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ON THE ISSUE OF DETERMINING THE SIZE OF THE PUBLIC SECTOR OF THE ECONOMY

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Abstract. One of the most pressing problems of modern economic science in a mixed economy is the definition and calculation of the size of the market and non-market (state, public, government) sectors. The calculation of the scale of the non-market sector is of fundamental importance in view of the following factors: it allows to easily distinguish the public sector from the market sector from the analytical point of view (statistical significance); promotes the development and implementation of effective state budget policy (fiscal importance); promotes the rational use of state property and the effective functioning of state-owned enterprises (asset management importance); enables the analysis of the impact on the economic growth of the sector and the adoption of sound economic decisions (macroeconomic importance). It should be noted that in modern conditions, various indicators are used to measure the size of the public sector of the economy, which have both theoretical and empirical significance, but due to their specificity are not homogeneous economic indicators and are characterized by understanding the size of the sector in different aspects. This paper reviews and analyzes these indicators and proposes a rather complex approach to calculating the public sector of the economy, which is fundamentally important for a comprehensive analysis and relevance of the sector's impact on economic growth.

Key words: Gross Domestic Product (GDP), economy and state, private and public sector, public sector indicators.

JEL Classification: J45, H71

1. Introduction

The economic role of the state for any country, no matter at what stage of economic development it is, remains one of the key and problematic issues, as it largely determines the prospects of economic development of the country both at the micro and macroeconomic levels. In general, and including in the conditions of transition economy, the quality of solving socio-economic problems in the world, in the context of sectoral analysis, in the author's opinion, significantly depends on the solution of two interrelated issues: 1. How methodologically accurately and comprehensively the sizes (volumes, scales) of the private and public sectors of the economy will be calculated; 2. To what extent the impact of the private and public sectors on the economic growth of the country will be taken into account. The focus of our study is an attempt to answer the first question.

2. Analytical importance of measuring the scale of the public sector of the economy

As it is known from theory and proven by the world practice, the market as a special economic mechanism is not perfect and sustainable enough to solve all socio-economic problems facing society. The mentioned shortcomings are focused on the notion of the so-called "market fiasco" (Hillman, 2003, p. 9; Tanzi, 2011, p. 43; Klumph, 2013, p. 95), which raises the need of participation of the state, as a special and specific economic entity, along with the market in the economic space. From the point of view of regulating economic processes, such a synthesis of the market and the state is known in the world as a mixed economy, the core of which is the market infrastructure.

It should be noted that at the present stage the necessity and expediency of state regulation of the economy is not the main issue, but its scale and intensity, forms and methods of implementation, tools and mechanisms remain critically important (Morozov, 2006, p. 22). At the same time, the degree of interaction between state mechanisms, market regulators and the correlation of forms and methods of their use, which is never static, is of particular importance in the implementation of the system of state regulation of the economy and, accordingly, in the implementation of the state economic policy. It undergoes permanent changes in accordance with

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the peculiarities of the current stage of the country's development, economic, social, political, legal and other factors, as well as changes in the conceptual priorities of the strategy of socio-economic development of the country.

The state, as a business entity participating in market relations, belongs to the state (public) sector of the economy. It is well known that in countries with developed economies, market mechanisms and, accordingly, private sector entities dominate the market. The transition to a market economy, however, puts on the agenda the activation of the private sector, increasing its scale, transforming it into a driving force of the economy, while reducing the direct participation of the state in the economy, as the private and public sectors are integral segments of the economy as a single integral system. Increasing the size of one of the sectors of this system and, accordingly, reducing the size of the other sector is a closely interrelated process that can be caused by many factors, the most important of which is the structural reorganization of the economy. It should be noted that in the conditions of gradual transition to a market economy, the economic role of the state acquires a double meaning. In particular, the state, as an organizing phenomenon of the economy, must simultaneously perform two interrelated tasks: in particular, the state, as an organizing phenomenon of the economy, must simultaneously perform two interrelated tasks: on the one hand, it is called to create the most favorable conditions for the intensive introduction of market institutions in the economy, and on the other – to ensure moderate regulation of the economy through the use of appropriate mechanisms.

It is important to note that in a transition economy, state regulation of the economy is significantly and fundamentally different from the state regulation of a developed market economy. The latter is also not universal. In particular, in the state regulation of economies of developed countries there are reactive and proactive models of regulation of the market as an economic system. The reactive model (US, UK, etc.) mainly relies on the least possible "interference" of the state in the economy of the country, which particularly strengthens when it comes to identifying the shortcomings of the market economy and reducing the effectiveness of the functioning of market mechanisms, while the proactive model (Japan, Germany, etc.) is based on the preventive actions of the state to compensate for market defects, regardless of the effectiveness and quality of functioning of market mechanisms (Anisimov, 1995, p. 57–58). It should be noted that, compared to countries with developed market systems, state regulation of the economy and, accordingly, the implementation of the goals and objectives of regulation in countries undergoing transition to market relations is more complex, as they face a whole range of tasks that are difficult to implement, among which are the following:

1. Effective organization of structural reorganization of the economy.
2. Demonopolization of the economy in accordance with the principles of market economy.
3. Formation and improvement of mechanisms for regulating the economy.
4. Maximum promotion of the implementation and development of market infrastructure elements.
5. Creation of an adequate legislative framework for the effective functioning of the economy.
6. Changing the ratio between administrative and economic mechanisms of state regulation of the economy.
7. Inclusion of the country's economy in the world economic relations in the conditions of constantly growing globalization, etc.

Note that in purely terminological terms, when interpreting and using the sectoral understanding, the following concepts are used in economic science with almost identical meaning "public sector", "government sector", "state sector", "non-market sector". In economic theory and practice, the issue of the relationship between the public and private sectors, public and private ownership, public and private enterprises has always been a sensitive and fundamental paradigm (Roland, 2008, p. 9–17), since in most cases these relationships depend on the efficient functioning of the public sector and the efficient operation of the private sector, which complement each other in the context of overall economic development.

3. Methodological approach to measuring the scale of the public sector of the economy

It should be noted that in the modern economic literature there is no single, generally accepted indicator of the scale and size of the public (and hence the private) sector of the economy, which would set a sharp boundary between these sectors of the economy. This is due to the fact that there are different interpretations of the essence of the public sector. For example, according to one of the definitions, the public sector is a combination of all economic resources, factors of production, and financial resources, which is state-owned and disposed of and used by state authorities (Azrilian, 1998, p. 109). According to other definitions the public sector is defined as the combination of economic resources at the disposal of the state, designed to generate public wealth (Hillman, 2003, p. 94). What is common in these definitions is that the state (public) sector of the economy is mainly devoted to financial resources managed by the state, i.e., the state budget, its revenues and expenditures. This is the financial aspect of the public sector, but in the economy of any country, as noted above, the state is more or less involved in the formation of newly created value through the use of state property (in particular, state-owned enterprises). The latter can be considered as the economic aspect of the public sector. Thus, the public sector of the economy can be defined as a set of public funds – public finances (financial aspect) and state property (economic aspect), with the help of which public wealth is created in the country. In most cases, the public sector is considered as isolated from the state regulation of the economy, which, in our opinion, is economically unreasonable, while the financial aspect of the public sector involves the creation of goods and services necessary for society at the expense of public finances, which is reflected in a specific budget policy, which is a set of active and effective indirect economic measures of state regulation of the economy. Therefore, the public sector is an integral part of the system of state regulation of the economy. The scale of the public sector, i.e., the size of the government, is primarily determined by the share of public expenditure in gross domestic product, according to which the public sector can be large, medium and small. Within a large public sector, public expenditures are more than 50% of GDP, medium – 40-50%, small – less than 40% (Tanzi, 2011, p. 232). In general, the role of the state in the economy is associated with public (budget) expenditures per GDP, although this is not the only tool and indicator of the role of the state in the economy. Determining the scale (size) of the public sector of the economy is of great contextual importance not in itself, but because the "size of the state" has a certain impact on the country's economic growth, labor productivity, employment, economic freedom and other parameters (Khan, 2011). Moreover, the researches based on the data from EU and OECD countries show that different government size parameters (subsidy, transfer, investment, consumption) correlate differently with economic growth (Afonso, Furceri, 2010). The majority of theoretical and empirical studies point to a negative correlation between the size of government and economic growth, although the degree of this correlation may vary depending on which political-economic system and type (market, mixed, socialist or other) one is dealing with (Gusen, 1997, pp. 181–182). Therefore, in view of its importance, it is extremely delicate to look for ways of measuring the size and scale of the public sector. Various indicators are used to determine the size of the public sector in economic science, including the following indicators:

1. Specific weight of the state budget volume (mainly expenditures) in relation to the size of GDP (so-called "budgetary burden" coefficient), which is different in the market economy countries and is characterized by an upward trend. For example, this figure increased from 1960 to 2007, from an average of 28.0% to 42.0%, namely: In the USA – 27.0% to 36.6%, in Japan – 17.5% to 36.0%, in Germany – 32.4% to 43.9%, in France – 34 , 6% to 52.6%, in the UK – 32.2% to 44.6%, in Switzerland – 17.2% to 35.4%, in Sweden – 31.0% to 52.6%, in Canada – 28.6% to 39.3% (Tanzi, 2011, p. 9). By 2011, the state budget / GDP-related index worldwide accounted for 33% in terms of expenses and 31% in terms of revenues (Matteo, 2013, p. 85). In the Georgian economy in the last decade this figure is 28.5% on average (MOF, GEOSTAT).

2. In some cases, the share of state consumption in GDP is also used to determine the size of the public sector of the economy (Hägge, 2003, p. 74). This figure is close to the figure above, as the public consumption is known as the same budgetary expenditures with the exception of its specified portion – subsidies and transfers. For example, this figure in Georgia was 13.2% in the last decade (GEOSTAT).

3. One of the indicators is the share of state consumption in the final consumption of GDP (Consumption of households and consumption of public authorities), which shows how much of the final consumption of GDP created comes directly on the public consumption. For example, in 2008, in the member countries of the Organization for Economic Cooperation and Development (OECD), this figure was on average 20.6% (Tanzi, 2011, p. 101). In Georgia, in the last years (2010–2018), the share of state consumption in the final consumption of GDP is on average 15.8% (GEOSTAT).

4. In many cases, the share of government investments in the total volume of investments in the economy is often used to determine the size of the public sector. This implies the cost of state-financed investment-infrastructure projects, which is measured by the size of the capital expenditures of the budget. In the EU countries, for example, 20 percent of investments come on the state sector (Khodov, 1997, p. 17).

5. An important indicator of determining the size of the state sector is the scale of direct participation of state-owned enterprises in joint domestic production. In particular, in developed market economies, the state sector enterprises produce 15-20 percent of the gross national product (Gogokhia, 1996, p. 73). Also, by the early 2000s, states in western Europe were still major shareholders of privatized enterprises with almost 30% of shares (Roland, 2008, p. 64–65). It should be noted that in 2003, 35 percent of goods and services produced by enterprises engaged in entrepreneurship in Georgia came from the public

sector, and 65 percent from the private sector (CCG, 2004: 3), and in 2018 only 4.4 percent of business output came from state-owned enterprises (GEOSTAT).

6. The number of employees in the public sector is also used to evaluate the public sector (Gupta and othets, 2001, p. 6, 15), which is a pure quantitative indicator and does not fully reflect the economic scale of the public sector. According to this indicator, in Georgia in 2018 the public sector accounted for 17.7% of the total number of employees, while in the same year in the business sector the state-owned enterprises employed only 7.7% (GEOSTAT).

The assessment of the public sector of the economy by the above indicators gives different results. The question arises: Which of the above criteria most fully reflects the scale of the state (public) sector? To answer this question, it is necessary to distinguish two types of the public sector: the first is that the state creates a certain part of added value, i.e., acts as a producer (even with limited scale), and the second, unlike private sector entities, distributes the created value. In the author's opinion, the starting point for calculating the public sector should be the two above-mentioned points. In order to calculate the share of the public sector in the economy, let's make the following sequence of considerations: assume that the GDP created in the country annually is 10 billion euros (denoted by G). Suppose that the value created by the state in the volume of GDP is 15 percent, that is, 1.5 billion euros (denoted by S), and the rest of GDP – 85 percent, that is, 8.5 billion euros is created by private sector entities (denoted by P). Consider, however, that the state allocates 20 percent of the created product through the budget – 2 billion euros (mark D). When calculating the size of the public and private sectors, it should be assumed that the state creates a certain share of GDP and distributes it in parallel, so the joint effect of the state (public sector) can be expressed as follows: (1.5 + 2) / 10 * 100% = 35%, while the contribution of the private sector is 85% (P).

The effect of the joint participation of the public and private sectors is (35% + 85%), 120% = (S + D) + P should be approximately 100, then the following proportion will be obtained:

$$(S + D + P)\ 120 — 100$$

$$(S + D)\ 35 — X$$

$$X = (S + D) / (S + D + P) * 100\% =$$
$$35 / 120 * 100\% = 29{,}16\%.$$

The share of the private sector will be 100% _ 29.16% = 70.84%.

As a result of transformations of the equations, the exact formulas for calculating the sectors are obtained, namely the formula for calculating the scale of the public sector of the economy:

$$R_1 = \frac{S+D}{S+D+P} * 100\%, \quad S + P = G$$

then

$$R_1 = \frac{S+D}{G+D} * 100\%$$

The formula for calculating the magnitude of the private sector would be:

$$R_2 = (1 - \frac{S+D}{G+D}) * 100\% = \frac{G+D-S-D}{G+D} * 100\% =$$

$$= \frac{G-S}{G+D} * 100\% = \frac{P}{G+D} * 100\%$$

i.e.

$$R_1 + R_2 = \frac{S+D}{G+D} + \frac{P}{G+D} = \frac{S+D+P}{G+D} = \frac{G+D}{G+D} = 1$$

This formulation of the public and private sectors allows to avoid ambiguity of their division and to outline a certain boundary between these sectors of the economy. In the author's view, this calculation of the public sector reveals two types of its nature in relation to the economy:

1) what is the value of the product it creates together with the market;

2) to what extent it participates in the distribution and allocation of the created product.

The indicators calculated in this way more or less reflect the scale of the public and private sectors in the economy and the nature of their participation, which is of particular importance for countries with transit economies, when the private sector is formed and expanded through privatization and at the same time seeks certain limits of "interference" in the state economy.

It is also important to note that in the conditions of Georgia's transition economy, the calculation of the public and private sectors of the economy is complicated by the lack of data necessary for such calculations, in particular, the lack of aggregated statistics on the share of the public and private sectors in joint ventures. In the process of methodological improvement and operation of the database necessary for the above calculation, it is quite possible to determine the share of sectors at this particular stage of development in order to determine the ratio between state and market regulators. Furthermore, it should be emphasized that the above calculations are purely methodological in nature. Any level of the ratio of sectors cannot be considered optimal and/or static, since its change depends on many factors, including the stage of economic development of the state, the goals and objectives of economic policy, how effectively market mechanisms operate under these conditions, the level of market infrastructure, the degree of openness of the country's economy, the priorities of its macroeconomic and structural policy and much more.

4. Conclusions

Thus, the calculation of the scale of the state (non-market) sector in the economy has both purely scientific and theoretical, and practical and empirical importance for sustainable economic growth of any country, and in a transition economy – for an analytical approach to the optimal relationship between the state and the market (non-market and market sectors). In modern conditions, economic science uses different indicators to determine the size of the public sector, among which the "top" indicator is mainly the ratio of state budget expenditures to GDP. However, other indicators are also used: the share of public consumption in GDP; the share of public consumption in final consumption of GDP; the share of public investment in total investment; the scale of direct participation of state-owned enterprises in domestic production; the number of employees in the public sector and others. In the proposed model of sectoral accounting, the author tried to take into account the dual nature of the state in relation to the economy: in particular, on the one hand, the state creates part of the value added in the economy, and on the other hand, unlike private sector entities, it distributes the created value.

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