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MECHANISMS FOR PURSUING THE ECONOMIC AND ENVIRONMENTAL INTERESTS OF UKRAINE IN FOREST AND WOODWORKING INDUSTRY

Introduction. Interim results of a full log export ban have evidenced the benefits of such a solution for the national economy and the environment. However, despite obvious achievements, the situation in the wood industry on the whole remains disadvantageous, in particular due to the massive smuggling of the unprocessed wood disguised as fuel wood.

Aim and tasks. This article is intended to identify and substantiate legal and regulatory measures of the governmental policy aimed at the intensification of log export ban effects in Ukraine, as well as to give a forecast of macroeconomic effects of the realization of such measures in the mid-term run.

Research results. The inadequate institutional environment and the high level of corruption in the public sector form a favorable environment for massive smuggling of wood raw materials subject to a moratorium. Nevertheless, author strongly disagrees with conclusions that a log export ban, as a fragmented tool, totally failed in performing its mission, namely to stop the uncontrolled logging and forest export from Ukraine. One should remember the trade being a two-way process, the responsibility for smuggling should be also assumed by the destination countries which import unaccounted wood originated from Ukraine. It is necessary to urgently strengthen the effect of a log export ban through closing loopholes which are used to export unprocessed wood under the guise of the another associated commodity groups.

Conclusions. Vision on regulatory measures system, which is called to strengthen the effect of the log export ban, embraces: a) criminal responsibility for avoiding or deceiving customs control when bringing banned unprocessed wood across the border of Ukraine; b) fuelwood export ban for an eight-year period; c) limitation of unprocessed wood volumes for domestic consumption at the level of 25 million cubic meter a year. In the long-term perspective, to establish an effective and self-sufficient forest industry in Ukraine, it is necessary to strengthen ban on the export of unprocessed and fuelwood through a number of systematic measures: a) creation of the Ukrainian Export and Credit Agency; b) introduction of the “reasonable import substitution” policy; c) free connection to utilities for the companies; d) introduction of industrial parks with investment incentives for new manufacturing.

Key words: log export ban, timber export ban, unprocessed wood, fuel wood, plywood, furniture, mirror statistics, economic modeling, GTAP.

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МЕХАНІЗМИ ЗАБЕЗПЕЧЕННЯ ЕКОНОМІЧНИХ ТА ЕКОЛОГІЧНИХ ІНТЕРЕСІВ УКРАЇНИ У ЛІСОВОМУ ГОСПОДАРСТВІ І ДЕРЕВООБРОБНІЙ ПРОМИСЛОВОСТІ

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Проблема. Проміжні результати дії повної заборони на вивіз лісу засвідчили очевидні переваги такого рішення для національної економіки та навколишнього середовища. Однак попри наявні здобутки ситуація в лісопромисловому секторі залишається в цілому несприятливою, зокрема через масштабну контрабанду необроблених лісоматеріалів під виглядом паливної деревини.

Мета та завдання. Стаття має на меті ідентифікувати й обґрунтувати нормативно-правові та регуляторні заходи державної політики щодо посилення дії мораторію на експорт з України необроблених лісоматеріалів, а також надати прогнозну оцінку макроекономічних ефектів від реалізації відповідних заходів у середньостроковій перспективі.

Результати. Недосконале інституційне середовище та високий рівень корупції в митних органах формують сприятливе середовище для масштабної контрабанди лісової сировини, яка підпадає під дію мораторію. Незважаючи на це, засадничо хибними, на думку автора, є висновки щодо неефективності мораторію на експорт необроблених лісоматеріалів як фрагментарного інструменту, який нездатний зупинити неконтрольовану вирубку і вивіз з України лісу. Важливо пам'ятати, що торгівля завжди є двостороннім процесом, тому відповідальність за контрабанду розділяють і ті країни, які імпортують необліковану деревину українського походження.

Висновки. Заходи системи регуляторних, нормативно-правових заходів з посилення дії мораторію охоплюють: введення кримінальної відповідальності за переміщення через митний кордон України лісоматеріалів необроблених, заборонених до вивозу за межі митної території України; заборону на вивезення за межі митної території України в митному режимі експорту деревини паливної строком на вісім років; обмеження обсягу внутрішнього споживання вітчизняних лісоматеріалів необроблених на рівні 25 млн. м³ на рік. У довгостроковій перспективі для становлення в Україні ефективного і самодостатнього лісопромислового комплексу необхідно посилити мораторій на експорт лісоматеріалів необроблених та деревини паливної рядом системних заходів: створення Експортно-кредитного агентства; запровадження політики «розумного імпортозаміщення»; забезпечення безкоштовного приєднання підприємств до інженерних мереж; відкриття індустріальних парків з наданням їх резидентам пільгових умов виробничої й інвестиційної діяльності.

Ключові слова: мораторій, лісоматеріали необроблені, деревина паливна, фанера, меблі, дзеркальна статистика, економічне моделювання, ГТАР.

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Introduction. A rational use of national forest reserve remains extremely important both in terms of development of the national wood processing industry and in terms of avoiding environmental disaster in a number of regions of Ukraine. The most important step to solve the issue was an introduction of a log export ban from Ukraine at the beginning on hard wood (foliage), and later on soft wood (conifer) since 2017. Interim results of a full log export ban have evidenced the benefits of such a solution for the national economy and the environment. Thus, logging volume in 2017 went down by 2.5% compared to the previous year, and the forest regeneration area exceeded the total area of wood felling by almost 5% [1]. At the same time, the monetary value of wood processing output grew by 18% and the furniture manufacturing by 26% in spite of the overall decline in the manufacturing industry. Exports of processed wood products grew by 17%, tax revenue from wood processing and furniture manufacturing grew by one third, and capital investments in the woodworking industry grew twice (+2.1 billion UAH only for 9 months of 2017) [2]. However, despite obvious achievements, the situation in the wood industry on the whole remains disadvantageous, in particular due to the massive smuggling of the unprocessed wood disguised as fuel wood. This makes it reasonable to start proposing and substantiating new regulatory and foreign trade measures aimed at improving the existing mechanism for pursuing economic and environmental interests of Ukraine in forest and woodworking industry.

Analysis of recent researches and publications. A number of works written by Ukrainian researchers have been devoted to the subject of current environmental and economic issues of the forest and woodworking industry in Ukraine. The following are worth to note: N.M. Popadnytsya [3], A.M. Deineka [4], V.P. Pechuliak [5], O.V. Ulianchenko [6], R.B. Babych [7] et al. Thus, when studying the prospects of supplying wood to woodworking, furniture and pulp and paper industries, R.B. Babych substantiated the need to concentrate primary processing of cut timber on the landing which in his opinion will make it

possible to process small-sized wood and debris into a valuable raw material for pulp and wood-based boards. N.M. Popadnytsya has developed a methodology for a comprehensive analysis of the domestic woodworking market and proposed ways to increase competitiveness of the Ukrainian woodworking industry on the domestic market based on the development of clusters. V.P. Pechuliak, having studied current international relations in the field of forest exploitation, has proven that Ukraine is deeply integrated into a global woodworking industry as a fine wood raw material supplier and substantiated that state regulations in Ukraine in the field of forest industry must take into account current trends of transformation and globalization of the world economy.

Previously unsettled problem constituent. With all due respect to the existing studies in this field, it is worth noting that given how quickly new challenges in the national forest and woodworking industry arise it makes it reasonable to start proposing and substantiating such mechanisms of pursuing national interests of Ukraine which will be appropriate for new environmental and economic challenges of the development of the industry.

Aim and tasks. This work is intended to identify and substantiate legal and regulatory measures of the governmental policy aimed at the intensification of log export ban effects in Ukraine, as well as to give a forecast of macroeconomic effects of the realization of such measures in the mid-term run.

Results. Moving up the value chain remains one of the main prerequisites for the implementation of the accelerated growth strategy of the Ukraine's national economy. Most domestic industrial sectors need to reorient manufacturing and export potential to a higher value added production. This also relates to forest industry, which includes woodworking, pulp and paper, furniture and logging industries. In particular, the comparison of the statistics on key export and import forest industry commodities clearly shows the disproportion in the Ukraine's foreign trade exchange (Table 1.)

Table 1. Comparison of monetary value and physical volume of Ukraine's foreign trade by main commodity groups in the forest industry in 2017

Export				Import			
Commodity code	Commodities	Value and volume	Avg annual price	Commodity code	Commodities	Value and volume	Avg annual price
440100	Fuel wood	\$114,3 M 1,97 M ton	57,7 \$/ton	471100	Wood fiber boards	\$95,4 M 186,0 K ton	512,9 \$/ton
440710	Sawn coniferous wood	\$318,2 M 1,68 M ton	189,1 \$/ton	4802-4805	Paper and cardboard uncoated	\$255,2 M 321,5 K ton	793,8 \$/ ton
440200	Charcoal	\$59,3 M 174, 2 K ton	340,4 \$/ton	4810-4811	Paper and cardboard coated	\$306,6 M 223,1 K ton	1373,9 \$/ ton
440791	Sawn oak wood	\$94,6 M 212,9 K ton	444,3 \$/ton	481900	Paper and cardboard packaging	\$76,9 M 27,4 K ton	2811,1 \$/ton
440890	Facing sheets	\$173,2 M 126, 4 K ton	1370,0 \$/ton	940330-940360	Wooden furniture	\$31,9 M 11,4 K ton	2798,2 \$/ton
Total		\$759,6 M 4,16 M ton	182,6 \$/ton	Total		\$766,0 M 769,4 K ton	995,6 \$/ton

Source: the table, incl. average annual price calculation, is composed by the author based on the State Statistics Service of Ukraine data [2].

As one can see from Table 1, foreign trade monetary value of five biggest forest industry export and import commodities is more or less similar. However, to obtain \$759,6 M in exports, Ukraine exports 4,16 M ton of wood and primary wood processing materials. While import to Ukraine is dominated by high value added products, that's why \$766,0 M of accounts for 0,77 M ton of imported products. In essence, Ukraine exports wood raw materials and wood primary processed semi-finished

products which are then used in the rest of the world for the production of deep processed and finished goods, which are then imported back to Ukraine to satisfy the domestic demand for final consumption while squeezing Ukrainian analogue manufacturers out from the market. In this connection, the greatest damage is caused to the domestic production of high-quality paper and cardboard, intended for writing, printing and other graphic works (Table 2).

Table 2. Dynamics of domestic production of paper products in 2011-2017, K tons

Commodity groups	2011	2012	2013	2014	2015	2016	2017	2017/2011
Paper and cardboard uncoated for printing, writing and other graphic works	33,2	14,6	13,7	8,7	3,5	2,8	1,3	-96,1%
Paper and cardboard uncoated for technical use	465	472	497	442	392	399	435	-6,5%
Paper and cardboard corrugated	158	159	168	146	149	149	159	0,6%
Paper for hygienic and household use	113	129	121	124	119	115	120	6,2%
Toilet paper	93	104	111	115	102	104	106	14,0%
Paper and cardboard boxes and cases	528	543	595	557	474	511	542	2,7%
Wallpapers and other paper wall surfaces	113	117	119	117	57	60	65	-42,5%

Source: the table, incl. average annual price calculation, is composed by the author based on the State Statistics Service of Ukraine data [2].

Undoubtedly, the complete solution to the chronic problems of the domestic forestry industry is a long-term process, but it has to be noted that the structural reorientation of the manufacturing and export potential in the relevant branches is significantly inhibited due to non-compliance with the regime of a total ban on the export of unprocessed timber from Ukraine. The inadequate institutional environment and the high level of corruption in the public sector form a favorable environment for massive smuggling of wood raw materials subject to a moratorium. An in-depth analysis of statistical data gives reasons to believe that smuggling of unprocessed timber is carried out under the guise of fuel wood.

Thus, according to the State Statistics Service of Ukraine, domestic fuel wood exports (code 4401 10) in 2017 amounted to 1.07 million tons, bringing the country's foreign exchange earnings in the amount of USD 50.2 million. In the structure of export of the commodity group 44 "Wood and products from it", fuel wood export value amounted to 4.2%. During 2015-2017 physical and value volumes of export of fuel wood had a declining

dynamics, however, in January-April 2018 there is a significant increase in domestic export figures of fuel wood. Monetary value reached \$20.6 million compared to 12.5 million for the same period last year; physical volumes grew to 420.7 thousand tons compared with 291.7 thousand tons in January-April 2017.

In terms of geography of fuel wood exports, the prevailing share of export goes to the EU countries: in 2017 it amounted to 93.1% (998.7 thousand ton), in January-April 2018 to 95.9% (403.4 thousand ton). At the same time, Eurostat's mirror statistics from year to year show much less volumes of imports of this type of products into the EU from Ukraine. In particular, in 2017, Eurostat reported only 214.7 thousand tons of fuel wood imported from the customs territory of Ukraine, which is 784 thousand tons less than reflected in official statistics of Ukraine. The analysis of mirror statistics in dynamics shows that this discrepancy in data has a steady tendency to increase. In particular, in 2013, Eurostat recorded imports of fuelwood from Ukraine by 265.7 thousand tons less than reported by the State Statistics Service of Ukraine (Fig. 1).

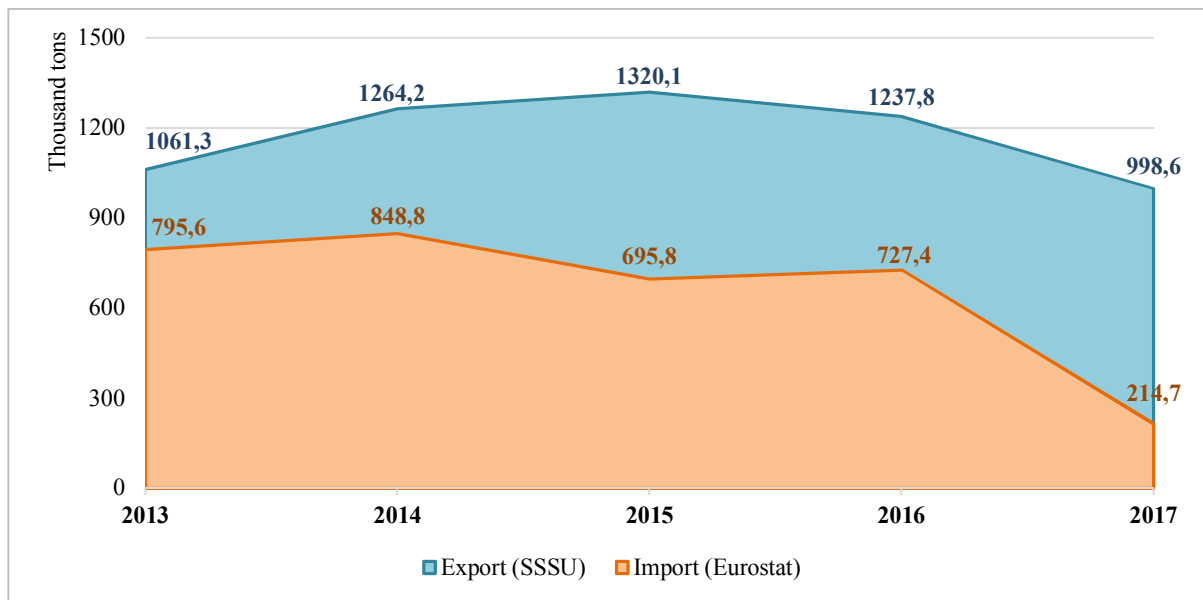


Fig. 1. Comparison of the mirror statistics of the State Statistics Service of Ukraine and Eurostat for fuel wood export from Ukraine to the EU (commodity code 4401 10) in 2013-2017, thousand tons

Source: composed by the author based on the State Statistics Service of Ukraine [2] and Eurostat [8].

Thus, item 4401 10 "Fuel wood in the form of logs, wood blocks, knots, bush wood, branches, etc." accumulates and conceals more and more volumes of smuggled products of adjacent positions. This is especially true for unprocessed timber (code 4403), for which a ban on exports was imposed in 2015.

Comparison of the State Statistics Service of Ukraine and Eurostat mirror statistics shows that despite the ban about 450 thousand tons of unprocessed wood was supplied annually from Ukraine to the EU during 2015-2017 under the guise of other commodity groups (most likely, under the guise of wood fuel) (Fig. 2).

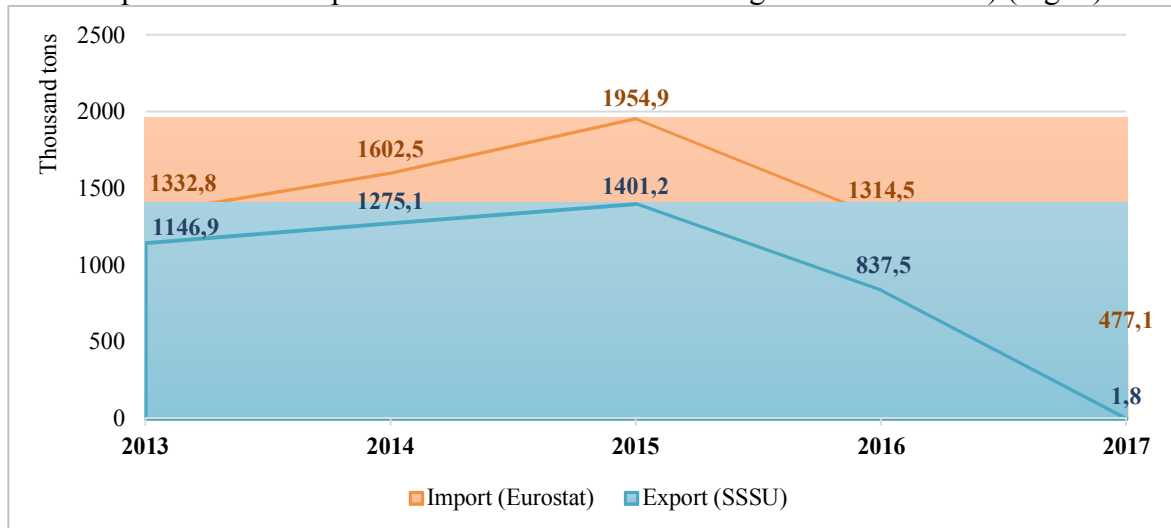


Fig. 2. Comparison of the mirror statistics of the State Statistics Service of Ukraine and Eurostat for unprocessed timber export from Ukraine to the EU (commodity code 4403) in 2013-2017, thousand tons

Source: composed by the author based on the State Statistics Service of Ukraine [2] and Eurostat [8].

It should be particularly noted that, from the author's point of view, a number of Ukrainian researchers [9] are fundamentally wrong in their conclusions that a log export ban, as a fragmented tool, totally failed in performing its mission, namely to stop the uncontrolled logging and forest export from Ukraine. In a socio-political discourse these considerations make one think of the need to cancel log export ban and are promoted in the interests of foreign consumers of Ukrainian forests. In fact, it is necessary to urgently strengthen the effect of a log export ban through closing loopholes which are used to export unprocessed wood under the guise of the another associated commodity groups, in particular fuel wood. It would be also crucially important to increase responsibility attributed for domestic fine wood smuggling. That said, one should remember the trade being a two-way process, the responsibility for smuggling should be also assumed by the destination countries which import unaccounted wood

originated from Ukraine. According to the findings of a large-scale research, made by the international organization "EarthSight" [10], institutional capacity of the EU countries to ensure execution of their own EU Timber Regulation (EUTR) on import ban on log, illegally received from the origin country, is not much higher than the ability of the Ukrainian customs and other controlling authorities to ensure a full compliance with the log export ban legislation.

Author's vision on regulatory measures system which is called to strengthen the effect of the log export ban in the current circumstances has been translated into the Draft law #5495 from December 6, 2016 "On Preservation of the Ukrainian Forests and Prevention of Illegal Export of Unprocessed Wood". The Draft Law introduces:

- Criminal responsibility for avoiding or deceiving customs control when bringing fine and rare wood or timber, unprocessed wood

and other kind of wood prohibited for export from Ukraine across the border of Ukraine;

- Fuelwood export ban (commodity item 4401100000 under the UKTZED (Ukrainian Commodity Description and Coding System)) for an eight-year period;

- Limitation of unprocessed wood volumes for domestic consumption at the level of 25 million cubic meter a year regardless of the previous year volumes in order to bring national legislation on log export ban in full compliance with the international obligations of Ukraine in terms of WTO and EU Association Agreement.

Therefore, export ban on commodity item 4401 100000 under the UKTZED will contribute to the full-scale launching of export ban on unprocessed wood, which national wood processing companies still lack because of smuggling. In particular, this refers to the scarcest wood assortment (technical and plywood raw materials) used in manufacturing of added-value wood processing production – fiberboards, chipboards and plywood, which, in their turn, are basic components for furniture and other joinery products.

Fuelwood itself is a fine raw material for manufacturing of some high added-value products. The main purpose of its processing is wood fuel pellets and briquettes, used in households both for burning and as an alternative energy source. Along with that, modern high technologies make it possible to use such kinds of wood in the production of so called wood powder which is widely used in various sectors of industry – chemistry (production of phenolic plastics, polymer compounds, fertilizers), metallurgy (as an additive in manufacturing of ferrous alloys and mould boxes), agriculture (as a supplement to some kinds of feed, in the industrial cultivation of mushrooms, fish and meat smoke-drying). Also wood powder serves as a raw material for explosives.

Therefore, ban on fuelwood and unprocessed wood export from Ukraine brings about opportunities to intensify national manufacturing of higher added-value products with an extensive range of goods in the basic economic sectors of Ukraine. In order to assess

the potential effects of the ban on the export of goods from Ukraine under codes 4403 and 4401 10 of the UKTZED, an economical and mathematical modeling of the relevant scenario was carried out taking into account the above-mentioned inter-sectoral links. The calculations were made using GTAP – the applied model of the overall balance – which is based on a system of balance equations that describe the behavior of economic agents at the external and internal market under the specified trading conditions, as well as the global database based on the tables “cost-output” and the matrix of social accounts. Combining databases with the appropriate mathematical tools allows GTAP to quantify the projected changes at the macroeconomic and sectoral levels in the medium term, which is needed to bring the national economy into a new balance state as a result of regulatory measures of foreign trade policy.

The calculations have shown that 600-610 million USD increase of exports in processing industries will compensate for a loss of 50-60 million USD from the fuelwood exports ban as soon as in the mid-term run. The overall results of the modeling have demonstrated that ban on export from Ukraine of unprocessed wood and fuelwood and their redirection for the needs of the national processing industries will accelerate GDP growth by 0.94 percentage points. Industrial manufacturing will additionally increase by 1.52%. The utmost growth is expected in wood processing (22.9%) and in pulp-and-paper industries (13.8%).

Ukraine’s commodity exports will increase by 1.41% mainly due to the industries where the largest industrial growth is expected. At the same time, a number of sectors of the forest industry, in particular, wood processing and pulp-and-paper industries will see import substitution which will positively affect the trade balance. However, the development of processing manufacture will demand investment in innovative equipment and this will result in its import increase by 2.5%. Also the needs of the manufacturers of the pulp-and-paper industry are expected to induce imports growth of some chemical products (2.1%). In

general, commodity imports will increase by 0.6% which amounts to about 300 million USD, basing on the 2017 data. Thus, the growth of the foreign trade surplus (taking into account the loss of 50 million USD revenue from the fuel wood export) is expected at 257.4 million USD level.

The labor market is expected to create new 176.6 thousand jobs in processing industries, which use fuelwood and unprocessed wood as raw materials. Loss of jobs will mainly occur in gray logging, as well as in transport and logistics sectors, which currently provide services to transport timber abroad. This loss is estimated at 39.6 thousand jobs, so the net effect of increased employment will constitute 137 thousand jobs. This will contribute to reduce the unemployment rate by 0.8 percentage points from the current 9.9% to 9.1%.

In the long-term perspective, to establish an effective and self-sufficient forest industry in Ukraine, it is necessary to strengthen ban on the export of unprocessed and fuelwood through a number of systematic measures of industrial policy aimed at the development of the furniture, wood processing and pulp-and-paper industries. The most important of them are:

- creation of the Ukrainian Export and Credit Agency (ECA), aimed at lowering the cost of export credits and insurance of export operations for the processing industries. Among the forest industry products the national ECA legislation covers goods from the Group 94 under the UKTZED which, among other things, includes wooden furniture;
- industrial parks with favorable conditions for their resident companies which engaged in manufacturing and R&D activities;
- introduction of the "reasonable import substitution" policy through adopting the Draft Law "Buy Ukrainian, Pay to Ukrainians" which sets price preferences for domestic producers in public procurement as well as requirements of localization of manufacturing facilities for the participants;
- free connection to utilities for the companies. This will reduce investment barriers, connected with complicated, unfair

and bureaucratic mechanisms, for new manufactures in Ukraine.

As preliminary estimated, implementation of the whole complex of the above-mentioned measures for forest industry development will ensure in a long-term perspective:

- increase of the forest coverage of Ukraine from the current 15.9% to 20.0% due to the forests expansion from 10.4 to 12.6 million hectares;
- growth in production of wood processing and furniture industries by 62.3%, and of paper industry – by 34.0%;
- increase of the share of forest, wood processing, furniture and paper sectors in the structure of the processing industry of Ukraine from 4.4% to 6.3%;
- export growth of products of wood processing and furniture industries by 88.2%, paper industry – by 75.9%;
- reduction of the share of forest raw materials in the export of forest, wood processing, furniture and paper industry enterprises from 13.1% to 1.3%;
- growth of net tax revenues from the companies of wood processing and furniture industries by 29.1%, and paper industry - by 16.3%.

Finally, I would like to note that the research on the domestic forest industry growth potential also provides calculations based on international "cost-output" inter-industry balance sheet data. These calculations make it possible to establish that the share of Ukrainian unprocessed timber is about 9.4% in the cost of finished wood products made in the EU countries, and about 1% in paper products made in the EU. Therefore, the implementation of investment projects in the forest industry in Ukraine which entails using domestic wood will contribute to the increase of the value added in the national industry by 10.6 times (when new woodworking capacities are introduced) and by 98.0 times (when new pulp and paper capacities are introduced), which will ensure the foundations for the growth of national well-being.

Conclusions. The introduction of a log export ban in Ukraine has contributed to the growth of the production and export potential of manufacturing in the domestic forest industry, first of all, in the woodworking and furniture industry. At the same time, the imperfect institutional capacity meant to ensure control over the practical observance of relevant legislative provisions, both in Ukraine and in the EU, has led to the intensification of smuggling of wood raw materials between the EU and Ukraine, limiting the positive impact of the ban, especially for consumers of rare wood for technical and plywood purposes, as well as pulp and paper industry companies. In order to eliminate the existing shortcomings, it is necessary to immediately prohibit domestic exports under commodity item no. 4401 10 "Fuel wood in the form of logs, wood blocks,

knots, bush wood, branches, etc.", which accumulates ever increasing smuggled product volumes of unprocessed timber. It is also advisable to introduce criminal responsibility for the smuggling of timber or lumber of valuable and rare breeds of trees and other wood products, the export of which is prohibited outside the customs territory of Ukraine. In the future, it will be necessary to focus on the implementation of a large-scale Industrial Package of Reforms, which will cover, first of all, the launch of a national export-credit agency, the introduction of industrial parks with investment incentives for new manufacturing, the free connection of manufacturing facilities to utilities, import substitution in public procurement, etc.

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