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**SOVIET AND POST-SOVIET MODELS OF DEVELOPMENT
OF THE TIMBER INDUSTRY COMPLEX OF RUSSIA
IN THE SECOND HALF OF THE 20TH CENTURY:
PROBLEMS, CHALLENGES, SOLUTIONS**

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Abstract. Background: The purpose of this study is to identify common and specific trends in the implementation of models of Soviet and post-Soviet modernization of the timber industry in Russia. **Methods:** The methodology of the research is based on the use of theoretical approaches of historical and economic sciences. Such a wide range of methodological approaches used in the work is related to the complexity of the study, which included analysis of the interaction of the state, the timber industry complex and the region at the macro-, meso- and microlevels of social and economic interaction. **Findings:** The dynamics of the development of the domestic timber industry complex during the period under review was characterized by a hasty growth, then a stage of maturity and, subsequently, a stage of decline. Moreover, this dynamics was marked both in production and economic indicators, as well as in capital investment indicators that affected the industrial and social infrastructure of the timber industry, as well as on quantitative and qualitative indicators of the development of mechanization in the timber industry and the achievement of scientific and technological progress. The final transition of the domestic timber industry complex from a group of stable industries of the old technological order to the problem group has become an obvious proof of the counter-modernization model of development. However, we need a search for new transformational solutions. At the present stage, Russia needs an urgent transition to the process of building a cluster policy in the timber industry. Such a policy should be carried out both at the regional and national levels, as well as in the context of international cooperation. **Application:** The findings of the study will be helpful for specialists who deal with the issues of economic or industrial history.

Key words: timber industry complex, development models, the USSR, Russia, indicators, infrastructure, mechanization, challenges.

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**СОВЕТСКАЯ И ПОСТСОВЕТСКАЯ МОДЕЛИ РАЗВИТИЯ
ЛЕСОПРОМЫШЛЕННОГО КОМПЛЕКСА РОССИИ
ВО ВТОРОЙ ПОЛОВИНЕ XX ВЕКА: ПРОБЛЕМЫ, ВЫЗОВЫ, РЕШЕНИЯ**

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Аннотация. Целью данного исследования является выявление общих и особенных тенденций в реализации моделей советской и постсоветской модернизации лесной промышленности в России. Методологическая основа исследования основана на использовании теоретических подходов исторических и экономических наук. Такой широкий спектр методологических подходов, используемых в работе, связан со сложностью исследования, которое включило в себя анализ взаимодействия государства, лесопромышленного комплекса и региона на макро-, мезо- и микроуровне социально-экономического взаимодействия. Динамика развития отечественного лесопромышленного комплекса в течение рассматриваемого периода характеризовалась ускоренным ростом, затем стадией зрелости, и в завершении – стадией снижения. Более того, эта динамика была отмечена как по производственным, так и по экономическим показателям, а также по показателям капиталовложений, которые влияли на промышленную и социальную инфраструктуру лесной промышленности, а также на количественные и качественные показатели развития механизации в лесной промышленности и достижение научно-технического прогресса. Окончательный переход отечественного лесопромышленного комплекса из группы стабильных отраслей старого технологического порядка в проблемную группу стал очевидным доказательством модели контрмодернизационного развития. В сложившейся ситуации необходим поиск новых трансформационных решений. На современном этапе Российской Федерации необходим срочный переход к процессу формирования кластерной политики в лесной промышленности. Такая политика должна проводиться как на региональном, так и на общегосударственном уровне, а также в контексте международного сотрудничества.

И.Р. Шегельман является автором вводного раздела, в котором представлены результаты обобщения исследовательского опыта по изучению заявленной проблемы. О.И. Кулагин является автором основной части статьи, в которой проведен сравнительный анализ советской и постсоветской модели развития отечественного лесопромышленного комплекса.

Ключевые слова: лесопромышленный комплекс, модели развития, СССР, Россия, индикаторы, инфраструктура, механизация, вызовы.

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1. Introduction

This study is an attempt to set the framework for writing a comprehensive study on the role of the domestic timber industry complex as the basic mechanism for the exploration, and then the development by the Soviet and then Russian state of its vast peripheral spaces. The study of the history of the development of branches of the Soviet timber industry complex began in the late of 1940s–1950s. Then came first major monographs on the history and economy of the timber industry. These studies are valuable, because in these researches were given first generalizations related the history of restoration and development of branches of the timber industry complex after the war. The period from the late 1950's to the 1980's was characterized by a great variety of problems and researchers. At the same time, the problems of the restoration and development of the domestic timber industry

complex after the war were discussed highly generalized. These subjects were touched upon in the works on the history of the national economy and the working class of the USSR.

All the studies relating to Soviet historiography on the subject have number of features. The most detailed reflection in them was given to the role of the Communist Party of the Soviet Union (CPSU) training workers and striving of the Party organizations to increase labor productivity, the strengthening of labor discipline and technical progress in the timber industry. In addition to the negative economic consequences of the extensive development of the timber industry, the social, demographic, and environmental risks that were most evident in the later period were not taken into account.

The second period in the study of the role of timber industry complex in the life of the country (late 1980s – late 1990s), in the author's opinion, were connected with the final "withdrawal" of

this subject on the periphery of the interest of both historians and economists. On the one hand, at this stage the history of the timber industry was much less in demand than in previous decades, despite the emergence of new methodological approaches and liberation from ideological clichés that opened up new opportunities in covering this topic with historians. At the same time, interest in the political history of the Soviet period has clearly pushed attention to economic topics to the background. On the other hand, a clear decrease in the interest of economists in the timber industry has been facilitated by a change in the political and socio-economic environment in favor of the problems associated with the history of the development of the oil and gas complex.

At the third stage (early 2000s – 2017), priority attention to the studied problems were paid primarily to economists, as well as specialists in the field of forestry and technical sciences. Later, at this stage, there is an increase in the study of this problem by historians.

The first who turned to attempts to rethink Soviet and post-Soviet economic history were well-known economists who became not only great theorists but also practitioners of conducting economic reforms in the USSR and then in Russia. The works of L.I. Abalkin, which are devoted to both the economy of socialism and the transition period of market reforms, are multifaceted in this case. In particular, they studied the problems of adapting enterprises to external and internal changes, as well as the creation of sustainable enterprise development systems [1]. Much attention to the study of the transitional stage of market reforms in the Russian economy has been given to E. Gaidar. In particular, he studied the issues of economic competition and the issues of transformations in the sphere of property [5].

The basis for rethinking the problems of the ways of development of domestic timber industry in the new economic conditions were publications of specialists in the field of economic transformations in the timber industry complex. In particular, N.A. Burdin [3] pays much attention to the problems of restructuring and problems of improving the structure of the timber industry complex. In the researches of N.A. Medvedev [10], the problems of forest management and general questions of the economy of the timber industry complex are considered. An important contribution to the study

of problems of economics and organization of forest management and the forestry sector in Russia, the relationship between man, society and nature were made by the generalizing works of N.A. Moiseyev [11], as well as A.I. Pisarenko and V.V. Strakhov [16]. These studies contain a historical overview of the main theses of the theory and policy of forestry in Russia against the backdrop of the development of domestic and world forest science, and the economy with an emphasis on the role of the State in forestry in Russia.

In the early 2000's a complex interdisciplinary study was started, connected with the history of the domestic timber industry complex. Within the framework of the system approach, various aspects of the socio-economic, technological, organizational development of the timber industry [21] and forestry in Russia were studied in a comprehensive manner and with the observance of the historicity principle throughout virtually the whole history [22].

To the attempts of writing a generalizing work on the history of the creation and development of one of the branches of the forestry complex, it is worth mentioning the "History of the pulp and paper industry of Russia" [8]. Despite the highly respected authors team, which included big leaders, among which are M.I. Busygin (in 1982–1989. Minister of timber, pulp and paper and woodworking industries and the Minister of USSR forest industry), the publication is more a matter of scientific and popular character.

It is necessary to note the appeal of some economists and specialists in the sphere of forestry to the consideration and analysis of the economic history of regional timber industry complexes. In the dissertation of G.A. Knyazeva, economic problems of structural reorganization of the regional forest complex of the Republic of Komi in market conditions were considered [9]. Despite the deep economic analysis, the study presented in this publication covers only the period of the first half of the 1990s and does not affect practically the time of development of the regional forestry complex in the Soviet era.

Among the works of historians in recent years, we can note a number of dissertations in which new methodological approaches to the study of the history of the development of industrial branches are applied. These include the

study of S.A. Bakanov [2], in which the development of the coal mining industry of the Urals is viewed through the prism of its life cycle and the dissertation of M.V. Slavkina [20], which examines the impact of the oil and gas complex on the modernization processes taking place in the scientific, technical, economic, social and political spheres of life of USSR and Russian Federation in the period from 1939 to 2008. The strong point of these dissertation studies is that the authors, within the framework of their chosen methodological approaches, were able to conduct a comprehensive analysis of the development of these sectors of the domestic economy over long periods of time.

Dissertational studies of historians of the last decade on the problems of the development of the timber industry complex are distinguished by the traditionality of the consideration of timber industry history. These works absorbed traditional research trends for Soviet historiography related to the study of the place and role of the timber industry in the national economy, the formation and development of the personnel of the forest industry, the material and technical basis of the timber industry and the material and living conditions of the workers, the development and use of production capacities for timber enterprises and improving the organization of production and labor in logging and wood processing, and etc. The peculiarity of these studies was that they concerned only the national regions of Russia and not including a new level of analysis of the problems of the timber industry complex of the country. To this kind of studies could be attributed dissertations of V.S. Vasiliev [4] and M.S. Novolodskaya [15].

The article reviews foreign publications on the research topic. These scientific works could be divided into several areas. One of such areas was the study of the correspondence of the resource possibilities of forest resources in the whole USSR [26], and in particular of the European North of Russia and Siberia to ever increasing demands of the world and domestic markets for forest products [24]. The problem associated with the disappearance of forest areas in the USSR, which appeared before the Soviet leadership in the late 1980s, also become the subject of research by foreign authors [23]. Another area of researches area includes generalizing works devoted to various branches

of the Soviet timber industry [25] and, in particular, the pulp and paper industry. An important aspect of research and analysis among foreign specialists were the issues of labor protection in Soviet industry, which, among others, were studied by the CIA. The analysis of foreign studies has shown that Western historiography also lacks a systematic approach to the study of the USSR and Russia models of the development of the timber industry complex.

In general, analysis of the research literature has shown that there is still no comprehensive research on this issue.

2. Methodology

A comparative study of the Soviet and post-Soviet model of the development of the Russian timber industry complex in the second half of the 20th century required the author to address theoretical and methodological principles, developed in the works of foreign geographers and economists.

The central aspect of the study was the authors' appeal to the theory of modernization as one of the possible methodological models for studying different historical events. At the same time, much attention is paid to the specifics of modernization reforms, to the features that distinguish Russian modernization path from similar processes in other countries. According to the authors' study, one of such features, which in many respects make the situation of our country unique, is the availability of the richest forest resources. The extensive nature of the development of these resources has become basic factor in the Soviet modernization in those regions, that have saved considerable reserves by the middle of the twentieth century.

Another methodological approach in this study was using of the concept of "center-periphery". The classic of this concept is J. Friedman. According to his concept, the unevenness of economic growth and the process of spatial polarization inevitably generate disproportions between the so-called core and periphery. In this case, the core throughout the life cycle of the center-peripheral system stably dominates the periphery. According to A.I. Treivish, G.V. Joffe and O.V. Gritsai, a number of key characteristics of the periphery can be singled out: a low initial level of socio-

economic development with a low rate and unstable character of its dynamics, an increased share of employed in the primary sector and sphere of non-market services, the minimum share of knowledge-intensive industries in the structure of the economy, etc. [7].

For the analysis of the dynamics of the development of the domestic timber industry complex, it was important to use the theory of the life cycle of the industry. It is based on the idea that the product produced by the industry passes through several stages in its economic life: 1) “Birth”; 2) “Growth”; 3) “Maturity”; 4) “Decline”. This or that stage of development of the industry changed the state’s attitude to the prospects of its further financing, and also changed its own needs and interests.

In addition, when working with quantitative information, elements of statistical techniques for the analysis of dynamic series and descriptive (statistical) statistics were widely used. The result of using of statistical methods was the identification of the correlation of the dynamics in the macro-, meso- and micro-levels of the development of the timber industry complex.

3. Results

3.1. Production and Economic Indicators

An analysis was made of the dynamics of the growth rates of gross output and the growth rates of the total industrial output by branches of the timber industry complex in comparison with other branches of Soviet industry. According to this index of Soviet timber industry from the 1940s to the second half of the 1980s showed a serious backlog not only from almost all branches of heavy, but also some branches of light and food industry. The volume of logging, reaching by the mid-1970’s peak values, began to decline gradually towards the beginning of the last decade of Soviet power. By the end of the period under review volumes of logging decreased below the postwar values (in million m³): 1945 – 172.1, 1950 – 234.5, 1955 – 308.1, 1960 – 343.7, 1965 – 354.8, 1970 – 354.7, 1975 – 377.0, 1980 – 349.2, 1985 – 344.3, 1990 – 330.0, 1999 – 141.7 [12, p. 11]. The growth rate of labor productivity by industry during the 1940s–1950s in the timber industry of the country were among the lowest among all branches of

heavy industries. During the 1960s–1980s the industry indicators were more than 2.5 times lower than in all branches of heavy industry. By the end of the 1980s the labor productivity indicators of the timber industry complex were leveled with the average for all branches of heavy industry. However, this did not indicate an increase in the efficiency of this production, but a general decline in labor productivity in the most priority sectors of the Soviet economy. Between 1990 and 1999 timber, woodworking and pulp and paper industry showed one of the highest rates of labor productivity growth, which was the only positive indicator of its development in the first post-Soviet decade.

The outpacing rates of wage growth in comparison with the growth rates of labor productivity were combined with the average wage rates for the timber industries in comparison with other industries. During the 1990s, turnover in the timber industry remained one of the highest among all industries: in 1995, 30.8 % of workers were taken to the industry from the average number of employees, while in the same year the number of employees dropped by 38.5 %. In 2000 45 % of workers were taken, and dropped out – 45.5 % [19, p. 161]. The constant increase in the cost of production was due to a permanent over expenditure of the wage fund and high fines, which were carried by the timber industry. The result of the financial insolvency of the industry was the growth of unprofitable enterprises. By the period of perestroika, almost half of the industrial-production fixed assets of the timber industry complex was worn out and required additional capital investments to overcome this situation.

In the 1990s, timber industry of Russia was the only one among all industries where the percentage of unprofitable enterprises by 1999 exceeded 50 % [17, p. 350]. Degree of depreciation of fixed assets of timber, woodworking and pulp and paper industry in 1990 was 48.3 %, and in 2000 – 48.7 %.

3.2. Capital Investments and the Problem of Formation of the Industrial and Social Infrastructure

The indicator of capital investments could be considered as an important indicator of the priority development of a particular sector of the

economy for the State. On the one hand, starting in 1945, the Ministry of Industry received and continued to receive from the State budget subsidies to cover the planned gap between the prime cost and the selling price of products. During the period from 1952 to 1958 timber industry took the penultimate place in the volume of capital investments among industries – 2.5 billion rubles. Then in the period from 1959 to 1965, the smallest amount of investments were received by the forestry, paper and woodworking industry – 5.8–6.0 billion rubles [13, p. 596]. The traditional problem for the industry, connected with the nonfulfillment of the capital investment plan, was also preserved. Due to unsatisfactory implementation of the capital construction plan was formed a significant increase in sphere of unfinished construction. The key problem, which was most acute in the second half of the 1960s, was in impossibility to intensify the production of timber enterprises at this stage, due to the relocation of logging to multi-forest areas in the East the country. Enterprises located in the multi-forest areas of the country were under construction and their production capacities were not brought to the extent envisaged by the projects. The increase in capacity due to the intensification of production of operating enterprises in the European part and the low forest areas of the Urals and Siberia was not provided with wood and led to further fatal deforestation in the European part of the country. By the 1970s–1980s the periphery of the timber industry complex was not only finally fixed, but also aggravated by an increase in disproportions in capital investments between the new leader industries and old outsider industries. For the period from 1971 to 1987, among all the national economic complexes, only the chemical and timber industry complex demonstrated the dynamics to decrease. However, it should be noted, that within timber industry itself, by the 1970s–1980s, “new” sub-sectors, in comparison with the “old” sub-sectors, received a stable priority from the State. In the development of the pulp and paper industry in the period 1986–2000, it was planned to allocate 12.6 billion rubles capital investments or 37 % of the total capital investment of the timber industry complex sent during this period. This amount of capital investments was 1.4 times higher than the volume of capital investments expended on the

development of the industry for the previous 15 years – 1971–1985 [6, p. 44].

Investments in fixed assets in the timber industry in 1990 amounted to 1.7 % of all investments in the main capital of the country’s economy (4.7 % of all investments in industry). By 2000, the situation changed somewhat: the timber industry complex received 1.5 % of all investments in the fixed capital of the country’s economy (3.8 % of all investments in industry) [19, p. 570].

3.3. Problems of Mechanization of Timber Industry Complex and Introduction of Achievements of Scientific and Technical Progress

In the course of the study, various aspects of the mechanization of forestry industries were researched. In the 1950s and 1960s in terms of the number of major new types of machinery and equipment, the woodworking and paper making equipment of the USSR showed one of the lowest quantitative indicators among all types of industrial equipment by all industries. Comparatively low indicators were shown even by those sub-sectors of the timber industry complex, which could be attributed to new ones. At the same time the problem also was in extremely inefficient using of equipment received by enterprises. According to the results of numerous inspections, a large number of uninstalled imported and domestic equipment accumulated at enterprises and bases for many years and it fell into disrepair. At the end of the Soviet period, against the backdrop of a general decline in investment in the industry, the technical backwardness of the timber industry complex was preserved against the background of the development of new and newest branches of Soviet industry.

The above factors have influenced the level of mechanization of labor in selected industries branches of timber industry complex. According to the estimates of the staff of the Council for the Study of Productive Forces under the USSR State Economic Council, by 1960 the level of mechanization of production in the timber industry had increased more than twofold in comparison with 1913 (with the growth of the entire industry 10 times). In the woodworking mechanization of labor compared with 1913 grew less than 4 times,

and in the pulp and paper industry – about 6 times [18, p. 7]. By the end of the 1950s the problem of mechanization of individual production operations was still not practically solved. The level of mechanization was especially low in forestry. By 1989, the volume of machine stock in the country's timber industry amounted to a lower percentage than noted by official statistics in previous years: on the felling of the forest – 38.7 % (corresponding to the level of 1950), for skidding – 42.3 %, for pruning of boughs – 58,4 %, on bucking – 43.6 % [14, p. 189].

3.4. Challenges of the Present for the Timber Industry Complex of Russia

Unfortunately, the period of the 1990s – the beginning of the 2000s did not bring decisive changes in the modernization and alignment of the optimal model for the development of the Russian timber industry complex. Investment underfunding of the economy of the industry led to the aging of fixed assets and did not provide even a simple reproduction process, which increased the wear and tear of the economic and social infrastructure of timber enterprises. Some growth in the economy was mainly due to opportunistic external factors, increased exploitation of existing fixed assets, organizational improvements, intensified labor intensification and the development of non-fund-raising and technologically simplified production of goods and services. Tax revenues tended to be enlarged in terms of narrowing the range of taxpayers on income tax, as a result of the closure of many timber enterprises. State spending on social transfers had grown, generating increased fiscal policy of the State in relation to business. This, in turn, contributed to the deterioration of the investment and business climate.

The above requires strengthening the influence of the integrated potential of the government, society, science and education on the development of priority economic activities for the timber industry and their integration into developed high-tech clusters that combine the effective functioning of small, medium and large businesses.

4. Conclusion

The dynamics of the development of Russian timber industry complex during the period

of existence of both the Soviet and post-Soviet model of the development of the timber industry complex was characterized by a sharp increase, then a stage of maturity and, subsequently, a stage of decline. Moreover, this dynamics was noted both in the production and economic indicators, as well as in the indicators of capital investments, which affected the industrial and social infrastructure of the timber industry. This kind of dynamics also affected quantitative and qualitative indicators of the development of mechanization in the timber industry and the process of introduction of scientific and technological progress.

Based on the our results we can confirm hypotheses that both development models of Soviet and post-Soviet timber industry complex have significant indicators of inefficiencies. Both these models could not turn the timber industry complex of Russia into an efficient and modernly developing branch of the economy. This requires finding new ways of development.

At the present stage, Russian State needs an urgent transition to building a cluster policy in the timber industry. Such a policy should be carried out both at the regional level, as well as in the general and in the context of international cooperation. A prerequisite for such a policy should be the condition, under which timber industrial clusters would go beyond the limits of both some regions and interstate borders, creating conditions for the stable development of the Russian timber industry in the coming years.

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