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# VARIATIONS OF PRODUCTION FACTORS THEORY

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**Abstract.** The paper discusses the influence of the proportions of production factors on the establishment of public equilibrium. The theory of production factors occupies an important place in the history of economic thought. The creator of the theory of factors is considered to be the famous French economist Jean Baptiste Say (1767-1832). J. B. Say campaigned against mercantilism and protectionism and advocated a policy of free trade. Factor theory finds significant application in the international division of labor.

Another French economist, Frédéric Bastiat, developed the theory of economic harmony. In this theory F. Bastiat sought to reach an economic agreement between different groups of the society, through their cooperation. Canadian engineer-technologist P. Monsarov developed a theory of four factors. Nowadays, Heckcher-Ohlin Theory is widely used in the international division of labor.

**KEYWORDS:** FACTOR, PARADOX, IMPORT, EXPORT.

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## INTRODUCTION

Mankind has suffered and continues to suffer from essentially the same problems from its beginning to the present. The forms of their manifestation were always different. Therefore, the knowledge of the genetic interconnection between the various stages of historical development, the identification of mental-hereditary, cause-effect relationship, is one of the topical theme in scientific historiography. This also applies to the interconnectedness of theories of production factors, which we will discuss in this article.

## Materials and methods

Jean Baptiste Say developed the theory of three factors of production. According to J. B. Say three factors participate in the creation of the value of goods: labor, capital and land. Labor creates wages; Capital – profit, benefit; the land – rent. Each of these factors receives its own income for the service. The worker receives a salary for his labor; capital owner – profit, interest; landowner – rent.

Based on the three-factor theory of J. B. Say, another French economist, Frédéric Bastiat (1801-1850), developed the theory of economic harmonies. According to Bastiat, the main thing is service for service. He presented society as an exchange of services between different classes of society and different individuals.

F. Bastiat considered service as a source of value. In his view, "value is the ratio between two exchange services" (Bell, 1973, p.169). The capitalist provides services to the worker by buying machinery, raw materials, and so on. The

worker provides services to the capitalist by labor, services are provided to other members of society by officials, clergy, artists, musicians, etc. According to Bastiat, the service is voluntary, and is beneficial to the whole society, because a member of the society receives equal services for one type of service, he saw economic harmony in this.

F. Bastiat considered exchange to be the basis of economic harmonies first of all service exchange. F. Bastiat defined service as the force, the tension that characterizes people not only in the process of producing material wealth, but also wherever service takes place. F. Bastiat argued against the theory of labor value. He resolutely denied the connection between the creation of value theory and the production of material wealth. F. Bastiat considered service or effort as a source of value for goods. He determined value not by labor but by the ratio between two different types of services. F. Bastiat wrote in his book *Economic Harmonies*: If anyone, from the provision that the price is determined by working hours, explains why air is of no value and why diamonds are of high value, I would burn my book (Bastiat, 1896. p. 129).

In the 50s of the XX century, the Canadian engineer-technologist P. Monsarov extended the three-factor theory by J.B. Say and developed the four-factor theory. In his view, the science factor is overlooked in the three-factor theory.

P. Monsarov views science as the fourth, independent factor of production. Moreover, he considers science as the first factor. It offers a four-factor formula:

1. Science;
2. Capital;
3. Land;
4. Labor.

However, the development of science and technology plays a crucial role.

P. Monsarov believes that technical progress leads to simultaneous increases in wages and profits. He believes that on the basis of the fourth, the main factor of production - the development of science, incomes will be equalized, deproletarianization will take place and a middle class will emerge (Chavchavadze, 1987, pp.283-284).

The theory of factors of production is still widely used today. A fifth factor was added to it - entrepreneurial habits.

Heckscher-Ohlin's theory is spreading in the modern period. It is widely used in the international division of labor.

Heckscher-Ohlin's theory was developed by two Swedish economists, Eli Heckscher and Bertil Ohlin. This theory clearly indicates the interaction that is manifested between the proportion of access to different factors of production in different countries and the proportion of the use of factors in the production of different goods. It is also called the theory of the ratio of factors (Chanukvadze, 1969, 84). Heckscher-Olin Theorem: A country exports goods in which its surplus factor is used extensively (Chanukvadze, 1969, 85), while importing goods produced by a meager factor. There are also some deviations from this formula.

Specifically, it turned out that the capital-saturated US, which, according to Heckscher-Ohlin's theory, should export capital-intensive goods and import labor-saturated ones. In practice it is on the contrary. They exported labor-intensive goods and imported capital-intensive goods.

In the 1950s of the 20th century, a study by Vasil Leontiev, an American economist of Russian descent, showed that in 1947, the United States, which was considered a capital-intensive country, exported labor-intensive rather than capital-intensive products, although according to Heckscher-Ohlin, the result should have been the opposite. It turned out that capital in the US was not the most redundant factor in the post-World War II period. More than that is cultivated land and technical staff. Here Heckscher-Ohlin's theory was proved: the US turned out to be a net exporter of goods, in the production of which these factors are used extensively.

The paradoxical results obtained by V. Leontiev worried both him and other economists. It turned out that in 1947 the US sold labor-intensive goods to other countries in exchange for capital-intensive goods. The basic parameter was only 0.77. According to Heckscher-Ohlin's theory, it should have been higher than 1.

Numerous studies have shown that two main conclusions have been reached: The understanding of the availability of factors and the intensity of their use has been significantly improved. The first rejected Heckscher-Ohlin's theory. The other supported him. Despite the differences in calculation techniques, all studies have largely confirmed the existence of Leontiev's paradox in the United States between World War II and the early 1970s (Krugman et al., 2017).

Subsequent studies have shown that capital is by no means the most redundant factor in production in the United States. The first place belongs to the cultivated land and the scientific-technical staff. The US is a net exporter of goods that makes extensive use of these factors in full compliance

with Heckscher-Ohlin's theory. However, calculations for 27 countries in 1987 showed that trade in 30 out of 100 countries went in the opposite direction to Heckscher-Ohlin's theory (Krugman et al., 2017).

This is in general. The Americans will look after American business. Let's think about our case! How does our economics fit into Heckscher-Ohlin's theory?

In today's world, some countries that have surplus raw materials go through the international distribution of labor as a raw material factor. For example, Azerbaijan mainly exports crude oil and gas.

Georgia has a relatively surplus factor - labor resources. Comparative is because there is no longer an appropriate production base here and therefore labor resources are flowing into emigration.

The risk of remaining unemployed in a structural transformation society is high. So there is an incentive for self-insurance and one or two people from the family go abroad to work.

Economic globalization, which creates a mobile population in developing countries, plays an important role. Even in highly developed countries there is a demand for services. Migration processes are also generated by politics and hostilities, which in turn create an influx of refugees. The workforce goes to where wages are high. However, the demand in the labor market of developed countries is for non-prestigious, dirty, harmful, hard work, which is avoided by the local population (Google, Leontiev's Paradox, 8-9).

The solution is to create jobs. The government promises to create tens of thousands of jobs; this is good. It would be better for the business to create jobs as well. There is a Georgian proverb: "If the mountain does not go to Amirani, Amirani must go to the mountain".

Returnees from abroad have some experience in doing business. I do not think they have accumulated enough money and capital to set up large enterprises, but they can create small and medium-sized enterprises. For reference, in the "prehistoric era", i.e. during the developed socialism, there were 700 large enterprises in Georgia, small and medium-sized.

It is also interesting to revive the previous, local experience of entrepreneurship. Our society does not come straight from the jungle. In Kakheti, there is even a shortage of labor force for agricultural work, especially seasonal, if not unemployment. Viticulture, fruit growing, horticulture are developing. For example, during the vine grafting season, a worker is paid 70-80 GEL for 7 hours of work per day. In 2021, they were paid 55 GEL per day for picking grapes and peaches. In the vintage, the brigade was brought from Tsnori in Gurjaani to pick grapes. The products they produce, wine, peaches, watermelons, fresh and seed potatoes are quite expensive and occupy an important place in the export segment of the country.

Warning signals are heard from the government in the direction of industrial revival and development. For example, the composite parts of an aircraft made at the Tbilisi Aviation Plant are supplied to American Boeing aircraft. The energy sector is developing. According to the Minister of Economy

and Sustainable Development of Georgia Levan Davitashvili, if investors are interested in the production of electric batteries in Georgia, they will have maximum support. Priority will be given to the Ministry of Economy for industrial investments that can employ quite a number of people and produce a product (Google, Leontiev's Paradox).

This is a new approach and is welcome, as until now the priority field was agriculture. For the last 30 years, all hopes have been based on foreign investment. Investments were mainly used for infrastructure.

For reference, there is a Ministry of Economy and Industry in Israel. By the way, the Israeli Minister of Economy and Industry invested \$ 50 million in 2017 to make the above-mentioned composite parts when he arrived in Georgia to participate in a cultural event marking the 70th anniversary of Israel's founding.

Since we have touched upon the issue of industry, it must also be said that if industry is not restored in Georgia, the country will be in a "world rural state." "Price scissors" operate on the world market. Industrial goods are sold at a monopoly high price, while agricultural goods and resources are sold at a monopoly low price. The difference is made by the maximum profits that industrially developed countries meet.

The resources also include labor resources, which flow from Georgia in the context of the Heckscher-Ohlin theory as a surplus and cheap factor. With this labor resource it is possible to produce labor-intensive and resource-intensive goods and export them abroad. This will help increase the trade balance, raise the exchange rate and increase overall prosperity.

Today we do not have access to the formula established 5 centuries ago – "Achieving an active trade balance with excessive exports". A more effective formula was developed about a century ago: "Withdrawal of capital takes precedence over withdrawal of goods."

According to the great Georgian public figure, scientist, publicist, brilliant writer and poet Ilia Chavchavadze, tireless work, hardworking people and the fair, correct use of the wealth created by them could put a troubled Georgia on its feet. In order to build a society that is economically viable, I. Chavchavadze recognized the principle of compulsory labor for everyone.

According to I. Chavchavadze, every person, no matter what rank and quality he was, should look for and see the true object of his life in labor and hard work. I. Chavchavadze believed that the improvement of economic life, the regulation of economic relations between the various classes, the growth of the country's wealth, and the abundance of wealth were of primary importance for the advancement of the Georgian nation. It is therefore superfluous to talk about the serious development of culture and the growth of the spiritual wealth of the people. As one of the just and inexhaustible sources of strengthening and enriching the nation, I. Chavchavadze considered economic production (Chavchavadze, 1987, 19).

I. Chavchavadze expressed great sorrow because the development of our industry was following in the footsteps of a turtle.

With regard to industry, we can add that in the above-mentioned "prehistoric era" in Georgia functioned: the Ministry of Industry; the Ministry of Local Industry; the Ministry of Light Industry; the Ministry of Food Industry; the Ministry of Meat and Dairy Industry; the Ministry of Fish Industry; the Ministry of Pharmaceutical Industry, etc. These structures were abolished on the grounds of rationalization. It was considered that many people worked in them! Society is for people and in a pluralistic society the more people will be employed, the more productive there will be. There will be no more overpopulation. Many people mean many scientists, many engineers, many workers (Mankiw, 2008, 538). With their proper implementation, many economic problems in the society can be solved by increasing productivity. China, for example, employs about 800 million people. China ranks second in the world in terms of GDP, after the United States, and according to the forecast, it will soon overtake it.

Such an approach is not only an expression of humanism, but also an increase in jobs and incomes, which will expand the domestic and foreign markets and will also facilitate the sale of goods produced by the expulsion of the "invisible hand" (private interests). The latter is a precondition for crisis prevention, which will be followed by poverty alleviation, reduction of crime and improvement of the quality of civilization.

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