A COMPARATIVE ANALYSIS OF THE EU MEMBER STATES REGARDING THEIR INTERDEPENDENCE WITH RUSSIA

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Abstract: The interdependence is definitely the most common concept used to describe the relations between the EU and Russia. Nevertheless, despite their obvious interdependence, there are still a series of debates in literature which usually arise when it comes to describing its typology and its implications, especially in the analysis at the Member States level. Moreover, given the complexity and variety of relations between the EU-27 and the Russian Federation, the present study aims to outline a comprehensive picture of the interdependence between the two actors at a regional level by conducting a comparative analysis of the European Union Member States according to their interdependence with Russia, considering energy as the main aspect of their relations. In this sense, the scientific approach will focus on a comparative analysis of the mutual energy dependencies between the member states and Russia, in order to characterize the interdependence typologies, as well as to identify the distribution of cost and advantages.

Key Words: Interdependence, vulnerability, energy, advantage, gas

JEL Classification: N44, N74, R58, F59

Introduction

The complex interdependent relation between Russia and the European Union has been a highly debated topic over the last decade due to its high relevance for the future and security of the entire Eurasian region. The difficulty of analysing the mutual dependence arises mainly from the wide spectre of relations that exist within EU and Russia, both on bilateral bases, as well as regional. Presently, the bilateral relations between EU’s member states and Russia prevail on the regional one, as Europe’s economic and political fragmentation is highlighted when dealing with Russia. The current study focuses on analysing the differences and discrepancies of energetic dependence among the EU member states, in regards to Russia, as well as Russia’s dependencies on EU’s member states in order to shed some light on the overall EU-Russia economic interdependence.

The first section of the paper exposes the general overview of the economic relations between Russia and the European Union, both politically and economically. Within the second section, there a comparative analysis will be conducted using Barbieri and Russet methods of quantifying interdependence, although their general method will be applied to the energy sphere, as well as to all EU’s member states and Russia.

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1. General overview of the economic relations between Russia and the European Union

The fact that the EU and Russia are interdependent to some extent has been well established in the literature. However, the experts’ opinions are not uniform and often the interdependence (seen as mutual dependence) is treated superficially, with more emphasis on the European Union's dependence on Russia, not vice versa. There are far fewer studies that deal with Russia's dependence on Europe and even so, those studies are accompanied by a wave of pessimism. This trend in the literature is not random and is based on a number of factors, such as: the fears of Europeans on energy security due to interruption of gas supplies to Ukraine in January 2006 and January 2009 by Russia; the concern of European states regarding external energy dependence, namely energy dependency on Russia, as a main supplier; the strategy of the quasi-public company Gazprom and last but not least all the tensions which rise from the frozen conflicts and political instability in the buffer zone. Consequently, the media and European politicians often advocate for an excessively bleak picture when it comes to Russia, an image often influenced by geopolitical reasons such as: the war in Georgia in 2008, the recent revolution in Ukraine or the annexation of Crimea. Unfortunately, this view sometimes interfere with objective analysis of the economic risks associated with Gazprom’s dominant position in the European gas market, and Europeans often pay little attention on the leverages it has. Russia’s economy is solely dependent on energy exports.

This study aims to provide an analysis of the particularities of trade relations between EU and Russia in order assess their implications on the interdependence between them. Since in literature there are several studies which focus on Europe’s dependence and vulnerability regarding energy imports from Russia, this study will mainly focus on Russia’s economic dependence on its energy exports, and consequently on European customers.

1.1. Theoretical background

The concept of economic interdependence is a concept closely linked to foreign trade. In economics interdependence is defined as mutual dependence in which there are reciprocal effects of trade/business transactions between partners. Such relationships, however, do not only have economic implications but also political. The classical liberal conception states that conflicts between countries with extensive trade links create high costs associated with finding a new trading partner. In this context, bilateral trade induces the political factor to refrain from promoting an aggressive
policy or the use of force, as long as it has a high degree of of economic importance (and hence political) that specific country. (Hirschman, 1945)

The interdependent relationship is not necessarily one of mutual benefit, as in the strategic interdependence of the United States and the Soviet Union in the Cold War, but interdependent relationships always entail costs, since interdependence limits the autonomy of the parties involved. The costs of interdependence involve sensitivity to outside pressures, which in certain cases take the form of vulnerability (Keohane and Nye, 1977; pp. 12–13).

It is incomplete to stick to the reciprocal effects of trade when defining and analysing the concept of economic interdependence. The main aspect to be considered is the nature of these effects, namely their main characteristic of asymmetry. An interdependent relation is perfectly symmetrical only in theory, as the mutual gains and benefits can vary greatly from one partner to the other.

Other concepts used in the analysis of this study refer to proximity and complementarity. Both concepts are closely related to interdependence: whereas proximity causes the existence of interdependence, which in turn induces some complementarity in relations between states.

The geography of international relations and especially in the study of international conflict, the proximity factor is analysed from different perspectives. For example, the French philosopher Emmanuel Levinas in his essay Peace and Proximity (1984), considers that ethics in foreign policy is limited to one’s neighbours, which defines the proximity as the main factor to suspend the threat of conflict (Denboer, 2010, p.67).

Harvey Starr believes that states (or any other units) which are close to each other, interact, and thus communicate more effectively. Simply, they are able to interact more with each other, which Starr defined as ”interaction opportunity". Also the proximity makes states situated in the vicinity of another state to be more important, relevant and the highest degree of proximity is the border between the states.

At the same time, in some cases, proximity can also be a main factor in accelerating the emergence of disputes or conflicts, often due to territorial disputes or cultural differences. Therefore, intense interaction between states can have positive effects, but also negative (Starr, 2005, p.389 -396).

Regarding the concept of complementarity, it is an implication, a natural effect of the relationship of interdependence, whereas interdependent states depend on each other and thus complement each other. Complementarity is directly proportional to the interdependence so that, as the interdependence is stronger, the greater is the degree of complementarity (Vecchi, 2011, p.7 -12).
1.2. Geopolitical outlines

Being the largest geopolitical entities in Europe, Russia and the EU are interdependent in many areas, being major partners in a number of key areas such as trade, energy and external aspects of security. In this context and with such a starting point, we could say that the European Union and the Russian Federation are strongly linked on political, cultural and economic backgrounds. A glance at the map of the world is enough to understand that Russia and the EU share security interests and an important common neighbourhood and consequently have only one choice in the current international, multipolar and globalized environment - to further develop their partnership. Such an approach on the relations between the EU and Russia is based on two fundamental arguments: the "proximity" and "complementary" of their relation (Starr, 2005, 389-396).

The argument of "proximity" refers to a strong strategic component which can be characterized not only by shared economic interests but also by their common objective of strengthening cooperation in various international areas. Geographically, Russia is and will remain the most powerful neighbour of the European Union and will continue to play a leading role in Euro-Atlantic and Eurasian space. From this perspective, the European Union and Russia are "condemned" to co-exist in each other’s vicinity and moreover, in some circumstances, one inside the other, as the Kaliningrad region is located within the EU.

Regarding the argument of "complementarity", Vecchi describes EU-Russia relations on the principle of complementarity between needs and resources (Vecchi, 2011, p.9); from this perspective, Russia and the EU are complementary in almost all levels. On the one hand, the Russian Federation is the main energy supplier for Europe, and one of the leading suppliers for most of the raw materials used by the Union’s industry. On the other hand, the EU is the main investor in the Russian economy, and a major supplier of know-how and technology. Thus, at first glance, we can say that the EU and Russia are too close (geographically, culturally and economically) not to realise that closer cooperation can provide an opportunity to increase welfare and security in both spaces (Bahgat, 2006, 964).

The asymmetric interdependence between EU Member States and Russia is based on a number of features which vary from one state to another. Firstly, the main factor that induces a clear advantage to Russia in its energy relations with some EU countries (mainly Eastern states) relates primarily to the difficulty or impossibility of substituting oil and gas, at least on short and medium term. The difficulty of substituting energy products is valid for all oil and gas importing countries such as the U.S., but much more real for the energy trading partners of Russia. Former USSR deliberately tied
both its own republics and its satellite states through a network of dependence on oil and gas supplies. The key economic sectors of the countries belonging to the former Soviet bloc, such as industry, transportation or gas supply to households, were built in such a way as to depend entirely on oil and gas supplies from Russia. If oil can, to a certain extent be substituted, since it can be transported via ships or other means, while gas can only be transported through pipelines, which are very expensive and imply the existence of a high geographical proximity between the importer and the exporter. Thus, Russia's neighbours have no other energy supplier in their proximity. Such monopoly gives Russia a huge market power over its customers. Theoretically, in this context, the Russia holds the advantage within its asymmetric interdependence with EU-27 eastern countries.

However, while imports of oil and gas from Russia are essential for EU Member States, income from oil and gas exports is vital for the Russian economy. Russia's economic growth over the past decade is largely due to its energy sector, given that approximately 20% of total revenue from Russia's GDP comes from this sector (IS5, 2014).

The asymmetric interdependence of Russia and the European Union on a bilateral level (Russia-EU member state) varies from state to state. Clearly not all the states are disadvantaged in their economic relation with Russia; some Western economies hold advantages over Russia. Overall, the EU member states that benefit most are those for which the energy mix is more diversified, who have more energy suppliers than Russia and last but not least, who invest more in the Russian Federation and consequently increase its vulnerability.

On a regional level, the economic interdependence between Russia and the EU can be qualified as symmetric, as Russian economy is highly vulnerable to the investments and trade with the Union as a whole.

**1.3. Economic outlines**

In the economic sphere, the total value of trade in goods between Russia and the 27 EU members increased from € 52.8 billion in 1999 to nearly 307 billion in 2011, with a considerable increase in both exports and imports. (Table 1) Therefore, for Russia, the European Union became the main trading partner and at the same time, the Russian Federation, along with the U.S. and China, has become one of the major trading partners of the EU-27, excluding intra-EU trade.
Given this trade dynamic between Russia and the EU, expressed in Table 1, it is easy to understand why, within its foreign policies, the EU was a strong supporter of Russia's accession to the WTO, from the beginning of the negotiation process all the way to the actual accession of August 22nd, 2012. The EU’s support throughout the entire process of Russia's WTO accession represented an important goal to achieve for the EU, in order to develop and strengthen its economic relations with the federation. In essence, the central interest of the union in Russia's WTO accession was to prevent it from adopting unilateral tariff systems as it was the case in the past. (IS2, 2013)

Also, from an external perspective, one of the major advantages of Russia's accession to the WTO, in addition to tariff reductions in general, is the predictability and legal certainty of the federation (Latek, 2012, 5), which are very important for the European Union, not only in terms of trade but also in terms of investments since, the EU is the most important foreign investor in Russia. According to the Central Bank of Russia, almost three quarters of FDI in Russia come from the EU. (National Bank of Russia, IS4, 2014)
Foreign Direct Investments (FDI) represent much more than income. FDI’s are the clearest indicator of a country's willingness and ability to succeed in the global economy. (Garanina, 2009, 13) In the case of Russia, after the fall of communism, the capital flows from foreign investors have been crucial for the consolidation of economic and political reforms. (Aslund, Guriev, Kuchinus, 2010, 17) Thus, in regard to the scope of foreign direct investments, the links between Russia and the European Union are very strong, considering that at least 70% of the total FDI in Russia come from the European Union. (Appendix 1)

According to the analysis made on FDI in Russia (Appendix 1), can be noted the following:

- The European Union is the main investor in the Russian Federation in the last decade, given that approx. 70% of FDI in Russia comes from the EU-27, except for the year 2009 which was affected by the economic crisis;
- Russia's attractiveness as a destination for FDI’s within the analysed period has increased, given that the total flow of investment, which in 2009 reached a threshold of 36.336 million USD, increased in 2011 to 55,615 million USD;
- The main member states investing in the Russian Federation are: Cyprus (24%), the Netherlands (13%), Luxembourg (7%) and Germany (4%);
- The newest members of the European Union, namely the states of Central and Eastern Europe invest the least, with a share of less than 1% of total foreign direct investment in Russia.

Given the intensity of trade and investments between the European Union and the Russian Federation, as well as the existence of the two arguments mentioned above, that of "proximity" and "complementarity" there can be developed two scenarios: on the one hand, a positive scenario, characterized by a "strategic partnership" between the two global players who understand the need to cooperate and work together on the international stage, or, on the other hand, a negative scenario, characterized by a "confrontational attitude" where both players try to maximize their position by "mutual attacks". However, in such a "strategic relationship" that can take the form of a "partnership" or a "rivalry" and with so many stakes at hand, "complementarity" is not a sufficient argument and does not guarantee automatic cooperation. Close cooperation between the two players in the world arena is ultimately a matter of political choice, and that choice must be rational and positive.

In order to discuss economic cooperation between the two actors it is important to analyse the EU and Russia should as part of a global economic landscape which within the last decade has proven to be unstable, affected by a number of factors, such as the public deficits challenges, induced by public and private debt as well as the exchange rate volatility. (Lorkowski, 2012, 7) In this context, both the EU and Russia must face these challenges and economic cooperation may come as a part of the solution: rather than try to cope with them individually, they should join efforts to seize advantage.
of the complementary structure that characterizes their economic relations. (Kredler, Afontsev, 2010, 24) In this respect, private initiatives should be linked to responsible policies in order to support bilateral economic cooperation in bilateral trade, investment and innovation.

Thus, Russia and the EU should seize the opportunity of "interaction" that Starr speaks of. (Starr, 2005, p.389-396) Given that this interaction can have both positive and negative effects, the two actors must channel their energy in order to eliminate the negative effects and to accelerate the positive ones, possibly given by accelerating their cooperation.

From a theoretical perspective, proximity causes enhanced interaction, which in time can lead to the existence of interdependence between the involved partners. The concept of complementarity is an implication, a natural effect of the relationship of interdependence, whereas interdependent states depend on each other and thus complement each other.

In this theoretical framework, the intense interaction between the EU and Russia, due to their proximity, led to a relation of interdependence, which, in turn, leads to complementarity. In literature, the economic cooperation between Russia and the union is primarily focused on their energy relations. However, to reduce this interdependence to: Union is the buyer and Russia the supplier of energy is a simplistic approach, since, it does not take into account various factors that confer a high degree of complexity to the relations between the two actors. Therefore, to analyse and determine the nature and intensity of their interdependence is necessary to conduct a thorough analysis of trade between Russia and the European Union, the particularities of their trade as well as their implications on the economy of both regions.

2. Economic comparative analysis

In literature, there are several methods of quantifying economic interdependence between states. Nevertheless, the most complex and accurate are the methods proposed by Barbieri (1996) and Oneal and Russet (1998) (Table 2):
### Table 2 - Methods of quantification of interdependence

<table>
<thead>
<tr>
<th>Methods</th>
<th>Instruments</th>
</tr>
</thead>
</table>
| Barbieri (1995, 1997, 1998) | (1) $\text{TradeShare}(i) = \frac{\text{imports}(ij)+\text{exports}(ij)}{\text{import}(i)+\text{export}(i)} = \frac{\text{Trade}(ij)}{\text{Trade}(i)}$  
(2) $\text{Intensity}(ij) = \sqrt{\text{TradeShare}(i) \times \text{TradeShare}(j)}$  
(3) $\text{Symmetry}(ij) = 1 - |\text{TradeShare}(i) - \text{TradeShare}(j)|$  
(4) $\text{Interdependence}(ij) = \text{Intensity}(ij) \times \text{Symmetry}(ij)$ |
| Oneal & Russet (1997, 1999)   | (1) $\text{Dependence}(i) = \frac{\text{imports}(ij)+\text{exports}(ij)}{\text{GDP}(i)} = \frac{\text{Trade}(ij)}{\text{GDP}(i)}$  
(2) $\text{Dependence}(j) = \frac{\text{imports}(ij)+\text{exports}(ij)}{\text{GDP}(j)} = \frac{\text{Trade}(ij)}{\text{GDP}(j)}$  
(3) $\text{Interdependence}(ij) = \text{MIN}[\text{Dependence}(i); \text{Dependence}(j)]$  
(4) $\text{Asymmetry}(ij) = \text{MAX}[\text{Dependence}(i); \text{Dependence}(j)]$ |
| Energetic Vulnerability    | (1) $\text{Energy Dependence on Russia} = \frac{\text{ImpRU}(\text{gas})+\text{ImpRU}(\text{oil})}{\text{Total energy consumption}} \times 100$  
(2) $\text{Energy Dependence on EU} = \frac{\text{ExpEU}(\text{gas})+\text{ExpEU}(\text{oil})}{\text{Total energy exports}} \times 100$ |

Source: Author (Barbieri, 1996, Russet & Oneal 1998)

Although the methods above are thorough and complex, they refer to interdependence only in terms of trade. Therefore, based on Russet’s method, the energetic interdependence (mutual dependence) can be measured through EU member states and Russia’s dependencies in the sphere of energy, as the table above shows.

Applying the author’s proposed method we can conclude the following:

1. The energy dependence that the EU’s member states have on Russia show that the most vulnerable states are situated in Central and Eastern Europe (CEE) (Figure 1):
Therefore, the most vulnerable states are: Lithuania, Hungary, Slovakia and Finland (the only vulnerable member that is not a CEE country). A close look at the energy vulnerability map show quite clearly that geography matters when it comes to EU-Russia interdependence: the proximity to Russia is directly proportional to EU’s member state energy dependence.

The states which depend the least on Russia when it comes to energy resources supply are Ireland, Portugal, Malta and Cyprus. While Cyprus has a privileged relation with Russia, being considered often as a Russian *Trojan Horse* in Europe (Popescu, 2009, 37) Ireland and Portugal are some of the EU members that have the lowest proximity to Russia. Within this context, according to the proximity theory, the overall interactions and relations with Russia are not intense.

**Table 3 - Member States energetic dependencies on Russia**

<table>
<thead>
<tr>
<th>High Vulnerability (0,76)</th>
<th>Medium-high vulnerability (0,4-0,52)</th>
<th>Medium vulnerability (0,25-0,35)</th>
<th>Low vulnerability (0,16-0,22)</th>
<th>Insignificant Values (0,06-0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lithuania</td>
<td>Hungary, Slovakia, Finland</td>
<td>Czech Rep., Latvia, Poland, Bulgaria, Austria</td>
<td>Romania, Slovenia, Estonia, Italy, France, Netherlands, Great Britain, Spain, Denmark, Sweden, Belgium Greece, Germany, Luxembourg</td>
<td>Ireland, Portugal, Malta, Cyprus</td>
</tr>
</tbody>
</table>

Source: Author’s representation

2. Russia’s energetic dependence on EU Member States (Figure 2)

According to the energetic dependence index, Russia presents a high vulnerability only on two Member States, Germany and Italy, both situated in the Western part of the EU (Table 4), while it has a low vulnerability on the rest of the continent.
Moreover, the EU members that Russia has a low to none vulnerability are either situated in the Eastern part of the EU Eastern countries (Romania, Bulgaria, Greece, Estonia and Lithuania) or they have the lowest proximity to Russia, such as Portugal, Spain, Ireland and the UK.

### Table 4 - Russia’s energetic dependencies on EU member states

<table>
<thead>
<tr>
<th>High vulnerability (0,17)</th>
<th>Medium vulnerability (0,08)</th>
<th>Low vulnerability (0,02-0,04)</th>
<th>Insignificant values (or zero) (0-0,1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germany</td>
<td>Italy</td>
<td>Finland, Sweeden, France, Belgium, Netherland, Austria, Poland, Czech Rep., Slovakia, Hungary, Latvia</td>
<td>Ireland, Denmark, Great Britain, Greece, Luxemburg, Spain, Portugal, Malta, Cyprus, Slovenia, Romania, Lithuania, Estonia, Bulgaria</td>
</tr>
</tbody>
</table>

Overall, Russia does not depend on EU member states when it comes to energy, presenting low to insignificant vulnerabilities for most of the states, except for Germany and Italy.

Comparing the energetic mutual dependencies of Russia and the EU member states, we can have an overall image of their interdependencies:
In the energy sphere, the relationship of interdependence between the EU and Russia can be characterised either as a weak and relatively symmetrical interdependence, whether as an asymmetrical interdependence which is mainly in favour of Russia, when it comes to the countries in Central and Eastern Europe, and in favour of the EU, when it comes to Germany and Italy, trends which emphasise the East-West Division of EU Member States.

**Conclusions**

The asymmetrical interdependence between Russia and the EU Member States underlines the East-West division of the European Union which will definitely have long-term adverse consequences. The failure of the Nabucco pipeline and the lack of diversification for gas imports in the new EU Member States will lead to more severe disparities in economic development between the members in the East and those in the West.

The East-West division will lead to a more fragmented energy market, having the EU’s eastern part highly dependent on energy supplies from Russia while the Western part will be much more diversified when it comes to energy sources and suppliers, especially those related to natural gas.

Such a development could have serious consequences not only for the consolidation of a common gas market but also for the future of EU’s common energy policy, for the development of the CFSP, as well as for the strategic guidelines of the foreign policies of EU’s Member States.
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