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COMPARATIVE ANALYSIS OF RUSSIAN AND UKRAINIAN GAS TRANSIT POWERS

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ERI Working Papers
No: ERI_WP-002 (English)
Almaty/2014

ERI Working Papers No: ERI_WP-002 (English)

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Comparative Analysis of Russian and Ukrainian Gas Transit Powers

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22 December 2014

Abstract

With increasing demand for natural gas, pipeline infrastructure started playing even more important role for transit countries in the Eurasian gas supply chain. High degrees of interdependence that pipelines entail succeeded to prevent long-term gas supply disruptions in the region. It, however, could not discourage energy actors from causing short-term supply cuts to influence the decision making of other players. Using energy as a weapon too frequently forced gas producers to invest in alternative pipeline projects to diversify their dependence on a single transit country. As a result both Russia as a transit country for Central Asian natural gas and Ukraine as a transit country for Russian energy resources started gradually loosing their transit leverage. This paper aims to analyze changing dynamics of Russian and Ukrainian gas transit powers over the last two decades.

Keywords: pipeline politics, transit leverage, energy security, interdependence, and bargaining power

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Introduction

Energy crises in the Eurasian region demonstrate complex intermixes of political and economic components in the negotiation and bargaining processes. In this paper, I present a comparative analysis of Ukrainian and Russian transit powers both as a political instrument and as a form of economic leverage. Changing dynamics of transit powers are analyzed within the context of gas pipeline network infrastructure, energy interdependency and dependency diversification policies as well as transit countries' price bargaining power.

Due to its landlocked geographical location the most feasible way for Central Asian producers to transport hydrocarbons to distant markets is through pipeline networks. Natural gas carries much less energy per unit volume than oil. Thus, even if it is compressed or liquefied using complex and expensive technology, it will still make road and rail gas transport for a long distances economically inefficient. In this regard, a comparatively cheap way to transport natural gas is through large-diameter pipelines. However, building a pipeline transportation system is expensive and the tyranny of distance that requires comparatively big upfront investments in the construction of gas pipelines make it difficult and uneconomic to duplicate. High degrees of interdependence provide certain leverage not only to gas producers and consuming countries, but also to transit states leading either to beneficial cooperation or gas supply disruptions in the Eurasian energy system.

Although the Soviet political and economic system disintegrated, the gas pipeline networks remained in place. Russia emerged as a central player in the regional gas supply system by owning transport infrastructure. Even though Central Asian gas producing

countries gained control over their own resources, they remained dependent on Russian pipelines to reach European customers. But the Russian absolute control over energy infrastructures was also challenged by the fact that Russian gas had to cross several independent countries, such as Ukraine, Poland, Belarus, Slovakia, Czech Republic etc. Although gas exports from Russia to Western Europe went smoothly through most of the transit territories, relations with Ukraine turned sour. Within complex interdependent Eurasian gas supply relations Russia used coercive power to influence the outcome of negotiations on export and transit of natural resources. Ukraine, on the other hand, gained leverage from its infrastructural power. At the same time, Russian status in energy relations with Central Asian producers changes from exporting into importing and transit country. Having possessed infrastructural leverage to transport Central Asian resources, Russia itself quite effectively used its structural power. However, over the last two decades both Russia and Central Asian states succeeded to diversify their dependence on Ukrainian and Russian gas infrastructures, thus reducing the transit powers of the former.

Theoretical framework

Complex interdependence theory

A broad definition of transit power can be derived from general description of power in the complex interdependence theory developed by Robert O. Keohane and Joseph S. Nye Jr.[2] According

[2] Keohane, Robert O., and Joseph S. Nye Jr., "Power and interdependence in the information age," Foreign Affairs. 77.n5 (Sept-Oct 1998): 81(14), Expanded Academic ASAP. Gale. University of St Andrews, 2009, 160 <http://find.galegroup.com/itx/infomark.do?&contentSet=IACDocuments&type=retrieve&tabID=T002&prodId=EAIM&docId=A21115195&source=gale&srcprod=EAIM&userGroupName=stand&version=1.>

to this view, power is the capacity of one country to direct the decisions and actions of another state or states.[3] In this sense, power derives from strength, which is the ability to coerce or in the case of interdependence encourage another country to change its policy if it threatens stability of energy supplies. So the transit power can be defined first, as an ability of transit country to use its pipeline-based structural leverage to redirect the decisions of another country and second, as a tool to generate high revenues from gas transit relations. Robert Larson argues that there were several cases when Russia tried to use its leverage in the gas supply sector to put pressure on Ukraine, Belarus and some Central Asian countries.[4] Some of them were successful, some not. Within the complex interdependence theory interaction between states will most likely increase leading to cooperation, while the role of the power balance will diminish but still remains important. Excessive dependence of producing countries on a particular gas-exporting route made both sides vulnerable to a long-term energy supply disruptions. That is why, gas supply relations within the Eurasian region up until recently have been characterized as relatively stable. However, such dependence could not discourage energy actors from causing short-term supply cuts to gain economic and political leverage. With decreasing dependence of exporting states on Russian and Ukrainian transit infrastructures vulnerability of long-term supply disruptions was replaced by simply a sensitivity to supply cuts, which could be sacrificed for higher goals. The fact that pipelines had to cross the territory of a sovereign country or countries, which in practice has the capacity, although not the

[3] Chas. W. Freeman, Jr., "Arts of Power: Statecraft and Diplomacy," Washington: United States Institute of Peace Press, 1997, 2

[4] Larson L., Robert , "Russia's Energy Policy: Security Dimensions and Russia's Reliability as an energy supplier," FOI Swedish Defence Research Agency Defence Analysis, R-1934-SE, 2006, 202

right, to unilaterally abrogate any agreement on energy supply, made the situation even more complicated.

What matters the most is that to what extent, being asymmetrically interdependent, transit countries can use their power and react to the existing or possible alternatives. Complex interdependence theory imply that the less dependent state in gas transit relations is the one for which the termination or drastic alteration of the relationship in gas supply chain costs least. In this context energy supply interactions, it is not so much about who is stronger and who is weaker, but rather about the different types of power that interacting parties possess. In the Russia-Ukraine gas transit relations, Ukraine as a transit country up until recently tried to use its structural power to keep the present path of gas to Europe through its territory. Russian dependence on Ukrainian infrastructure was the source of political and economic leverage of the latter. Besides Ukraine financially benefited from high transit fees for the Russian gas. Russia, on the other hand, as an exporting country wanted to diversify its transit routes to decrease its dependence on Ukraine. Interestingly though, being a transit country for Central Asian gas, Russia tried hard to keep Central Asian gas producers dependent on it and did its best to prevent building alternative pipeline routes bypassing Russian territory.

Cooperative game theory and bargaining power

From economic perspective transit countries use their favorable position as bargaining power, which is the capacity to generate

intended negotiation outcomes.[5] Bargaining is both a cooperative and a conflictive decision-making mode.[6] Bargaining is cooperative because all parties involved can improve their initial status quo situation by means of coordinating their behavior. It can also be conflictive because every participant would take part in negotiations with their own expectations of gains and would like to profit from the interaction as much as possible.[7] Franz Hubert and Svetlana Ikonnikova, apply cooperative game theory for multilateral negotiations in order to derive the bargaining power of different players endogenously from the architecture of the transport system and its possible extensions. This theory allows quantifying the strategic importance of any alternative option to extend the network by means of calculations depending on how it changes the distribution of the profit. It is important though that pipelines are evaluated in the context of the whole network.[8]

According to the theory, the power of a country is determined by its control of existing transport capacities. But in order to obtain a comprehensive assessment of countries relative bargaining power, alternative pipelines and possibility to extend existing ones should also be taken into account.[9] For transit countries the share of the profit is reflected in transit fees. Since it is often difficult to use

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[5] Av Charles W. Freeman, Jr., "The Diplomats Dictionary," National Defense University Press, Washington DC. <http://books.google.com/books?hl=no&id=SXFePmd2uEIC&q=arts+of+power>

[6] Schneider, Gerald, "Capacity and Concessions: Bargaining Power in Multilateral Negotiations," Millenium – Journal of International Studies, 2005, 670 <http://mil.sagepub.com/cgi/content/abstract/33/3/665> (R. Harrison Wagner, "Bargaining and Conflict Management," Multiple Paths to Knowledge in International Relations, eds. Zeev Maoz et al. (Lexington: Lexington Books, 2004) 39-72)

[7] Schneider, Gerald, "Capacity and Concessions: Bargaining Power in Multilateral Negotiations," 670

[8] Hubert, Franz, "Strategic investment in international gas transport systems," EIB Papers, Volume 12 №2, 2007, 79 <http://www.eib.europa.eu/attachments/efs/eibpapers/eibpapers_2007_v12_n02/eibpapers_2007_v12_n02_a03_en.pdf>

[9] Hubert, Franz, "Strategic investment in international gas transport systems," 64

"objective" or "fair" way of setting transit fees, the outcome in the form of transit agreements depends upon relative bargaining power.[10]

"Good" or "bad" transit country

Producers, consumers and transit countries may mutually benefit from being interdependent if they cooperate and coordinate their actions. Robert Jackson and Georg Sørensen argue that rising interdependence between producers and transit countries may produce incentives to avoid conflicts and compel states to engage in more intensive forms of cooperation.[11] The role of a so called "good transit country", which tends to produce predictable conditions for the most cost efficient way to transport energy with minimal disruptions while enjoying internal security and stable government, is crucial.[12] This is an issue of confidence on which to build partnership in gas supply relations. However, actors do not always act in a predictable way and refrain from using energy as a weapon.[13] "Bad transit country" may produce disorder in which cost-inefficient economic transportation methods and routes are chosen. It is usually a common practice in states with unstable government and bad security conditions.[14] The overall relationships between states also affect stability of energy supplies over the territory of another country. For instance, a country with friendly

[10] Stevens, Paul, "Transit Troubles Pipelines as a Source of Conflict," 15
[11] Kaptur, Karolina and Roksana Rauk, "The EU's partnership with Russia in the energy sphere," 24 (Jackson, Robert, Georg Sørensen. "Introduction to international relations: theories and approaches." 3rd ed., Oxford: Oxford University Press, 2007. 100-115)
[12] Paul Stevens, "Transit Troubles Pipelines as a Source of Conflict," A Chatham House Report, 2009, 11 <http://www.isn.ethz.ch/isn/Digital-Library/Publications/Detail/?ots591=CAB359A3-9328-19CC-A1D2-8023E646B22C&lng=en&id=99212>
[13] Keohane, Robert O., and Joseph S. Nye, "Power and interdependence," 160
[14] Paul Stevens, "Transit Troubles Pipelines as a Source of Conflict," 11

attitude to another state might not consider 30 percent energy dependency as a security challenge and would further develop joint cooperation, while two states with relatively opposed relations might perceive even 10 percent of dependence as quite a serious obstacle.[15]

Inherited gas transport infrastructure as a main source of transit power

The Eurasian elaborate pipeline systems, which transport Central Asian and Russian gas to and through Russian territory then through Ukraine and Belarus to Europe was largely established in the 1960s, 1970s and early 1980s.[16] The former Soviet space had a complete gas extraction and distribution system, which was broken economically and politically into pieces after disintegration of the Soviet Union. However, due to the importance of existing gas transport pipeline networks for the economies of both former Soviet republics and European consumers, it had to be put back together very quickly. In the middle of 2000s 25% of the European energy consumption came from natural gas[17] and about 57% of this was imported[18]. Not surprisingly though that 50 percent of gas import came from and via Russia.[19] Even though this amount has decreased down to 30% in 2013 it is still significant.[20] The Eurasian

[15] Palonkorpi, Mikko, "Energy Security and the Regional Security Complex Theory," 5
[16] Ericson, Richard E., "Eurasia Natural Gas Pipelines: The Political Economy of Network Interdependence," 30
[17] Hubert, Franz, "Strategic investment in international gas transport systems," 65
[18] Cohen, Ariel, "Europe's Strategic Dependence on Russian Energy," The Heritage Foundation Leadership for America, 2007 <http://www.heritage.org/Research/Europe/bg2083.cfm>
[19] Hubert, Franz, "Strategic investment in international gas transport systems," 65
[20] Institute for Energy Research, "Ukraine: An Important Transit Country for Natural Gas and Petroleum," 2014 http://instituteforenergyresearch.org/analysis/ukraine-an-important-transit-country-for-natural-gas-and-petroleum/

gas supply system can be technically divided into two parts: first, gas transport network from Central Asian producers (mainly Turkmenistan, Uzbekistan and Kazakhstan) to Russia; second, the network that transports Russian and to some extent Central Asian gas to Ukrainian and Central and West European customers.

Russia – Ukraine - Europe gas pipeline networks

The former Soviet Union first started to supply gas to Western Europe in the late 1960s, through eastern Ukraine and Czechoslovakia to Austria and Germany. This pipeline network is part of what is called the Southern System.[21] Ukraine remained the only gas transit country to Europe until 1990s.[22] However, after the collapse of the Soviet Union the map of gas supply routes has been gradually changing. After the collapse, although technically pipeline networks remained almost the same, now Russia found itself in a relatively uncomfortable position that its only supply chain to Western Europe passed through several newly independent states and Russia had to purchase/barter and transport Central Asian gas to which it previously had free access. Within newly established mechanism of export profits distribution, Ukraine started bargaining over its share. The fact that the only transit route to Europe was in Ukraine's disposal gave it a very strong bargaining leverage.

In order to avoid high dependence on Ukraine, Russia decided to diversify its transit routes. Russia proposed building alternative pipelines bypassing Ukraine. The first of such alternatives put into

[21] Hubert, Franz, "Strategic investment in international gas transport systems," 65
[22] Ikonnikova, Svetlana, "Coalition Formation, Bargaining and Investments in Networks with Externalities: Analysis of the Eurasian Gas Supply Network," Munich Personal RePEc Archive Paper № 915, 2005, 6 <http://mpra.ub.uni-muenchen.de/915/>

operation in 1998 run through Belarus and Poland and brought the Russian gas to Germany. The pipeline capacity of newly built Yamal 1 (28 bcm/y) was put against 70 bcm/y Ukold pipeline network.[23] To further decrease its dependence on Ukrainian gas transit infrastructure Russia started considering to build Yamal 2 additional bypass pipeline. However, when Yamal 1 started the transmission of gas, Belarus initiated renegotiations over a payment for the transit. Tension on transit price negotiations deterred Russia from increasing the capacity of Yamal track.

In 2003 Russia promised to invest in upgrading pipelines running through Ukraine in exchange of control over transit capacities. The upgrade project aimed to raise the capacity of existing system by 15 bcm/y, which is still the cheapest option to increase the capacity of the existing gas transport networks.[24] However, Ukraine refused to sign a long-term contract with Russia concerning its control over Ukrainian transit infrastructure. Strained relations with Belarus on price negotiations made the Russian side choose extreme measures and build a pipeline avoiding any transit country on its way to the European market. Of all alternatives to extend the transit capacity of gas supply network, in 2005 Russia decided to choose the most expensive option but at the same time politically the most secure one. North European Gas Pipeline started moving Russian gas (Nord Stream – capacity 55 bcm- 2 pipeline: 27,5 bcm each)[25] to Germany through the Baltic Sea, avoiding any transit country in 2011.

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[23] Ikonnikova, Svetlana, "Coalition Formation, Bargaining and Investments in Networks with Externalitie," 7

[24] Ikonnikova, Svetlana, "Coalition Formation, Bargaining and Investments in Networks with Externalitie," 7

[25] Kari Liuhto, "The EU-Russia gas connection: Pipes, politics and problems," Electronic Publications of Pan-European Institute, 2009, 133 <www.tse.fi/pei>

In the 1990 Ukraine enjoyed the status of the only transit country for Russian gas. When Yamal 1 started operating Ukraine's transit leverage decreased down to 80%. Two pipelines of the Nord Stream network halved Ukraine's transit power. With projected implementation of either South Stream or Southern Gas Corridor, Russia will barely need Ukraine transit network.

Pipeline infrastructure to transport Central Asian gas to external markets

The conflict over gas supply between Russia as a producer, on the one hand, and Ukraine and Belarus as transit countries, on the other, caused the Central Asian gas-producing countries to search for alternative ways to export their resources. Five main streams of the Central Asia-Center (CAC) and two main runs of the Bukhara – Ural pipeline to and via Russia transported most of the Central Asian gas. Four of the Central Asia – Center pipelines run from Turkmenistan via Uzbekistan and Kazakhstan to Russia, while one of them goes along the coast of the Caspian Sea via Kazakhstan to Russia. There are also two branches of the Bukhara – Ural line running from Uzbekistan through Kazakhstan to Russia. Although the projected maximum capacity of all the arterial gas pipelines running into or via Russia is 100,5 – 122,8 bcm, over the years lack of investments reduced the capacity down to 63 – 77 bcm.[26]

In 2007, the total net export of Central Asian natural gas accounted for 71,3 bcm (Turkmenistan 54,3 and Uzbekistan 14,7 and Kazakhstan 2,3 bcm). Most of this gas went to or through Russia

[26] Paramonov, Vladimir, "The Future Supply Of Gas From Central Asia To Russia: An Expert Assessment," Defence Academy of the United Kingdom, Central Asian Series 08/05E, 2008, 7 <http://se2.isn.ch/serviceengine/FileContent?serviceID=10&fileid=DF39B22B-A86F-E7BB-FF16-626BEC897F9B&lng=en.>

(60 bcm: around 48,1 bcm from Turkmenistan and 10,5 from Uzbekistan, the remainder from Kazakhstan) to the European market.[27] Having benefited a lot from re-exporting Central Asian resources Russia used its political and transit leverage to block projects designed to diversify energy export dependence of the former. To sustain Central Asian countries' dependence on Russian infrastructure Russia proposed to upgrade four runs of the Central Asia-Center pipeline system from current 60 bcm/y capacity to 90 bcm/y and complete the Caspian Coastal Pipeline with the capacity of 20 bcm/y to transport gas from western Turkmenistan, Uzbekistan and Kazakhstan.[28] Russia could not imagine, at that time, that the overall gas import from Central Asian region would decrease more than twofold with most of the resources moving towards Chinese direction in less than five years.

The source of Ukrainian gas transit power

Ukraine's resource potential, strategic location and existing infrastructure used to be the main source of its transit and bargaining power. However, being too dependent on Russian energy resources Ukraine could not afford losing gas supply for a long period. Ukraine consumes between approximately 60 and 75 bcm of gas annually, which is far beyond the proportion to the size of its economy and current 20 bcm/y gas production.[29]

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[27] International Energy Agency Working Paper Series, "Perspectives on Caspian Oil and Gas Development," Directorate of Global Energy Dialogue, 2008, 10 <http://www.iea.org/about/copyright.asp>

[28] International Energy Agency Working Paper Series, "Perspectives on Caspian Oil and Gas Development," 18

[29] Chow, Edward and Jonathan Elkind, "Where East Meets West: European Gas and Ukrainian Reality," 81

Analysis of gas transit pipeline network illustrates that until South Stream/Southern Gas Corridor starts operating Ukraine remains a major transit country with the capacity to transport largest (around 50%) portion of Russian gas to Europe (80% of the Russian gas exports to Europe had previously passed through Ukraine[30]). In addition, Ukraine has a comparatively large gas storage capacity. The country can store up to 35 bcm of gas in underground gas storage systems, mainly located in the west of the country – an ideal location for serving West European gas customers.[31] The location of Ukrainian gas storages in the West of the country, has both economic (gas transportation require fuel gas to push natural gas through pipelines for a long distance, thus it can be easily and cheaply transported to Europe) and security significance (the ongoing crisis in Ukraine proved it risky to store strategically important resources in the eastern part of the country with dominant Russian population[32]) for the current Ukrainian government. Ukraine could always open storages and use that energy to compensate insufficient gas supplies from Russia. In light of current gas crises between Russia and Ukraine having such storage capacities proved to be useful. Besides, Ukraine has its own gas production facilities. Gas production capacity of the country accounts for 20 bcm/y (peak of Ukraine gas production was almost 70 bcm in 1975, more than the total consumption of Germany, Italy, and the United Kingdom at that time).[33] These unique

[30] Stern, Jonathan, "The Russian-Ukrainian gas crisis of January 2006," Oxford Institute for Energy Studies, 2006, 2 <http://www.oxfordenergy.org/pdfs/comment_0106.pdf>

[31] Chow, Edward and Jonathan Elkind, "Where East Meets West: European Gas and Ukrainian Reality," The Washington Quarterly, Volume 32, number 1, 2009, 81

[32] "Ukraine: Possible Backlash From an Anti-Russian Move," Stratfor Galobal Intellegence, 2008, <http://www.stratfor.com/memberships/122053/analysis/ukraine_possible_backlash_anti_russian_move>

[33] Chow, Edward and Jonathan Elkind, "Where East Meets West: European Gas and Ukrainian Reality," 79

facilities (storage and production) provide Ukraine certain leverage to sustain short-term supply cuts. But the gas storage capacity is for the most part a season long energy security guarantee. Afterwards when the storage is empty 20 bcm of domestic production will not save it from energy crisis.

Short-term gas supply cuts in the gas transit relations between Russia and Ukraine

As a legacy of the Soviet Union, Russia inherited control over the integrated system of the Eurasian gas supply network. However, newly independent republics started challenging Russian interests in the gas supply chain. Russian authorities also actively used its power to influence the decision-making of Ukraine. In 1993, Russia cut 25% of Ukraine's gas supply, officially due to non-payments, a week before an important meeting during which the two sides would discuss a Russian ultimatum on the surrender of nuclear weapons and the Black Sea Fleet. Next attempt by Russia to use energy diplomacy appeared in 1995, when Russia raised its export price on gas for Ukraine while proposing that Ukraine join the CIS Customs Union. Both attempts to use energy as a foreign-policy instrument brought no result.[34] Since then energy relations have been developed on Russia's frequent accusations of Ukraine of siphoning off gas bound for Europe, while Ukraine used its gas transit power to resist Russia's attempts to influence its foreign policy. Regular disputes with Russia over the debt amount and pricing contracts have worsened relations between two states. The most notorious

[34] Fredholm, Michael, "The Russian Energy Strategy & Energy Policy: Pipeline Diplomacy or Mutual Dependence?" Conflict Studies Research Center 05/41, 2005, 17 <www.da.mod.uk/colleges/arag/document.../russian/05(41)-MF.pdf>

disagreement over gas price subsidies took place in late 2005 and early 2006, when Gazprom chose to unexpectedly cut off gas to Ukraine for four days.[35] However, supplies were never completely cut off during this conflict and causing most countries a little more than minor inconvenience. In less then three years disagreements between Russia and Ukraine led to another conflict. Ukraine and Russia failed to agree on a price for Russian gas supply to Ukraine and a tariff for the transit of Russian gas to Europe before the previous agreements expired on December 31st 2008. Russian exports to Ukraine were cut off on January 1st. Exports to sixteen European Union member states were drastically reduced on January 6th and cut completely from January 7th, which restarted only on the 20th of January.[36] Fourteen days of complete gas supply cut off had more serious consequences both for European consumers' economy and Russia-Ukraine's image of reliable gas supply countries.

According to some estimations the number of incidents in the Eurasian gas supply sector, such as cut-offs, explicit threats, coercive pricing policy and certain take-overs exceeded fifty-five in the period between 1991 and 2006.[37] But, the gas crisis of 2014 is incomparable to previous crises in terms of its impact on the Ukrainian, Russian and European countries' economy and energy security. Russia demands 485 dollars per thousand cubic meters, while Ukraine claimed willingness to buy it for 269 dollars per

[35] Imblum, Mark A., "Russia's Energy Policies and Ukraine's NATO candidacy," Naval Postgraduate School, 2008, 14 <http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA483735&Location=U2&doc=GetTRDoc.pdf>

[36] Pirani, Simon, Jonathan Stern and Katja Yafimava, "The Russo-Ukrainian gas dispute of January 2009: a comprehensive assessment," Oxford Institute for Energy Studies, 2009, 4 <www.oxfordenergy.org/pdfs/NG27.pdf>

[37] Larson, Robert L., "Russia's Energy Policy: Security Dimensions and Russia's Reliability as an energy supplier," 262

thousand cubic meters. Russian gas supplies to Ukraine were cut for over a six months period. What is more important, this overall instability is pushing Russian government to take the last measure to diversify its dependence on Ukrainian infrastructure by building either South Stream pipeline or extend the Russia-Turkey pipeline to reach European borders avoiding Ukrainian territory.

Spill over affect of the Ukrainian gas crisis on Central Asia-Russia gas transit relations

Russia-Ukraine gas crisis had much greater affect for the Eurasian gas supply system than Russia assessed in the beginning. As a result of which Russia lost its almost absolute transit power over the Central Asian natural gas. On the one hand, Central Asian gas was complementary for the Russian economy, from which it benefited a lot in terms of profits from reselling it. On the other hand, the amount of gas imported from Central Asian region helped Russia to fulfill its obligations to the European consumers. Inherited gas pipeline network, sufficient gas reserves to meet growing European demand, complementary network system of gas transit routes and high revenues to the budget were hypothetically supposed to ensure cooperative dynamics in energy export/import and transit relations between Russia and Central Asian producers. However, Russian energy interest over the Central Asian natural resources was connected to the demand coming from the European markets. And Russia-Ukraine gas crisis negatively impacted this demand.

The amount of Central Asian gas arriving at the Russian border has increased from a mere 2.3 bcm in 1998, and 38,1 bcm in 2000, to

63,5 bcm in 2006.[38] Up until 2007 Russia remained a major importer and transit country for the Central Asian gas. Russian - Central Asian gas transit relations have been relatively stable for a long period, although not always fair towards Central Asian energy actors in terms of discriminatory pricing policy. The first major supply disruption occurred when the Russian company Gazprom cut 90 percent of gas imports from Turkmenistan by in 2008.[39] It was the first time when Central Asian countries realized how vulnerable they are in energy relations with Russia.

Gas disruption was a serious strike to Turkmenistan's economy, which at that time was highly dependent on revenues generated from gas export. Even though officially supply cut was a result of explosion on one of the CAC pipelines, the fact that it lasted for so long can be justified only by Russia's inability to profit from re-selling Turkmen gas. A year earlier, not to allow diversification of gas export routes avoiding Russia, Gazprom signed an agreement according to which it was obliged to buy Turkmen gas in an amount of 50 bcm/y for 350 dollars per tcm[40] plus 20 dollars price for transit facilities[41]. Due to the Russia – Ukraine gas crisis, it was unable to pay for and import the entire contracted volumes of Central Asian gas and an accident in the system of the main provider was a convenient way to get rid of its obligations as a buyer. Having engaged in short - term price bargaining disputes

[38] Sagers, Matthew J., "Developments in Russian Gas Production Since 1998: Russia's Evolving Gas Supply Strategy," Eurasian Geography and Economics, volume 48, № 6, 2007, 659

[39] Jarosiewicz, Aleksandra, and Krzysztof Strachota, "The New Great Game – a breakthrough?" Center for Eastern Studies Commentary, 2009, 5 <http://www.osw.waw.pl/files/commentary_26.pdf>

[40] "Rossiya blijayshie chetire-pyat let budet snijat dobichu gaza na 10 procentov," NEWSru.com, Economica, 2009, <http://www.newsru.com/finance/09apr2009/dobycha.html>

[41] Socor, Vladimir, "Turkmenistan Pressured by Gazprom's Halt on Turkmen Gas Imports," The Jamestown Foundation, Eurasia Daily Monitor, Volume 6, Issue 125, 2009, <http://www.jamestown.org/single/?no_cache=1&tx_ttnews%5Btt_news%5D=35193&tx_ttnews%5BbackPid%5D=13&cHash=daaa8568e7>

Russia had no idea that this gas supply cut would have far more serious consequences than expected. In 2012 gas export to Iran and China exceeded the volume of export to Russia. Turkmenistan exported 42.48 bcm of natural gas in 2012, 52% of which went to China, 24% to Russia and 22% to Iran. However, since Europe remains the highest paying and the most reliable energy market, Central Asian countries will continue to be interested in Russian gas transit infrastructure.

Ukraine's changing bargaining power under proposed alternative gas supply networks

Pricing policy in Russia-Ukraine gas transit relations was determined by a number of factors. Prices for gas and gas transit fees were frequently used as a stick or a carrot to achieve certain goals both by Russia and Ukraine. Political changes in Ukraine's internal affairs, which resulted in new pro-Western governments, led to active use of discriminatory pricing policy for natural gas by Russian Federation. Ukraine in its turn during the previous gas crisis was counting on its almost monopolistic transit power to reduce transit fees and gas price set by Russia for its gas. In an attempt to decrease its dependence on Ukraine Russia implemented the Nord Stream pipeline project, thus reducing its dependence twofold.

Ukraine's ability to turn off the gas tap has always been one of the most important tools capable to keep Russian policy in check. The model developed by Franz Hubert and Svetlana Ikonnikova that is based on cooperative game theory suggested that in the status quo situation a grand coalition, which consists of Russia, Ukraine,

Belarus as the main players, would maximize its profit by using the existing capacity of South System, which is 70 bcm/y and Yamal 1 with the capacity of 28 bcm/y. Building new pipelines or/and upgrading existing ones required additional investment. If an increase of gas supply were necessary then the most feasible and cheapest option up to a limit of 15 bcm/y would be upgrading of the South System. To increase energy export beyond that amount new pipeline had to be added. Investing in building Yamal 2 pipeline in addition to Yamal 1 was more efficient than considering bypass extensions in the south. Economically the most expensive pipeline project was Nord Stream, which requires at least yet another doubling of capital expenditures per unit of capacity.[42] However, economically less efficient the Nord Stream pipeline played very important strategic role. Russia put in place the Nord Stream pipeline in 2011.

Franz Huber[43] and Svetlana Ikonnikova[44] calculated the relative bargaining power of the Eurasian gas network players, in which Russia is a producing country and Ukraine, Belarus, and some other countries are transit states for Russian gas. They measured the power of a country by its share in total profit from the gas export business. According to the calculations, since currently demand for Russian gas and production cost is compatible, there would be no need (commercial interest) to increase capacity beyond South and Yamal 1. However, some countries receive their "share", and bargaining power not in the form of economic revenues, but as political concessions on other issues.

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[42] Hubert, Franz, "Strategic investment in international gas transport systems," 71

[43] Hubert, Franz and Svetlana Ikonnikova, "Investment Options and Bargaining Power

[44] Ikonnikova, Svetlana, "Coalition Formation, Bargaining and Investments in Networks with Externalities: Analysis of the Eurasian Gas Supply Network," Munich Personal RePEc Archive Paper № 915, 2005, <http://mpra.ub.uni-muenchen.de/915/>

In the beginning of 1990s Ukraine enjoyed 100% gas transit leverage over the Russian gas exports. When the Yamal 1 was put into operation Ukraine still remained quite an important transit country since almost 80 percent of Russian natural gas exports to Europe passed through its territory. With the construction of the Nord Stream pipeline, which directly links Russia with Germany under the Baltic Sea, Ukrainian transit power decreased down to 50 percent, because from that time on half of the Russian exported gas has reached European market avoiding Ukrainian territory. Russia supplied only 30% of the Europe's gas consumption with only 16% through Ukraine.[45] With the South Stream pipeline, Ukraine may lose its strategic importance as a transit country for Russia, resulting in significant economic loss that was previously earned from transit fees and cheaper energy resources. Complications with gaining the permission from the Romanian government to let the South Stream Pipeline pass its territory forced President Vladimir Putin to make an announcement regarding its withdrawal from this Project. He offered Turkey a discounted gas price for its consent to extend the Blue Stream pipeline from Ankara to the borders of Italy within the framework of the Southern Gas Corridor initiative. In any of these two cases, Russian gas will reach European market avoiding Ukrainian territory and decreasing the transit power of the latter down to 0%.

Unstable gas supply relations force European countries to consider alternative pipeline routes avoiding Russia as well. In this sense, Ukraine as an important transit country can lose its significance, unless this diversification applies only to bypass Russia and retain

[45] Institute for Energy Research, "Ukraine: An Important Transit Country for Natural Gas and Petroleum," 2014 http://instituteforenergyresearch.org/analysis/ukraine-an-important-transit-country-for-natural-gas-and-petroleum/

Ukraine as a transit country. Thus, Ukraine proposed a new option to transport Caspian gas bypassing Russia, the so-called "White Stream". This network will retain Ukraine as a major transit state for Central Asian gas export. Ukrainian officials during the energy conference in Vienna proposed it in 2007, where Ukrainian Prime Minister Yulia Timoshenko asked the European Union to consider participating in it.[46] However, this project is still under consideration.

Russia's gas pricing policy towards Ukraine

When the Soviet energy system collapsed, Russia traded goods for Central Asian energy resources. In the beginning of 2000s both sides agreed to introduce pricing policy for energy resources. Gazprom purchased gas from Turkmenistan for less than 100 dollars per tcm, and sold it for 230 dollars per tcm to RosUkrEnergo, which resold it to Ukraine for 95 dollars per tcm and presumably the rest to Europe for 250 dollars tcm,[47] someone was obviously making money out of it. It is difficult to say for sure, whether such positive discriminatory pricing policy was the result of Ukraine's bargaining power, or Russia's attempt to influence Ukrainian foreign policy by means of carrots, or both of them simultaneously. However, it was pretty clear that gas-pricing variations were used for political purposes by both transit and gas exporting countries.

Unstable gas pricing policies were often a source of disagreements between Russia and Ukraine. There were price consequences for

[46] Ericson, Richard E., "Eurasia Natural Gas Pipelines: The Political Economy of Network Interdependence 47

[47] Jarosiewicz, Aleksandra, and Krzysztof Strachota, "The New Great Game – a breakthrough?" 6

Ukraine for taking more gas than agreed in the contract during the gas crisis of 2009. For siphoning gas the country was charged at 150 percent of the contract price in the period of April-September, and 300 percent during October-March.[48] Ukraine was often unable to pay even the reduced price for its gas and delayed payments.

Russia positions itself as an economic actor, arguing that in pursuit of economic leverage it will not provide energy without getting paid. However, market mechanism does not always prevail when it comes to gas export-import relations. This is clearly illustrated by giving price concession on gas to relatively poor and friendly states such as Belarus, high prices to relatively poor and unfriendly states such as Georgia and high prices to rich and friendly European states. South Ossetia and Abkhazia, for instance, receive gas for free, hardly a market mechanism.[49]

One of the sources of conflict between Russia and Ukraine is the gas pricing mechanism upon which countries often fail to agree. Current Russia-Ukraine gas crisis is not an exception. Russia demands payment in an amount of 485 dollars per tcm according to the agreement signed between Putin and Tymoshenko in 2009. Having accumulated more than 5.5 billion dollars debt, Russia demands prepayment for future gas supplies to Ukraine. To accelerate the process of negotiations Russian government proposed a discounted price of 385 dollars for tcm. However, Ukraine says it is ready to pay 269 dollars per tcm with the condition that the debt

[48] Pirani, Simon, "The Russo-Ukrainian gas dispute of January 2009: a comprehensive assessment," 26

[49] Larson, Robert L., "Russia's Energy Policy: Security Dimensions and Russia's Reliability as an energy supplier," 211

is recalculated according to this price.[50] Even though gas supplies in the amount of 1 bcm was restored, the overall conflict has not been resolved yet.

Russia's bargaining power in the context of existing and planned gas pipeline networks

By using its transit power Russia developed policies that gave it an upper hand in price negotiations with Central Asian producers. Russia imported Central Asian natural gas at a low price and exported it for a much higher price. Turkmenistan's land-locked geographical location limited the space for maneuvering to diversify its dependence. Moreover, the fact that Turkmenistan's exports had to pass through Russia or Iran, the two countries with the biggest proven natural gas reserves in the world and practically Turkmenistan's main competitors further complicated energy relationships. In the absence of extensive energy security interests in importing Turkmen gas Russia could easily sacrifice stable gas supplies for certain political and economic gains. Despite their excessive vulnerability, Central Asian states never seriously attempted to achieve "independence" from Russia. All they wanted is to restructure commercial relationships in order to achieve a more politically acceptable framework of economic gains and energy led sustainable development.

With increasing interest of external potential customers for the region' natural gas, Central Asian states started demanding fair pricing policy and an ability to sign direct contracts with European

[50] Mercouris, Alexander, "Ukraine-Russia Gas Crisis Looms Because Europe Refuses to Face Reality," Sputnik International, 2014 <http://en.ria.ru/authors/20141022/194456710/Ukraine-Russia-Gas-Crisis-Looms-Because-Europe-Refuses-to-Face.html> (December 5, 2014)

consumers keeping Russia as a transit country only. Russia refused to agree on the second term, but increased the price for Central Asian gas up to the European level. Central Asian counterparts were ensured that there was no difference to change trader to sell gas to Europe, and if they want to sell additional gas they can sell it to China, but not Europe.[51] Central Asian countries accepted this condition hoping for a long and stable export of natural gas to Russia for the best possible price. After all this is what they wanted. However, an extensive dependence of Central Asian producers on solely Russian infrastructure proved to be quite risky in the end.

Russia's exercise of transit power towards Central Asian countries: discriminatory pricing policy

The importance of alternative gas pipelines and the possibility to bypass monopolist Russian gas transit network should have never been underestimated. Alternative routes significantly affected price negotiation outcomes for the countries involved in gas transit relations. For a long period, Russia enjoyed its favorable position as a single gas transit network owner to transport Central Asian gas to Europe. Using its bargaining power, Russia established a payment system, which was far below that of average world prices. Up until the beginning of 2000s Central Asian countries received goods in barter for their energy. Pricing mechanism was later introduced, but it was far from being fair towards Central Asian exporters. In 2006 Gazprom was buying natural gas from Turkmenistan for 60 dollars

[51] Azarov, Dmitriy, "Gasprom ne razreshil Kazakhstanu torgovat s EC gazom napryamuyu," Kommersant, № 90, 2009, <http://lena.ru/news/2009/05/22/gas>

per tcm, and selling it to Ukraine for 95 dollars per tcm, while the average price in Europe was about 260 dollars per tcm.[52]

With increasing interest for the Central Asian natural gas by other regional and global customers, Turkmenistan, Uzbekistan and Kazakhstan started demanding fair prices for their resources. Alternative pipeline options significantly raised Central Asian producers' bargaining power. In an attempt to keep Central Asian region under its sphere of influence Russia agreed on terms of gas import from which it could no longer benefit. According to the agreement, Gazprom had to pay, on average 350 dollars per tcm of Central Asian gas in 2009, while Russia sold the same amount of gas to Ukraine for 230 dollars per tcm and to Europe for 280 dollars per tcm. Russia acknowledged losing money from the Central Asian contracts but expected to recover the loss when increasing demand is restored.[53]

However, Russia and Turkmenistan conducted an agreement on a "take or pay" basis, which implied that Russia was obliged to pay for Turkmen gas whether it physically received it or not as long as Turkmenistan kept sending the gas. According to the agreement Russia had to purchase gas in the amount of 50 bcm/y for 350 dollars per tcm,[54] and itself cover 20 dollars transit fees[55], which

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[52] Paramanov, Vladimir and Strokov Aleksey, "Structural Interdependence of Russia and Central Asia in the Oil and Gas Sectors," Defence Academy of the United Kingdom, 07/16 E, 2007, 3 <http://se2.isn.ch/serviceengine/FileContent?serviceID=10&fileid=95971F3D-8C83-808D-6EC6-D71D94950584&lng=en.>

[53] Kramer, Andrew E., "Falling Gas Prices Deny Russia a Lever of Power," 2009, <http://www.nytimes.com/2009/05/16/world/europe/16gazprom.html?_r=1&th=&emc=th&pagewanted=all>

[54] "Rossiya blijayshie chetire-pyat let budet snijat dobichu gaza na 10 procentov," NEWSru.com, Economica, 2009, <http://www.newsru.com/finance/09apr2009/dobycha.html>

[55] Socor, Vladimir, "Turkmenistan Pressured by Gazprom's Halt on Turkmen Gas Imports," The Jamestown Foundation, Eurasia Daily Monitor Volume 6, Issue 125, 2009, <http://www.jamestown.org/single/?no_cache=1&tx_ttnews%5Btt_news%5D=35193&tx_ttnews%5BbackPid%5D=13&cHash=daaa8568e7>

meant Gazprom could not any longer profit from re-sales or swaps of Turkmen gas to Europe. Pricing policies for Central Asian gas, which was subject for change due to consideration of alternative pipelines, resulted in increasing bargaining power of Central Asian counties and diminishing of Russian transit power. China signed gas agreements with Central Asian producers to import up to 80 bcm of gas annually by 2018. With current level of gas export capacity Central Asian states will have to redirect all their gas towards Chinese direction leaving Russia with no power to influence regional exporters' decision-making on the basis of its transit leverage.

Conclusion

Due to Central Asian countries' land-locked geographical location pipelines turned to be the most cost efficient way to transport natural gas. However, once installed, gas transport networks generate large quasi-rents and at the same time become quite inflexible. Transportation of natural gas requires large upfront investments in transport facilities with relatively long lifetime and low operating cost. The analysis of Russia-Ukraine and Central Asia-Russia gas transit relations proved the fact that conditions for operating such pipelines can be relatively unstable due to frequent gas supply disruptions, threats of supply cuts, discriminatory pricing policies.

The following conclusions were generated from the comparative analysis of Russian and Ukrainian gas transit powers. First, the inherited Eurasian gas transit network infrastructure allowed Russia and Ukraine to use its transit leverage to either strengthen cooperation or generate short-term gas conflicts to promote its

political and economic interests. Second, the gas transit strategy of both Ukraine and Russia has frequently been driven by political motivations and used as a foreign policy instrument against neighboring countries. Third, the Eurasian gas supply network was characterized by high level of interdependence. Although energy dependence could lead to cooperation and high level of energy security, gas transit disruptions show that interdependence could not ensure stable and reliable supply of energy resources. Interdependence was just a barrier against long-term gas supply disruptions. Fourth, the higher transit power of the transit country is the more favorable transit tariff this country enjoyed. However, due to the complexity of relationships between gas producers and transit countries, sometimes actors received their "share" and bargaining power not in the form of economic revenues, but as political concessions on other issues. Fifth, Russia or Ukraine threatened to use their transit power to punish or reward political behavior of other countries too frequently, which caused a reaction, countermeasure (for instance, investment in cost inefficient alternative pipeline projects bypass transit country) to render further use of that leverage ineffective. Due to frequent gas supply disruptions Russia decided to diversify its dependence on Ukraine as a transit country by choosing economically inefficient, but politically more secure options – Nord Stream pipeline and potentially South Stream pipeline. Moreover, Russia-Ukraine gas crises had a spill over affect on Russia-Central Asian energy relations allowing China to enter and take over the significant part of the Central Asian energy market. As a result, both Russian and Ukrainian gas transit powers have significantly decreased over the recent years. If Russia builds South Stream, Ukraine will completely lose the possibility to use its transit power. Russia's attempt to

restore its influence over the Central Asian natural gas producers may lead to a direct competition and conflict with China.

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