

# Effects of the Export Restrictions on Birch Log Market in Northwest Russia

SARI KARVINEN<sup>1\*</sup>, ANTTI MUTANEN<sup>1</sup> AND VLADIMIR PETROV<sup>2</sup>

<sup>1</sup> Bioeconomy and environment -unit, Natural Resources Institute Finland (Luke), Yliopistokatu 6, 80100 Joensuu, Finland

<sup>2</sup> Department of forest policy, economics and management, Saint-Petersburg State Forest Technical University, Institutskiy per. 5, 194021 Saint-Petersburg, Russia

\* Corresponding author; e-mail: sari.karvinen@luke.fi, tel. +358 29 532 3256

Karvinen, S., Mutanen, A. and Petrov, V. 2019. Effects of the Export Restrictions on Birch Log Market in Northwest Russia. *Baltic Forestry* 25(1): 105–112.

## Abstract

Russia imposed an export quota for birch logs in 2019, justified by the increasing export volumes and rising price of birch logs harming the domestic plywood production. In this study, the possible effects of the export quota were scrutinised by analysing the interdependencies between the exports, domestic consumption, and prices of birch logs in Northwest Russia, the largest producer of plywood and exporter of birch in Russia. According to the results, the domestic demand has determined the price development of birch logs, while the effect of exports has remained weak. It can be concluded, that the total demand for birch logs in Northwest Russia has been dominated by domestic consumption and it seems that despite the parallel rising trends of domestic use and export volumes, the birch log resources and harvesting volumes have been adequate to meet the increasing demand. Notwithstanding the periodical fluctuations, the long-term development of price of birch logs has remained rather steady in the region. Thus, the effect of the quota on birch log price development in the domestic Russian roundwood markets will probably remain small. However, the quota is likely contrary to trade agreements, it will add to bureaucracy and destabilise the operating environment of logging companies as well as international buyers of Russian roundwood.

**Keywords:** roundwood, export restrictions, prices, veneer logs

## Introduction

Since the dissolution of the Soviet Union, the Russian Federation (hereinafter Russia) has regulated roundwood exports actively by political measures. The range of means has included protective export duties and quotas as well as other actions, such as alterations in classifications, required documents and certificates, sorting requirements for exported timber assortments, and reductions in the number of customs stations accepting export declarations (Jutila et al. 2010). As far as the roundwood export duties and other valid trade regulation are concerned, Russia's attitude to roundwood exports has varied from free trade in the late 1990's to no trade, which would practically have been achieved, if the customs tariffs' programme for roundwood exports of 2007 had been fully implemented (Solberg et al. 2010, Mutanen and Viitanen 2017). The shifts in the Russian roundwood trade policy have typically been sudden and the precise content of the coming new regulation has often remained vague until the implementation. Obviously, the unforeseen policy changes have increased

uncertainty in the operating environment both in the Russian forest sector and in the countries importing large volumes of Russian roundwood.

Russia's long-awaited membership in the World Trade Organisation (WTO) in 2012 stabilised the regulatory situation and lowered the export duties of most timber assortments. Although bureaucracy increased with the introduced export quotas and the export licence system, the operating environment became more predictable, as according to the WTO membership agreement, new protective customs duties and other trade restrictions were no longer applicable. Nonetheless in 2017, Russia issued a decision concerning the export of birch logs over 15 cm in diameter (Government Decision No. 19 dated 18.01.2017). Birch logs were added to the list of products of major importance for the Russian domestic market and their export can be temporarily restricted or prohibited. An export quota of 567 000 cubic metres for six months was imposed on 01.01.2019 (Government Decision No. 836 dated 17.07.2018), justified by the increasing export volumes and rising price of birch logs allegedly leading to a raw material deficit in the Russian plywood mills (MinPromTorg 2016, 2017).

Several theoretical models developed to explain the effects of international trade (Ricardian, Heckscher-Ohlin, gravity, specific factors, etc.) have in common that trade lead to specialisation in production among nations, while protectionism or alternatively trade liberalisation induces shifts in income and welfare distributions within and among countries. Thus, the measures affecting international trade tend to create gainers and losers. However, amongst economists, there exists a strong consensus that the total effect of trade liberalisation on the economic welfare and on economic growth is a positive one as the losses could be compensated by the gains (e.g. Krugman 1993, Fuller and Geide-Stevenson 2003). However, theoretical models include several premises and underlying assumptions, which in turn, are seldom fulfilled completely in the real world. Thus, the blessing of free trade can be questioned especially in political rhetoric, as has happened during the recent years, when protectionism has increased considerably worldwide (IMF 2016, WTO 2016).

Export restrictions on a raw material benefit a particular processing industry, i.e. the gainer, via the lowered price of the raw material. However, the effect on domestic producers of the raw material is a negative one and thus, the restriction act as a profit-shifter, which discourages the producers of the raw material to invest and may potentially jeopardise the domestic raw material production (Fung and Korinek 2014). In the long run, the effect of the export restriction may turn harmful also for the gainer as the lowered price of raw material has reduced domestic supply of raw material and at the same time the incentives for innovation and lowered productivity and competitiveness within the gaining industry. Thus, in the long term, the effect of protectionism is typically harmful also for the “winner”, i.e. a particular industry or a sector of national economy whose benefit the trade restrictions were initially designed for.

Several studies suggest that the previous roundwood export restrictions have had a negative impact on wood harvesting in Russia (Turner et al. 2008, Pisarenko and Strakhov 2009, Solberg et al. 2010). The impact of export restrictions on the production of forest industry has been reported being positive – although depending greatly on other factors in the business environment (Turner et al. 2008, Solberg et al. 2010, Kuzminykh 2016). These studies have focused on discussing the impacts of Russian fiscal and trade policies on the export volumes of roundwood and on the forest industry’s production volumes in the case of coniferous wood. Instead, no attention has been paid to birch.

In this paper, the historical development of Russian exports, domestic consumption, and prices of birch logs are studied, and the possible effects of the export quota are analysed by scrutinising interdependencies among

them. Geographically, the focus is on the Northwest federal district (hereinafter NW Russia), which is the largest producer of birch plywood and the largest exporter of birch in Russia.

**Materials and Methods**

During the recent years, Russia has exported annually about 6.3 million cubic metres of birch, of which roughly one fifth has been sawlogs and veneer logs and the rest other birch assortments, predominantly birch pulpwood (Federal Customs... 2019). The majority of birch log exports have been directed to China, while Finland has been the second largest export destination. In the case of birch pulpwood, the majority has been exported to Finland. During the last four years birch log export volumes have multiplied mainly due to the growth in exports to China (Table 1). The export quota for birch logs is about 60 percent of the volumes exported in the first half of 2017 and 40 percent in the first half of 2018 (Federal Customs...2019), thus it will restrict the export of birch logs from Russia effectively. The quota is divided among market operators relative to their birch log export volumes during years 2014–2016 (Government Decision No. 836 dated 17.07.2018). Applying for an export licence was possible after the quota distribution was published on 20 December 2018 – less than two weeks before the export restriction came into effect (Order...5118, Support...2018). The distribution of the quota among the countries importing birch logs from Russia is not applied.

In Russia, wood resources, production volumes of different forest industry products, harvesting volumes, and intensity of forestry as well as forest sector’s contribution to GDP, employment, and welfare vary distinctively among the regions. Thus, also the effects of policy measures aiming at restricting international roundwood trade are different regionally. In Russia, the largest producer of plywood is NW Russia, whose annual production volume of 1.2 million cubic metres of plywood accounts for one third of Russia’s total plywood produc-

**Table 1.** Export of birch from Russia in 2013–2017, 1 000 m<sup>3</sup>. (Federal Customs...2019)

Timber assortment*	Country	2013	2014	2015	2016	2017	Export duty
Birch sawlogs and veneer logs > 15 cm	Total	697	1 073	1 292	1 646	1 967	7 %
	China	540	824	990	1 309	1 635	
	Others	157	249	302	338	331	
Birch < 15 cm	Total	1 643	1 295	1 190	1 238	1 100	0 %
	Finland	1 206	1 058	981	1 088	918	
	Others	437	237	208	150	182	
Birch other	Total	3 251	3 788	3 959	3 443	3 204	7 %
	Finland	3 014	3 317	3 494	3 157	2 904	
	Others	237	470	465	286	300	
Birch total		5 591	6 156	6 440	6 328	6 270	

\*Detailed classification in Appendix

tion (Regiony Rossii 2017). The overwhelming majority<sup>1</sup> of plywood produced in NW Russia is non-coniferous (birch) plywood. NW Russia has also been the largest federal district in terms of birch exports, and hence, the area was selected to be the target area of the study. In 2013–2017, about 4.7 million cubic metres of birch was exported from NW Russia annually and 90 percent of the volume was directed to Finland (Table 2).

**Table 2.** Export of birch from Northwest Russia in 2013–2017, 1 000 m<sup>3</sup> (Federal Customs... 2019)

Timber assortment	Country	2013	2014	2015	2016	2017
Birch saw logs and veneer logs > 15 cm	Total	134	175	191	263	357
	Finland	129	161	145	165	143
Birch < 15 cm	Total	1 570	1 218	1 093	1 152	1 009
	Finland	1 167	1 034	953	1 058	905
Birch other	Total	2 942	3 472	3 552	3 104	2 911
	Finland	2 787	3 081	3 205	2 913	2 695
Birch total		4 646	4 866	4 836	4 519	4 277

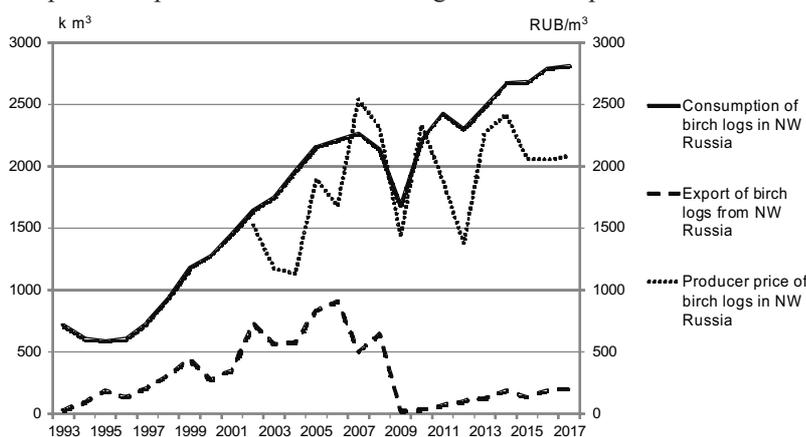
The data set employed in this study consisted of the annual observations of consumption volumes and prices of birch logs in NW Russia, as well as the export volumes of birch logs from the region. As no official data on consumption (or harvesting) of birch logs in NW Russia was available, the consumption of birch logs was calculated using the official production volume of plywood in NW Russia reported by the Russian Federal Service of State Statistics (hereinafter RosStat) and its roundwood equivalent converted by factor 2.29 (UNECE 2010). Figures for plywood production were available from 1993 onwards. The producer price of non-coniferous logs offered to domestic markets was used to describe the market price of birch logs in NW Russia. Nominal producer prices were deflated using the Russian pro-

ducer price index for industrial goods. Both the nominal birch log prices and the deflator were reported by RosStat. The producer price data was available from 2002 onwards.

The Federal Customs Service of Russia has published export statistics on birch log exports from NW Russia only since 2012. Instead of the official Russian figures, it was decided to use the Finnish birch log import data as proxy for the export of birch logs from NW Russia. The rationale was that the majority of exported birch logs from NW Russia have ended up in Finland until the very recent years (Federal Customs... 2019). Accordingly, the import volumes of birch logs into Finland describe well the development of birch logs exports from NW Russia to international markets in the past. The import data of birch logs from Russia to Finland covering the period 1993–2017 was reported by the Finnish Customs (2018). The low number of observations as well as limited availability of relevant variables restricted the statistical analysis to correlations and simple linear regression.

**Results**

The consumption of birch logs in NW Russia increased steadily from the late 1990’s till 2007 (Figure 1). After a slight decrease in 2008 and a considerable drop in 2009, the height of global economic crisis in terms of the demand for forest industry products, the consumption of birch logs returned to the growth path. Although the exports of birch logs from NW Russia fluctuated annually in the 1990s and the early 2000s, a distinctive rising trend is evident until 2006. However, a prominent change occurred by 2009, as export volumes dropped close to zero, which was attributable to, in addition to



**Figure 1.** Consumption (left axis), exports (to Finland, left axis), and price (deflated, base year 2017, right axis) of birch logs in Northwest Russia 1993–2017. (Sources: Federal Customs...2019, Finnish Customs 2018, RosStat 2018)

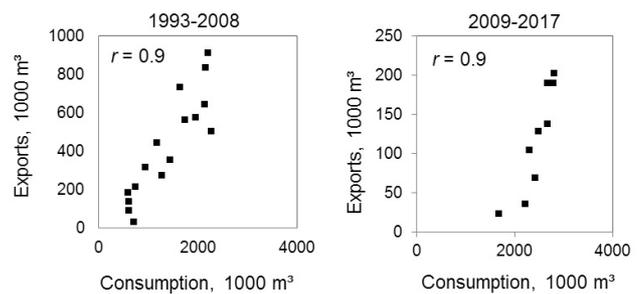
<sup>1</sup> RosStat compiles statistics on the total plywood production but not on the distribution to coniferous and non-coniferous plywood. Foreign trade statistics by the Federal Customs Service of Russia, however, include the distribution of plywood exports to different assortments. Based on the detailed export figures for NW Russia, one may estimate that roughly 98 percent of plywood production in NW Russia in 2014–2017 consisted of birch plywood.

the aforementioned global financial crisis and its effect on market demand for plywood, Russia's determination to restrict the exports of roundwood via raising the export duties.

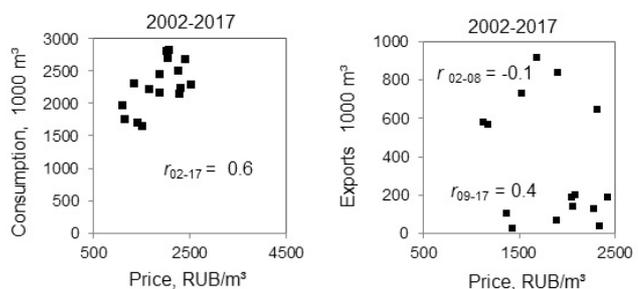
In accordance with the Government Decision No. 75 issued in February 2007, the duties on coniferous timber assortments and on birch logs of diameter exceeding 15 cm rose on 01 June 2007 and again on 01 April 2008 (Mutanen and Viitanen 2017). As of 01.01.2009, the duties were to rise to a minimum level of EUR 50 per cubic metre. The international users of exported Russian roundwood were facing a situation, in which the Russian source of raw material was becoming exceedingly expensive. To cope with the situation, one could try to find alternative sources to procure roundwood or to adjust the production level and the need for wood raw material. In Finland, for example, the import volume of birch logs from the Baltic States increased slightly in 2008, yet no true substitute for Russian birch logs existed. Thus, the second option was inevitable and the production level of birch plywood in Finland was reduced by 50 percent in 2009 (Natural Resources... 2019). The production level remained at a relatively low level many years afterwards and was still over 10 percent lower in 2017 compared to 2008.

Year 2009 was a turning point in birch log exports from NW Russia and thus, the correlations between the consumption and export volumes were calculated for two different time periods, 1999–2008 and 2009–2017 (Figure 2). There was a strong positive correlation (0.9) between the export and consumption volumes of birch logs in both the sub-periods. Hence, it seems that as both the export and consumption volumes have been increasing simultaneously, there has also been an adequate supply for birch logs to meet the total demand. However, a positive correlation between the consumption and price of birch logs is detected (Figure 3), which may indicate that the rising price level may have acted as an incentive to enhance the supply.

The birch log price data was only available from 2002 onwards. The correlation between the consumption of birch logs and the birch log price was relatively high (0.6) in 2002–2017 (Figure 3), and shortening the time frame to 2009–2017 did not affect the result. The positive correlation between the birch log prices and the consumption of birch logs in NW Russia implies the higher the domestic demand, the higher the market price. The correlation between the birch log price and the export volume of birch logs was -0.1 within the sub-period 2002–2008 and 0.4 within sub-period 2009–2017. Calculation of the coefficient of correlation for the whole period (2002–2017) was not justified due to the shift in the export volumes in 2009.



**Figure 2.** Correlations between consumption and export of birch logs in Northwest Russia in 1993–2008 and in 2009–2017. (Sources: Federal Customs...2019, Finnish Customs 2018, RosStat 2018)



**Figure 3.** Correlation between the birch log price (deflated, in 2017 prices) and the consumption of birch logs in Northwest Russia and correlation between the birch log price and the export of birch logs from Northwest Russia. (Sources: Federal Customs...2019, Finnish Customs 2018, RosStat 2018)

In order to investigate the effects of both the domestic and the export demand for birch logs on the price of birch logs in NW Russia, a simple regression model was constructed. Theoretically, the model was a reduced-price model, where the different factors of demand and supply affect the observed development of birch log price. However, due to the availability of data, the explanatory variables consisted only of demand volumes for birch logs in domestic and export markets as well as dummy variables describing changes in operating environment such as shift in export duty regimes or cyclical fluctuations in markets for forest products. Several differently defined dummy variables were tested, such as variables depicting changes in the minimum export duties on birch logs or Russia's accession to the WTO. According to the results, the best suited for the data were dummy variables for years 2007–2008 and for year 2012. The former dummy variable coincided with the start of Russian roundwood export duty programme as well as the cyclical peak in roundwood prices in the Bal-

tic Sea Region (Hautamäki et al. 2012). The latter dummy variable was necessary because in 2012, there was a considerable and uncontrollable drop in the birch log price series. Possible reasons for the drop were the expectation related to Russia's WTO accession, which would have lowered export duties and raised export demand for birch logs in future. The similar drop was not detectable in the Central or Volga federal districts where roundwood exports play only a minor role in regional roundwood markets.

The ordinary least squares (*OLS*) estimation results of the price model are reported in Table 3. In the estimation, the logarithmic transformations of the variables were used, thus allowing the interpretation of the coefficients as elasticities. According to the *KPPS* unit root tests, all the time series were *I*(0) series at 5 percent risk level, and the price model was estimated using *OLS* and the levels of the variables.

**Table 3.** Estimated model for birch log price in Northwest Russia in 2002–2017

Regressor	Coefficient (s.e.)
Constant	0.36 (1.81)
Consumption of birch logs in NW Russia	0.96*** (0.23)
Exports of birch logs from NW Russia	-0.05 (0.04)
Dummy <sub>2007-2008</sub>	0.36** (0.12)
Dummy <sub>2012</sub>	-0.33* (0.16)
Diagnostics	
$R^2_{\text{adjusted}}$	0.66
Durbin-Watson	2.13
White	8.34
Jarque-Bera	0.19

Asterisks denote the risk level at which the null hypothesis is rejected; \*\*\* = 1 percent, \*\* = 5 percent, and \* = 10 percent. Standard errors of the estimates are presented in parentheses below the estimates.

According to diagnostic tests, the residuals of the birch log price model were well-behaved, and according to the estimated coefficients, the consumption, i.e. the domestic demand for birch logs, had the dominating effect on the price development of birch logs in NW Russia. For example, when the consumption of birch logs had increased by 1 percent, also the real price of birch logs had risen by 1 percent. However, the effect of birch log exports on price development was statistically not significant. Changes in the estimation period (2002–2017 vs. 2009–2017) or in the definitions of dummy variables, had only minor effects on the values and statistical significances of coefficients of consumption and exports.

## Discussion and Conclusions

The analysis of historical development revealed interdependencies among birch log exports, domestic consumption, and prices in NW Russia. The demand for birch log has been dominated by domestic consumption and it seems that despite the parallel rising trends of domestic use and export volumes, the birch log resources have been adequate to meet the increasing demand. The domestic demand for birch logs has determined the price development of birch logs, and the exports have been of minor importance. The results of *OLS* estimations show that the earlier export restrictions and the fluctuations of export volumes have hardly had any noticeable effect on the birch log prices in NW Russia. Thus, and notwithstanding the periodical fluctuations, the long-term development of real price of birch logs has remained rather steady in NW Russia.

The export quota will restrain the birch logs export at the level of the whole Russian Federation considerably and the export volumes of birch logs will be cut by half. Corresponding development can be expected in NW Russia, even though the quota is not distributed geographically and exact regional changes are not possible to foresee. The lower total demand for birch logs could enhance the supply to Russian plywood mills and ease pressure on birch log prices regionally. However, the lower demand could decrease harvesting volumes especially in mixed forests and affect the harvest of coniferous tree species. The reduction of harvesting volume as a consequence of export restrictions has been observed in several studies (Perez-Garcia et al. 1997, Turner et al. 2008, Solberg et al. 2010, van Kooten and Johnston 2013). The afore-mentioned studies also indicate a reduction of log price related to export restrictions. However, this result is based on forest sector modelling calculations, and not on actual historical data as in this study, where statistically significant effect between the export volumes of birch logs and the price of birch logs in NW Russia was not detected.

In the total, the effect of the quota seems to be negative on harvesting operations bringing challenges to Russian logging companies already struggling with high costs and low productivity (Gerasimov 2008). According to the results of this paper, the effect of the quota on the availability and price of birch logs in domestic roundwood markets in NW Russia will probably remain small. Thus, will the planned quota support domestic plywood production in NW Russia as advertised? Possibly in some plywood mills, the quota could have noticeable positive outcomes. However, in a wider perspective, the quota will shake the somewhat stable operating environment in international roundwood operations since Russia's WTO accession, increase again Russia's

country risk in the eyes of foreign investors, add to bureaucracy, increase costs – both private and governmental – and possibly gain very little.

The study has some limitations and weaknesses. The limited availability of relevant variables and low number of observations restricted the statistical analysis and decreased the reliability of analysis. The used dataset of export volumes based on the Finnish statistics is representative for most of the studied period, yet the situation has changed substantially within the last years when birch log exports to China have increased rapidly. This creates uncertainty when attempting to generalize the results of this study.

## References

- Federal Customs Service of Russia 2017. Informatsiia dlia uchastnikov VED [Information for foreign trade participants] (in Russian). Available online at: [http://ved.customs.ru/index.php?option=com\\_content&view=category&id=20&Itemid=179](http://ved.customs.ru/index.php?option=com_content&view=category&id=20&Itemid=179), [Cited 30 Nov 2017]
- Federal Customs Service of Russia. 2019. Data base of foreign trade customs statistics. Available online at: <http://stat.customs.ru>. [Cited 4 Jan 2019]
- Finnish Customs 2018. Uljas - System for distribution of Foreign Trade Statistics. Available online at: <http://tulli.fi/en/statistics/uljas-database>. [Cited 4 Jun 2018]
- Fuller, D. and Geide-Stevenson, D. 2003. Consensus Among Economists: Revisited. *Journal of Economic Review* 34 (4): 369–387.
- Fung, K. C. and Korinek, J. 2014. Economics of export restrictions as applied to industrial raw materials. In: *Export Restrictions in Raw Materials Trade: Facts, fallacies and better practices*. OECD. P. 63-92. Available online at: <http://www.oecd.org/tad/benefitlib/export-restrictions-raw-materials-2014.pdf>
- Gerasimov, Y. and Karjalainen, T. 2008. Development program for improving wood procurement in Northwest Russia based on SWOT analysis. *Baltic Forestry* 14(1): 87–92.
- Government Decision No. 19 of the Russian Federation dated 18.01.2017. O vnesenii izmeneniia v perechen tovarov, iavliauscchikhsia suschestvenno vazhnymi dlia vnutrennego rynka Rossiiskoi Federatsii, v otnoshenii kotorykh v iskluchitelnykh sluchaiakh mogut byt ustanovleny vremennye ogranicheniia ili zaprety eksporta [On introducing alterations to the list of products with major importance to the domestic market of the Russian Federation, for which can be set temporary export restrictions or prohibitions] (in Russian).
- Government Decision No. 836 of the Russian Federation dated 17.07.2018. O vvedenii vremennogo kolichestvennogo ogranicheniia na vyvoz brioven iz beriozy za predely territorii Rossiiskoi Federatsii v gosudarstva, ne ne iavliaushchimisia chlenami Evraziiskogo ekonomicheskogo soiuza [On imposing a temporary quota restriction on birch log export outside the Russian Federation to the states not being members of the Eurasian Economic Union] (in Russian).
- Hautamäki, S., Mutanen, A. and Viitanen, J. 2012. Substitution in the Finnish forest industry's round-wood procurement. *Silva Fennica* 46(3): 425–440. Available online at: <https://doi.org/10.14214/sf.51>
- IMF. 2016. World Economic Outlook, October 2016. International Monetary Fund, Washington, 2816 pp. Available online at: <http://www.imf.org/en/Publications/WEO/Issues/2016/12/31/Subdued-Demand-Symptoms-and-Remedies>, [Cited 12 Feb 2018]
- Jutila, L., Karvinen, S., Leinonen, T. and Väliky, E. 2010. Venäjän tullipolitiikan vaikutuksista Suomen ja Venäjän väliseen metsäsektorin kauppaan [The influence of Russian customs policy on the trade between the Finnish and Russian forest sectors]. Working Papers of the Finnish Forest Research Institute, 155. 32 pp. (in Finnish).
- van Kooten, C. and Johnston, G. 2014. Global impacts of Russian exports restriction and the Canada-U.S. lumber dispute: Modeling trade in logs and lumber. In: *Forest Policy and Economics*, Vol. 39(C), Elsevier, Dordrecht: 54–66. DOI: 10.1016/j.forpol.2013.11.003 Available online at: <https://ideas.repec.org/a/eee/forpol/v39y2014/icp54-66.html>
- Krugman, P. 1993. The Narrow and Broad Arguments for Free Trade. *The American Economic Review* Vol. 83, No. 2. Papers and Proceedings of the Hundred and Fifth Annual Meeting of the American Economic Association, May 1993: 362–366. Available online at: <http://www.jstor.org/stable/2117691>
- Kuzminykh, Yu. V. 2016. Vozdeistvie administrativnykh i tamozhennykh barierov v sfere lesosyrievogo eksporta na ego dinamiku i strukturu. [Nhe impact of administrative and customs barriers in the area of export of timber raw materials on its dynamics and structure]. *Voprosy regionalnoj ekonomiki* 28(3): 33-39 (in Russian with English abstract). Available online at: <https://doi.org/10.21499/2078-4023-2016-28-3-33-39>
- Ministry of Industry and Trade 2018. Podderzhka uchastnikov VTD. [Support for foreign trade participants]. Available online at: <http://mail.non-tariff.gov.ru/>. [Cited 5 December 2018]. (in Russian).
- Ministry of Industry and Trade 2018. Order No. 5118 dated 29.12.2018. Prikaz o raspredelenii kvot v otnoshenii brioven iz beriozy, vyvozimykh za predely territorii Rossiiskoi Federatsii v gosudarstva, ne iavliaushchiesia chlenami Evraziiskogo ekonomicheskogo soiuza, v 2019 godu. [Order concerning allocation of quota regarding birch logs exported outside the territory of the Russian Federation to the states not being members of the Eurasian Economic Union in 2019] (in Russian)
- MinPromTorg 2016. Poiasnitelnaia zapiska k projektu postanovleniia Pravitelstva Rossiiskoi Federatsii o vvedenii vremennogo ogranicheniia na vyvoz brioven iz beriozy za predely territorii Rossiiskoi Federatsii v gosudarstva, ne iavliauscchiesia chlenami Evraziiskogo ekonomicheskogo soiuza [Explanatory note to the draft of Government Decision on imposing temporary restrictions for birch log export outside the territory of the Russian Federation to states not being members of the Eurasian Economic Union]. Ministry of Industry and Trade of Russia (in Russian).
- Minpromtorg. 2017. Poiasnitelnaia zapiska k projektu postanovleniia Pravitelstva Rossiiskoi Federatsii "O vnesenii izmeneniia v perechen tovarov, iavliaushchikhsia sushchestvenno vazhnymi dlia vnutrennego rynka Rossiiskoi Federatsii, v otnoshenii kotorykh v iskluchitelnykh sluchaiakh mogut byt ustanovleny vremennye ogranicheniia ili zaprety eksporta" [Explanatory note to the draft of Government Decision "On introducing alterations to the list of products with major importance to the domestic market of the Russian Federation, for which can be imposed temporary export restrictions or prohibitions in

exceptional circumstances”]. Ministry of Industry and Trade of Russian (in Russian).

- Mutanen, A. and Viitanen, J.** 2017. Venäläisen tuontipuun rajahintojen ja Suomen kantohintojen väliset vuorovaikutussuhteet [The interaction between the Russian border import prices and Finnish stumpage prices on roundwood]. *Metsätieteen aikakauskirja* 2017–7692. Available online at: <https://metsatieteenaikakauskirja.fi/pdf/article7692.pdf> (in Finnish).
- Natural Resources Institute Finland. 2019. Statistical database. Available online at: [stat.luke.fi](http://stat.luke.fi). [Cited 4 Jan 2019]
- Perez-Garcia, J., Lippke, B. and Baker, J.** 1997. Trade barriers in the Pacific forest sector: who wins and who loses. *Contemporary Economic Policy* 15(1): 87–103. Available online at: <https://doi.org/10.1111/j.1465-7287.1997.tb00457.x>
- Pisarenko, A.I. and Strakhov, V.V.** 2009. O tamozhennom regulirovanii razvitiia lesopromyshlennogo kompleksa Rossii [Customs regulation of timber industry development in Russia]. *Lesnoye khozyaistvo* 3: 2–4 (in Russian).
- RosStat 2018. Central data base. Federal Service of State Statistics. Available online at: <http://cbsd.gks.ru/>, [Cited 4 Jun 2018]
- RosStat 2017. Regiony Rossii. Osnovnye kharakteristiki sub’ektov Rossiiskoi Federatsii – 2017 g. Statisticheskii sbornik. [Regions of Russia. Regional profiles of the constituent entities of the Russian Federation –2017. Statistical Book.]. Federal Service of State Statistics, Moscow. 751 pp. Available online at: [http://www.gks.ru/wps/wcm/connect/rosstat\\_main/rosstat/ru/statistics/publications/catalog/doc\\_1138625359016](http://www.gks.ru/wps/wcm/connect/rosstat_main/rosstat/ru/statistics/publications/catalog/doc_1138625359016) (in Russian).
- Solberg, B., Moiseyev, A., Kallio, A.M.I. and Toppinen, A.** 2010. Forest sector market impacts of changed roundwood export tariffs and investment climate in Russia. *Forest Policy and Economics* 12(1): 17–23. Available online at: <https://doi.org/10.1016/j.forpol.2009.09.016>
- Turner, J.A., Buongiorno, J., Katz, A. and Zhu, S.** 2008. Implications of the Russian roundwood export tax for the Russian and global wood products sectors. *Scandinavian Journal of Forest Research* 23(2): 154–166. DOI: 10.1080/02827580801995307.
- UNECE. 2010. Forest product conversion factors for the UNECE region. Geneva timber and forest discussion paper 49. ECE/TIM/DP/49, United Nations Publication ISSN 1020 7228. United Nations. Geneva, 50 pp. Available online at: <https://www.unece.org/fileadmin/DAM/timber/publications/DP-49.pdf>
- WTO 2016. Report on G20 trade measures (mid-October 2015 to mid-May 2016). World Trade Organisation, Geneva. 103 pp. Available online at: [https://www.wto.org/english/news\\_e/news16\\_e/g20\\_wto\\_report\\_june16\\_e.pdf](https://www.wto.org/english/news_e/news16_e/g20_wto_report_june16_e.pdf), [Cited 12 Feb 2017]

**Appendix**

Foreign trade classification codes (the TN VED of Russia) for birch

Till 31 December 2016		
Birch, saw logs and veneer logs:	4403 99 510 1	smallest diameter 15–24 cm, length > 1 m
	4403 99 510 2	smallest diameter > 24 cm, length > 1 m
Birch, other timber assortments:	4403 99 590 1	smallest diameter < 15 cm
	4403 99 590 9	other

1 January 2017 onwards		
Birch, largest cross-section ≥ 15 cm:	4403 95 000 1	sawlogs and veneer logs, diameter of smallest cross-section > 15 cm, length > 1 m
	4403 95 000 2	other timber assortments, diameter of smallest cross-section < 15 cm
	4403 95 000 9	other
Birch, other dimensions:	4403 96 000 1	diameter of smallest cross-section < 15 cm
	4403 96 000 9	other

Correspondence of the trade classification codes TN VED 2012 and 2017 for birch

2012	2017
4403 99 510 1	from 4403 95 000 1
4403 99 510 2	from 4403 95 000 1
4403 99 590 1	4403 95 000 2
	4403 96 000 1
4403 99 590 9	4403 95 000 9
	4403 96 000 9

2017	2012
4403 95 000 1	4403 99 510 1
	4403 99 510 2
4403 95 000 2	from 4403 99 590 1
4403 95 000 9	from 4403 99 590 9
4403 96 000 1	from 4403 99 590 1
4403 96 000 9	from 4403 99 590 9

Source: Federal Customs...2017