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The Study of Factors that Caused High Profitability of Russian Fisheries in 2014-2016

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INTRODUCTION

Fishery is one of the traditional branches of the Russian economy. It is based on harvesting fish and other aquatic biological resources, whereas aquaculture production has not been widespread yet. Officially, according to statistical data, the Russian fishery does not have a strong impact on the Russian economy – only about 0.2% of GDP is created in the industry, and the number of its employees does not exceed 0.03% of all employed. However, some aspects of fishery activities are important both for the whole country and for some of its regions. Products of the industry play an important role in nutrition of Russians. The proportion of fish proteins is about 10% in consumption of animal proteins in Russia. Fishery enterprises are important participants in the value chain, they are buyers and suppliers of products and services for other sectors of the economy – shipbuilding industry, machine and instrument engineering, food and transport and logistics companies. In some coastal regions of Russia, fishery enterprises are strategic, they provide employment and income to a significant part of the population. In the regions of the Far East and the Extreme North, fishing plays an even more significant role – it not only forms part of the traditional lifestyle of indigenous peoples, but also often serves as the basis for the survival of people in harsh natural conditions. Therefore, despite the relatively modest statistics, fishery is an important part of the Russian economy. Ecosystem aspects of the activity of Russian fisheries are also important, since the increase in fishing activity has a detrimental effect on fish stocks and may conflict with the principles of sustainable fishing.

SUBJECT AND HYPOTHESIS OF RESEARCH

Russian state statistics show that Russian fisheries which has been stagnant for a long time, has shown exceptional results in recent years. Against the backdrop of a moderate increase in fish production (3-7% per year), its financial performance has reached phenomenal values. Fishery has become the most

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profitable branch of the Russian economy, more than 2 times ahead of the subsequent extraction of mineral resources. Moreover, the growth of profitability in the industry was literally “explosive” in nature. For example, if before 2008 the value of sales margin in the fish industry was 2-3 times lower than the average Russian level, and in 2009-2013 it exceeded the average level 1.5-2 times, in 2015-2016 this indicator increased 4 times and exceeded 50%.

Many financial indicators of Russian fisheries are also ahead of other countries. So, in 2015 the ratio of net profit and added value in European fisheries did not exceed 20%, while in Russia this figure was more than 30%. Gross margin profit in Russian fishing industry was 1.6 times higher, and net margin profit – 2.5-3 times higher than in the EU countries, Norway and Iceland. The return on assets (RoFTA) in Russian fisheries in 2015 was 25.3% – significantly higher than the average figure for the EU countries (15.9%) (Annual Economic Report, 2017). Such significant financial successes of Russian fisheries after almost two decades of its stagnation are remarkable.

In Russian bibliography there is a large number of works devoted to economic problems of fisheries, however, there are no publications explaining a sharp increase in the profitability of this sector. Appeal to foreign sources also does not give the desired result due to the incompatibility of fishing business conditions in Russia and other countries, and, probably, due to the absence of such precedents in the world practice. Occasional profitability of Russian fishing industry is not only of scientific interest. Its analysis is of practical importance, since it allows us to better understand the prospects for further development of the industry.

The purpose of the study was to determine the reason for the sharp increase in the profitability of Russian fisheries in recent years, to name and evaluate the factors that led to this growth.

As a hypothesis specifying the research vector, it has been assumed that the high profitability of the fishing industry, as well as other outstanding financial indicators, are largely ensured by appropriation of natural resource (in this case, fish-resource) rent by fishery enterprises.

It is well known that profitability of any business depends, on the one hand, on the revenue it brings, and on the other hand, on the costs associated with it. Therefore, the study of profitability should begin with an analysis of these two components. The data of Russian official statistics show that in recent years in the fishing industry, earnings of enterprises has grown substantially against the background of a typical cost dynamics, little differing from other branches of the economy. At a first glance, the reason for the disproportion is simple – it was a consequence of the growth in domestic prices for fish products, which outpaced inflation and the overall increase in food prices (Mnatsakanyn, 2017). However, this explanation is sketchy. We believe that high profitability of Russian fisheries is due to a hidden, but more important reason. Fisheries, along with agriculture and mining, are part of the primary sector of the economy, which activities are almost entirely based on the use of natural resources. It is fair to assume that abnormally high profitability of Russian fishing industry,

like its other outstanding financial results, is secured by the use of fish-resource rent.

METHODOLOGY OF RESEARCH

Profitability in Russian fisheries depends on many economic and non-economic factors. However, the fundamental reason for the high profitability of fisheries relative to other industries, without which the effect of other factors would be less noticeable, is the actual free-of-charge basis for fishing companies of the main resource of their business – fish stocks. The current situation in the Russian fisheries – a combination of artificial constraint of competition for access to fish resources and free-of-charge basis of these resources for companies – allows us to leave at the disposal of the fishing business a large part of the natural rent (resource fees) (Mnatsakanyn, 2017). In 2014-2016 the effect of these factors was enhanced by control of access to the domestic market for products from a number of countries, which led to an additional increase in the profits of Russian companies. We assume that creation of conditions for monetization of fishing rent and appropriation of its significant part by fishing companies have become the main cause of the super profitability of the Russian fisheries.

The concept of natural resource rent and its varieties – fishing rent is widely used in the literature on the economics of fisheries. Although the theory of fishery rent is described in some detail in the scientific literature (see e.g. (Anderson, 1977; Clark, 1975; Gordon, 1954; Hannesson, 1993; Walden, 2014), the mechanism of its formation and the impact on profit and on economic efficiency continue to be the subject of discussions (see e.g. Homans, 2003). Fishing rent can be calculated as the difference between the market value of fishery products and the costs associated with its production and sale (Clark, 1990), i.e. it is identical to profit. On the other hand, profit, along with the costs of labor, capital and other factors of production is one of the elements of added value created in fisheries. The analysis shows that for at least the last 5 years the dynamics of all elements of the costs in fisheries as a whole was about the same as in the entire Russian economy. For example, in 2012-2015 total costs in fisheries increased by 1.46 times, while on average in the economy they increased by 1.42 times (Mnatsakanyn, 2017). Therefore, the costs of factors of production are not the cause of faster growth of added value and profitability in fisheries. The only reason for this growth is profit.

In order to avoid cumbersome calculations, in the future we consider a simplified model of formation of profitability in fisheries, which is invariant against the other parameters, except for added value. This model is based on the assumption that high value added, which is mainly due to profits (rents) from the use of fish resources, plays a key role in the super profitability of Russian fisheries. Such an approach massively simplifies operationalization of a rather complex theoretical concept of fishing rent, while allowing to “highlight” the essence of our question of interest – the nature of high profitability of the Russian fisheries.

In theory, added value is interpreted as gross income spent to pay for all types of capital used (Marshall, 1920). This allows you to choose several main components in the added value that affect its amount: the cost of wages, reimbursement of capital invested in the business, as well as profit. The listed elements of added value, in fact, perform one economic function – they serve as the financial basis for the reproduction of capital (human, physical, and entrepreneurial). Most scientific papers are limited to the study of only these three components of added value, assuming that its other components are insignificant. However, the idea that the natural resources (natural capital) are "free of charge" and that payment for them is unnecessary which is being dominant in scientific discourse, as well as in making economic and politic decisions, in the case of fisheries, can significantly distort the classical added value model. Therefore, to identify peculiarities of the formation of added value in fisheries and the impact of that part of the profit on its value, which derived from the use of natural resources, our further research is based on decomposition of this indicator.

As noted above, in classical concepts, added value is a multifactor function, with components for labor costs (*LC*), payments for physical capital used (*CC*), profit (*P*) and other expenses (*OC*):

$$VA=f\,(LC,\ CC,\ P,\ OC) \qquad (1)$$

In its turn, the profit of enterprises P consists of the normal profit - *NP*, which is a minimum level of income, ensuring competitiveness of a business (it can also be interpreted as payment for enterprise capital) (McConnell, 2012) and surplus profit – *SP*, which formation basis in the fishing industry is natural capital (aquatic biological resources, natural environments), as well as structural (external organizational) capital (Coglan, 1999; Copes, 1972). While the normal profit in the long run is an indispensable attribute, a basic condition for any business, the surplus profit is unstable and evanescent. It does not have an unambiguous theoretical interpretation. In classical works, surplus (additional, excessive, etc.) profit is usually associated with exploitation of natural resources, and/or use of market power in some form or another (Chamberlin, 1962; Costanza, 1997; Pearce, 1988). But, whatever the theoretical views on this phenomenon are, they all boil down to the fact that there is an exclusive resource at the disposal of the industry. The use of this resource creates surplus profit.

In fisheries, such a resource, serving as the basis for the surplus profit formation, is fish stocks. Whereas, the main cost characteristic of this resource is fishery rent, the value of which depends on a number of factors, including those not directly related to the properties of the rent-bearing resource, for example, price conjuncture, level competition, government control, etc. The current conditions in the fishing business in Russia – on the one hand, artificial restriction of competition in the domestic market and access to fish resources, and on the other hand, the fact that these resources are actually free - makes it possible to leave a significant part of the fish resource rent available to a small number of enterprises, thereby providing them with a high surplus profit.

In order to measure the revealed effect, we use a standard method of estimating the effect of the initial parameters on the final result, using the sensitivity analysis method (Pannell, 1997). In the case under consideration, the sensitivity coefficients reflecting the strength (intensity), as well as the direction (nature) of the effect on the added value *VA* of the factors *F*, are calculated by the formula:

$$S_F^{VA} = \partial VA(F)/\partial F \tag{2}$$

where:

F – arguments of function *VA – LC, CC, NP, SP, OC*, respectively.

Let us take the total differential of expression (1) and, turning to finite decrements, we shall obtain an equation showing dependence of the change in the added value on the change in its factors:

$$\Delta VA = f'_{\mathrm{LC}}\Delta\mathrm{LC} + f'_{\mathrm{CC}}\Delta\mathrm{CC} + f'_{\mathrm{NP}}\Delta\mathrm{NP} + f'_{\mathrm{SP}}\Delta\mathrm{SP} + f'_{\mathrm{OC}}\Delta\mathrm{OC} = S_{\mathrm{LC}}^{VA}\Delta\mathrm{LC} + S_{\mathrm{CC}}^{VA}\Delta\mathrm{CC} + S_{\mathrm{NP}}^{VA}\Delta\mathrm{NP} + S_{\mathrm{SP}}^{VA}\Delta\mathrm{SP} + S_{\mathrm{OC}}^{VA}\Delta\mathrm{OC} \tag{3}$$

The formula (3) is universal. But its use is complicated by a large number of variables. In order to simplify the problem, reduction of the model dimension is often used in practice. To do this, let us consider the structure of the added value described by the function (1). Judging by official Russian statistics, the rate of growth and the structure of costs in Russian fisheries, including labor and capital costs, during the past few years had almost no industry specificity, they generally followed the trajectory along which the entire Russian economy moved. Another component of the added value – normal profit – in its meaning reflects general economic, rather than sectorial conditions. Thus, if we rely on the dynamics of the relevant indicators of the entire Russian economy, components of the added value created in fisheries *LC*, *CC*, *OC* and *NP* can be considered as constant values. Their relative change and, as a consequence, elasticity of the added value on them become zero. As a result, the model becomes one-dimensional, the only driver that affects the amount of the added value in the industry, is the surplus profit *SP*.

By dividing (3) into (1) and taking *LC*, *CC*, *NP*, *OC* as constants, after simple transformations, we obtain an expression of the relative change in the added value for Russian fishing industry

$$\frac{\Delta VA}{VA} = \beta \cdot \frac{\Delta\mathrm{SP}}{\mathrm{SP}}, \tag{4}$$

where:

$\beta = R'_{\mathrm{SP}}$ – a partial derivative of the revenue of the fish industry enterprises in the surplus profit, showing the value to which the ratio of the revenue change tends to the minimum change in the surplus profit. The value of this variable is determined by the degree of natural and economic-legal scarcity of fish resources, as well as various restrictions for "entering" the market.

In equation 1, parameter β can be interpreted as one of the levers of state economic regulation in fisheries. Influencing its size, the government in a certain way directs the activities of the industry. In this case, the objectives of government policy may be different. For example, by changing the order of distribution of fish resources among fishermen or other measures regulating

profitability of their activities, the government can solve social problems, stimulate investments in the industry, support the development of industries adjacent to the fish industry (Mnatsakanyan, 2018). In particular, at present one of the priorities of the state fishing policy in Russia is to encourage private investment in the construction of new fishing vessels. This is planned to be achieved through the creation of advantages in access to fish stocks for companies that invest (so-called “investment quotas”). Similar effects are also achieved through administrative regulation of the competitive environment in the industry and by other measures.

RESULTS AND DISCUSSION

Using the proposed model and under the assumptions made, *SP* and *β* values for Russian fisheries have been calculated on the basis of publicly available information (Table 1).

Table 1 Calculation of the added value dynamics in Russian fisheries

	2010	2011	2012	2013	2014	2015	2016
Normal profit, r_n	11%	12%	10%	8%	7%	8%	8%
Sales profit, P	13	15	16	17	32	75	86
Surplus profit, SP	11.9	13.4	14.4	15.6	29.8	69.0	79.1
Change in surplus profit, ΔSP		1.5	1.0	1.2	14.1	39.2	10.1
Added value, VA	97.0	96.5	107.8	118.0	136.2	204.2	223.6
Change in added value, ΔVA		-0.4	11.3	10.2	18.2	68.0	19.4
Sensitivity coefficient, β		-0.04	1.5	1.1	0.3	0.6	0.6

Source: Federal State Statistics Service data (http://www.gks.ru).
Notes: Unit of measurement of all cost indicators – billion rubles (in current prices). The percentage of normal profit in fishery is assumed to be equal to the average profit margin in the economy.

Reduction of the added value elasticity to the surplus profit in Russian fisheries in recent years means that the influence of "non-market" factors (such as availability of rights to extract aquatic biological resources, exclusive access to the market, etc.) that allow "monetizing" fishery rent, on the industry is weakening with time. The maximum effect of these factors was in 2012-2013, when an increase in the surplus profit by 1% ensured an increase in the added value by 1.1-1.5%. However, in 2014-2016 profit growth no longer gave the former multiplicative effect. Probably, Russian fishing business has reached its maximum in obtaining rents from the use of fish resources. This is indirectly confirmed by a comparison of the surplus profit and the market value of the industry product. So, if in 2010-2013 the specific value of the surplus profit in fishery was 3.4-3.6 thousand rubles per 1 ton of the extracted raw material (about $ 100/ton), then in 2015 the value of this indicator increased more than 4 times – up to 15.3 thousand rubles/ton (about $ 250/ton) – and reached 20-30% of the world wholesale prices for the most common fish species (FAO, 2017). Note that validation of this conclusion will become possible after publication of new statistical data.

Of course, not all excess profits of fishing companies are due to the scarcity of fish resources. The reason for its occurrence may also be short-term imbalances of supply and demand in the market. In this case, “excess” profit is a market signal that activates investments in fisheries (Boyce, 1995). However, an analysis of investment in Russian fisheries indicates a lack of such incentives. In conditions of unpredictability and inconsistency of government policy and uncertainty about their future earnings, companies prefer to exploit old vessels and reluctantly invest in the construction of new ones. Volumetric characteristics of supply and demand in the Russian market of fish products also remain relatively stable over years. Against the background of some stagnation in domestic demand due to a decline in purchasing power, market factors cannot provide a convincing explanation for the sharp increase in profits and profitability of fisheries.

Possible exhaustion of the effect of the surplus profit factor, which is based on natural rent, makes one think about other, more reliable growth drivers in Russian fishing industry. The need for such a search becomes even more evident against the backdrop of a fantastic, economically unreasonable increase in the profit share in the added value of the fishing industry, which in 2015 was 29%, and in 2016 – close to 40%. Since more than 90% of this profit has been obtained through the use of "non-market" factors and the benefits provided by the state, it becomes obvious that the current state of the industry cannot be considered sustainable in the long run. This, in turn, requires a more balanced approach to large-scale plans for fleet modernization, based on such a flimsy factor as current anomalously high profitability of Russian fisheries.

An additional confirmation of the above-mentioned imbalances in the development of Russian fisheries in recent years can be international comparisons of key financial results of the industry. Provided that in 2013 the values of most indicators of Russian fisheries differed little from those of EU countries, in 2015 the differences became quite significant. So, for example, in 2014-2015 the ratio of net profit (Gross Net Profit) and added value (Gross Value Added) in European fisheries did not exceed 20%, while in Russia this figure was more than 30%. The Gross Profit Margin in the Russian fishing industry was 1.6 times higher, and in terms of net profit (financial result), it was 2.5-3 times higher than in EU countries, in Norway and Iceland (Fig. 1, 2).

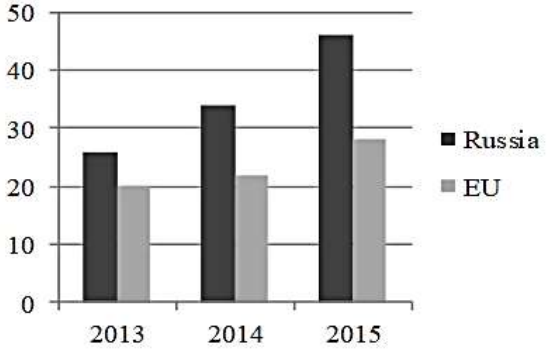

Fig. 1 Gross profit margin, percent

Source: Eurostat, Rossat

Obviously, such significant discrepancies are temporary, since the general trend is a reduction in the profitability of traditional fisheries (Gronbeak, 2014).

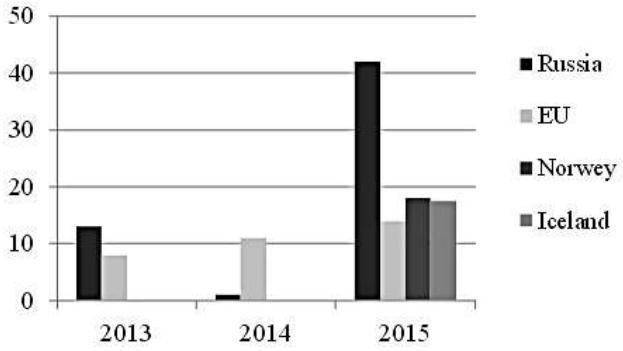

Fig. 2 Profitability margin, percent

Source: Eurostat, Rossat

CONCLUSION

The study of the reasons that led to the growth of profitability of Russian fishing, allows us to identify the drivers of this growth. The analysis shows that the key factor that influenced the growth of profitability was the growth of prices for fish and fish products, which was caused by the establishment of administrative restrictions. In turn, these restrictions have led to an abnormally high growth of fishery rent and its appropriation by industry enterprises. Action of the group of factors existing in the Russian fisheries in 2014-2016 has resulted in a disproportionately high profitability of the industry, significantly exceeding indicators of other sectors of the Russian economy and greatly differing from similar indicators in other countries. Calculations show that due to a favorable coincidence of circumstances in these years, the Russian fish business has achieved a maximum in extracting the rent from the use of fish resources. However, such benefits are short-term. This casts doubt on the development prospects of the industry, including large-scale government plans to modernize the fishing fleet, based on such a tricky factor as the current anomalously high profitability of the Russian fisheries. Nor should we forget about the negative social effect of the super profitability of the Russian fisheries, which has been to a significant extent achieved at the expense of consumers. Due to the rise in prices for fish products, which was noticeably ahead of the overall food inflation in Russia in 2015-2016, after more than 10 years of continuous growth, domestic fish consumption has declined. Consumption structure has also deteriorated – demand has shifted to relatively cheap, less quality products. The state of the Russian fisheries, operating in conditions of weak competition in the domestic market, supported by government subsidies and tax preferences, and having virtually free access to fish resources, can hardly be called sustainable.

In addition to economic, it is also necessary to take into account the ecosystem effects of protectionist policies. This policy leads to over-exploitation of fish stocks. Until recently the exclusive economic zone of Russia was one of the few prosperous regions of the World Ocean in terms of the state of bioresource potential. However, an increase in the fishing load on fish stocks poses a strong

threat to their sustainability and can have long-term negative consequences for both the fishing industry and public welfare.

Therefore, it is necessary to search for new, more reliable drivers for the development of the fishing industry. For example, aquaculture, which is rapidly developing in many countries of the world (FAO, 2016), but has not yet become widely spread in Russia, may become one of the directions of development of the Russian fishery. The development of fish processing is also promising. Now the share of raw materials is about 90% of Russian exports of fish and seafood and more than 40% of domestic consumption. Therefore, the development of fish processing will extend the value chain and in this way will support the growth of added value and profitability in the Russian fishing industry. This in turn will contribute to the advancement of Russian fisheries towards a model of sustainable development.

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Annual Economic Report on the EU Fishing Fleet (2017) (STECF-17-12). Scientific, Technical and Economic Committee for Fisheries. Publications Office of the European Union. Luxembourg.

Abstract.
The purpose of the research is to find the reasons that led to unusually high profitability in Russian fisheries in 2014-2016. The analysis showed that the main driver of profitability growth is the growth of domestic prices for fish and fish products, which outstripped the overall food inflation. Governmental support for fishing led to a rapid increase in fishing rent, which was almost entirely appropriated by fishing companies. But such a basis for the growth of Russian fishing is unstable in the medium and long term.

Keywords: fishery, profitability, profitability factors, value added, fish resource rent