the explanation of the EU sanction policies. Second chapter provides background of the Ukrainian conflict and a brief review of the sanctions imposed from the both sides. Then the impacts of the sanctions on both economies are analysed with the respect to economic indicators. Third chapter is an empirical part of the thesis and continues with the analysis of the trade relations between the EU and Russia before the imposition of the sanctions. Then finally a regression analysis is conducted using the gravity model and two empirical approaches to have a clear image about the impacts of the sanctions. First approach uses a dummy variable to control for the impacts of sanctions and the second approach is providing a prediction of the trade flows in the situation if the sanctions were not imposed. Then these estimations are compared with the actual values of exports between the EU and Russia. The last provided part is the conclusion which is

summarizing the findings of this paper and trying to give a suitable and convenient answer to the research debate.

Apart from the publications and research papers that were used for the analysis, several data sources were important for the empirical parts of the thesis. The data were extracted from various databases including IMF Directions of Trade Statistics Database, from the WDI Database of the World Bank and the CEPII database.

1 Overview of sanctions

In the international environment of today's world, every entrant is trying to pursue his own goals and political views. The only restrictions for these acts are the reactions of other entrants, because the environment is still quite anarchic, even though there is a rapid movement forward in the issue of institutionalization.. Countries or institutions entering the international environment have restricted power to influence the decisions of other entrants and to ensure that they will act in accordance with international law. Historically, the most common tools to achieve policy targets are wars and diplomatic negotiations. Apart from these traditional ways there are also sanctions, which represent an economic pressure on the selected participant of international field. Different kinds of such measures can be used by a single country, in a bilateral conflict or by a group of countries, usually associated in international organisations. This type of economic diplomacy can restore diplomatic or economic relations and push the coerced country to meet its commitments. There has been a significant growth in the usage of these kinds of policies in the past decades thus the types of sanctions and the process of imposition of sanctions are undergoing significant changes.

In the following part, I would like to focus on the theoretical aspect of sanctions, its goals and instruments. A brief overview of sanctions from the historical point of view will also be provided together with a short analysis of sanctions imposed by the European Union.

1.1 Literature review

This paper focuses on a topic which has been broadly discussed in many scientific researches and studies, although it is a fairly up-to-date subject of interest. Most of the publications are trying to evaluate and critically asses, whether the sanctions are effective or not. For analysis of sanctions and drawing various conclusions, the vast

majority of authors uses the work called *Economic Sanctions reconsidered* conducted in 1985 by Hufbauer, Schott and Elliot. It was re-written and its third, latest edition gained one more author, Oegg.¹ It is a database of economic sanctions which were imposed between years 1914 and 2006. There have been 204 cases examined and only 70 of them considered successful, thus 34%.² The main conclusion that can be drawn from this study is that sanctions might be successful, but it depends entirely on the conditions surrounding their imposition, for example the kind of policy used and the goal or desire of the sanction. This is determined by several criteria, such as responses of the targeted country or even third countries.

It is important to point out what is considered as a successful outcome of the sanctions. This factor always depends on the initial goal of the instrument, thus it might be diverse. In the case of economic interventions, it might be that e.g. (1) sanctions had at least a modest effect (the targeted country considered the issue), (2) the effects of the economic restrictions were strong enough to prevent new immoral acting of the targeted country or (3) the effects of sanctions was so effective that the initial problem was resolved.

Other significantly useful and beneficial work which provides a different point of view on sanctions is *Economic Sanctions Do Not Work* by Robert Pape published in 1997. His study concludes that most of the sanctions that were historically imposed have not actually been the reason for accomplishing of the initial goal. He states, that other factors were involved and responsible for the success, especially the change of previous behaviour (Pape, 1997). He has examined more than a hundred of cases and found only 5% of them successful. This paper is therefore very sceptical towards these kind of policies, according to Pape (1997, p. 106) "*sanctions still have far to go before they can be a reliable alternative to military force*". In general, researches carried out in the second half of the last century appear to be quite pessimistic. The group of authors who believe that the sanctions are rather an ineffective tool and should be diminished is significant. Some of the scientists who believe so are for example Lindsay (1986); Wallenstein (2000); Nossal (1989).

On the other hand, there are also authors in the academic and policy circles who consider sanctions as a powerful instrument. Woodrow Wilson, for an instance, was one

¹ This edition was published in 2007

² It is actually 174 cases but some of them are divided into 2 blocks.

of the first people to highlight the idea of using economic sanctions. After the First World War, he was defending and trying to prioritize diplomatic negotiations and economic sanctions as a next step instead of using violence to solve any conflict between countries. Wilson recommended these courses of action even in a case of a threat to world peace or disruption of generally applicable international standards. That might be considered as an extreme, but other scientists more or less agree as well. Among experts in this field of study who have a positive approach to further implementation of sanctions belong; Miers a Morgan (2002); Daoudi a Dajani (1983) and aforementioned Hufbauer, Elliot, Schott a Oegg (2007).

One of the scholars who is also considered as rather optimistic when talking about economic sanctions is David Baldwin. His work *Economic Statecraft* from 1985 and also an article published in 2000 called *The Sanctions Debate and the Logic of Choice* are showing a slightly different point of view while criticizing the bias in the sanctions literature³. Baldwin (2000, p. 1) states that “*scholars are talking past one another because they ask different questions, use different concepts, and set the discussion in different analytical contexts*”. Therefore, he suggests that for sanctions to be a useful tool for policy makers, researchers should first decide and agree with one another on which question is relevant to be asked and how to find the correct answers as well. Otherwise, it is unlikely to be productive.

Therefore, we can conclude this part with saying that a further research is needed to evaluate the true relevance of the economic sanctions. An interesting insight from several authors can be used⁴, considering sanctions are effective only as a threat. When their goal is not achieved in the initial menacing stage, there is a high possibility that it will never become successful. This is because the country which is facing the sanctions would evaluate the costs and benefits of sanctions in this first phase of threatening and decide whether to oppose the sanctions imposed or not.⁵ It would not make sense for the targeted state to give up to the sanctions after a long period of deprivation, when it

³ Whether sanctions work or not

⁴ e.g. Drezner (2000)

⁵ This is when assuming rational behavior of all participants, however, sometimes the leaders of the country might have inaccurate assumptions that the country has a stronger economy than it actually does. This is very likely for instance the case of Russia.

could have been done right after the warning. Since the focus of this paper is mainly the analysis of the changes in trade flows after the imposition of sanctions on Russia, this analysis will not provide an overall economic and political appraisal of the effects.

1.2 Theoretical definition of sanctions and its instruments

There are many definitions of the term sanctions in the literature, but most of them are affirmative of each other. According to Haas (1998, p. 1) sanctions are *“predominantly economic but also political and military penalties aimed at a state or other entities to alter political and/or military behaviour”*. He also mentions that international sanctions can be employed for a wide scale of purposes, can have different forms and the choice of relevant instruments for intervention highly depends on the context of the whole situation. Wallenstein (2000) states that sanctions portray a sort of surrogate middle way between a diplomatic note and an announcement of war. Both of these two are extreme, one is considered to be too weak to make an impact and the other one too aggressive. That is why there has been recently an increase in the interest for an alternative option – sanctions.

Many things have to be taken into account before imposition of sanctions. Commitments to third countries, relationship⁶ with the country of quilt, size of the countries and some other factors play a big role. According to Druláková, Zemanová and Trávníčková (2009) or Hufbauer, Schott, Elliot and Oegg (2007), the goals of such interventions can be divided into five groups;

- 1) Disruption of military aggression of the targeted country
- 2) Reduction of military potential of the targeted country: currently used mainly against countries who are trying to develop or gain nuclear weapons and this activity is against the international rules/commitments
- 3) Change of the policies of the targeted country in a limited range: to stop tolerating drug selling, to end violations of civil and political rights, to quit persecution because of religion or race etc.

⁶ trade, political or cultural relations

- 4) Change of the ruling regime in the targeted country: usually democratisation
- 5) Some other change in the behaviour of the country

The objective of sanctions can of course become different over a longer period of time.

There can be either unilateral or multilateral sanctions. In the case of unilateral interventions, only one country is employing them, in the case of multilateral ones, they are imposed by more countries, usually international organisations, such as the United Nations or the European Union. According to the Council on Foreign Relations, the United States of America have imposed the most sanctions (Masters, 2015). There can also be sanctions imposed on more countries at one time, as seen in history.⁷

The instruments of sanctions can be split into three main groups, these are; diplomatic, military and economic means of enforcement. Diplomatic sanctions could be for instance annulment of diplomatic relations; rejection of official diplomatic visits; a partial or complete elimination from international organisations. Military sanctions express any cutback in supply of military technology or even the arms embargo. Economic sanctions, the only group of sanctions that is going to be further discussed and taken into account in our analysis, are aiming into the economic sector of the country. The freezing of funds of selected representatives of the sanctioned regime; a partial or complete prohibition of trade relations; boycotts of strategic commodities etc. can be employed as an economic sanction against targeted country (Druláková, Zemanová and Trávníčková, 2009).

For a complex understanding of the formation of strategic political decisions in the country's foreign policy there is a noticeable trend in increasing emphasis on decoding of economic determinants. This means that there is a rise in the need of analysing policies not only considering the political power, but also economic. Economic sanctions are adopted for various reasons; they might signal a military conflict; they might be an instrument to avoid a military conflict; or they might just be a satisfaction for a pressure from own citizens (Hufbauer, Schott, Elliot and Oegg, 2007, p. 140). These days, the economic sanctions are highly used as a tool for prevention rather than a tool for remedy. They are a first incentive to warn that the inconsistent activities are not approved by the international community.

⁷ e.g. sanctions imposed on Germany during WW2

As it was mentioned before, economic sanctions display trade restrictions, which can be divided into; boycotts, embargos or complete prohibition of export and import. When there is a restriction in the purchases of goods and services from the targeted country, this country is economically afflicted by the international community for its actions. Interrupting the purchase of imports leads to decrease of its permanent financial income from foreign trade and undermines its fiscal balance. This has an effect of shortage of foreign currency for the targeted state, therefore, it is the most powerful when the economy of this country is open. Other effect that this intervention has and which might be even more powerful than the pressure on fiscal balance is the economic effect on citizens, which have to face higher prices and other disturbances. The most effective intervention might be a complete elimination of imports of a single product or a material, which is the most important for the country. It is because of the problems with supply elasticity which arise after the disturbances to the market are implemented. If the concrete product/material does not have any alternative in the targeted country's market and the country is dependent on its supplier the effects of such interventions might be enormous.⁸ Talking about embargos, it is a case of elimination of exported goods or services and it is the most common kind of economic intervention. Because of interdependence of today's world, discontinuation of sales of advanced technology, essential components for local manufacturing or cutback in the supplies of military material can be devastating for the country. Finally, the overall cancellation of trade with the particular country (countries) is a kind of sanction that implies a restriction of both import and export at the same time. The United Nations use this type of policy quite often. The loss of the value of the country's currency leads to an escalation of inflation and unemployment rates. This amount of pressure should lead to a change in the policies which the targeted country is practicing. Unfortunately, as Haass (1997) discusses, it can also lead to side effects on population and possibly humanitarian consequences.

Taking into account the issues of the effectiveness of economic sanctions, a new kind of economic interventions has been developed over the past decades, the so-called *smart sanctions*. They are a result of vigorous debates on how to increase the validity of sanctions and at the same time decrease the negative effects and humanitarian harm of

⁸ e.g. Baltic countries are highly dependent on the gas from Russia and would have very limited options of other suppliers

the complete prohibition of exports and imports. This is achieved by smartly targeting the sanctions on the ruling elites, because embargos or boycotts of luxury goods or strategic military material would not affect regular citizens. Another positive fact about this fairly new type of sanction is that the countries imposing the smart sanctions should expect less costs connected with the decrease of the number of commodities being tracked and also the controls of compliance of the punitive measures become easier and cheaper (Druláková, Zemanová and Trávníčková, 2009). The smart sanctions include for instance freezing of bank accounts; a ban on entry to the territory; a loss of diplomatic immunity – these are usually targeted at one person; financial restrictions targeted at key banks or institutions etc. There have already been some critiques of such policies⁹, but according to Cortright and Lopez (2002) smart sanctions are now considered as a satisfactory, broadly-used tool which needs to be further analysed and concrete results can be seen in the near future, after a practical employment of these sanctions brings actual results.

1.3 A brief historical review

Economic sanctions have been a part of the instruments of various policies for thousands of years. Already during the reign of Pericles in the 5th century BC the city-state of Athens imposed an absolute blockade on the Megarian city. As they wanted to show their biggest rival Sparta, that they are prepared to punish anyone who is trying to question their sovereignty, however did not want to use war as a threat (Hufbauer, Elliot, Schott and Oegg, 2007). Another case from far history is the blockade that Napoleon tried to employ to cause damage to Great Britain at the beginning of the 19th century. It was called the *continental system*. Nevertheless, it was not until the second half of the 20th century that the economic sanctions became a common coercing policy tool. There was a significant rise in the use of such policies and the main reason for imposing sanctions was to force the certain country to leave the territory of other country. During the Cold War era the focus was on the subject of respect of human rights.

⁹ e.g. Haas (1997)

Another significant phase when the economic sanctions underwent great changes was between the end of the Cold War and half of the 90's. At that time, the measures were very ambitious and also extensive, sometimes they would include the entire economy of a country. The most important case of this period was the legitimisation of sanctions against the aggressive and expansionist regime of Saddam Hussein in Iraq, however, it was mainly to prevent international military aggression, prevent support for terrorist groups, and put a stop to the proliferation of weapons of mass destruction, thus not really an economic type of sanction. The effectivity of sanctions was not sufficient and the sanctions were also usually extremely costly. After several events¹⁰, a broad discussion on the social and humanitarian impacts of the sanctions took place, since they affected a wide range of population and thus were considered immoral (Weiss, Cortright, Lopez, Minear, 1997).

Last phase can be dated from the mid-90s up to the present days. Political leaders had to consider the fact that the negative effects caused by sanctions in the social sphere are so significant, that it would be very hard for them to find sufficient political support for such an instrument. A new type of sanctions was developed, the aforementioned smart sanctions, so that the coercive tools are more effective and less aggressive. Since the 90's, and especially after the 11th September 2001 terrorist attacks, the main focus continues to be the fight against support for terrorism and violations of human rights. The shifts and changes in the policies can be clearly seen. Economic sanctions started to specialize, they are defined more precisely and they have as well significantly less impact on general society. Therefore, the authorities do not have such difficulties when promoting them and generally speaking, they are taken more positively.

1.4 EU sanction policy

The European Union has its own sanction policy. A first mention of economic sanctions has already appeared in the founding documents of the European Community. In 1987, thanks to the Single European Act, the European political cooperation was

¹⁰ Such as interventions in Yugoslavia and Haiti

integrated within the structures of the European Community. This has given the responsibility for implementation of sanctions to the European Commission. Nevertheless, we cannot actually talk about autonomous sanction EU policy up until the beginning of the 1980's (Druláková, Zemanová and Trávníčková, 2009). Owing to the Maastricht Treaty, which established three pillars of the EU¹¹, procedures regarding the use and implementation of sanctions were finally formed. The term *restrictive measures* is preferred over the term *sanctions* in the official EU documents.

At the beginning of the 21st century, a significant rise in the dynamic use of sanction policy was significant. In 2003, the Council issued a document called *Guidelines on implementation and evaluation of restrictive measures (sanctions) in the framework of the EU Common Foreign and Security Policy - new elements*. These rules define the basic principles, objectives and types sanctions. There is even a working group within the Council of the EU, which is in charge of an effective and relevant implementation of sanctions, as well as reporting of the performance and evaluation of the success of the interventions¹².

The EU has recently become another active and significant entrant in the world of security, mainly due to the increase in terrorist threats and the activity in the Middle East. The European Union has the right to impose the sanctions on groups of people, third countries as well as individuals. Economic sanctions are currently on the rise and are majorly used as the smart sanctions, which are explained above in the chapter 1.2. The article 11 of the EU treaty sets rules for the imposition and implementation of the sanctions proposed by the Union. The targets of these policies are mainly to strengthen the security of the EU; to keep the world peace; to secure common values, independence and integrity of the EU; to support the international corporation and to foster and consolidate democracy (Druláková et al., 2009)

¹¹ one of them is the creation of the Common Foreign and Security Policy (CFSP)

¹² The working group is called RELEX and it was established in 2004 (Druláková et al., 2009).

2 The Ukrainian conflict and its effects on the Russian and EU economy

To have a complex image, this section of the thesis will provide a review of the Ukrainian conflict and the sanctions from both sides of the disagreement that followed this event. It will be conducted by an evaluation of impacts of the sanctions on Russian and European economies, respectively.

2.1 Ukrainian conflict in brief

The sanctions regime imposed on Russia within the international environment was triggered by the clash between Russia and Ukraine. The conflict between these two countries is rooted deep in the history. A change in the position of Ukraine in the international sphere appeared after the dissolution of the Soviet Union and the proclamation of Ukrainian independence. Ukraine was not dependent on Russia anymore and started to form its own internal and foreign policy as well as its own economy. Even though the country was still more or less connected to its neighbour - Russia, it chose to get closer to the West, therefore an European integration process began. Many steps have been taken towards the “European’ way throughout the years.¹³ Despite the changes in the direction of Ukraine’s politics, from geographical point of view, Ukraine still represented a bridge between Russia and the West. Boundaries of Western democracy and liberalism were constantly shifted more to the east and it was an obligation of Russia to defend its territory. This situation of Ukraine being torn between the West and Russia has led to the following events.

Many consider the resignation of president Yanukovich from signing the Association Agreement with the European Union (for which Ukraine was preparing for several years) as the cause of the Ukrainian crisis. On November 21st, 2013, Yanukovich issued an official statement concerning the cancellation of the agreement with the EU, just a week before the date of the signing. One of the reasons for this action was the fear of the Russian-oriented Yanukovich, that Russia would strike

¹³ In 1998 and 2000, two important documents on strategy and program for the integration of Ukraine into the EU were signed. (Štěřba, 2006).

back¹⁴, which would certainly harm the already weak economy. This fear came from situations and development earlier that year. The Association Agreement, which was supposed to be signed, included as well a Deep and Comprehensive Free Trade Area and also Armenia, Moldova and Georgia were other entrants (Havlik, 2014). Russia interpreted this as a threat and started with its own interventions, to prevent the countries from signing the agreement. Havlik (2014, p.1) also states, that “*the Russian threats proved partly ‘effective’: Armenia decided in September 2013 not to sign the AA/DCFTA with the EU and announced the accession to the Russian-led Customs Union and Eurasian Union with Belarus and Kazakhstan instead*”.

Many thousands of people went to the streets to demonstrate as a reaction to the decision of Yanukovych not to sign the Association Agreement. The centre of the demonstrations was Kyiv’s square of Independence, the so-called Maidan. Police tried to overcome these protests with tear-gas and batons. The event has led to a series of protests and the number of people participating was rising together with the opposition, which saw an opportunity for a political change in this situation. The course of the demonstrations has become brutal over time, with shootings and riot units in action. In February 2014, the USA and the EU came with first statements on the crisis, due to the growing violence and increasing number of victims¹⁵. The intended goal was to achieve peace and to end hostilities on both sides. The reaction of Western countries should have brought the president and the opposition together to discuss the formation of a new government. As a results, an agreement was drafted between the president and representatives of the opposition. The agreement not only restricted competences of the president, but also promised to amend the constitution as well as early presidential elections. It was also signed by three witnesses from the ranks of EU foreign ministers - Polish, German and French. Just few days after signing this de facto capitulation, Yanukovych fled from Ukraine (Trenin, 2014).

A transitory government was established and it did not have full support since the pro-Russian parts of the country were against. However, the crisis was spread to east and south of Ukraine as well. In Crimea, which was until 1954 part of Russia, most of the people stood against the opposition because of strong ties to Russia and local people

¹⁴ e.g. by cutting the supply of gas

¹⁵ Just in Kiev was more than a hundred of victims.

who feel more like Russians than the Ukrainians. With the support from Russia¹⁶ it escalated into a referendum which took place in March, deciding that Crimea wishes to be re-unified with Russia again (Havlik, 2014). On March 18th, 2014 the partition of Ukraine has become more realistic with the Russian president Vladimir Putin signing a law about the reconnection of Crimea to the Russian Federation, which made the annexation of the Crimea legislatively accomplished (Englund, 2014). This action has sparked first sequence of reactions and sanctions by the international community. Just three days after the annexation of the Crimea, the Association Agreement between Ukraine and the EU was signed, which reflects the endeavour to get Ukraine out of the influence of Russia. Even though only the political part was signed since the economic part (Deep and Comprehensive Free Trade Area) was still undergoing several preparations, it was a big step towards the closer Ukrainian-Western relationships (Havlik, 2014).

Declaration of independence of Crimea and its connection to Russia was supposed to calm the situation, but on the contrary increased tensions in eastern Ukraine, particularly in the Donetsk and Luhansk region, where a high percentage of the Russian population lives. Separatist groups have been fighting hard for their independency and the conflicts were brutal with many victims. These groups were often managed by members of Russian military and Russia is also in many cases the supplier of the advanced weapons and various military systems to these groups.¹⁷

The heads of diplomacy of Ukraine, Russia, the US and the European Union met in April in Geneva to agree on the implementation of certain measures that should stop the violence and bloodshed (DeYoung a Gearan, 2014). After several incidents which included the crash of Malaysian airplane in July 2014 (the airplane was most likely shot down by one of the separatist groups)¹⁸, a summit in Minsk took place in August. The Ukrainian president Poroshenko and the Russian president Putin discussed the critical situation and the result of these negotiations was the Minsk Protocol which was an agreement on ceasefire signed by Russia, Ukraine, OSCE and Donbass separatists. However, it was not very successful since the riots of separatists did not come to an end. Havlik (2014, p.2) believes, that any kind of settlement of the conflict is not to be

¹⁶ Russia even sent military units to Crimea, claiming it was to protect Russians in the area.

¹⁷ These facts can be viewed as one of the main reasons of implementing the sanctions. However, Russia is often claiming not to be responsible for these actions.

¹⁸ The investigations of the incident are still ongoing, thus it cannot yet be stated who is responsible for this event.

achieved in the near future, suggesting that *“Doubtlessly, though admittedly ever more difficult since now the inclusion of separatists in the process seems inevitable, only negotiations between the representatives of Ukraine, Russia and the EU along the lines proposed earlier e.g. by Havlik (2013), and more recently also by Emerson (2014) and others, can help to de-escalate and potentially resolve the present conflict.”*

2.2 The EU sanctions imposed on Russia

In March, immediately after the annexation of the Crimea, which was considered to be against the international law by the Western countries, Europe ceased to negotiate with Russia on matters of trade and visa liberalization. Other countries, including the USA and Switzerland introduced first punitive measures as well, such as freezing of deposits or a ban on entry to the EU for those responsible for the situation in Ukraine. The first round of interventions was rather moderate, including sanctions against individuals¹⁹, including people close to the president Putin. The G7 group excluded Russia from the G8 and OECD stopped in the series of actions to include Russia in the organisation (Havlik, 2014). In another round of sanctions, the restrictions were expanded onto legal entities as well.

Third part of the course of imposing sanctions on Russia took place in June 2014 and this time it was solely about economic interventions. Russian finance markets together with markets in Crimea were affected. The EU defined 4 areas of the sanction measures (The EU Newsroom, 2016):

- embargo on the import and export of weapons from/to Russia
- the area of capital market (a prohibition of providing finance or investment services, restrictions on trade with bonds and other financial instruments)
- restrictions on trade with dual-use goods for military use (does not apply to goods intended for civilian use)
- restrictions on the export of the technology used for oil exploration and mining

¹⁹ these were imposed by the USA

In December 2014, the European Union also released new sanctions, which were supposed to affect only Crimea and Sevastopol, causing a loss from foreign investments as well as the trade with Europe. The restrictions included for instance a ban on tourism market, the European ships were not able to stop there.

As mentioned before, there are also sanctions imposed against Russia concerning a ban on provision of Visa entries and freezing of assets of concrete individuals. These restrictions imply to 151 people and 37 firms who are responsible for the situation in Ukraine (The EU Newsroom, 2016). In March 2015 a decision about the duration of sanctions was made by the European Council, interconnecting them with the completion of the Minsk agreements until the end of that year. Since this did not come true, the sanctions are still an ongoing process, with many times of prolongation. The latest news come from September 2016, with the duration of sanctions until 15th March 2017 (European Council, 2016).

2.3 Russian counter-sanctions

The reaction of Russia on the measures adopted by the EU and other countries came as a no surprise. The country imposed counter-sanctions that affected some of Russia's own agricultural products exports and a ban on imports from countries which issued the anti-Russian sanctions. The punished countries were EU, USA, Canada, Australia and Norway and the sanctions were supposed to last one year.

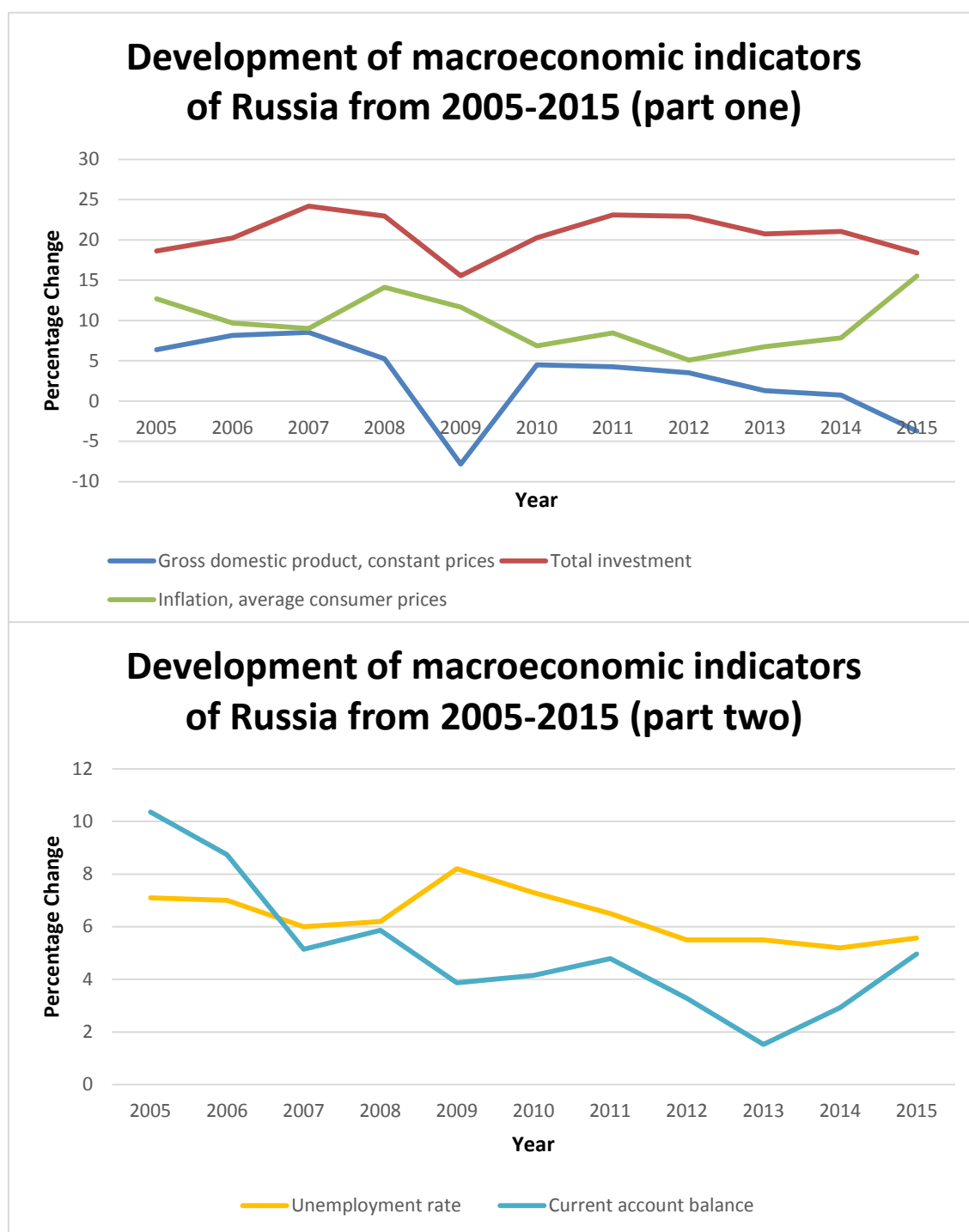
A list of prohibited products was implemented on 7th of August 2014 by the Russian government. The list included mainly food products, for instance; fruit and vegetables, dairy products, meat products and some of fish and sea products. Over the summer of 2015, Russia implemented some new restrictions, prolonging the counter-sanctions for another year and also prolonging the list of the countries affected by them. This included Montenegro, Liechtenstein, Albania and Iceland (European Parliament, 2015).

There were dispensations from the embargo, which involved food for babies, some products made of fruits and vegetables, certain animal products. *“Furthermore, lactose-free milk and milk products, salmon fry, seed potatoes, onion sets, hybrid sweetcorn and dietary supplements are also exempt.”* (European Parliament, 2015, p.3).

2.4 The impact of sanctions on Russian economy

Since the Russian economy is highly oriented on raw materials extraction and on the export of these commodities, the largest part of the state budget revenues is composed of the earnings obtained from these activities . Thus Russia is dependent on the prices of these commodities and the growth of prices over the past decade has provided the country with huge foreign exchange reserves, stable GDP growth and also a stable growth of other important macroeconomic indicators.

Figure 1: Development of macroeconomic indicators of Russia from 2005-2015



Source: IMF and own editing, September 2016

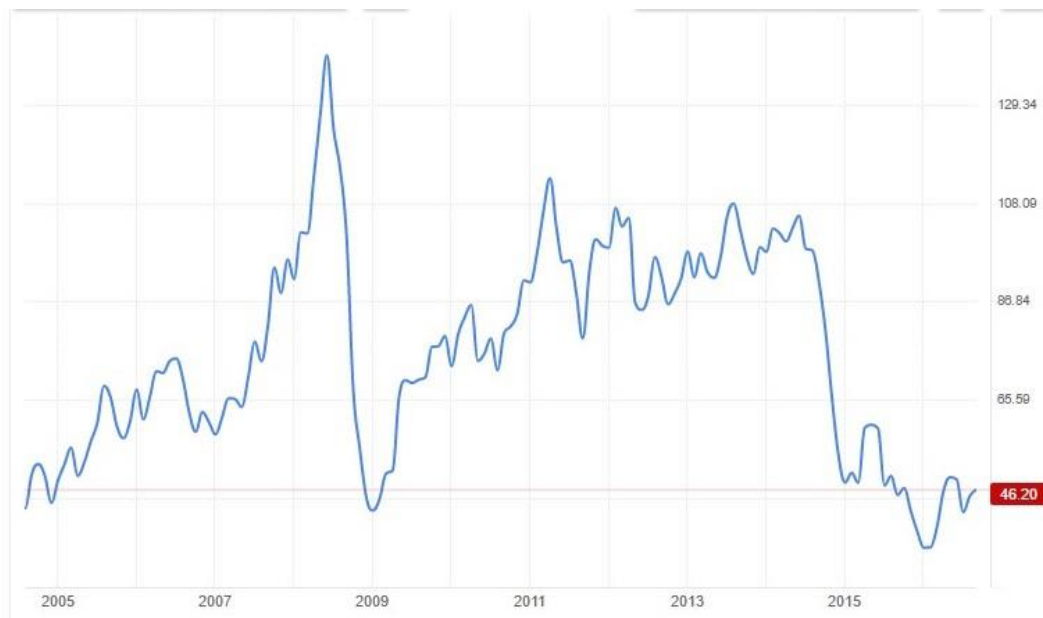
As the graphs above illustrate²⁰, until the year 2014 when the international sanctions were imposed, the Russian economy was quite stable (except the global financial crisis in 2008 and the fact that Russia is dealing with a kind of Dutch disease

²⁰ The figure is divided into two charts so that the separate indicators are easier to read through.

since there has been no incentive to stabilise and diversify the economy because of the highly profitable raw materials sector). Inflation was oscillating around 6% until 2014, where we can see a sharp rise and other factors were more or less affected as well. It is clear, that the financial crisis in 2008 hit the economy harder than the imposition of sanctions in 2014, with the GDP in 2009 below any other value.

A development of world oil prices is depicted in the figure below. The rise in oil prices is gradually stopped²¹, which was followed by stagnant economic growth in Russia. This can again be seen most significantly in 2014, when the GDP growth slowed down and together with increasing expenditures the state budget balance worsened.

Figure 2: World oil price developments in the period from 2005 - 2015, USD / bbl



Source: Trading Economics, September 2015

The goal of the restrictive measures taken against Russia was to weaken some of the branches of the economy, especially the energy industry, processing and banking sector. Good examples could be companies involved in producing of oil and natural gas or Russian banks, which all of a sudden lost the opportunity to obtain finance from abroad.

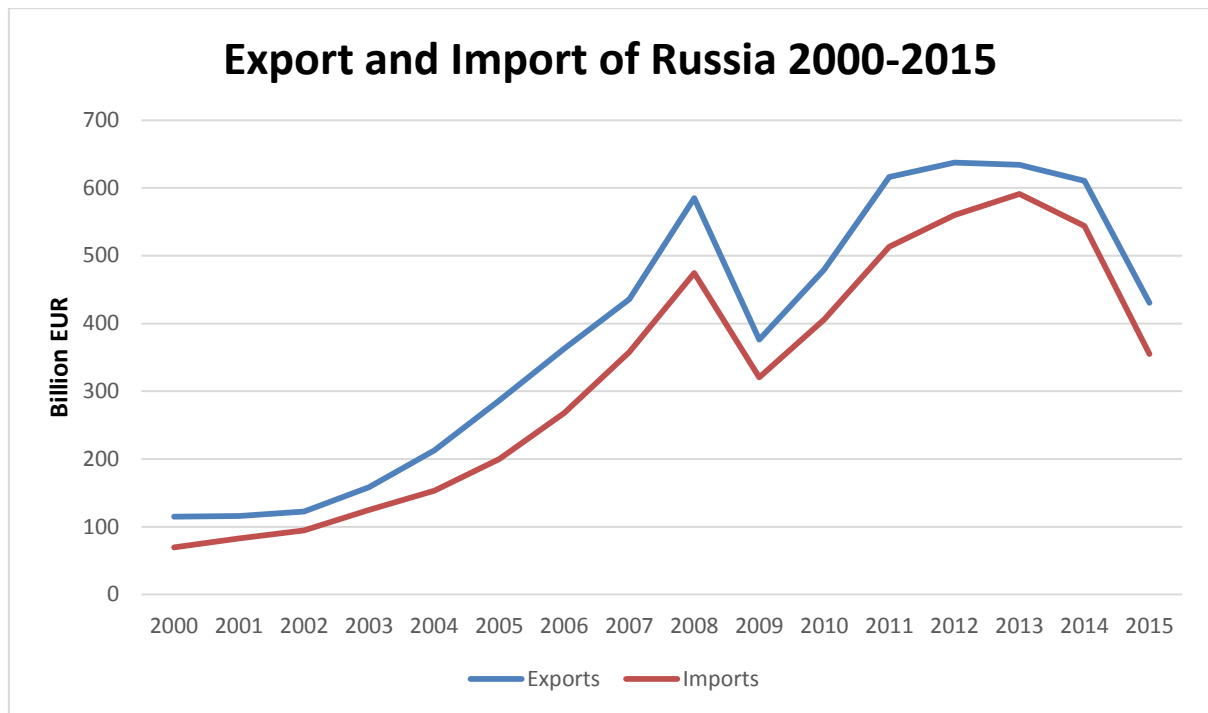
²¹ Again, not considering the 2008 Global Crisis.

The impact of economic sanctions on the Russian economy can be split into 3 main points. Firstly, sanctions have led to an increased volatility in foreign exchange markets and a significant weakening of the national currency in Russia- ruble. The outflow of capital due to uncertainty, geopolitical tensions, the imposition of sectoral sanctions and the threats of further restrictive measures have led to a deterioration of the capital and financial account of balance of payments in Russia. Secondly, the sanctions have been a cause of the limited access to the international financial markets. The conditions for obtaining financial sources from abroad have become stricter after the imposition of economic restrictions. Since September 2014, only a few financial institutions have provided Russian companies with financial instruments. Thirdly, the FDI also sunk, approximately of 47% just in the first quarter of 2014²² (World Bank, 2015).

Other important indicators which express the state of an economy are the values of imports and exports. The decrease of both of these indexes can be seen in the following graph. In 2008 a sharp decrease occurred because of the Global Crisis that was supressing the world economy. In 2014, there is another sharp decrease, this time caused by the restrictions that the EU imposed on Russia as well as by the counter-sanctions that Russia used as a strike back.

²² This decrease was not caused solely by the sanctions or other economic problems, but also by the fact that Russia has often implemented a kind of unfriendly approach to foreign investors or institutions.

Figure 3: Export and Import of Russia 2000-2015



Source: WDI and own editing, September 2016

All of the above mentioned changes in the Russian economy were linked with the low prices of oil which decreased the state budget revenues. The state can still keep solving its financial problems by using the foreign exchange reserves, which were collected when the prices of oil were high. However, it is not possible to draw on the reserves forever and also the circumstances concerning the prices of this commodity are still becoming worse. It could be even said that Russia is dependent on selling its products abroad and since its production is highly focused on one industry, the raw material extraction, this turmoil in the prices of this commodity is causing significant problems to the economy. The current situation of the oil prices in the international market is together with the capital outflow, ruble crises and other effects of sanctions putting more pressure on the Russian economy (Evans-Pritchard, 2014). Thus it might help the EU and more western countries to achieve the desired successful outcome of the restrictions imposed, which is to stop the military intervention in Ukraine.

It would be very difficult to quantify the impact of the sanctions, because there are both direct and indirect effects which can have a negative influence on the economy. In the case of Russia, it was the change in prices of certain commodities or shortages, which were caused by the Russian counter-sanctions. The products from the Western countries were not available anymore and the prices of domestic products were rising at

the same time. The supply of the food which has always been imported into the country, usually from Europe, has decreased and Russian people have to give up on some of their favourite products. Most affected are dairy products such as French cheeses and meat or variety of fruits. As a result of this, a smuggling system has arisen as well. Russia is trying to find alternatives and support production of their own food, but that is of a lower quality. In his article for International Business Times, Jess McHugh (2015) warns that *“With nearly 23 million people living in poverty -- up 3 million from 2014, according to one Moscow Times report -- the food shortage will be an urgent problem for millions of Russians.”*

The imposed restrictions have resulted in short-term changes in the GDP growth rate and the exchange rate, but in 2015 Russia has managed to stabilise these factors. In an interview in April 2015, the Russian president Vladimir Putin confirms this: *“We have come across certain external limitations, which in one way or another have had an impact on our growth rates, on our development, though on the whole we can now see that the ruble is gaining strength and the stock markets are on the rise. We have managed to avoid spiralling inflation.”*(Kremlin, 2015) According to Putin, the country’s economy is getting back on the track, with GDP slowly rising again, holding back the growing unemployment rate and slowly increasing the production of agricultural products and oil. There are still some troubles which need to be overcome, but he suggests using the sanctions as a restart for new development of the economy. This could be done by finding a substitution of imported high technology and increased food production. He also states that the sanctions are not the main issue that Russia has to deal with; *“In fact, the sanctions came in handy for the Government and the Central Bank, which can now blame the situation on the sanctions. But the sanctions are not the only reason. We must adjust our economic policy more professionally, consistently and quickly. It has now been adjusted.”*(Putin, 2015) I would also mention the fact that we have come across certain external limitations, which in one way or another have had an impact on our growth rates, on our development, though on the whole we can now see that the ruble is gaining strength and the stock markets are on the rise. We have managed to avoid spiralling inflation. I would also mention the fact that we have come across certain external limitations, which in one way or another have had an impact on our growth rates, on our development, though on the whole we can now see that the ruble is gaining strength and the stock markets are on the rise. We have managed

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2.5 The impact of sanctions on the EU economy

It was not only Russia which was disturbed by the economic sanctions, the countries which imposed the restrictions were affected as well. It was calculated, that more than a million of jobs might be at stake for the EU, with Germany and Poland leading the list with the count of more than 300 000 jobs each²³ (ING International Trade Special, 2014). This is because of the linkage between German companies and Russian Companies. Representatives of various industries are also afraid that with the ongoing sanctions Russia might redirect its trade to China and increase the proportion of business cooperation with China.

Generally, the economic sanctions had the largest impact on the European Union among the western countries which imposed them, since the volume of international trade between the EU and Russia is significantly higher than for instance between Russia and the United States. European companies are postponing their investments and banks are not providing as many loans as before with the risk that is at stake.

²³ However, it is important to point out that the the total number of employed people in the EU is more than 200 millions in 2015, thus the 1 million jobs that are mentioned would only mean less than 0,5% of the total employment, which is not so significant (Eurostat, 2016).

Figure 4: Exports of Member States to Russia in the years 2010 - 2015 (in millions of USD)

Country	2010	2011	2012	2013	2014	2015
Euro Area	70,267.59	79,655.37	99,853.15	100,172.56	87,680.81	52,998.35
Austria	2,460.64	2,872.39	3,393.08	3,845.97	3,438.43	2,012.37
Belgium	3,265.77	3,543.43	4,490.97	4,034.00	3,572.65	2,092.67
Cyprus	27.00	36.94	32.68	42.67	43.63	59.18
Estonia	558.62	936.74	771.68	788.01	1,613.68	510.81
Finland	4,583.85	5,478.14	5,003.78	5,395.74	4,568.24	2,667.37
France	8,203.73	8,969.95	13,813.20	13,021.48	10,715.12	5,920.80
Germany	26,620.34	29,538.08	38,305.52	37,916.68	32,961.30	20,439.27
Greece	421.26	573.64	632.65	611.30	496.65	229.39
Ireland	998.39	1,219.60	1,365.87	1,372.26	1,301.79	831.60
Italy	10,027.91	12,646.90	13,434.90	14,563.30	12,727.29	8,322.58
Latvia	666.73	663.57	711.41	802.77	651.29	388.27
Lithuania	953.30	1,116.94	1,250.37	1,118.42	979.29	447.90
Luxembourg	119.56	172.18	178.05	204.05	177.47	111.07
Malta	13.15	38.06	34.32	51.59	45.02	25.56
Netherlands	4,438.53	5,183.72	5,978.22	5,837.16	5,258.02	3,095.68
Portugal	348.79	462.67	578.42	691.44	586.96	393.51
Slovak Republic	2,492.25	1,485.01	3,714.95	3,533.69	2,863.06	1,759.52
Slovenia	1,025.94	1,128.10	1,249.68	1,427.41	1,339.67	866.45
Spain	3,041.81	3,589.31	4,913.40	4,914.63	4,341.25	2,824.33
Czech Republic	2,904.69	3,221.47	5,353.93	5,317.72	4,897.30	2,845.63
Denmark	1,708.21	2,027.54	2,042.76	2,178.37	1,604.56	874.45
Sweden	2,849.39	2,997.82	3,940.52	3,916.61	3,239.30	1,853.03
United Kingdom	4,568.96	5,005.06	8,191.60	8,106.43	7,808.93	3,722.31
Bulgaria	540.44	649.37	694.02	702.20	652.19	473.58
Croatia	316.31	336.65	351.76	392.52	422.09	237.99
Hungary	3,141.80	3,075.89	3,103.33	3,007.13	2,739.59	1,713.76
Poland	5,826.75	5,963.40	7,473.60	8,325.60	7,075.25	4,097.13
Romania	1,347.35	1,433.31	1,735.85	2,046.59	2,205.57	1,297.48
European Union	93,471.49	104,365.89	132,740.52	134,165.74	118,325.59	70,113.72

Source: IMF and own editing, September 2016

In the figure above, it can be seen that there was a significant downturn in the volumes of exports from the member states of the EU to the Russian Federation, starting in 2014 and becoming even lower in 2015. The reasons for this decrease are among other factors the counter-sanctions that Russia imposed, when the country appointed embargos on certain kinds of food. It is important to state, that other reasons for the drop in the exports might be also the decrease of the oil prices or depreciation of ruble. As we can see from the table, the exports for the whole EU in 2013 are almost two times higher than in 2015, which is a serious fall, however the impact of this factor for the Union as a whole is not devastating, since the GDP of European Union was worth

16229.46 billion USD in 2015, making the economy one of the largest in the world, with the value representing 26.18% of the world economy (Trading Economics, 2016). What is dangerous about the decrease of exports is the fact that it can cause serious problems in particular sectors, which are directly affected by the restrictions.

In other words, the losses, which are going to affect the international trade flows between the EU and Russia, are not going to be enormous, but they will be large enough to cause damage to the enterprises and businessmen who trade with Russia. In terms of volume, there are only five sectors which have more than 5% of total exports to Russia, thus they are more fragile. As we can see in the table below, these are; road vehicles, general industrial machinery, medicinal and pharmaceutical products, electrical machinery and specialized machinery.

Figure 5: Top-10 products exported from EU-27 to Russia (Extra-EU exports), 2010

Rank	Product (SITC code)	Value (EUR million)	% of total exports to Russia
1	Road vehicles (78)	9 401	11
2	General industrial machinery (74)	6 922	8
3	Medicinal & pharmaceutical prod. (54)	6 459	7
4	Electrical machinery, appliances (77)	5 152	6
5	Machinery, specialized (72)	4 850	6
6	Telecomm. & sound-rec. equipm. (76)	3 664	4
7	Office & data-processing mach. (75)	2 771	3
8	Articles of apparel and clothing (84)	2 525	3
9	Miscellaneous manufact. art. (89)	2 493	3
10	Manufactures of metals (69)	2 453	3

Source: Eurostat- Statistics Explained, December 2011

A good example of how the economic restrictions affected certain industries and companies could be the German car producers since Russia is their second most important importer (in terms of extra-EU countries of car exports). In terms of all the EU exports (including intra-EU exports) Russia is the sixth most important importer of German cars with the share of approximately 3% in 2013 (OEC, 2016). Another field which is highly influenced by the sanctions is tourism. There has been a decrease among number of tourists visiting the EU, especially harmed is Bulgaria, since more

than two thirds of the total number of tourists visiting the country are Russian citizens (Ioffe, 2014).

However, the most affected is the European agriculture with falling prices of the products and a sudden oversupply²⁴. According to European Parliament, *“Russia is the second most important destination for EU agricultural products (after the USA)²⁵, representing in total a value of about EUR 11.8 billion in 2013, i.e. 10 % of all EU agricultural food exports. The food ban affects a value of EUR 5.2 billion.”* (Kraatz, 2014, p. 4). The countries that were harmed the most and have the biggest losses are Lithuania (927 million EUR in 2013), Poland, Germany and Netherlands. The Union also had to release a lot of extra funds to compensate the losses to the farmers²⁶.

Speaking generally, the EU as a whole should not suffer that much after the economic restrictions that were imposed from the both sides. The only situation, where the EU would be hit very hard by the sanctions would be if Russia would interrupt the supply of oil and gas. However, just as much as the EU is dependent on the Russian supply of these resources, Russia is dependent (possibly even more) on the export of them. So the use of these measures from the Russian side would have negative consequences for both sides.

Ultimately, it would be very difficult to conduct any relevant and accurate estimates of the economic disturbances, which the sanctions have initiated. It would require a deep analysis of various affected sectors and countries. European Parliament in his briefing article from 2014 concludes, that their analysis *“does not highlight a large number of job losses, and according to first macro-economic estimations, they will presumably be too small in number to be visible at aggregate European or national level. The damage in certain regions and sectors may nevertheless be considerable.”* (Susanne Kraatz, 2014, p. 1). Even though the values might not seem to be disastrous, it is still an artificial and disturbing intervention into the European economy, which has had over the past couple of years problems itself²⁷. There are some options for the EU to

²⁴ These losses are mostly caused by the Russian counter-sanctions, not by the EU sanctions imposed on Russia.

²⁵ Considering the extra-EU agricultural exports.

²⁶ e.g. on 03.09.2014: An aid of 30 million EUR was released for funding of promotion programmes of EU agricultural products; on 11.08.2014: Exceptional measures of funding 32.7 million EUR were taken to support peach and nectarine producers (Susanne Kraatz, 2014).

²⁷ By problems it is meant the indebtedness of certain countries and also some ongoing impacts of the 2008 Global Crisis.

solve the problems caused by the restrictions, such as redirecting the prohibited products to substitutional sales markets. Some measures have already been taken²⁸, but it will take some time for these to get settled and also it requires extra costs for the EU to implement them. To conclude, it is very important to point out, that whatever the costs for the EU for implementing the sanctions on Russia are, in economic terms they would still lead to market distortion and inefficient allocation of scarce resources.

²⁸ For example the Juncker's Plan from 2014.

3 Impacts of sanctions on the trade flows

The efficiency of economic sanctions is generally highly linked with the interdependence between the country that is imposing the restrictive measures and the targeted country. That is why I would like to analyse the trade between the EU and Russia in the following part. Firstly, to have a better overall image, a review of the international trade relations between the two countries before the sanctions were imposed is provided. Secondly, a gravity model of the trade between selected EU members and Russia is conducted and explained, in order to assess the impacts of economic restrictions on the bilateral trade.

3.1 Trade relations between the EU and Russia before the imposition of sanctions

Even though Russia is the largest country of the world, disposes of huge reserves of mineral resources and all the benefits that are associated with it, it is still economically less developed in comparison with the EU. However, it is important to realize that the historical development of these two international entrants was dissimilar. The USSR was a central-planned economy for a long time, which has had an impact on the current economic progression. However, due to its undisputed potential, Russia remains one the most important trade partners of the EU.

A crucial turning point of the trade between the EU and Russia was signing the Partnership and Co-operation Agreement (PCA) in 1994²⁹. This agreement is very important for trade and FDI when it comes to the issues of European businesses. However, most importantly, the PCA provides an overall framework for economic, political and cultural relations between the two blocs. PCA expired in December 2007 and in November 2008, negotiations began on a new strategic agreement with Russia,

²⁹ It came to effect in 1997.

but it was postponed due to the several disagreements³⁰ (The European Union Committee, 2015).

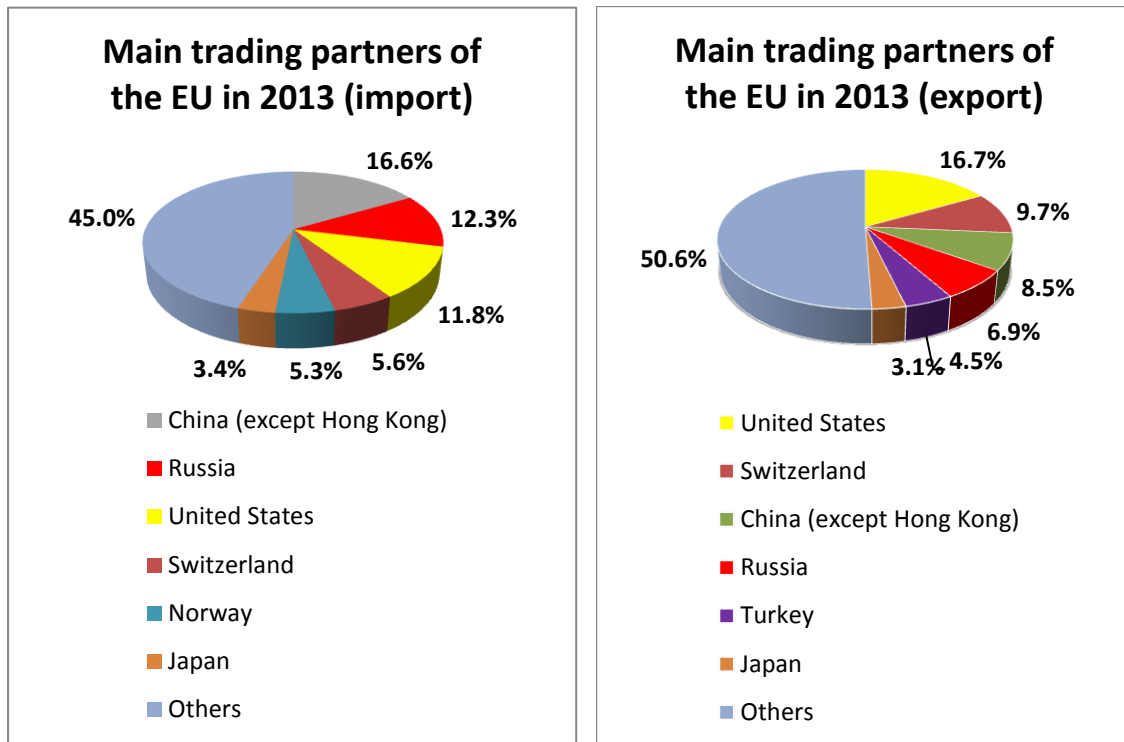
Plans of a further economic integration with Russia have been meaningful to the Union for a long time, especially after Russia joined the World Trade Organisation in 2012. This aim has been already written in the Common Economic Space (CES) agreement in 2003. This document has been signed to contribute to improving conditions for all market participants. The most significant goals of the CES are; economic integration, harmonizing of regulations, eliminating the trade barriers and exchange of information (EurActiv.cz, 2014). The negotiations about Russia entering the WTO have taken place since 1995, however it has taken almost two decades before the actual agreement was settled. The EU and other western countries believed that it would be beneficial for Russia to join the organisation. Russia's representatives did not exactly share the same views and the negotiations have had to be renewed many times.

The EU was a strong defender of Russia in the case of entering the WTO since it believed that it would significantly support the further integration of economic relations between the EU and Russia. Also, Russia's application of unilateral tariff rates (as it was a case in the past few years) would be prevented. However, already a couple years after the entry of Russia into the WTO, the country still does not respect the obligations associated with accession to the organization.

As we can see in the graph below, in 2013 Russia belonged to one of the most important importers to the EU. The country was in 2nd position, following China. Considering exports, Russia was in 4th place, with the United States being the country where the EU exports are directed the most.

³⁰ Conflict in Gruzia came in the way, together with antipathies between Poland and Russia.

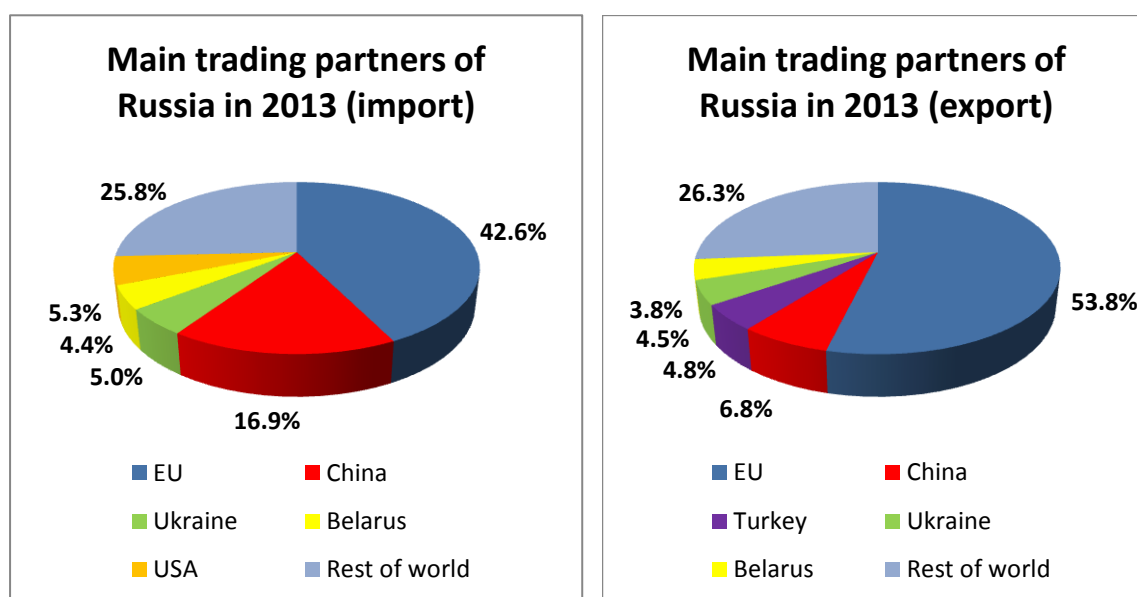
Figure 6: Main trading partners of the EU (%), 2013



Source: Eurostat and own editing, September 2016

Speaking about the external trade relationships of Russia in 2013, we can see in the figures below that the EU is significantly more important partner of the country for both exports and imports. The members of the European Union are responsible for approximately half of the exports and imports as well, making Russia more dependent on EU than the Union is on Russia.

Figure 7: Main trading partners of Russia (%), 2013



Source: IMF and own editing, September 2016

Figure 8: EU – Russia trade in goods, 2013-2015



Source: European Commission and own editing, September 2016

The trade flows between the two blocks were on the rise since 2005, with only one disturbance of the trend in 2008 with the Global Financial Crisis. This has negatively affected the trade relations between the EU and Russia. Starting from 2010, the trade flows were blooming again, reaching a top level in 2012. As can be seen in the figure above, the EU exported goods worth of more than 119 billion EUR in the year of 2013. The same year, Russia has imported into the EU goods worth of approximately 207 billion EUR. When it comes to the value of exports and imports, the EU has a

negative trade balance with Russia: in 2013 it was -87.5 billion EUR (European Commission, 2015).

To rely solely on the dynamics of the trade flows is not very expressive, thus it is important to also examine the commodity trade structure. In the following table, five groups of exported and imported goods with the largest share of the total trade flows with the Russian Federation is shown (according to the SITC scheme)

Figure 9: Value of exports of goods from Russia to the EU in 2013 by SITC division (selected groups), million euros.

	2013	Share of total volume
Total	206 957	100%
SITC3- Mineral fuels, lubricants and related materials	160 635	77,7 %
Other	16 608	7,9 %
SITC6- Manufactured goods classified chiefly by material	12 352	6%
SITC5- Chemicals and related prod.	6 297	3,1 %
SITC2- Crude materials, inedible, except fuels	3 671	1,8 %

Source: European Commission and own editing, September 2016

As it was mentioned before, Russian economy is highly oriented on mining and subsequent export of raw materials. Therefore the import into the EU is dominated by oil and gas making this sector of the economy the most sensitive to economic sanctions.

Figure 10: Value of exports of goods from the EU to Russia in 2013 by SITC division (selected groups), million euros.

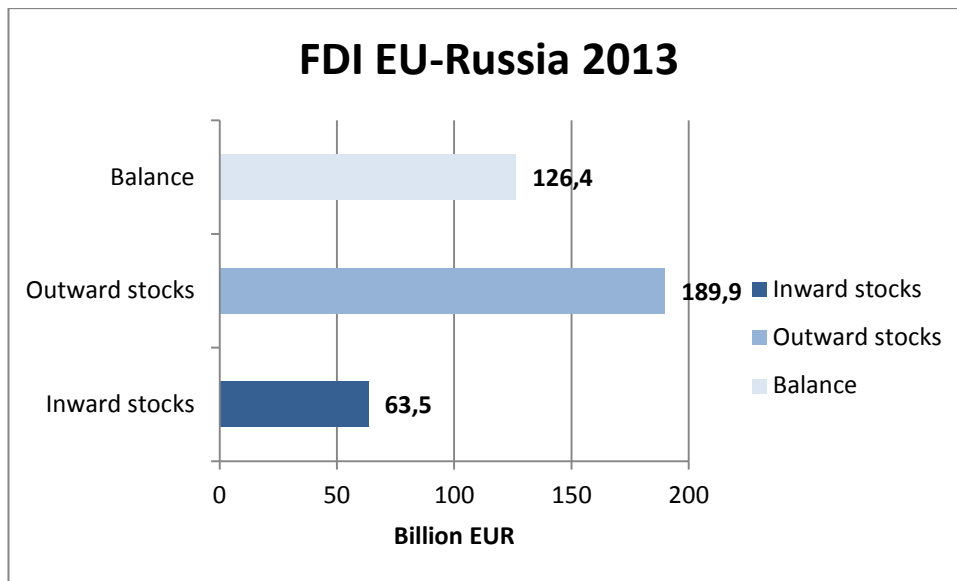
	2013	Share of total volume
Total	119 451	100%
SITC7- Machinery and transport equipment	56 557	47,4 %
SITC5- Chemicals and related prod.	20 115	16,8 %
SITC8- Miscellaneous manufactured articles	14 876	12,5 %
SITC6- Manufactured goods classified chiefly by material	12 561	10,5 %
SITC0- Food and live animals	8 7576	7,3 %

Source: European Commission and own editing, September 2016

From the European point of view, the most exported commodities in 2013 were high technological products such as machinery, chemical products and medicines. The machinery and transport equipment have almost half of the share of the total volume exported.

Another important aspect of external economic relations is foreign direct investment. Its level is closely connected with the economic performance of the country and its competitiveness.

Figure 11: Foreign Direct Investment between the EU and Russia in 2013



Source: Eurostat- Statistics Explained and own editing, September 2016

As can be seen in the figure above, in 2013 there have been FDI flows from the EU to Russia in the total value of more than 189 billion EUR. The Union is the most important investor for Russia.

The tight bilateral trade relations between Russia and the EU were destined due to the historical development, geographical location and, ultimately, mutually beneficial exchange of goods and services. The Russian Federation has become a strategic trade partner for the EU members especially because of its energy resources. It was proven throughout this analysis, that Russia is more dependent on the economic relations with the EU, because approximately half of its total exports and imports are made with the 28 members of the Union. From the analysis of the composition of the exports and imports between the two entrants, we can conclude that the restrictions or any disturbances to the economy might lead to Russia's lack of up-to-date technology and manufactured goods. The EU might be exposed to shortages of energy.

3.2 Gravity Model

The following empirical part of the thesis will provide an analysis of the trade flows between the EU and Russia using the gravity model. Firstly, a literature overview of the development of the model is introduced. Secondly, a theoretical background

(methodology) of the model is presented. Lastly, the actual econometric model using the regression analysis is conducted, with the explanation of the results.

3.2.1 Literature overview of the gravity model

The model has its roots already in the year 1687, when Isaac Newton spoke in front of the public with his theory of gravitational law. The law represents the function describing the attractive force between two different objects; larger objects that are close to each other, have a stronger mutual relations (Ševela, 2002). In 1962, the physical model underwent minor modifications and found its application in modelling the international trade. Jan Tinbergen (1962) and Pentti Pöyhönen (1963) first introduced and developed the gravity equation, independently of each other. This easy empirical tool explains the power and a range of international trade. Although the original use was designed for modelling of the international trade, since then the gravity equation and its different variations is also used in a wide range of other disciplines, especially with regard to modelling of so-called "social relations". Thus the gravity models can be defined as mathematical models based on the analogue nature as in Newton's physics.

The popularity of the gravity model lies in the simplicity of its concept, a good approximation of available data and the craftsmanship of its econometric estimation. Despite its benefits to the empirical analysing, the model did not avoid criticism. It was criticised for a lack of theoretical basis, because these models have intuitively implemented the empirical work, without much of an effort to support it by the theory.

It was Linnemann (1966) who took a step forward to quiet the opponents of the model and provided a theoretical basis for the model. His theory was built on Walras' general equilibrium principle, but the model tended to include too many regressors so that it could be easily reduced into a gravity equation. Then several theoretical discoveries followed. Anderson (1979) was first to develop a formal plan with rationale to explain the gravitational equations. Finally, Alan Deardorff (1995) proved that the formula defines several models and can be also deduced from the standard trade theory. Bergstrand (1985 and 1989) also further formed the econometric model, taking into account the liberalizations of trade and the impact of national borders. Many alterations of the model have been developed since then, a contribution of Anderson and van Wincoop (2003) was especially significant, with using a non-linear system of equations

where the costs of trade were controlled for the “multilateral trade-resistance” (MTR) terms, in addition, the trade costs defined them. A simplified version of this model was introduced by Baier and Bergstrand (2009) using the exporter and importer country year dummy variables to control for the MTR.

Statistical and econometric methods are used for a specification and estimation of the model. In the 90’s, the cross-sectional data were most frequently used for the estimation. However, results based on cross-sectional data were often criticized and since the beginning of the 21st century the panel data became more and more favoured (Egger 2002).

Despite the fact that the problem of lack of theoretical background was solved, other difficulties encountered that reduced the value of gravity models. Among other problems, one of the most serious ones is the endogeneity problem and the problem of heterogeneity, which both distort the resulting estimates. Endogeneity problem was solved by the inclusion of other relevant explanatory variables, thus the gravity models began to grow. Authors such as Baier and Bergstrand (2007) consider the core of the endogeneity and heterogeneity problem in the cross-sectional data. These problems can be eliminated by the application of panel data and models with fixed or random effects.

Even though there are several critiques of the model and some issues still need to be addressed, the high statistical power and a good compliance with the data led to a frequent usage of this model in practice. Anderson (1979), for example, considers the gravity model as the most successful tool of empirical analysis of trade for the past 25 years. Even the authors in the later period still have a positive attitude towards these models. Gravity models these days are widely used for estimating bilateral trade relations between the countries, to evaluate the effects of trade policies including the impact of regional trade agreements, political blocs, regional integration, international migration, patent rights or violation of trade flows. Using these models, the impact of foreign direct investment, effects of natural boundaries, effects of protectionism and openness, and many others can be measured (Egger, Pfaffermayr, 2003).

3.2.2 Methodology

The gravity equation in connection to international trade reflects the amount of the flows of bilateral trade between partner countries. The trade flows are defined to be

directly proportional to economic size and inversely proportional to the distance between the given countries. International trade, with regards to both aspects, is consistently and properly generalized by the equation that is highlighting the economic range and statistical significance of the cross-country trade. As it was mentioned above, the equation is based on the gravitational forces introduced in the Newton's laws.

$$F_{ij} = G \times \frac{M_i M_j}{D_{ij}}$$

F_{ij} represents the trade flows between the countries, M_i and M_j the economic mass of the countries, G is a constant and D_{ij} the distance between the countries.

The gross domestic product is usually taken as the economic mass criterion. Also population and income per capita might be considered for this variable, but it is not appropriate to take all of them into account at the same time, since they have a high correlation among each other. The D_{ij} distance usually depicts a path between the capital cities of the countries, assuming that these play an important role as the economic centre of the country. However, this is an inefficient approach, because it does not take the choice of the transportation into account, which is eliminating the transport costs. For this reason, other indicators were developed, such as the distance-weighted GDP and the average distance of all trading countries.

We start from the stochastic version of the gravitational equation which is depicted above. In addition, the equation is transformed. We use a log form for both sides of the equation and adjust it according to the usual rules for logarithms. In this part of the equation, the fact that the data we are dealing with are panel data is already taken into account. Thus, the indexation t representing a given time interval is added to the already existing i and j indexes. A log-linear equation is used to explain the bilateral trade flows (Caruso, 2003);

$$\ln TRADE_{ijt} = \beta_0 + \beta_1 \ln GDP_{it} + \beta_2 \ln GDP_{jt} - \beta_3 \ln DIST_{ij} + \beta_4 A_t + \mu_{ijt}$$

- $TRADE_{ijt}$ depicts the trade flows between the countries i and j in time t
- GDP_{it} and GDP_{jt} denote the gross domestic products of the countries i and j

- $DIST_{ij}$ is the measure of the distances between the two countries
- A_t is a symbol for a mixture of other factors that impact the trade flows, usually dummy variables
- μ_{ijt} denotes a common error term

The idea behind the gravity equations lies in the proposal that countries of a comparable GDP are more likely to trade between each other than countries with a different GDP. Same idea is proposed to the distance variable, where countries that are close to each other are more likely to trade than countries that are far from each other. Moreover, a similar idea is suggested for the dummy variables. Dummy variables, in other words artificial variables, reflect the predetermined character between two states. Typically, common cultural and historical sketches are assigned to these characters. Thus the countries with common language, colonial history or shared borders should trade more, since the communications and transportation costs are lower. Thanks to the logarithmic structure, the coefficients of the model (β_1) represent elasticity, more precisely the ratio of percentage changes.

Non-linear form of the gravitational equations was transformed into a linear form. This gives us an option to model the estimates with linear regression analysis. According to Dhrymes (2000) the best linear unbiased estimator for coefficients is considered to be the estimates obtained by the method of least squares (OLS). However, this approach to the estimations using the least squared method also has several issues that need to be dealt with. If the domain of logarithmic functions is taken into account, a question of what to do with the zero values of explanatory variables arises. This situation might emerge when the two countries did not trade with each other in the certain years. Most of the empirical studies simply address the issue by narrowing the data, in other words, omitting zero values and estimating the equations by OLS with positive observations. Another option is to use the Poisson quasi-maximum-likelihood estimator as suggested in the work of Bergstrand and Egger (2011, p. 30); ‘ ‘ *The zeros issue was also addressed in Santos Silva and Tenreyro (2006) using a Poisson quasi-maximum-likelihood estimator in their effort to eliminate bias arising from heteroskedasticity in the error terms in typical gravity equations.* ’ ’ Another inconvenience is connected to the occurrence of possible bias that is tackled gradually in the specific models.

Following this general theoretical introduction, the next part of the thesis will deal with the empirical analysis of the trade flows between the EU and Russia.

3.2.3 Regression analysis

Data sources, descriptive statistics and development of variables over the time

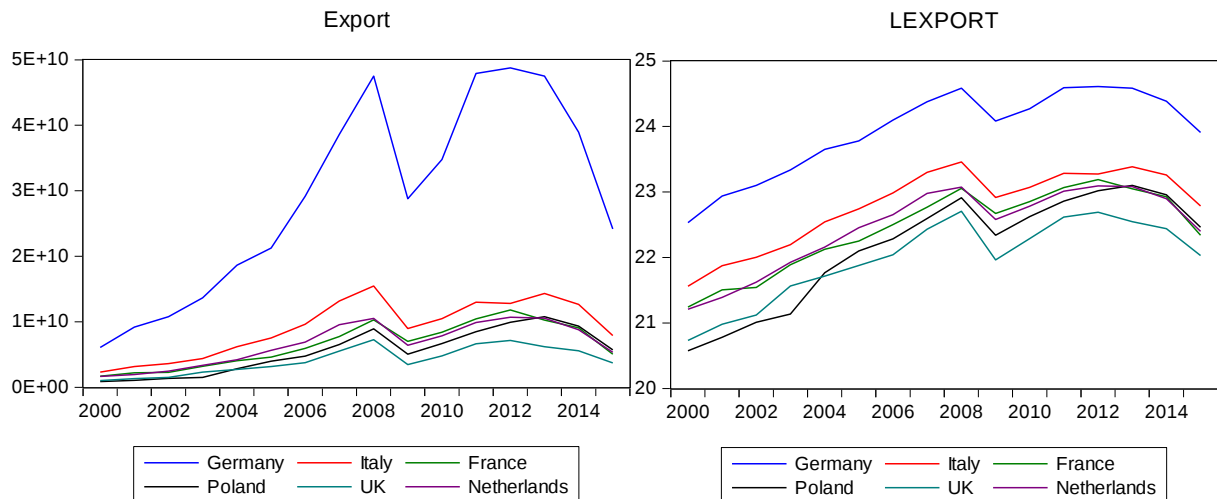
This section of the analysis aims to introduce the variables that were adopted in the regression analysis. The sources of these variables will be presented together with the descriptive statistics. The panel data set was made as an initial step in modelling the regression analysis, as it is the most commonly used type of data for gravity models, as it was mentioned before. The variables presented display 6 major exporting EU countries to Russia (according to UN COMTRADE and data presented by Observatory of Economic Complexity (OEC)) over the period of 2000-2015. The countries are the following; Germany, Italy, France, Poland, UK and Netherlands. The sources for each of the variable are diverse, however there was no issue of the zero trade values, thus the implication of the aforementioned the Poisson quasi-maximum-likelihood estimator was not needed. To make sure about the stationarity nature of the variables for the econometric estimates a test for this issue will be conducted in this part as well.

Figure 12: List of variables and its statistics

Variable	Mean	Median	Maximum	Minimum	Std. Dev.	Observations
<i>GDP_IMPORTER</i>	1.20E+12	1.26E+12	2.23E+12	2.60E+11	6.81E+11	96
<i>GDP_EXPORTER</i>	1.80E+12	1.95E+12	3.87E+12	1.72E+11	1.05E+12	96
<i>EXPORT</i>	1.01E+10	6.95E+09	4.88E+10	8.62E+08	1.09E+10	96
<i>DISTANCE</i>	2127.53	2269.200	2510.880	1156.427	466.9339	96

Source: Own estimations and editing

Figure 13: Descriptive statistics of variable *EXPORT*

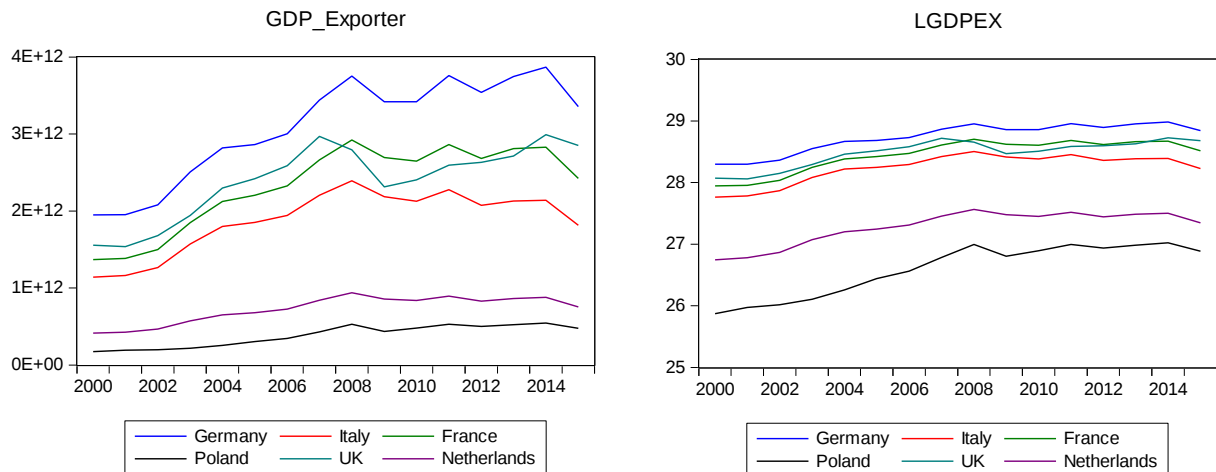


Source: Own estimations and editing

Firstly, the dependent variable *EXPORT* will be introduced. This variable presents the values of exports from the selected EU countries to Russia, in other words the trade flows between these entrants. The data for this variable were obtained from IMF Directions of Trade Statistics Database, for the examined countries for the period of 2000-2015. The values are in millions of USD. The graphs above show the development of these values. In the first graph, the initial values are depicted and the second graph shows the log forms of the variable (how they are used in the regression)³¹. It is clear that Germany has the highest export values to Russia and an expected decrease in the years 2014 and 2015 when the sanctions were imposed can be seen clearly as well. In the examined period, the variable *EXPORT* has reached the minimum value of 862 million USD, the maximum value of 48,8 billion USD and the mean average value was 10,1 billion USD, as shown in the table above.

³¹ This will imply to all the graphs presented in this section.

Figure 14: Descriptive statistics of variable GDP_Exporter



Source: Own estimations and editing

The data needed for this independent variable were gathered from the WDI Database of the World Bank, again for the period of 2000-2015 and the examined countries. The logical expectations about this explanatory variable are that the higher the GDP of the exporters, the higher the trade flows (*EXPORTS*), thus this variable is positively related to the dependent variable (Anwer and Sampath, 2010). Germany is again the leader in the level of GDP and a decrease over the years 2014 and 2015 can be seen in the graphs above. In the examined period, the variable *GDP_EXPORTER* has reached the minimum value of 172 billion USD, the maximum value of 3870 billion USD and the mean average value was 1800 billion USD, as shown in the table above.

Figure 15: Descriptive statistics of variable GDP_Importer



Source: Own estimations and editing

The values for the explanatory variable of *GDP_IMPORTER* were also extracted from the WDI Database of the World Bank, for the same period and countries examined. However, in this case, the importer is only Russia. The logical expectations about the influence of this variable on the dependent variable are also the same as with the GDP of exporting countries, thus positive relation among the trade flows and GDP of importer (Russia). The GDP values of Russia over the examined period were on average 1200 billion USD, as seen in the table above.

Another independent variable entering our regression is *DISTANCE*. This variable depicts the distances between the examined countries and Russia. These were logically constant over the time. The data were obtained from the CEPII database and are expressed in kilometres. As other scholars also expect, the closer the countries (lower distance between them), the higher should be the trade flows. The minimum value which this variable has reached is approximately 1156 km and the maximum value is approx.. 2500 km. The mean distance among the examined countries is 2127 km.

Dummy variables, such as common language, colonial history etc., which were discussed in the previous sections were also taken into account and downloaded from the CEPII database, however they did not prove to be significant for our analysis, since all of the countries only reached the values of zero for these dummy variables. That is the reason they were omitted from our analysis.

Logarithmic transformation and stationarity

As presented before, theoretical structure of the gravity model recommends logarithmic transformation. From econometric point of view, logarithms stabilise variance and help to reduce consequences of non-stationarity. Stationarity of all variables was tested using unit root tests. On at least 5% level of statistical significance all variables were found to be stationary and may be used for empirical analysis (Verbeek, 2012).

Empirical approach

The empirical approach of this analysis consists of the two regression estimates. In the first one, dummy variable representing period of sanctions is used to evaluate the impact of sanctions. In the second one, regression models are estimated on restricted

sample till year 2013 and based on the real values for GDPs, the expected values of exports are predicted and compared with the real values.

3.2.4 Results of the Regression Analysis

Econometric estimation of regression models using panel data starts with the selection of the most appropriate method of estimation. According to Wooldridge (2006) and previous studies, one may work with Ordinary Least Squares method (OLS), Random Effects (RE) or Fixed Effects (FE) estimators. Hausman test helps us to choose the most suitable method for our data. Hausman test suggested using the Fixed Effects Estimator and therefore, this technique is used for my data. Estimation with Fixed and Random Effects excluded variable representing distance from the models due to its constant values over the time and controlled heterogeneity across the states and over the time with fixed (random effects). However to provide transparency in my results, I present estimates of all three techniques for the first empirical approach.

Regression models have been estimated with robust standard errors to avoid all negative consequences of heteroscedasticity and autocorrelation. Collinearity among explanatory variables was controlled via Variance Inflation Factors test, which reported lower values, than critical level of 10 and therefore collinearity among explanatory variables does not bias the results (Verbeek, 2012).

R-Squared of all estimated models reports that models were able to explain relatively well the variability of the dependent variable and may be used for interpretation. Interpretation of the results is divided according to the two empirical approaches. All estimated models are together presented in the structured table below and were estimated in software EViews.

Figure 16: Regression analysis estimates (OLS, FE, RE)

Variable / Model	Model 1 OLS	Model 2 FE	Model 3 RE	Model 4 FE
Dependent variable	<i>LOG(EXPORT)</i>			
<i>LOG(GDP_IMPORTER)</i>	0.578111*** (0.087023)	0.532979*** (0.041595)	0.552521*** (0.043028)	0.536033*** (0.042346)
<i>LOG(GDP_EXPORTER)</i>	0.899373*** (0.129580)	1.025855*** (0.115761)	0.971087*** (0.111926)	1.007431*** (0.116600)
<i>LOG(DISTANCE)</i>	-1.778109*** (0.327638)			
<i>SANCTIONS</i>	-0.229671 (0.160230)	-0.229282*** (0.031614)	-0.229451*** (0.051900)	
<i>CONSTANT</i>	-4.878700** (2.356423)	-20.73946*** (2.230561)	-19.74727*** (2.264778)	-20.30883*** (2.233454)
R-Squared	0.700310	0.986476	0.971408	0.986811
Adj. R-squared	0.687137	0.985233	0.970476	0.985596
F-statistic	53.16188	793.2730	1041.907	812.3395
Observations	96	96	96	96
Note: Standard Errors are in paranthesis *** stat. significance on 1 %, ** stat. significance on 5 %, * stat. significance on 10 %.				

Source: Own estimations and editing

Approach with dummy variable for sanctions

First approach aimed to compare the period, when the sanctions occurred, with other years. Therefore the dummy variable Sanctions is present in the models 1, 2 and 3, which can be found in the model table. As mentioned earlier in the text, all three estimation techniques are presented for the variable, however according to Hausman test, the model 2 is taken into consideration, once interpreting the statistical significance of the results. Estimated coefficients provide consistently the same signs and in the model with fixed effects, all variables were found to be statistically significant at least on 5% level of statistical significance.

Based on obtained results, on average, during the period when the sanctions were active (2014, 2015), the value of exports in analysed sample were lower, compared to other years.

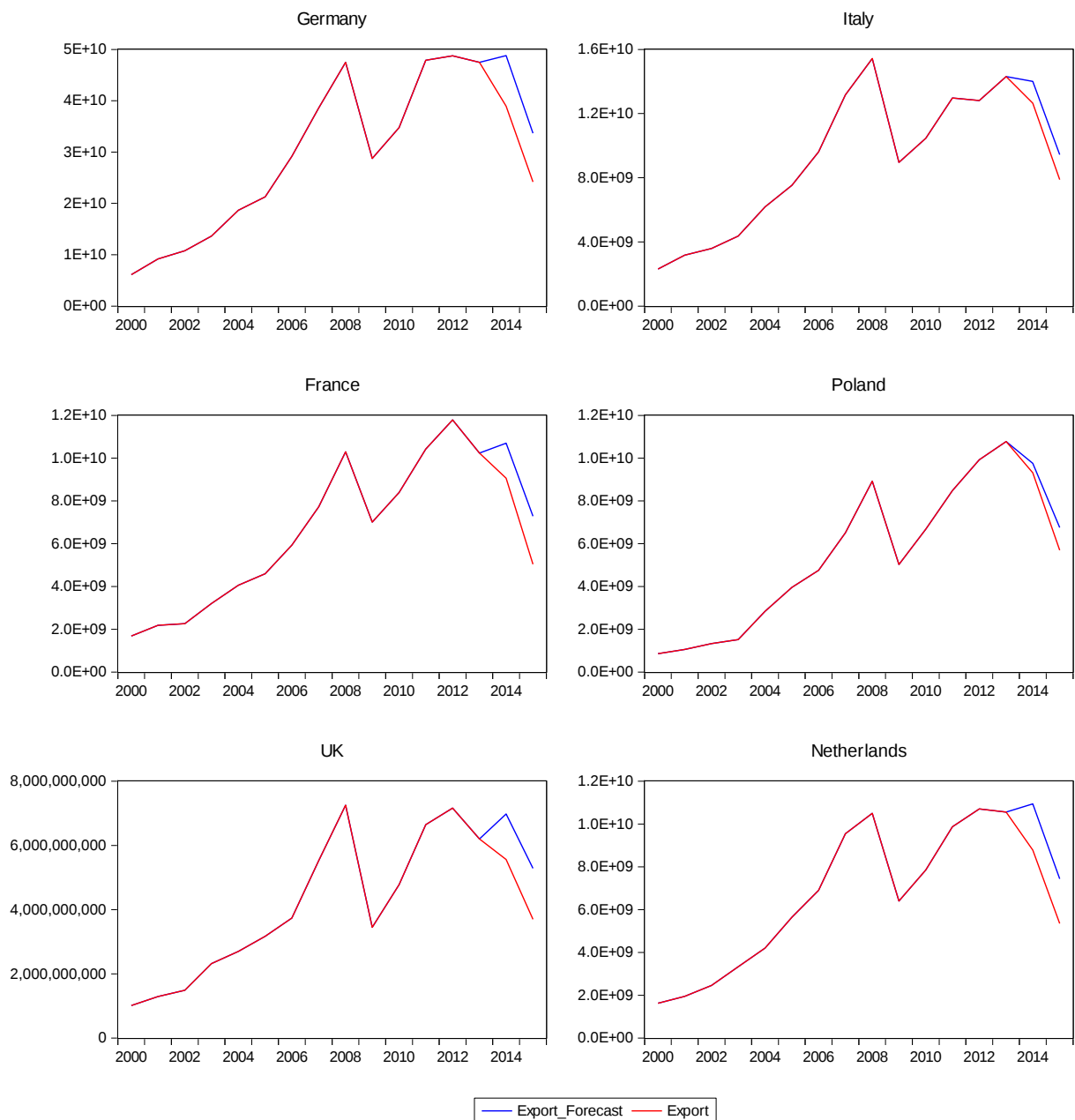
Approach without dummy for sanctions

The second approach works with the sample of years 2000 till 2013, before the sanctions occurred. Estimated model (number 4 in the model table) with fixed effects again reported statistically significant coefficients at least on 5% level of statistical significance. Also estimated values of coefficients were relatively the same as in the

main model. The second step in this empirical approach was to use real values of GDP for years 2014 and 2015 and forecast values of export for years 2014, 2015. Comparison of values, which were forecasted based on the years before the sanctions were active, with the real values of export for years 2014 and 2015 may reveal another view on the potential impact of sanctions.

Results are depicted graphically below and estimated values for years 2014 and 2015 are presented in the table. One can see very clearly, that forecasted values, having no idea about upcoming sanctions, would suggest higher values of export compared with the real figures. The following table then represents the real and forecasted values for each of analysed states.

Figure 17: Comparison of estimated and real values of trade flows between Russia and the examined EU countries



Source: Own estimations and editing

Figure 18: Comparison of the real and forecasted export values for EU countries (million USD)

STATE	EXPORT_FORECAST	EXPORT
Germany - 14	48809289432.06341	38952890000
Germany - 15	33656393229.70151	24171400000
Italy - 14	13999006494.63426	12640060000
Italy - 15	9441047012.206664	7876860000
France - 14	10702747674.29747	9063410000
France - 15	7281126080.94126	5035650000
Poland - 14	9758886361.696024	9320850000
Poland - 15	6758012238.866338	5693980000
UK - 14	6975599071.374801	5559150000
UK - 15	5286038184.437936	3696270000
Netherlands - 14	10934427057.49114	8782320000
Netherlands - 15	7437573837.948539	5344720000

Source: Own estimations and editing

3.2.5 Summary of empirical results

For a better image about the outcome of the analysis which was conducted, this part of the thesis will summarize the empirical results and asses, whether it complies with the logical expectations and findings of other scholars. As it was stated before, the econometric models shown in Figure 16 were used in order to evaluate the impacts of the sanctions imposed by the EU on the bilateral trade flows between the EU and Russia.

Two empirical approaches were shown, the first one was a regression analysis of trade flows between the selected countries of the EU (Germany, Italy, France, Poland, UK and Netherlands) with a dummy variable for the control of the effects of sanctions for years 2014 and 2015. The results and significant coefficients have proved our expectation, with lower values of exports for the years when the sanctions were active. Thus there is a definite negative impact on the bilateral trade flows. This finding can be supported by the study of Romanova (2016), who examined the effects of reciprocal

sanctions on the EU-Russian relations. She states that even though there are plans for further integration, the “divorce” between the two international subjects is real, which can be proven by Russia trying to find substitutions for the prohibited products and the EU paying compensations to the farmers, as it was discussed in the previous chapters. These actions diversify the trade relations among the EU and Russia and also decrease the importance of each other in its own market.

Other studies which have done a similar analysis of the impacts of the sanctions on the trade flows using the gravity models are for instance Hufbauer et al. (2003) or Caruso (2003). Even though these publications are not connected with the EU-Russian sanctions, they can provide a useful insight on the general effects of sanctions on the trade relation of the affected countries. The first mentioned examined the impact of sanctions on the U.S. trade, using the common gravity model variables (such as GDP and distance) together with the independent variables that might influence the trade flows as well (membership in various trade unions for example). Apart from that, he also used dummy variables for sanctions, like in our analysis. The outcomes of his research confirm our results, even though he divides the sanctions into moderate and extensive. The latter mentioned, Caruso, has shown a similar approach as Hufbauer et al. and obtained similar results.

However, it is important to mention that the decrease in the trade flows might be caused by other factors as well and it would be difficult to filter these to obtain accurate results. Thus further research and possibly an in-depth analysis is suggested. Romanova (2016, p. 2) even states that “*It is difficult (if not impossible) to separate the effect of sanctions from the overall slow-down of the Russian economy, which started before the sanctions, and from the fall in oil (and thus, gas) prices and, consequently, export revenues of Russia.*”

The second empirical approach which was displayed in this thesis was also a regression analysis, this time without the dummy variable for sanctions. A restricted sample for the years 2000-2013 (before the imposition of the sanctions) was used in order to forecast the values of exports for the years 2014 and 2015. In other words, how the exports would be if there were no sanctions. These values were then compared with the real values of the exports for the two years and our expectations were again

confirmed, with the trade flows decreasing over the examined period 2014 and 2015. This type of approach is commonly used when examining trade flows and policies.

A conclusion can be drawn, that both of the empirical studies which were conducted in this thesis have proved the common beliefs of the scholars about the negative impact of economic sanctions on the trade flows between Russia and the EU.

Conclusions

In this thesis, I focused on analysing the impacts of economic sanctions imposed by the European Union, the United States and other countries on Russia., with respect to the changes of trade relations between the EU and Russia. The main reason for such external pressure on the Russian economy was the intervention of Russia into internal affairs of its neighbouring country, Ukraine, in 2014. Almost all democratic states including the EU criticized such external policy of Russia and gradually moved from diplomatic negotiations onto more extensive and efficient measures. Thus the objective of these restrictions was to prevent Russia from intervening into the territory of Ukraine.

The goal of this research was to assess the impacts of the sanctions on the trade flows between Russia and the EU. The analysis has been conducted using the theoretical evidence and then by carrying out two types of empirical studies, both using the gravity model to estimate the effects of the restrictive measures.

In the first part of this paper, a theoretical background of sanctions was provided with the definition of sanctions and its instrument. Secondly, an overview of the Ukrainian conflict was shown with a brief introduction of the sanctions imposed by the EU. However, Russia did not hold back and introduced counter-sanctions on several products imported from the EU as well. This has had an inherent impact on the trade relations between the two participants as well. The impacts on the economies of both Russia and the EU are presented in the second chapter as well. Together with the overview of the trade relations between the two countries before the imposition of the sanctions in the following chapter it can be assumed, that Russia's economy would be more exposed and sensitive to the impacts of the sanctions, since the EU forms approximately half of the total exports and imports of Russia. On the other hand, Russia is in fourth place when it comes to the exports from the EU, so the European economy is not as vulnerable as the Russian economy in the case of diverted trade.

Following these theoretical explanations and findings, the empirical analysis was conducted in the third chapter, using the gravity model for estimations. Two empirical approaches were displayed, both using the data extracted for the period of 2000-2015 and six major exporting EU countries to Russia. These are Germany, Italy, France,

Poland, UK and Netherlands. Firstly, an approach using dummy variable SANCTIONS was used for the two years (2014, 2015) when the restrictive measures took place. The regression analysis provided statistical significant and expected estimates, confirming our expectations that the sanctions would have negative effect on the trade flows between the selected EU countries and Russia.

Secondly, an approach which predicts the bilateral trade flows was used. The idea of this approach was to use a restricted sample for the years 2013-2015 and predict the values of exports for the years 2014 and 2015 in the case that sanctions were not imposed. This was later compared with the actual values of exports for those years and the logical assumptions behind the model were confirmed, with the predicted trade flows values higher than the real values for the two years when the sanctions were active. Thus both of the empirical approaches confirmed our hypothesis, that the sanctions would have suppressing and negative effect on the trade flows between the EU and Russia.

Several conclusions can be made following these analyses. The negative impact of the sanctions on the trade flows between the two international entrants is indisputable. However it would be very difficult to determine the specific impact of the sanctions these days, since they have been implemented quite recently. Other factors need to be considered as well, such as re-exports to other countries or the decline of the oil prices and their impact on the worsening of the Russian economy. These factors have an effect on the trade flows as well and it would be very difficult to separate them from the sanctions effect, so a further research is definitely needed. To answer the research question is quite difficult since the sanctions are still an ongoing process and the concrete outcomes are not yet known. However, as our research has proven, they have had a negative impact on the trade flows, but the initial goal still has not been accomplished, that is, Russia leaving the Ukrainian territory. Thus from the political point of view, the sanctions have not yet proved to be effective.

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Appendix 1: Panel regression results

Dependent Variable: LOG(EXPORT01)

Method: Panel Least Squares

Date: 09/29/16 Time: 19:46

Sample: 2000 2015

Periods included: 16

Cross-sections included: 6

Total panel (balanced) observations: 96

White diagonal standard errors & covariance (d.f. corrected)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(GDP_IMPORTER)	0.578111	0.087023	6.643209	0.0000
LOG(GDP_EXPORTER)	0.899373	0.129580	6.940669	0.0000
LOG(DISTANCE)	-1.778109	0.327638	-5.427047	0.0000
SANCTIONS	-0.229671	0.160230	-1.433385	0.1552
C	-4.878700	2.356423	-2.070383	0.0412
R-squared	0.700310	Mean dependent var	22.62512	
Adjusted R-squared	0.687137	S.D. dependent var	0.910093	
S.E. of regression	0.509053	Akaike info criterion	1.538148	
Sum squared resid	23.58125	Schwarz criterion	1.671707	
Log likelihood	-68.83108	Hannan-Quinn criter.	1.592135	
F-statistic	53.16188	Durbin-Watson stat	0.061764	
Prob(F-statistic)	0.000000			

Appendix 2: Panel regression results

Dependent Variable: LOG(EXPORT01)

Method: Panel Least Squares

Date: 09/29/16 Time: 19:51

Sample: 2000 2015

Periods included: 16

Cross-sections included: 6

Total panel (balanced) observations: 96

White diagonal standard errors & covariance (d.f. corrected)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(GDP_IMPORTER)	0.532979	0.041595	12.81355	0.0000
LOG(GDP_EXPORTER)	1.025855	0.115761	8.861859	0.0000
SANCTIONS	-0.229282	0.031614	-7.252565	0.0000
C	-20.73946	2.230561	-9.297871	0.0000

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.986476	Mean dependent var	22.62512
Adjusted R-squared	0.985233	S.D. dependent var	0.910093
S.E. of regression	0.110595	Akaike info criterion	-1.476828

Sum squared resid	1.064115	Schwarz criterion	-1.236420
Log likelihood	79.88774	Hannan-Quinn criter.	-1.379651
F-statistic	793.2730	Durbin-Watson stat	1.407189
Prob(F-statistic)	0.000000		

Appendix 3: Panel regression results

Dependent Variable: LOG(EXPORT01)

Method: Panel EGLS (Cross-section random effects)

Date: 09/29/16 Time: 19:51

Sample: 2000 2015

Periods included: 16

Cross-sections included: 6

Total panel (balanced) observations: 96

Swamy and Arora estimator of component variances

White cross-section standard errors & covariance (d.f. corrected)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(GDP_IMPORTER)	0.552521	0.043028	12.84091	0.0000
LOG(GDP_EXPORTER)	0.971087	0.111926	8.676123	0.0000
SANCTIONS	-0.229451	0.051900	-4.421001	0.0000
C	-19.74727	2.264778	-8.719297	0.0000

Effects Specification		S.D.	Rho
Cross-section random		0.683741	0.9745
Idiosyncratic random		0.110595	0.0255

Weighted Statistics			
R-squared	0.971408	Mean dependent var	0.914153
Adjusted R-squared	0.970476	S.D. dependent var	0.649716
S.E. of regression	0.111638	Sum squared resid	1.146596
F-statistic	1041.907	Durbin-Watson stat	1.289248
Prob(F-statistic)	0.000000		

Unweighted Statistics			
R-squared	0.366942	Mean dependent var	22.62512
Sum squared resid	49.81253	Durbin-Watson stat	0.029676

Appendix 4: Panel regression results

Dependent Variable: LOG(EXPORT01)

Method: Panel Least Squares

Date: 09/29/16 Time: 19:56

Sample: 2000 2013

Periods included: 14

Cross-sections included: 6

Total panel (balanced) observations: 84

White diagonal standard errors & covariance (d.f. corrected)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(GDP_IMPORTER)	0.536033	0.042346	12.65846	0.0000
LOG(GDP_EXPORTER)	1.007431	0.116600	8.640026	0.0000
C	-20.30883	2.233454	-9.093014	0.0000

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.986811	Mean dependent var	22.58595
Adjusted R-squared	0.985596	S.D. dependent var	0.934996
S.E. of regression	0.112214	Akaike info criterion	-1.446422
Sum squared resid	0.956994	Schwarz criterion	-1.214915
Log likelihood	68.74970	Hannan-Quinn criter.	-1.353358
F-statistic	812.3395	Durbin-Watson stat	1.387688
Prob(F-statistic)	0.000000		