The connection between the form of ownership and the activeness of the capital assets renewal in agriculture

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Abstract. The debate about what type of property — state, private, cooperative — is more efficient for production has not ceased since the late 80s - early 90s of the last century. Apparently, it cannot be solved outside the context of the industry, management, the size of the enterprise, and some other signs of production. In agriculture, the private ownership on main means of production is not uniquely preferable to stimulate their renewal over the state and cooperative without certain (explicit or hidden) preferences by the state. It, like other forms of ownership, is preferable only for a certain size, type, and industry, as well as prevailing social relations, which directly or indirectly provide various kinds of preferences to business entities with a private form of ownership. The article attempts to resolve this issue not theoretically, as it is done in most works, but on the basis of empirical data in the context of capital assets renewal and technical and technological modernization in agriculture.

1. Introduction
Agriculture is the most important sector of the national economy of Russia. Its share in GDP in recent years has a tendency to increase. So, if in 2010 it was 3.8% and was lower than in 2005 by 0.5% (compared to 2000 - even by 2.8%), then already in 2017 the agriculture share in GDP grew to 4.4%, i.e. + 0.6%. (But in 2016 it amounted to 4.6% and was higher than in 2010 by 0.8%). In many constituent entities of Russia, agriculture is the basic industry, whose share of production is a quarter of GRP and higher. [1] The growth of agricultural production in Russia occurred both due to favorable climatic and weather conditions, and due to organizational, technological and institutional factors. In the face of a decrease in the number of people employed in agriculture, so for 2010 - 2017, the share of people employed in agriculture decreased in the whole country from 8.9% to 7.1%, i.e. almost 1.8%, and in some regions this trend was even more pronounced. In order to maintain previous volumes and growth rates, it is necessary to find factors and conditions to replace the outflow of workers. If in the 90s and first decades of the new century it was possible to fill the shortage of labor in agriculture at the expense of migrants (mainly compatriots who migrated from neighboring countries to Russia), then gradually this source of labor force supply is running out. The downward trend in the number of people employed in agriculture, as well as the rural population, is stable for the country, and therefore its further strengthening should be expected. But at the same time, the situation on the domestic as well as external agri-food markets requires an increase in agricultural production. It is clear that in the conditions of a declining number of employees, reduction (or at least no growth) of sown areas and agricultural land,
weather anomalies, the solution to the problem lies in the capital growth, modernization of the technical and technological state of national agriculture. Statistical data indicate that although there is an increase in the value of capital assets, but with a decrease in the number of employed, the growth of the former is insufficient to ensure full reproduction of economic dynamics in the industry. [2, 3]

An important condition for the growth of production efficiency is, occurring from time to time, a change of ownership. Recently, emphasis has been placed on privatization. The ideologists (and apologists) of privatization [4, 5, 6, 7] argue that, unlike it, statehood as one of the forms of nationalization associated with the fact that the state becomes the main, and sometimes the sole owner of the means of production: factories, plants, and other production institutes, shows its effectiveness in conditions of low productive forces, and especially technology and labor, as well as weak institutions: the absence of large enterprises and the presence of many small ones. Therefore, the socialization of production, the creation of large-sized production units (factories, plants, industrial centers, etc.) stimulates the introduction and development of new technologies; improves qualifications of the workforce. However, in the so-called post-industrial conditions, the monopolization of property in the hands of the state, as well as the emphasis on gigantic production facilities, does not give the expected positive effect. The same ideologists of privatization argue that, on the contrary, in the conditions of a post-industrial economy and network society, the diversification of forms of ownership and types of enterprises, the transfer of state-owned enterprises to private hands, and the formation of joint-stock companies give the expected effect of the productivity and growth.

The positive moment of privatization is connected with the creation of competition between state and non-state enterprises, as well as with the state relief from micromanaging, the release of funds for the development of strategic industries.

World practice, not only of the distant past, but also of the immediate one (70-80s of the last century in Europe, Great Britain and other Western countries, as well as 90s and the noughties in Russia and countries of Eastern Europe) [8, 9, 10, 11, 12, 13, 14] confirms the provisions for the advantages of the private form of ownership over state and public ones in increasing labor productivity and production growth. The reduction of ownership forms and the growth of production is actively used in modern economic research, [15, 16] being one of its cornerstones of modern theory. However, approaches to property as a relatively independent constellation of factors of production are not new and not rare in economic and sociological literature [17]. In the past they were not absolutized. The emphasis of this context takes place in the last twenty years of the last century and developed especially actively in the 90s – noughties under the influence of the ideas of the Washington consensus. [18, 19] This includes at least the entire installation program discourse of radical market reform (also called “shock therapy”) of 90s in Russia and the CIS countries, as well as in Eastern European countries.

The subject of this study is regional agriculture. The choice of the subject is related to the fact that a small regional economy is easier to study in terms of our task, here agriculture is an important branch of the regional economy. The investments in it deserve the attention and are made willingly. Of no less importance is the fact that the authors were monitoring the state of the so-called material and technical base of agriculture for many years, and therefore there are quite representative statistics.

2. Theoretical, methodological positions and empirical base

The methodological basis is the provisions of the theory of reproduction. We should compare the efficiency of reproduction of capital assets of agriculture in the current conditions, under the dominance of private and joint-stock ownership and a minimal presence of cooperative and state ownership with a period of total predominance of cooperative (collective farm) and state (state farm) ownership. Bearing this in mind the theoretical base has to be expanded by works of scientists from the Soviet period [20, 21], which proved the advantage of non-private types of ownership in socialist economic management: state and cooperative-collective farm and current works [5, 9, 14, 22, 23] substantiating the advantages of private ownership against state and collective-farm cooperative in the modernization of agricultural capital assets.
The selected subject, object, and context of the study determined the empirical base, which was, in one case, the data of official statistics published in statistical collections of the Soviet period, as well as in monographs [24, 25], in the other case, sample data, which were obtained by the authors from the beginning of the 90s to the present. The empirical base is represented by: 27 enterprises directly related to agriculture (of which 18 are located in the CBD, 4 - North Ossetia-Alania, 3 KCR, 2 - Stavropol Territory), 9 processing enterprises (mainly engaged in the processing of agricultural products, of which 5 - livestock raw materials and 4 - plant raw materials, out of 9 objects 2 are located in the Republic of Adygea, 1 - North Ossetia-Alania, 6 - KBR). All the studied objects had private or family ownership and are mainly classified as medium and small. The calculations were carried out in standard programs Microsoft Office Excel 2007 and others.

3. Results and discussion

Data from official statistics and personal surveys show that at present in the agriculture of Kabardino-Balkaria and other North Caucasian territories the vast majority of agricultural enterprises are private or joint-stock companies. In addition, there is almost no state presence in joint stock companies. This state of the empirical base of the study of the problem of the influence of ownership on the activity of technical and technological modernization of agricultural enterprises forms a specific perspective in assessing the impact of the state ownership on the frequency and dynamics of modernization and renovation of capital assets. We are talking about using enterprises of the Soviet past for comparison, where there was a monopoly of collective-farm cooperative and state ownership. In addition, farm / peasant farms, joint-stock companies of various types, private enterprises of various profiles and types: from micro enterprises to small, medium and large, dominate within modern agricultural enterprises. The presence of such an institutional structure does not allow a direct comparison of the effectiveness of the functioning of enterprises of various types of ownership. For this purpose, along with the statistics of the Soviet period, publications (articles, monographs, dissertations, etc.) of Russian researchers of that period, presented in our bibliography, were an important source. Generalization of the available sources of the Soviet period shows that (1) new equipment and technologies were delivered to agricultural enterprises every five to six years (in accordance with five-year plans); (2) however, the supply was not total and comprehensive; firstly, some enterprises (collective farms, state farms) had an advantage over others in obtaining new equipment and technologies, secondly, technical means and technologies were of a sectoral and segmented nature, they did not enter all productions at once, but only partly, therefore, imbalances were observed; (3) there was no complete technological and technical re-equipment (modernization) of production; Most often, re-equipment concerned 40%, the remaining 60% functioned on old (and obsolete) technical means and technologies; (4) often technical and technological re-equipment did not take place in those sectors where it was required, but in those where it was sent from above; (5) often new equipment and technologies of wrong qualities and wrong capacities came to the farms; (6) equipment and technologies often arrived late; (7) advanced equipment and technologies often arrived without appropriate Staffing Support. As a result of these, as well as other factors and conditions, the effectiveness of technical and technological re-equipment in agriculture remained low, and in places extremely low, because new equipment and technologies were installed or used for other purposes and inefficiently.

In modern conditions, the enterprises (organizations) at our disposal were divided into several groups depending on size (volume of production, number of employees, as well as profit, income). Four groups were identified: microenterprises, small enterprises, medium-sized enterprises and large enterprises. In numerical terms, the share of microenterprises was over 45%, small enterprises - about 30%, medium-sized enterprises - about 18% and large enterprises - about 7%. According to industries all enterprises were divided into two groups: agricultural and processing. The main share is occupied by agricultural enterprises (over 2/3 of the total number of enterprises). Inside the agricultural enterprises, the following are identified on a sub-sectoral basis: the production of grain and leguminous crops (about 10%), the production of vegetables (over 30%), the production of milk (over 20%), the production of cattle (about 5%), the production of sheep and goats (about 5 %), poultry production (over 15%), fish production
(about 5%), fruit production (over 15%), berry production (about 5%), other (remaining volume). Processing enterprises are differentiated according to the product principle: production and storage of dairy products: cheese, butter, sour cream, kefir, ayran, etc. (over 15%), processing and storage of beef meat (about 7%), processing of poultry meat (about 20%), processing and storage of fruits (about 35%), processing and storage of grain (15% colo), processing and storage of berries: grapes, strawberries, raspberries, etc. (about 15%), processing and storage of potatoes and vegetables (over 15%), etc. (remaining strength).

Observations have shown: 1) the type of industry as a whole does not affect the intensity of capital assets renewal of enterprises. (Although there is no denying the existence of such a dependency. For example, if we compare agricultural and processing enterprises, then, in general, the second was updated more often than the first. This applies to so-called technical means and technologies. But it should be taken into account that in agricultural enterprises, where the land acts as the main means of production, increased attention to the land was observed in terms of renewal, which manifested itself in an increase in the volume of fertilizers (organic and mineral), as well as crop rotation and in general “the repair of arable land, hayfields, meadows”. At the same time, differences are observed within large industries at the so-called sub-sector level. For example, in such segments of agriculture as the production of vegetables, more active capital assets renewal took place than in the neighboring fruit segment, and in livestock breeding, there was a more active update in milk production than in the production of livestock for slaughter, in poultry farming - more active than in livestock breeding. Processing industries generally showed greater conservativeness than agricultural. Here the rule is more clearly observed - “squeeze the maximum out of the available funds”.

Thus, if we are talking about the industry and sub-industry specifics of capital assets renewal (technologies and technical means), then the type of product is crucial, i.e. product features form the intensity (activity) of the of fixed assets renewal and the technological process. (We can assume that we are talking about timeserving features associated with obtaining profit, revenue. Products that provide higher profit (revenue) also stimulate more active of fixed assets renewal, technical and technological modernization, and even more so the modernization of logistics and communications, which are becoming important element of the cost and profitability of production).

At the same time, industry and product affiliation as a whole is not decisive in the frequency of technical and technological modernization of agricultural and processing industries (and capital assets of enterprises). Observations indicate that the size of the enterprise is a more significant factor. Here the general rule is: the larger the enterprise, other things being equal, the higher the activity (frequency) of its technical and technological modernization, the smaller the enterprise, the lower the frequency of modernization. Comparison of microenterprises with small, medium and large enterprises of the same industry showed that microenterprises least actively update their production capacities, followed by small, medium; large enterprises that most often carry out technical and technological modernization.

In connection with the above, the question arises: does the form of ownership play a role in the activity of renewal of production, or is renewal of production as a whole indifferent to the form of ownership? Available statistics on the question as a whole answers negatively, because the form of ownership does not influence the intensity of modernization of the enterprise. And this is true for all types of enterprises.

Thus, we came to the conclusion that the size of the enterprise is crucial for intensity of modernization of production in the agricultural sector (among agricultural and processing enterprises) The next factor influencing the modernization of production is product specialization. And only at the end of these three factors: the size of the enterprise, type of product and type of ownership, type of ownership matters. But at the same time, one cannot exclude the influence of the type of ownership on the intensity of capital assets renewal and on the whole modernization of production. However, such influence is observed at the level of small and medium enterprises, while at the level of microenterprises, as well as large enterprises (companies and firms), such influence is less noticeable and has a less strong manifestation.
4. Conclusions

The first: the frequency of capital assets renewal (the intensity of technical and technological modernization) in agricultural and the processing industry enterprises to the greatest extent depends on the size of the enterprise. Microenterprises had the lowest propensity for modernization intensity. The reason for this attitude, in our opinion, is that, firstly, the technical and technological equipment of such enterprises does not have a high cost, and secondly, the main emphasis on such enterprises is placed on labor. Therefore, these types of enterprises win not due to the technical level of their production, but due to the intensity of labor on them. The latter is determined by production volumes, to which complex and developed technologies are not applicable. Thus, production volumes are an obstacle (and, perhaps, an incentive) to technological modernization of production.

However, in large enterprises, the intensity of technological modernization is not high. Perhaps, due to the volume of production and the conservatism of product sales markets. Large enterprises are trying for a long time to determine the trends of consumption and production. As a rule, the event horizon in them is commensurate with the life of capital assets, i.e. full depreciation of capital assets. Therefore, the period of technological modernization of large enterprises is determined by depreciation of capital assets, and the latter by profit. In fact, there is one “loophole” in this rule. If a large enterprise finds a buyer for its funds, this happens in accordance with the principle of diffusion of innovations, i.e. an enterprise that can acquire the so-called “used” technology and equipment, then it activates the modernization of its production. Otherwise, the exploitation of capital assets is carried out till their natural (physical or moral) disposal.

The most active subjects of modernization are medium-sized enterprises. The reason for this attitude, in our opinion, is that they are between large and small enterprises. They can receive funds from the large and transfer their resources to the small, i.e. they receive “used” funds from large enterprises at an affordable price and condition, and sell these funds at an affordable price for them to small enterprises. Therefore, here the process of modernization proceeds most intensively, although it may not be accompanied by the same qualitative changes in the structure of capital assets of these enterprises, because they acquire from large ones “used” more often than completely new technologies and production.

The second: apparently, the form of ownership does not play the decisive role in the capital assets renewal and in general in the technical and technological modernization of agricultural and the processing industry enterprises; the level of profitability of manufactured products does. If an enterprise produces highly profitable products and the demand for these products is steadily high, and the competition in the market is high, this encourages the owner of the enterprise to modernize so as not to lose the market. Who does it better: a private trader or the “red director”, there is no definite answer. There is an answer to the competence of the head (general director, manager, etc.). Practice has shown that the level of competence does not depend on the form of ownership of the enterprise, although it was higher in private enterprises. But it is associated with a very common and not obsolete form of patronage, which takes place in our reality. In private enterprises, the owner himself chooses a manager, in state enterprises, a manager is often imposed although in both cases, applicants pass contests and tests. But in the second case, the ability to “get around” these conditions is higher than in the first.

The third: an analysis of the dynamics of the capital assets renewal, as well as the intentions of the owners (and managers of state enterprises) shows that the main criterion for technical and technological modernization is the profitability of the production (enterprise), all other factors and conditions are of secondary importance at best. Moreover, the latter is not absolute, but relative. We are talking about the fact that a decrease / increase in profitability is not at all a reason for technical and technological modernization of the enterprise. Profitability is important. It is noted that if the level of profitability of production falls below the permissible limit, then modernization takes place. When approaching the specified minimum level of profitability, the owner and manager are thinking about the need for modernization, if they do not find other factors due to which it is possible to increase or restrain the falling profitability. If after the manipulation with factors a satisfactory solution has not been found, they proceed to modernization.
Fourth: what should be the threshold level of profitability for modernization to take place? Often it seems that such a level is impossible to determine a priori that it is individual for any enterprise. Practice shows that this conclusion is incorrect and is based on an error. The profitability of production (and therefore the enterprise) is determined by the possibility of reproduction. The marginal rate of return is determined by the possibility of simple reproduction. Everything above this norm creates the basis for modernization or expanded reproduction. The ratio of profit to the costs of capital assets is a criterion for the modernization of production. Since the size of profit is a variable for years, then take the average of three to five years, and this value is divided by the value of capital assets. The obtained value also serves as a guideline for modernization. With its growth, the likelihood of modernization increases, with declining - decreases.

Fifth: the activity of modernizing enterprises is determined by the level of profitability of production. The latter, in turn, is tied, all things being equal, to manufactured products. The analysis has shown that enterprises engaged in the cultivation of crop production carry out modernization more often than livestock production enterprises. But within these two industries, there is a difference in product segments. In the crop sector, modernization in the vegetable segment is more active than in the grain and fruit. In fruit it is more active than in grain. Thus, it turns out that grain growing occupies the upper niche in the crop sector, and vegetable production - the lower. The remaining product segments are located in between. In the livestock industry, modernization is more active in the poultry segment than in cattle, sheep, goats, horses. But within these segments, there is a differentiation by microsegments. For example, in the poultry segment, egg production is subject to more frequent modernization than poultry production for slaughter. Young stock production is more often than finished poultry. Inside the livestock segment, the production of milk and young animals undergoes more frequent modernization than the segment of cattle for meat and slaughter. The same is true for other segments and microsegments.

As a result, one more criterion for the modernization of agricultural production can be proposed - the maturity of the product. The shorter it is, the more modernization is more active, the longer – the more lasting. For example, the maturity of cattle is higher than the maturity of birds, sheep, goats, so the intensity of modernization in the second is higher than in the first.

References
[1] Rakhaev H M and Eneeva M N 2018 The state of spatial development of agriculture and the formation of the agri-food cluster of Russia (problems of theory, practice and methodology) (Raleigh, North Carolina, USA: Open Science Publishing)
[2] Ogarkov A P and Ogarkov S A 2012 Improving the management of reproduction of fixed assets of agriculture Bulletin of personnel policy, agricultural education and innovation 3 3-5
[3] Rakhaev H and Kushkhova B 2019 Improving the efficiency of the use of fixed assets in agriculture of the North Caucasus Federal District AIC: Economics and Management 4 29-40
[4] 1996 A comparative analysis of the economic results of Russian enterprises of various forms of ownership (St. Petersburg: International Center for Social and Economic Research "Leontief Center")
[5] Radygin A D 1998 Russian privatization: a national tragedy or the institutional base of post-Soviet reforms? World of Russia 3
[6] Perevalov Yu, Gimadi I and Dobrodey V 1999 Does privatization affect the activities of enterprises Economics 6 76-89
[7] Chubais A 1999 Privatization in Russian (Moscow: Vagrius)
[8] Batyaeva A 1999 Who works more efficiently: state or non-state enterprises? World economy and international relations 3
[9] Kuzenkov A L 1997 Privatization and the effectiveness of enterprises Problems of forecasting 3
[10] Pliskevich N M 1999 Russian privatization: revolution or evolutionary transition? Social sciences and modernity 4 79-83
[11] Kochevrin Yu 1993 Privatization in Russia ME and MO 6 5-10
[12] Nellis J 1992 A Review of Privatization: Internationally Society and Economics 4 33-56
[13] 1992 Privatization: the experience of Eastern Europe and Asia: 6 round-table discussions (Moscow: IPRG)
[14] Radygin A D, Entov R M, Abramov A E, Chernova M I and Malginov G N 2019 Privatization in Russia: 60 years later. The scope and effectiveness of the public sector (Moscow: Publishing house "Delo" RANEPA)
[15] Radygin A D 1994 Property reform in Russia: on the way from the past to the future (Moscow: Republic)
[16] Abramov A, Radygin A, Chernova M and Entov R 2017 State ownership and performance characteristics Issues of Economics 4 5-37
[17] Rothbard M 2016 Power and the Market: State and Economics (Chelyabinsk: Socium)
[18] Williamson J 1997 The Washington Consensus Revisited Economic and Social Development in the XXI Century p 50
[19] Ananyin O, Khaitkulov R and Shestakov D 2010 Washington Consensus: landscape after the battles World Economy and International Relations 12 15-27
[20] Bulatov A E 1972 Patterns of reproduction of fixed assets in agriculture (Moscow: Economics)
[21] Poletaev P I 1977 Reproduction of fixed assets and agricultural efficiency (Moscow: Kolos)
[22] Sokolov A 1993 On denationalization and privatization in agriculture Economist 6 29-33
[23] Uzun V 1992 Privatization: in agricultural production Russian Economic Journal pp 61-72
[24] Zhereshtieva R F 1981 The formation of socialist agriculture in Kabardi-no-Balkaria (Nalchik)
[25] Kardanov B M 1977 Production assets of collective farms and state farms and ways to increase their efficiency (Nalchik)