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Why do two oil and gas rich countries differ in their competitiveness? A comparative study of Norway and Russia

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Abstract

The aim of this research is to investigate the differences in the competitiveness of Norway and Russia, two oil and gas rich countries, with the aid of the global competitiveness index 4.0 framework. Results show that the differences arise in the areas of institutions, innovation capability, financial system, labour market, and skills, which are influenced to a certain extent by variations in government policies and national cultures. Findings of this very first comparative competitiveness study of Norway and Russia support the argument that natural resources are not by themselves sufficient to create competitiveness, and they provide suggestions for Russian policymakers in order to improve Russia's competitiveness.

Keywords: Competitiveness, global competitiveness index 4.0 framework, Norway, Russia.

1. Introduction

The concept of competitiveness has attracted increasing attention since the seminal work of Porter (1990) on the competitive advantage of nations. It has originally been considered from an economic perspective as “*the ability of firms to compete in international markets while simultaneously expanding the wealth and living standards of citizens*”, and the outcomes have been evaluated by measures such as gross domestic product (GDP) per capita, employment, exports, and inward foreign direct investments (Porter 1990; Aiginger and Vogel 2015; IMD World Competitiveness Centre 2019). There have been debates on whether competitiveness is a more appropriate term for firms than locations (Krugman 1994), and whether attractiveness is a more suitable term for locations (Sölvell 2015). Recent studies have challenged the economic perspective and added “beyond GDP” measures on social goals, ecological goals, and goals for the quality of life (Aiginger and Vogel 2015).

Studies have ranked the competitiveness of countries, regions and states using different frameworks and measures. These include for example the global competitiveness index 4.0 framework of the World Economic Forum (Schwab 2019), the world competitiveness index developed by the IMD World Competitiveness Centre (IMD World Competitiveness Centre 2019), the EU regional competitiveness index (Dijkstra et al. 2011), the UK competitiveness index (Huggins 2003), the world competitiveness index of regions (Huggins et al. 2014), The Beacon Hill Institute's state competitiveness index (The Beacon Hill Institute 2015), and Milken Institute's state technology and science index (Klowden et al. 2018). Ranking countries, regions and states by their competitiveness is the first step to recognize differences among them, but there is also the need to investigate further where these

differences are coming from in order to understand the underlying determinants of competitiveness. There have been attempts to understand the causes of differences in competitiveness using for example the diamond model of Porter (1990) or the emerald model of Sasson and Reve (2012) (see Akpinar et al. 2015; 2017), but there is need for more research in this direction. We aim to contribute to this need by making an in-depth investigation on differences in the competitiveness of Norway and Russia, two countries which are rich in the natural resources of oil and gas.

Natural resources of a country do not necessarily lead to competitiveness (Porter 1990). Sound monetary and fiscal policies, institutions for human development and effective politics, the quality of the business environment, the state of cluster development, and sophistication of company operations and strategy are key determinants of competitiveness (ibid.). Countries rich in the natural resources of oil and gas provide a good research context for studying this proposition. Indeed, among the oil and gas rich countries the United States of America (USA) ranks 2nd, Norway 17th, United Arab Emirates 25th, Qatar 29th, Saudi Arabia 36th, Russia 43rd, Kuwait 46th, Nigeria 116th, and Venezuela 133rd in their competitiveness (Schwab 2019). This research selected the two European countries, Norway and Russia, and aimed to understand the reasons behind Norway's higher level of competitiveness compared with Russia, despite the similarity that the oil and gas industry is highly important for both countries, accounting for ca. 17% of Norway's GDP (Norwegian Petroleum 2019) and ca. 30% of Russia's GDP (Candau 2018). This aim will be achieved by using the global competitiveness index 4.0 framework, finding out initially the main areas of differences, and then searching for deeper insights about the reasons behind them via available secondary data and interviews with two academics who were knowledgeable about both countries. The contribution of this research is that it is the first study to compare the competitiveness of these two countries. Results from this research will be relevant for Russian policy makers to improve Russia's competitiveness. The good practices from Norway can also be benchmarked by other countries that are rich in oil and gas. All suggestions, however, should be treated with caution by taking into consideration local contextual factors.

The rest of the paper is organized as follows. In section 2 relevant literatures are reviewed and the theoretical framework is introduced. The applied methodology is described in section 3, and the results are presented in section 4. Finally, the paper ends with a discussion of the findings in section 5.

2. Literature review

2.1 Competitiveness and its assessment

There are different views on what competitiveness means. The traditional narrow scope regarded it as price competitiveness and measured it with indices based on costs and productivity (Aiginger and Vogel 2015). This was a dangerous conceptualization that could put both firms and locations into a zero-sum race to minimize their costs (Krugman 1994). Furthermore, although a country's prosperity may be improved by natural resources, they have no direct contribution to productivity as can be seen in examples of highly competitive countries with limited natural resources like Germany and Switzerland (Porter 1990; Delgado et al. 2012). In line with these arguments the scope of competitiveness moved away from price towards quality, studying structures and capabilities in a country like the innovation ecosystem, the education system, institutions, and the state of clusters (Aiginger and Vogel 2015). According to this view, competitiveness is about the ability of institutions and policies to build a benevolent environment for the development of relevant structures and capabilities for businesses to flourish and citizens to prosper (Garelli 2006; Schwab 2018). It can also be defined as a country's ability to provide citizens with rising and sustainable living standards, enabled by high levels of productivity and innovativeness of firms (Porter 1990; Delgado et al. 2012). Productivity is a critical determinant of economic growth, and it reaches a high level when there are policies and institutions set to provide citizens with conditions allowing them to prosper (Hall and Jones 1999).

Competitiveness has been assessed by various frameworks and indices on both its enablers and outcomes. One popular framework is the diamond model by Porter (1990), according to which the determinants of competitiveness are factor conditions, demand conditions, related and supporting industries, and the context for firm strategy, structure and rivalry. In addition, the government and chance events can impact on competitiveness through their

influences on the four determinants (ibid.). The determinants are not static, and mutual interactions between them further strengthen a country's diamond (ibid.). Following globalization and regional integration initiatives, the viability of the diamond model has been questioned, and as a result, the double diamond model, which takes into consideration also the diamond of a country's most important trading partner, has been introduced (see Rugman and D'Cruz 1993; Moon et al. 1998; Cho and Moon 2005). A more recent framework of competitiveness is the emerald model by Sasson and Reve (2012). This model assesses the competitiveness of a country by its attractiveness for foreign direct investments, measured by the determinants of educational attractiveness, talent attractiveness, R&D and innovation attractiveness, ownership attractiveness, environmental attractiveness, and cluster attractiveness. Akpinar et al. (2015) and Akpinar et al. (2017) have tested the determinants of this model in the contexts of European regions and the states of the USA respectively. Akpinar and Mermercioglu (2014a) and Akpinar and Mermercioglu (2014b) have also used this model for benchmarking clusters. Although both of these frameworks are equally suitable for our purposes, we opted for a framework that has already compared the competitiveness of countries.

There are two frameworks that analyse competitiveness at country level: the world competitiveness index developed by the IMD World Competitiveness Centre, and the global competitiveness index 4.0 framework by the World Economic Forum. The world competitiveness index has more than 332 measures on economic performance (81 measures), government efficiency (71 measures), business efficiency (72 measures), and infrastructure (108 measures) (see IMD World Competitiveness Centre 2019). While having so many measures provides a more detailed analysis, it creates additional complexity. The global competitiveness index 4.0 framework was introduced in 2018, developed from its predecessor, the global competitiveness index, by integrating changes coming with the Fourth Industrial Revolution. It assesses competitiveness of countries using a detailed scheme of 98 indicators grouped under 12 pillars and four categories (see Schwab 2019). We selected it as the theoretical framework for this research for two reasons. First, it already ranks Norway and Russia along the 98 indicators and thus offers a suitable starting point for the comparative study. Second, this very recent framework covers best the recent developments in technology. See section 2.2 for further introduction of this framework.

2.2 Theoretical framework

The global competitiveness index 4.0 framework defines competitiveness as the set of institutions, policies, and factors that determine a country's level of productivity, leading to higher level of living standards (ibid.). The difference with its predecessor is that it reflects better technological breakthroughs like the Internet of Things and artificial intelligence, aiming to provide policy makers with new insights in the light of these rapidly developing new technologies. Its 12 pillars are grouped under four categories: enabling environment, human capital, markets, and innovation ecosystem. The enabling environment includes the institutions, infrastructure, ICT adoption, and macroeconomic stability pillars, and the human capital covers health and skills pillars. The markets category is made up of the pillars of product market, labour market, financial system, and market size, and finally the innovation ecosystem looks into the business dynamism and innovation capability pillars. All of the pillars are of equal importance, and one cannot be replaced with another. Some indicators of the 12 pillars are the following.

1. *Institutions*. This pillar includes a variety of indicators related to security, social capital, checks and balances, public sector performance, transparency, property rights, corporate governance, and the future orientation of the government.

2. *Infrastructure*. This pillar reflects the quality of the transportation infrastructure (e.g., roads and railroads) and the utility infrastructure (e.g., access to electricity and water supply) in the country.

3. *ICT adoption*. This pillar measures the penetration of mobile-cellular and fixed-broadband internet subscriptions in the country.

4. *Macroeconomic stability*. This pillar looks at the inflation level and the dynamics of debt in the country.

5. *Health*. This pillar assesses the healthy life expectancy of citizens.

6. *Skills*. The pillar addresses the education level and the skills of current and future workers.

7. *Product market*. This pillar covers the market conditions in the country such as the degree of the market's openness to competition and trade across borders.

8. *Labour market*. The pillar looks at employer-employee relationships, the rights of the employees, and the availability of incentives for them to utilize their potential based on meritocracy.

9. *Financial market*. The availability of financial products (i.e. the depth of the financial market) and the overall risks of the country's financial system (i.e. the stability of the financial market) are covered by this pillar.

10. *Market size*. This pillar assesses the size of the country's GDP as well as the ratio of imports of goods and services to GDP.

11. *Business dynamism*. This pillar measures the administrative requirements for doing business and the entrepreneurial culture in the country.

12. *Innovation capability*. Finally, this pillar addresses the interaction and diversity in the workforce, the extent of R&D activities, and the ability to commercialize innovations in the country.

3. Methodology

3.1 Research approach and context

This is a qualitative comparative study, the aim being the exploration of deep insights on the differences between Norway's and Russia's competitiveness with the aid of the global competitiveness index 4.0 framework. Norway and Russia were selected for the research because they are two European countries that are rich in natural resources of oil and gas, but they differ significantly in their competitiveness. Understanding the determinants of Norway's competitiveness over Russia can guide policy makers of Russia, and possibly to a certain extent also of other countries rich in oil and gas, to build policies and institutions for improving competitiveness.

Norway is a North-European country located on the Scandinavian Peninsula with a territory of 323,759 square kilometres. It is surrounded by the North Sea, the Norwegian Sea, Skagerrak Strait that separates it from Denmark, and the Barents Sea, and it has land borders with Sweden, Finland and Russia. It is a small country with a population of 5.3 million people (of which 17% is immigrants), who mostly reside in cities along the southern coast such as Oslo, the capital, and Bergen (Modig 2018). Ranking 17th in the global competitiveness index (Schwab 2019) and 1st in the social progress index (Social Progress Imperative 2019a), Norway enjoys being 6th most prosperous country in the world with a purchasing power parity (PPP) adjusted GDP per capita of USD 65,603 (OECD 2019a). The oil and gas cluster (representing 17% of GDP) and the maritime cluster are Norway's two globally most competitive clusters (Kokaurov and Akpinar 2019). Norway's exports make up 38.1% of GDP (OECD 2019a), and they are mostly from natural resources exported to the UK (21% of the total export value), Germany (16%), the Netherlands (10%), Sweden (7%) and France (6%) (Trading Economics 2019a). High dependency on oil and gas industry is at the same time Norway's key competitiveness challenge (Kokaurov and Akpinar 2019).

Russia, officially named as Russian Federation, is the world's largest country with a territory of ca. 17,098,000 square kilometres extending over 11 time zones (Bradshaw 2008). It is surrounded by many seas and oceans and has borders with China, Mongolia, North Korea, Kazakhstan, Azerbaijan, Georgia, Ukraine, Belarus, Poland, Lithuania, Latvia, Estonia, Finland, and Norway. With a population of nearly 144 million people (Schwab 2019) and PPP adjusted GDP per capita of USD 24,791 (Social Progress Imperative 2019b), Russia ranks 43rd in the global competitiveness index (Schwab 2019) and 62nd in the social progress index (Social Progress Imperative 2019b). Similar to Norway, Russia is also highly dependent on the oil and gas industry, and its exports, representing 25.7% of GDP (OECD 2019b) and mostly from natural resources, are mainly to China (13% of the total export value), the Netherlands (10%), Germany (8%), Belarus (5%) and Turkey (5%) (Trading Economics 2019b). High dependency on its oil and gas industry is also Russia's key competitiveness challenge (World Economic Forum 2013).

3.2 Data collection and analysis

This research made use of reliable secondary and primary data. The statistics of the World Economic Forum's 2018 global competitiveness report formed the basis for the preliminary analysis to identify the key dimensions of

the differences in the two countries' competitiveness levels. Further secondary data sources included international sources such as OECD, IMF, Trading Economics, and Social Progress Imperative, as well as national sources such as websites of various official organizations in Norway and Russia. In addition, academic and trade publications on Norway and Russia related to the identified differences from the preliminary analysis were utilized. The available secondary data was quite extensive and could be regarded as sufficient for the purposes of the study (see Goodrick 2014), but in order to achieve deeper insights primary data was collected via two interviews. The interviewees were carefully selected to have good knowledge on the competitiveness matters of Norway and Russia. Both interviewees were Russian academics working in Norway for more than ten years. One of them was a researcher at Nord University in Norway, and the other one was an advisor at the High North Center for Business and Governance at Nord University Business School. Interviewing is a reliable data collection method for qualitative research (Eriksson and Kovalainen 2016). Both interviews were semi-structured, and the questions were designed based on the main differences in Norway's and Russia's competitiveness which were identified after the preliminary analysis. The interviewees were asked permission to record the interviews, which were conducted in Russian language, the mother tongue of the interviewees and the corresponding author, via Skype video calls. The recordings were transcribed immediately after each interview.

The data analysis had two stages: the preliminary analysis and the in-depth analysis of the differences. The preliminary analysis was done by comparing Norway's and Russia's performances in all the pillars and sub-pillars of the global competitiveness index 4.0 framework. The findings from the first stage formed the basis for the in-depth analysis of the differences in the second stage, where the pillars and the sub-pillars with the most differences were the focus of investigation. At this stage secondary data from reliable sources and the primary data from the interviews were analysed by the method of qualitative content analysis using codes identified from the pillars and sub-pillars with the highest differences. Data was reduced and organized by the aid of the codes, following the suggestion by Cresswell (2014). This made the analysis process more efficient, and since the amount of data was manageable, no special qualitative data analysis software was used other than Microsoft Word and Excel.

3.3 Verification of findings

A number of strategies were used to ensure the reliability and validity of the findings. Regarding reliability, multiple reliable sources of secondary data were used. The use of multiple secondary data sources enabled us to triangulate the data and increase the reliability of findings. One limitation in access to secondary data was that we could not make use of any publications in Norwegian language due to lack of our skills in this language. In order to further ensure reliability, each interviewee was carefully selected with the criterion that he should have good expert knowledge on both countries, and the interviews were recorded and transcribed for reliable analysis. Despite both Russian interviewees have been working in Norway for more than ten years each, their knowledge of Norway could be subject to the limitation of not being natives. Further interviews with Norwegian experts could increase the reliability of findings. However, it was not possible to find Norwegian experts who were also knowledgeable about the competitiveness matters of Russia. This limitation was compensated to a certain extent by the availability of extensive secondary data on Norway in English. Regarding validity, the global competitiveness index 4.0 framework, allowed to achieve valid preliminary findings thanks to comparable statistics on Norway and Russia. Designing the interview questions based on these preliminary findings and using codes from the pillars and sub-pillars of the global competitiveness index 4.0 framework consistently in analysing the data further contributed to the validity of findings from the in-depth analysis.

4. Results

4.1 Preliminary analysis

Table 1. Norway's and Russia's scores (out of 100) in the pillars of the global competitiveness index 4.0 framework (adapted from Schwab 2018).

Pillar	Norway	Russia	Difference
<i>Overall</i>	78	66	12
Institutions	77	53	24
Infrastructure	75	72	3
ICT adoption	82	72	10
Macroeconomic stability	100	88	12
Health	98	68	30
Skills	84	68	16
Product market	63	54	9
Labour market	73	59	14
Financial system	80	55	25
Market size	61	84	(23)
Business dynamism	77	63	14
Innovation capability	68	51	17

The first interpretation from Table 1 is that Norway performs better in all pillars except market size. The biggest differences are in health (+30 points difference), financial system (+25 points), institutions (+24 points), innovation capability (+17 points), skills (+16 points), labour market (+14 points), business dynamism (+14 points), macroeconomic stability (+12 points), ICT adoption (+10 points) and product market (+9 points). Out of these we selected financial system, institutions, innovation capability, skills, labour market, and business dynamism for further analysis at sub-pillar level. We did not select health because differences in life expectancy, which is the only indicator behind this pillar, can be subject to reasons that are beyond the scope of this research. We did not select macroeconomic stability, ICT adoption, and product market either, because despite the differences, either Russia also scores pretty well (e.g., the pillars of macroeconomic stability and ICT adoption), or Norway does not score that well to be considered as a role model (e.g., the pillar of product market). Analysis of the differences in the sub-pillars of the selected pillars revealed the key areas for in-depth analysis (see Table 2).

Table 2. Pillars and sub-pillars with high differences, selected for in-depth analysis (adapted from Schwab 2018).

Pillar	Sub-pillar	Difference between Norway and Russia (points out of 100)
Institutions	Incidence of corruption	56.0
Institutions	Judicial independence	45.1
Institutions	Freedom of the press	42.4
Institutions	Property rights	33.8
Institutions	Strength of auditing and reporting standards	28.0
Institutions	Intellectual property protection	26.9
Innovation capability	International co-inventions	66.4
Innovation capability	Patent applications	58.6
Innovation capability	R&D expenditures	26.7
Innovation capability	Trademark applications	23.3
Innovation capability	State of cluster development	23.2
Financial system	Insurance premium	57.6
Financial system	Domestic credit to private sector	42.7
Financial system	Soundness of banks	39.4
Financial system	Financing of SMEs	26.0
Labour market	Reliance on professional management	29.1
Labour market	Active labour policies	24.5
Labour market	Cooperation in labour-employer relations	23.3
Skills	Extent of staff training	19.5
Skills	Quality of vocational training	18.6
Skills	Skillset of graduates	16.3
Skills	Ease of finding skilled employees	14.2

4.2 In-depth analysis of the differences

4.2.1 Institutions

Incidence of corruption

Kritskaya et al. (2018) claim that corruption may accompany a Russian citizen in many aspects of social life. Naumenko (2018) states that even though there are some cases of public officers arrested from large scale corruption, it is just the “peak of the iceberg”, and many small incidences are not revealed. Therefore, there is need for setting anticorruption as priority, and measures and actions should be developed by experts from relevant fields and supervised by the Prosecutor's office for combatting corruption (Datsenko 2018; Naumenko 2018). Norway, on the other hand, has a well-organized system of preventing corruption because it is seen as a national threat (Kuznetsova 2014). Norway has very low corruption thanks to the competences of a special branch, the National Authority for Investigation and Prosecution of Economic and Environmental Crime, which consists of law enforcement teams specializing in financial crime investigations (Dyngeland 2016; Bisschop-Mørland and Dagestad 2019).

Judicial independence

The Council of Europe representatives point at problems of insufficient judicial independence and excessive prosecutorial powers in the Russian judicial system (Muižnieks et al. 2016). According to the Supreme Court of Canada (2017), Russian laws cannot protect judges from the external influences of interest groups. As a result, such influences and pressures lead to bribes (International Commission of Jurists 2014). In order to solve this problem, new regulations directed mainly at consolidation of impartiality, effectiveness, and independence of judges will be helpful (Muižnieks et al. 2016). Kondrashov (2015) believes that the current system in Russia increases the dependence of the judicial branch on the executive authority because judges are assigned by the presidents of courts and members of the Presidential Commission. They should be assigned by a special judiciary committee, like in Norway, where judges are assigned by the government on the recommendation of the Committee on the Appointment of Judges (Chibisova 2014). Furthermore, shifting of power from the court president to expert committees, as in Norway, can also relieve the problem in Russia. The chairman of a Norwegian court has almost no influence in resolving judicial matters: all complaints are considered by the steering committee that consists of two judges, one lawyer and two public members appointed by the government for four years (ibid.). In addition, Kornus and Deryuga (2018) suggest that some Russian judges have in some cases limited experience and need to consult with more experienced colleagues, therefore, decreasing the level of independence. In contrast, Norway employs people who have different backgrounds: this allows having “a broad and varied background of experience”, and law graduates are not immediately hired for a court position (The Courts of Norway 2019).

Freedom of the press

The key issue in Russia is that most of the media channels are owned and controlled by either the government (mainly TV and radio) or powerful private business groups (mainly online and print media) (Zakem et al. 2018). In addition, the Presidential Administration of Russia plays a vital role in the mass media to promote national interests (ibid.). On the contrary, Norway actively encourages pluralism and freedom of the press by promoting competition among media companies. For example, not a single company in Norway may have more than one-third share in any media type (Arkin 2018). The commission created for the incentive of pluralism in Norway exercises efforts to achieve openness and transparency in journalism and monitors its realization by all media (ibid.).

Property rights

Although Russian law distinguishes property rights as a special matter, it provides only general descriptions about its nature, which leads to obstacles and difficulties in implementation (Feoktistov et al. 2016). The problems arise by different interpretations of the law that create misunderstandings as well as by the high level of bureaucracy which impedes the development of property rights in Russia (ibid.). Norway, on the other hand, promotes

transparency, has clear legislation on property rights, manages the registration of ownership properly, and the judicial system is effective in resolving disputes (International Business Publications, USA 2013).

Strength of auditing and reporting standards

Auditing is a young profession in Russia (Storozhenko 2018). Russian audit firms had been conducting their procedures in compliance with domestic standards until 2017, when 30 international standards were legislated, and in 2018 Russia has fully adopted international standards (Kolesnikov et al. 2018). Storozhenko (2018) further argues that the adoption of new standards was problematic due to challenges in translation and misinterpretations arising from it. In addition, Russian auditors were not provided with sufficient education to adapt to international standards, and as a result, the number of practicing auditors in Russia has decreased by 12% from the beginning of 2015 to the end of 2017 (Laypanov and Borlakova 2018). Furthermore, auditing is becoming a less attractive profession for new graduates than other finance-related positions since there is the requirement to earn an additional certificate (Sheremet 2017). All auditing firms in Norway have to follow international standards, and as revealed by the interviews, the qualifications and experiences of Norwegian auditors are higher than Russian auditors on average, and the control on audit firms is stricter. As Norway is a small country, building trust is very important for businesses, and auditing plays a crucial role in that.

Intellectual property protection

The role of intellectual property protection is crucial in the overall economic and political development of Russia, but awareness of it is very low in the society probably because of the Soviet mentality, which assumes that everything can be publicly used (Kitayov and Pak 2015). As a result, most people find it legal to copy and distribute music, films, and documents of different kinds (ibid.). The legislation also requires improvements to correspond with the International Declaration of the Intellectual Property (Chernysheva and Novikova 2018), and the creation of a separate monitoring party and its constant development will positively contribute to the issue (Bankovskiy and Entyakova 2019). Norway, on the other hand, has a long tradition, more than 100 years, in registering and protecting intellectual property (see Stenvik 2016). Being a member of the European Economic Area, Norway also strictly adheres to EU regulations on intellectual property protection (Kazachenok 2015). Norway adopted the Marketing Control Act in 2009, prohibiting copying of any recognizable signs that are even not registered, and started to provide grants for patents in English language in 2015 (Stenvik 2016).

4.2.2 Innovation capability

International co-inventions

According to Dezhina (2010), a very small number of research institutes are involved in international cooperation, mostly driven by individual efforts of Russian scientists. The ratio of incoming foreign scientists to Russian scientists visiting abroad is 1:10, meaning that foreign experts are not keen to work in Russia (ibid.). Russian PhD students have poor opportunities to participate in international projects or conferences, and as a result Russian scientific work remains domestic (Kachmazova 2016). In the interviews it was mentioned that Russian researchers are not provided with organized support to conduct joint international research, and the lack of financial support leads to Russian researchers to have a “service role” in the cooperation. Moreover, inadequate language skills and weak understanding of the mechanisms of foreign markets make collaboration more difficult. Norway, on the other hand, actively supports international collaboration in research, and as a result, 60% of all scientific publications from Norway have been done in collaboration with foreign co-authors (OECD 2017). It was argued by the interviewees that since Norway is a small country, internationalization is the main source of accessing resources, and there is a clear understanding of the benefits and orientation towards international cooperation.

Patent applications and trademark applications

Despite significant government efforts, the Russian system is not yet at the point of conducting research that leads in a systematic way to patent registrations (Yakovets et al. 2018). The society does not value scientists, and their salaries are small; consequently, talented Russian scientists leave the country, foreign scientists are not attracted, and Russia’s innovative capability remains limited with about six researchers per 1000 employed compared to

Norway's 12 (Kuznetsov 2017; OECD 2019a; OECD 2019b). The contribution of Russia's business sectors to patented innovations is also considerably small (one third of all registered patents) compared to Norway's 81% (OECD 2019a; OECD 2019b). As mentioned during the interviews, the strong belief in intellectual property in Norway, and the lack of it in Russia contribute to this difference. The interviewees also see the roles of the government and its ministries crucial for the difference in creating an effective innovation ecosystem, as for example the Norwegian government funds research and improves the innovation infrastructure continuously (OECD 2017).

R&D expenditures

Russia's R&D spendings accounted for 1.1% of its GDP in 2018, which is considerably low compared with Norway's 1.9% (OECD 2019a; OECD 2019b). In Russia the government made nearly 70% of total R&D expenditures (Dezhina 2017). It established "technology platforms" in the 2010s, but only one-fifth of the targeted number of platforms was achieved by 2017 due to the lack of interest from the private sector (Kuznetsov 2017). State-owned companies were also pushed to increase their R&D activities, but only a third of them responded to the call, and forced collaboration with universities did not bring expected results because there was no genuine interest from the private sector for R&D (ibid.). As revealed in the interviews, Russian private firms have a short-term orientation, and they'd rather save money or import technology than invest in R&D. In Norway, the role of the private sector, especially SMEs, in R&D has been much more significant, accounting for 54% of total R&D expenditures (NIFU 2018). The government, on the other hand, has the political will to increase the country's innovativeness via financial support for R&D (OECD 2017).

State of cluster development

The government has played the key role in cluster development in Russia (Islankina and Thurner 2018). This, however, was not very effective because it has favoured large state-owned companies at the expense of neglecting SMEs (Kutsenko 2015), and it has favoured some regions over others (Zemtsov et al. 2016). For example, 29% of the 113 cluster initiatives in Russia were in the Central Federal region, some regions did not have a single cluster, and at the end only eight clusters were found to be effective (Rodionova et al. 2018). The ineffectiveness was mainly due to strong government involvement and lack of cooperation from businesses (Kutsenko 2015). It was also mentioned in the interviews that there is a sociological phenomenon of informal networks in Russia, which diminishes transparency and negatively impacts cooperation. Norway has placed a central role for cluster development and launched three different programs for clusters, which are at different stages of development. Arena, the first of the programs, provides underdeveloped clusters with managerial and financial support up to five years (Njøs and Jakobsen 2016). The second program, called the Norwegian Center of Expertise (NCE) program, is for up to 10 years and aims to help established local clusters to develop their innovation capabilities and to internationalize (ibid.). Both programs are very selective, and the government provides up to maximum 50% of the funds, and the rest comes from the private sector (Müller et al. 2012). Once the supported clusters are selected, the role of the government is limited in that clusters decide on their own about their future investments (Jakobsen and Røtnes 2012). Finally the third program, called Global Centers of Expertise (GEC), aims to support clusters which already have an international position to become globally competitive (Røtnes et al. 2017). Whereas GEC and NCE programs concentrate on central regions, Arena mainly contributes to rural development (ibid.). It was also mentioned in the interviews that Norway has the culture of a well-tuned dialogue based on trust among cluster members that aims for collective consensus. This makes the level of cooperation higher than in Russia.

4.2.3 Financial system

Insurance premium

The Russian insurance market is stagnant with low levels of profitability and liquidity (Bykanova and Cherkashina 2017). As a result, the number of insurance companies has decreased by 33% from 2015 to 2017, and the decline is expected to continue (KPMG 2018). Problematic areas are vulnerability to macroeconomic factors, instability of the Russian economy as a whole, low incomes of citizens, and high volatility in the exchange rate, which increase risks (Podkolzina 2016). Low reliability of insurance services as well as the absence of insurance literacy

and awareness among citizens further challenge the market (Aksyutina 2014; Nerovnya et al. 2018). The Norwegian insurance market does not face a similar problem because, as mentioned in the interviews, the purchasing power in Norway as well as insurance literacy and awareness are high, and risks related to the problematic areas of Russia are considerably low.

Domestic credit to private sector

The interviews revealed that the use of domestic credit by the private sector is much higher in Norway than in Russia simply because the interest rates are lower. While the short-term borrowing rate has been fluctuating in Russia between 10% and 15% from 2014 to 2016, it has been between 1% and 2% in Norway (see OECD 2019a; 2019b).

Soundness of banks

The Central Bank of Russia cancelled the licenses of more than 400 banks between 2013 and 2016 due to economic reasons and suspicions of fraud (Bidzhoyan 2018). This “cleaning of the banking sector” increased the dominance of state-owned banks, which, representing 66% of the market, lag behind private banks in their efficiency (Bashirov 2017; IMF 2018). Another issue is that quality of the services and the general welfare level differ significantly across Russia’s regions (Tavasiev and Mazurina 2016). Finally, it was mentioned in the interviews that international sanctions set against the Russian Federation further contribute to the instability of Russian banks. The interviews also revealed that banks in Norway are fewer in number, but they are very transparent as demanded by the legislation, which aims to strongly protect borrowers. In addition to transparency, stable macroeconomic conditions strengthen the soundness of the Norwegian banking system.

Financing of SMEs

Russian SMEs are financed mostly (in 2015 it was 94%) by bank loans, but there are barriers to getting a loan (OECD 2015). Savchina et al. (2016) argue that Russian banks are interested in developing their businesses with fewer number of large firms rather than higher number of SMEs. They further claim that Russian banks lack proper methodology to assess risks of SMEs, and as a result, the application processing time is longer, and interest rates are higher for SMEs. In addition, application acceptance rates are also lower for SMEs due to their lack of sufficient collateral (OECD 2015; RAEX 2018). Lack of transparency makes risk assessment more difficult and amplifies the obstacles (OECD 2015). It came out in the interviews that the Norwegian business system works towards SMEs, though most industries are led by large state-owned companies, because SMEs are viewed as the “skeleton” of the Norwegian economy in the strategy of the government. Some of the business support services for SMEs are free, which is unimaginable in Russia, and there is a more developed venture capital system in Norway. Public grants may cover up to 50% of SME expenditures in internationalization and R&D projects. Furthermore, the whole system is pro-business, transparent, and efficient.

4.2.4 Labour market

Reliance on professional management

It was mentioned by the interviewees that the recruitment of management may not always be based on merit in Russia. As it is not demanded by legislation, recruitment processes may lack transparency especially in the case of state-owned companies. As a result, cases of employing relatives, acquaintances, or persons with good political connections are possible. In Norway, however, such cases in state-owned companies are avoided because by law all open positions in the public sector must be announced publicly, and the recruitment process is transparent in order to eliminate possible conflicts of interest. Open competition for positions aims to ensure that the companies are run by professional management.

Active labour policies

The labour policies as well as the Labour Code in Russia favour employers, and the support for employees is basic in the cases of unemployment, reskilling, or the advancement of their professional skills (see Komitet po trudu i zanyatnosti naseleniya Sankt-Peterburga 2019; Trudovoi Kodeks RF 2019). The situation in Norway is different.

The Norwegian Labour and Welfare Administration provides free vocational training for up to ten months to unemployed people, and reskilling and the advancement of professional skills receive special attention (see Government.no 2017). Employees are encouraged to participate in educational programs next to their employment in order to keep their skills up-to-date to meet the demands of the changing work environment. Furthermore, the government offers special grants for immigrants and people with basic skills to upgrade their skills through education, and unemployment benefits are high to provide individuals with basic security (ibid.).

Cooperation in labour-employer relations

The interviews revealed that there are cultural differences in management and labour-employer relations in Norway and Russia. Whereas the organizational structure is horizontal and less hierarchical in Norway (the Scandinavian approach), there is a bigger distance between employers and employees in Russia. One of the interviewees argued that the Scandinavian approach might not work successfully in Russia due to differences in the mind set. Russian way of decision-making usually requires immediate action with almost no extra time to be spent on discussions and meetings, whereas in Norway it is accepted not to decide “right here and right now”. As a result, whereas employers are expected to implement decisions taken by management in Russia (top-down approach), they are expected to contribute to decision-making in Norway.

4.2.5 Skills

Extent of staff training

On average only 14% of the employees receive training in Russia (Stuken 2015). The ratio is low because employers perceive training to be expensive and risky since trained employees can leave the company any time (ibid.). The problem is that especially older employees with lower positions and less academic background, who actually need training to develop their skills, do not receive any training (Travkin 2017). In general Russian people are not trained after graduation, and Russian companies, which prefer to hire new people instead of reskilling their employees, provide their employees with training by 10 times less than the average in Europe (Boston Consulting Group 2017). The interviews revealed that Norwegian companies, on the contrary, dedicate more attention to staff training because there is a lack of qualified human resources in Norway, and employees are perceived as important assets which contribute to the competitiveness of the company.

Quality of vocational training

According to Zadorina (2017) the low quality of vocational training in Russia is due to comparatively low attention from the government and insufficient financing. As a result, there are scarce vocational schools in some regions and narrow program offerings that do not address the needs of the working life (Nikolaev and Chugunov 2012). In addition, vocational schools lack technological equipment, and some of the Russian instructors of vocational training do not have necessary high education (Ivanov 2016; Medvedeva 2018). For example around 14% of instructors did not have a bachelor’s degree, and about one-third did not have a pedagogical qualification (Ivanov 2016). The Norwegian government allocates 1.5% of GDP for upper secondary education where vocational programs are integrated (Statistics Norway 2019). There are nine vocational programs, which integrate theory and vocational training with apprenticeship based on the needs of different regions, and they are designed by councils consisting of industry representatives (Souto-Otero and Ure 2012; Rusten and Humberlin 2017). Apprenticeship at companies allows students to enter the working life smoothly. Moreover, Norwegian vocational school instructors must by law have a master’s degree in their teaching field and pedagogical teacher qualification (Krasnova and Polushkina 2014).

Skillset of graduates and ease of finding skilled employees

A comparison of 15-years-old students’ PISA 2015 performances in science, reading and mathematics shows that Norwegian students outperform Russian students in all three areas (see OECD 2018a). This is not surprising since education’s share of the government budget in Norway is around 8.4% of GDP (Statistics Norway 2019), which is much higher than in Russia, and the average salary of public school teachers is much higher in Norway, ca. 4,800 Euro per month (Nikel 2017), than in Russia, ca. 300 Euro per month (Boston Consulting Group 2017). In

addition, a major problem of Russian higher education is the gap with the practical needs of the working life (Gurban and Tarasyev 2016; Brovkin 2018a). Russian students have less freedom in planning their studies (e.g., choices of courses), and they are expected to learn concepts by memorizing from books rather than by applying them, which hinders the development of applied skills (Brovkin 2018b). Students in Norway, on the other hand, start planning their schedule and set goals with their teachers already in primary school (Dobrovolskaya 2014). It was also mentioned in the interviews that, different than in Russia, the focus of education is on skills for the career and life, and not necessarily on degrees. Furthermore, higher education institutes design their curriculums in response to the needs of the working life and the priorities of Norway's regions (Damsa et al. 2015). Indeed, there is high level of cooperation between higher education institutes and industries in Norway through projects whereby students can apply their learning (OECD 2018b). Such cooperation, which is also encouraged by the government, eases finding skilled employees. Norway also pursues an open policy to attract skilled international workers, as revealed by the high percentage of immigrants in the country.

4.3 Summary of findings

Key findings on the differences between the competitiveness of Norway and Russia can be listed under the pillars of institutions, innovation capability, financial system, labour market, and skills. In the institutions pillar Russia performs badly in setting and implementing anticorruption policies, in achieving an independent judiciary system and free press, in establishing the legal framework for property rights that allows minimum room for misinterpretations, in minimizing bureaucracy, in increasing the attractiveness of auditing as a profession for new graduates, and in safeguarding intellectual property rights. In the innovation capability pillar Russia lags behind Norway by lower international cooperation in R&D due to scarce funding and inadequate language skills, by the lower valuation of the profession of science, by the lower contribution of the private sector to carry out R&D activities and generate patented innovations, by the lower ratio of government spending on R&D to GDP, and by less effective cluster policies which neglect SMEs. In the financial system pillar Russia's competitiveness challenges lie in the low reliability of insurance services and the absence of insurance literacy, the lack of affordable domestic credit, the instability of Russian banks, and high barriers for SMEs to access financing. In the labour market pillar, the problematic areas in Russia are the lack of transparency in recruitment processes and inadequate support for employees regarding the advancement of their professional skills, reskilling or unemployment. Finally, in the skills pillar Russia performs badly in the amount of training provided by companies to their employees, in the quality of vocational training, in the amount of government spending on education, and the gap between education and the practical needs of the working life. The results further suggest that two factors significantly influence differences in these pillars, namely the policies of the government and culture. While government policies influence all of the five pillars equally, culture impacts more on certain pillars (e.g., institutions) and sub-pillars (e.g., reliance on professional management, cooperation in labour-employer relations, and extent of staff training).

5. Discussion

This study aimed to understand where the differences in the competitiveness of Norway and Russia, two countries which are rich in the natural resources of oil and gas, are coming from using the global competitiveness index 4.0 framework. In doing that first the pillars and the sub-pillars with the highest differences were identified, and then the identified sub-pillars were investigated in the two countries with the aid of reliable secondary data and interviews with two Russian academics who have been working in Norway for more than 10 years. Being the first study to make an in-depth comparative analysis of the competitiveness of Norway and Russia, this research makes a contribution to the literature. The findings not only support the argument that rich endowments are not sufficient to achieve competitiveness (Porter 1990; Delgado et al. 2012) but also suggest what really matters, or where countries can deviate despite their similarly rich endowments, as summarized in section 4.3.

The good practices from Norway allow us to make a number of suggestions for Russian policy makers in order to improve the competitiveness of Russia. The Norwegian institutional system can be a benchmark in order to

make the judicial system and the press more independent, avoid incidences of corruption, develop and implement the legislation for the protection of intellectual property, and harmonize the local auditing and reporting practices with international standards. There will naturally be difficulties in changing established routines in the institutions pillar, and determined government policies are needed to overcome them. In order to improve Russia's innovation capability the government should not only increase its spending on R&D but also find the means to increase the participation of businesses in R&D activities and to support international research collaboration. Furthermore, similar to the practice in Norway, it would be wise to empower regions in Russia and support cluster development in accordance with the strengths of the regions and the development needs of their clusters. The third pillar for development in Russia is the financial system. In this pillar the credibility of banks should be improved via strict control, and barriers to access to capital as well as interest rates should be lowered for private businesses, especially for SMEs. The current bias against SMEs in Russia should be reversed. In the labour market pillar, it is recommended to increase transparency in recruiting for high level positions in state-owned companies through public announcements of such positions. This will increase the level of professional management in Russia. Labour policies supporting cooperation in labour-employer relations shall contribute to labour productivity. Finally, Russia needs a restructuring of its education system to prioritize the development of skills as demanded by the working life. Currently, Russian students are less ready to be integrated into the working life. Teachers' salaries on average should be raised, practice-oriented vocational training should be incentivized, and the qualification requirements for vocational school teachers should be increased to match the level in Norway. While the higher education system should be more student-centric and flexible to meet the needs of different regions, employees should be perceived as important assets for companies and offered more training possibilities during their careers. These suggestions will make Russian companies more competitive. However, there can be limitations in the implementation of some of the suggestions due to cultural differences and size difference (both in terms of population and territory) between Norway and Russia.

This research was subject to two limitations, which imply possibilities for future research. First of all, the results are specific to Norway and Russia, but some of the suggestions can be considered with caution, taking carefully into consideration local contextual factors, also by other countries that are rich in the natural resources of oil and gas, such as Saudi Arabia, which is 36th in competitiveness ranking, 46th Kuwait, 116th Nigeria, and 133rd Venezuela. Such variation in the rankings already suggests that natural resources are not sufficient to achieve competitiveness. We recommend similar research in the future to benchmark the competitiveness of these and other oil and gas rich countries. As the statistics on these countries are available at the World Economic Forum's database, the use of the global competitiveness index 4.0 framework will be convenient. Secondly, there was a limitation in access to data. As one of the authors and both interviewees are natives of Russia, we had access to extensive secondary and primary sources of data on Russia. Data from Norway, however, was limited by the knowledge of the two interviewees working there and the available secondary data in English. Thanks to the high level in the use of English in Norway, we believe that this limitation did not create a major challenge, but we recommend future research to investigate data from also Norwegian sources. As a third avenue future research could also study the development of Norway's competitiveness using a longitudinal approach in order to understand what kinds of challenges it encountered on the way, and how they were resolved.

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