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TYPOLOGY OF MACROECONOMIC PARAMETERS OF POPULATION INCOME

Indicative planning is an important tool for regulating the processes of socio-economic development at the regional level. The quantitative and qualitative characteristics of human wellbeing are particularly notable among indicators used in this area. The aim of the study is to reveal the potential of indicative planning for analyzing and forecasting the dynamics of population income in a region. Our analysis is focused on regional population incomes. We consider the evolution of indicative planning. Moreover, we classify macroeconomic parameters reflecting different aspects of the dynamics in the regional population incomes under various analytical blocks. In order to assess the relative importance of each indicator, we propose to evaluate them using three matrices — achieving objectives (to what extent indicators influence the achievement of main objectives); autonomy (to what extent indicators or processes ensure the stability of regional socio-economic system); regionality (to what degree they can be categorized as internal factors of regional system). The authors substantiate a seven-stage method for building an integral index. Furthermore, we estimate the weights of selected indicators in accordance with specific criteria. The assessment has showed the influence of "big challenges" on the regional population incomes, integral index, and block indexes. The proposed typology of macroeconomic parameters of the population income can be used to forecast the socio-economic development of regions within the framework of strategic planning. In addition, it can be applied by the authorities of the subjects of the Russian Federation for the indicative planning in specific areas of socio-economic policy. Moreover, it is useful when monitoring the dynamics of population income and other indicators describing the living standards of population in the region.

Keywords: indicator, genesis and evolution of indicative planning, methodology and methods of indicative planning, monitoring of indicative plans, forecasting, integral index, population incomes, regional socio-economic system, evaluation criteria of indicators, decomposition of population incomes

Introduction

More than a quarter of a century after the start of modern economic reform in Russia, there is no doubt that the market reforms (as they were conceived) failed to provide the expected effects [1]. However, the economists and general public realized that the market is not a panacea for all problems of the post-Soviet economy as early as by the mid-1990s. At that point, top government authorities also recognized the need to use planning and forecasting capabilities for implementing economic policies that would harmonize the interests of population, economic entities, and the state.

Initially, the rule-making in planning and forecasting was limited to various "strategies," "concepts," and "foundations" (among the most successful documents in this area, we could highlight The Concept of Transition of the Russian Federation to Sustainable Development[1] and The Main Provisions of Regional Policy in the Russian Federation that were adopted in 1996[2]), that is, the acts with fairly modest legal force. Perhaps, their benefit was the fact that they established basic principles and framework for planning and forecasting both at the federal and regional levels. Finally, the beginning of the 21st century was marked by the significant strengthening of legal and regulatory support to the state regulation of the Russian economy.

It should be noted that the Federal Law "On State Forecasting and Programs of Socio-Economic Development of the Russian Federation" was adopted as early as in summer 1995.[3] This law presented the forecasting as a system of scientifically based ideas on the development areas of Russian economy based on the market laws (Clause 1 of Article 1). Such short-term forecasts were elaborated annually and made an integral part of the budget process. In addition, the government was responsible for

[1] On the Concept of Transition of the Russian Federation to Sustainable Development. Decree of the President of the Russian Federation No. 440 of April 1, 1996. Collection of Legislative Acts of the Russian Federation, 1996, No. 15, Art. 1572. (In Russ.)

[2] On the Main Provisions of Regional Policy in the Russian Federation. Decree of the President of the Russian Federation No. 803 of June 3, 1996. Collection of Legislative Acts of the Russian Federation, 1996, No. 23, Art. 2756. (In Russ.)

[3] On State Forecasting and Programs of Socio-Economic Development of the Russian Federation. Federal Law No. 115-FZ of July 20, 1995. Collection of Legislative Acts of the Russian Federation, 1995, No. 30, Art. 2871. (In Russ.)

elaborating the medium-term programs of socio-economic development of Russia, and the annual address of the President of the Russian Federation to the Federal Assembly of the Russian Federation had to include a section on the analysis of implementation of these programs and their clarification involving the definition of objectives for the coming year. By the mid-2000s, when political and economic stabilization became real, the period for short-term forecasts of socio-economic development was extended to at least three years (for the medium-term forecast, from three to five years), which was further stipulated in Article 173 of the Budget Code of the Russian Federation.[4]

Finally, in 2014, the law on state forecasting was replaced by the Federal Law "On Strategic Planning in the Russian Federation"[5] (the well-known dispute between G. Mintzberg [2] and I. Ansoff [3] only confirmed the relevance of this regulatory act for the Russian economy). Strategic planning was understood as the goal-setting, forecasting, planning, and programming socio-economic development at the federal, regional, and municipal levels (Clause 1 of Article 3). In this case, the clarified and expanded concept of "forecasting" was interpreted as the elaboration of scientifically based ideas on the risks to socio-economic development, threats to national security, areas, results, and indicators of socio-economic development of the Russian Federation, subjects of the Russian Federation, and municipal entities. It is easy to note that, together with goal-setting, planning, and programming, the forecasting comes as a basic element of the so-called "indicative planning," a special form of market economy regulation, the capabilities of which were clearly underutilized in the Russian realities of the second half of the 2010s. At the same time, the capabilities of indicative planning as a tool for regulating socio-economic processes and a source of information for management decision-making at various levels of economic activities so far are insufficiently studied, especially with regard to Russian practices of market regulation of the economy in transition.

The aim of this article is to reveal the potential of indicative planning for such particular case as the analysis and forecasting of dynamics in the population incomes of a large region.

Indicative planning: Genesis and evolution

Indicative planning is traditionally viewed as an economic practice opposed to directive planning, and this opposition is described by such dichotomies as "market vs. plan," "forecast vs. law," etc. This can be explained by economic discussions of the 1920s on the ways of building socialism in the USSR and disputes that accompanied the formation of neoliberalism doctrine (or ordoliberalism for Western Germany), and other ideological clashes of views with regard to the forms and methods of state regulation of the economy.

Meanwhile, as a particular phenomenon, the indicative planning has passed a long way in terms of both theoretical understanding and practical implementation in various countries of the world. O. O. Smirnova noted that one of the first proposals to use economic indicators was made by J. Bruckheimer in 1911. He built the forecasting process on the chronological series of three indicators, such as the index of bank loans, index of share prices and index of total economic activity [4, p. 77]. Basically, this is where Harvard ABC curves, Harvard barometer of W. C. Mitchell originated and many other variants of economic forecasting practiced in the 1920s and 1930s.

The book of the German economist C. Landauer "Planned Economy and Market Economy" published in 1931 remained virtually unnoticed in this period [5]. After emigrating to the US, in 1944, he published another book "Theory of National Economic Planning," this time in English [6], which was later reprinted many times and recognized as the first major work on the fundamentals of indicative planning. It was in this book that C. Landauer suggested that, in the market economy, planning authorities should analyze how the expected changes in the production process would affect the incomes of different population groups and what would be the response of consumers to changes in supply and income [6, p. 171–173]. C. Landauer's contribution to the theory and practice of indicative planning was recognized by regular scientific readings in his honor [7].

In the same year, the Austrian economist F. A. von Hayek wrote an essay "The Road to Serfdom" [8] that substantiated the main credo of neoliberalism "Competition as much as possible; planning

[4] On amendments to the Budget code of the Russian Federation regarding regulation of budgetary process and bringing certain legislative acts of the Russian Federation in conformity with the budget legislation of the Russian Federation. Federal Law No. 63-FZ of April 26, 2007. Collection of Legislative Acts of the Russian Federation, 2007, No. 18, Art. 2117. (In Russ.)

[5] On Strategic Planning in the Russian Federation. Federal Law No. 172-FZ of June 28, 2014. Collection of Legislative Acts of the Russian Federation, 2014, No. 26, Part I, Art. 3378. (In Russ.)

as much as necessary." Therefore, 1944 can be viewed as a starting point for scientific foundations of indicative planning.

Meanwhile, in the USSR, the issue of choosing between the plan and market acquired a practical rather than theoretical significance as early as the 1920s. The successful implementation of the GOELRO plan only strengthened the Soviet leadership in the desire to move to the medium-term (five-year) planning of the development of the USSR national economy. In the context of rolling back the New Economic Policy, there was a discussion about the forms and methods of planning, better known as the opposition between "geneticists" and "teleologists" [9]. While "geneticists" headed by N. D. Kondratiev argued for a plan in the form of forecast, the "teleologists" headed by S. G. Strumilin were for a plan in the form of law.

Due to well-known political and ideological reasons, this dispute was won by those who supported the directive planning for the USSR economy. However, two decades later, the ideas of "geneticists" were put into practice in the form of indicative planning, which gradually spread in a number of countries, primarily, in Western Europe. The most illustrative case is the France, which made a journey from the use of directive methods in managing the restoration of national economy in the post-war decade to the extended system of economic forecasting, which flourished in the 1960s and 1970s [10].

P. Massé, one of the enthusiasts of directive planning in France who headed the Commissariat général du Plan during the implementation of medium-term plans in the 1960s and1970s, considered the plan as a counterbalance to risk (le plan ou l'anti-hazard) and published a number of general and analytical papers [11, 12]. Moreover, his book "Le choix des investissements. Criteres et methodes" was published in the USSR in 1971 under the title "Criteria and Methods for Optimal Determination of Capital Investments" [13].

In France, with its tradition of a social state, the theoretical interest in the planning of a market economy was quite understandable. However, in the countries where the principles of economic liberalism dominated in theory and in practice, the ideas of indicative planning have also become popular. As early as in 1964, the Dutchman J. Tinbergen (who, by the way, in 1969 was the first to win the Nobel Prize in Economics) formulated the three most characteristic features of planning:

1. Plan is aimed at the future and, therefore, requires accurate forecasts.

2. Plan should be based on specific goals.

3. Plan implies the coordination of economic policies aimed at achieving the established goals [14, p. 8].

For his part, the Englishman J. Meade (who also won the Nobel Prize in Economics) revealed the dual nature of indicative planning that involves the tactics of "successive approximation" or "iterative duet" of state planning authorities and economic entities in order to achieve general economic equilibrium [15].

Even in the Francoist Spain, the theory and practice of indicative planning have not gone unnoticed by both academics and government [16]. As a matter of fact, in the USSR, too, the idea of a plan in the form of forecast was also not forgotten among the economists, especially in such scientific centers as the Siberian Branch of the USSR Academy of Sciences [17]. However, the interest in the capabilities of indicative planning in Russian peaked in the first decades of the 21st century [18–21].

When considering the methodological characteristics of indicative planning and, especially, to the possibility of using its tools in the Russian economy of the late 2010s, we should remember that no economic decision, which at least once proved to be successful, can be universal or guarantee unconditional success in the future. O. Morgenstern, one of the authors of the "game theory" who viewed the predictive function of economic science as a priority, warned however that the decisions based on even very accurate calculations will not necessarily be optimal, "The process of making such decisions involves several types of uncertainty. First, it is necessary to formulate the goal and decision of the opponent, which may be the nature and, sometimes, a human or a group of humans. Secondly, there is no certainty on whether all necessary information was collected and its quality was correctly evaluated. Thirdly, there is no certainty whether the correct conclusions were made from the scattered parts and fragmentary details to make up a satisfactory picture on the basis of available information" [22, p. 114].

Nevertheless, it is necessary to further improve the methodology and methods of indicative planning in relation to the realities of the Russian economy. At the same time, when elaborating recommendations for various levels of government ranging from federal to municipal authorities, we

should not forget the idea expressed about two and a half thousand years ago by the famous Greek philosopher Protagoras who stated that man is the measure of all things. This is why the analysis presented in this article is focused on such ontological indicator as the population income in the region.

Prerequisites of the analysis

Economic science has accumulated significant experience in building various systems of indicators for different purposes and using a variety of methods and methodological approaches. This study proposes an approach representing a synthesis and development of existing approaches. In particular, we suggested to use the system of generalized and local integral indicators of socio-economic development of the regions [23] and abbreviated welfare function of A. Sen to assess the social wellbeing of Russian regions by taking into account the income inequality [24].

To ensure the comparability of results obtained in different regions, we consider it appropriate to use a specific algorithm for building an integral index of the regional population income (Fig. 1). At the first stage, we selected the indicators describing the main block "Population income." Given that the population income indicators are interrelated with a large number of other indicators, at the second stage, we needed to identify the main indicators in accordance with the areas (blocks) specified above, including work, business, environment, society, prospects, and finance.

At the third stage, we defined the criteria for assessing the indicators. This is due to the fact that the indicators have a high weight for being included in a specific block, but have a differentiated weight

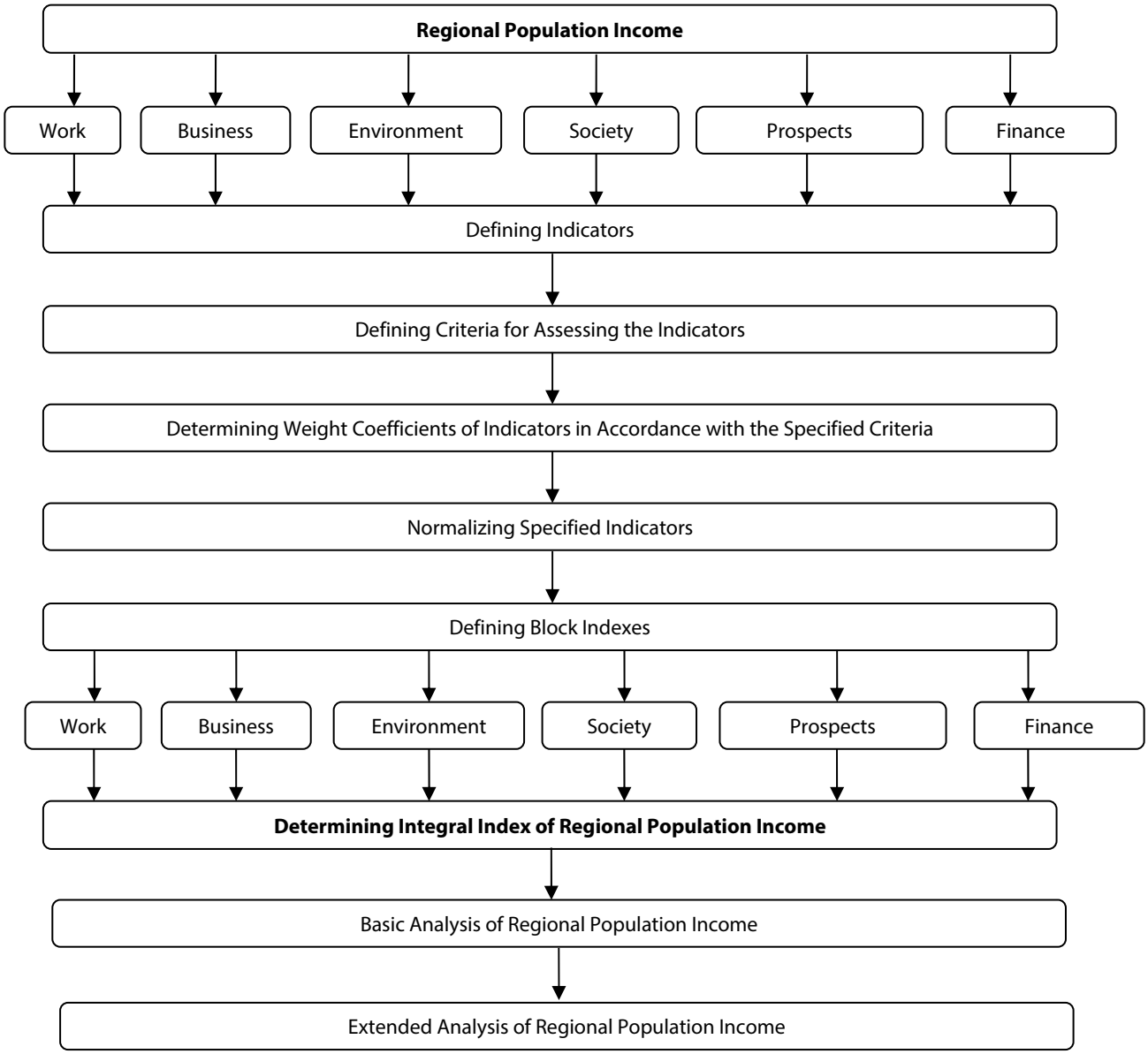

Fig. 1. *The algorithm for determining the integral index of regional population income*

Translation

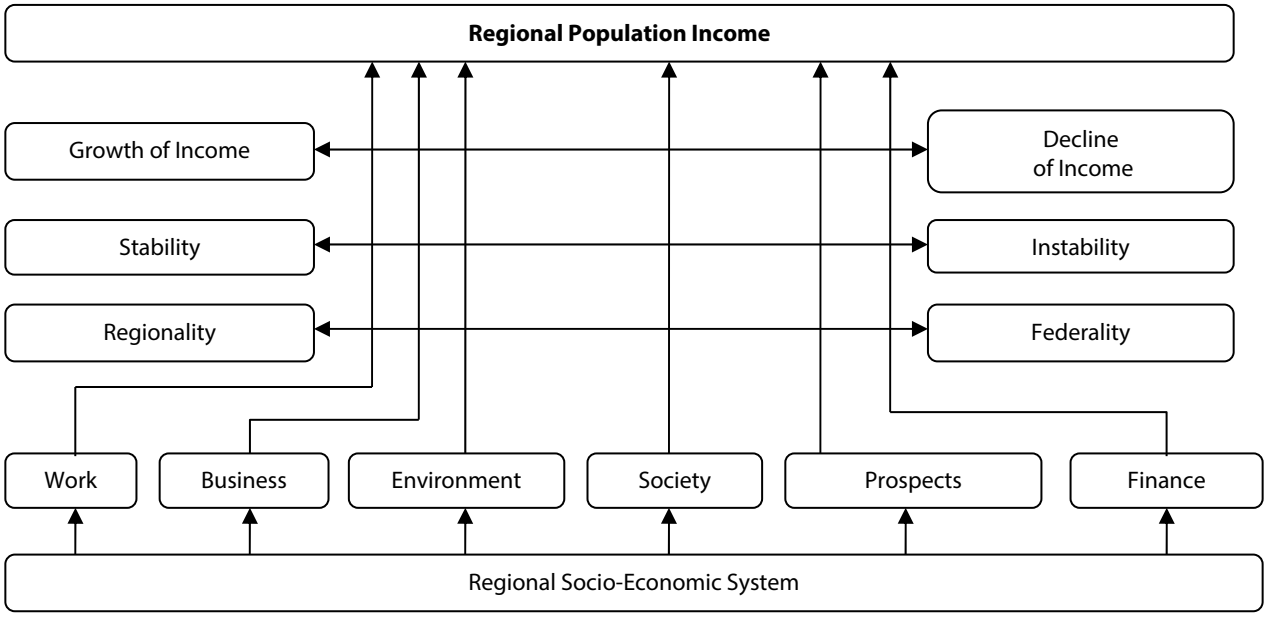

Fig. 2. *Decomposition of regional population income based on the matrix of criteria for assessing the indicators*

within the block. As a result, first, it would be appropriate to assess the indicators by the criterion of achieving a common goal, i.e. higher regional population income.

Secondly, the indicators should be viewed in terms of the impact made the processes, that they reflect, on the stability of the regional socio-economic system. Thirdly, each indicator should be assessed by whether it belongs to internal criteria (those related to the areas influenced and managed primarily by the regional authorities) or external criteria (those managed primarily at the federal or global levels).

To assess the relative importance of each indicator, we proposed to evaluate them by using 3 matrices, such as the goal achievement matrix (how strongly indicators affect the achievement of main goal), autonomy (to what extent the indicator or processes contribute to the stability of regional socio-economic system), regionality (to what extent they can be attributed to internal factors (advantages) of the regional system) (Fig. 2).

Following a pairwise comparison of indicators, we needed to simplify calculations by selecting either of two alternative assessment, such as 0 or 1. The assessments obtained for each indicator are summed up and then are normalized by using a linear scaling formula (1). Such matrices are built for each block of indicators and, later, the obtained weights are used to calculate the block index.

$$Ir = \frac{X - X_{\min}}{X_{\max} - X_{\min}}, \quad (1)$$

where Ir is the normalized value of indicator; X is the sum of the indicator assessments; $X_{\max}$ is the maximum value of the sum of indicator assessments for a given criterion; $X_{\min}$ is the minimum value of the sum of indicator assessments for a given criterion.

In this formula, the normalized values of indicators for a given criterion are calculated as the ratio of the difference between the specific value of the sum of indicator assessments and the minimum value of all indicators to the difference between the maximum and minimum values of the sum of assessments for all indicators of a particular criterion and block. The normalized values are also in the range between 0 and 1.

At the fourth stage, to ensure the comparability of heterogeneous indicators, we proposed to normalize them based on the linear scaling formula. In this case, formula 1 is used to normalize the indicators, the increase of which results in the increase of the block criterion (for example, income). To normalize indicators with inverse dependence, i.e. those the increase of which causes deterioration of the block criterion (for example, the growth of population with income below the subsistence minimum indicates the decline of income), we used linear scaling formula 2.

Translation

$$Ir = 1 - \frac{X - X_{\min}}{X_{\max} - X_{\min}}, \quad (2)$$

where Ir is the normalized value of indicator; X is the sum of indicator assessments; $X_{\max}$ is the maximum value of indicator among all block indicators; $X_{\min}$ is the minimum value of indicator among all block indicators.

At the fifth stage, for each block, we determined the normalized values of each indicator, which allow to calculate the block index, and then the integral index of regional population index. Next, in accordance with the obtained generalized, block, and criterion indexes, we can determine the strengths and weaknesses of the regional socio-economic system.

At the sixth stage, we proposed to carry out the basic analysis of regional population income which, in our opinion, should include such components as the analysis of dynamics in indicators included in the main block "Regional Population Income," analysis of dynamics in indicators with the highest weight coefficients in each of the blocks, analysis of dynamics in block indexes, and the integral index of regional population income. At the same time, according to the requirements of operational monitoring, the basic analysis can be carried out on a monthly basis, which allows to quickly define the state control measures that are necessary to achieve the main targets of the indicative plan.

At the seventh stage, we carried out the extended analysis of regional population income involving such analytical activities as determining the integrated indices in accordance with the proposed methodology of the Russian Federation, or federal district in which the analyzed region is located, regions included in that federal district, regions comparable to the analyzed region in terms of socio-economic development, comparative analysis of obtained integral indexes and their block components, analysis of the impact made by "big challenges" on the regional population income, integral index, and block indexes. We recommend to carry out the extended analysis at least once a year.

System of indicators

We suggest to use the above methodological approach and system of indicators in such main processes as analyzing stability of a particular region and its dynamics, comparing it with other regions when elaborating the forecasts of regional socio-economic development as part of strategic planning, elaborating, and implementing indicative plans, monitoring the implementation of strategic and indicative plans.

As the main and defining indicator used both for indicative planning and forecasting, we suggest to use the number of people with incomes in the range of 14 thousand to 45 thousand rubles per month (II1 (or IncomeIndex1) in the final Income matrix)[6]. People with such income can be viewed as the Russian "middle" class and, along with the group of people with incomes above 45 thousand rubles, ensure the stability of socio-economic systems at all levels. This group can grow as a result of declining number of people receiving income below 14 thousand and above 45 thousand rubles per month. Therefore, the dynamics in the number of people with incomes in the suggested range can be seen as the main criterion for the effectiveness of socio-economic policy at the regional level.

Of course, it the income level and conditions defining the "middle" class are debatable. In the context of indicative planning, we find it important to use comparative criterion in the regional aspect, and the word "middle" reflects the fact that this population group is in the middle of the scale used by Rosstat and constitutes more than half of population in Russia, and the overwhelming majority in a number of regions.

This assertion is a hypothesis, according to which the indicator of population with incomes in the range from 14 thousand to 45 thousand rubles per month is of priority importance within the proposed set of indicators and criteria. This hypothesis can be proven or disproved by further analysis.

The next indicator, which may also affect the stability (instability) of socio-economic system, is the number of people with incomes below the subsistence minimum (II2 in the final Income matrix). The subsistence minimum varies depending on the subject of the Russian Federation. However, at the same time, in most Russian regions, it is in the range of up to 10 thousand rubles per month for the able-bodied population. Therefore, a decline in the number of people with incomes below 10 thousand rubles will be the criterion of effectiveness of the regional socio-economic policy.

[6] Hereinafter, we used the data of regional statistics presented in the statistical compilations Regiony Rossii: Sotsia'no-ekonomicheskiye pokazateli. 2017 [Regions of Russia: Socio-Economic Indicators. 2017]. (2017). Moscow, Rosstat, 1402. (in Russ.)

Amid increasing social orientation, one of the priorities of socio-economic development at all levels is the fight against poverty in all its manifestations. An indicator describing the scale of poverty is the population with monetary incomes below the subsistence level (as a percentage of the total population of the Russian Federation; II3 in the final Income matrix). Lower share of such people will indicate a positive result of activities implemented by the regional administration, and vice versa.

The fourth indicator of the "Income" block could be R/P 10 % ratio, which measures the extent of social stratification in the region defined as the ratio of incomes of the richest 10 % to the poorest 10 % of the population (II4 in the final Income matrix). Accordingly, the decline of this indicator will allow recognizing a more even distribution of income, and vice versa. According to conducted studies, the "reduction of negative effects produced by socio-economic determinants (first of all, unemployment and stratification of the population by income level) will allow to reduce stress and uncertainty in the future" in people of the Russian regions [25, p. 72]. In this regard, it should be noted that, for measuring inequality of living standards, the economic literature also suggested to use BVN polarization factor, which describes the ratio of average income in upper-class population to the average income in the poorest population, Milanovic polarization index, and the index of population accumulating lower and upper median shares of income [26, p. 982].

The next indicator that we suggest to use is GRP per capita (II5 in the final Income matrix). It serves as an indicator describing the vector and dynamics of economic processes in the region, and reflecting the state and prospects of economic resident of a particular region. This indicator allows to assess potential growth of population income, as well as the sources of such income. It is also important to note that, in terms of comparisons (for example, in comparison with budget subsidies), the high value of this indicator allows to assess the extent of stability (autonomy) of a particular region. In addition, GRP per capita can be used to calculate the derivative (estimated) indicators based on Rosstat data to assess regional socio-economic effectiveness.

The actual final per capita consumption of households in the subjects of the Russian Federation allows to assess the final consumption of the population generated both by their earned income and by social transfers in the form of health care, education, culture, and other services.

The ratio of GRP to actual per capita final consumption of households allows to assess the adequacy of GRP produced in the region to ensure the final consumption of regional population (II6 in the final Income matrix). At the same time, the obtained indicator should exceed 1, which will show the adequacy of GRP, as well as the fact that population can make savings, which are an important factor in ensuring the long-term stability of regional socio-economic system.

The seventh indicator to be included in the Regional Population Income block is the increase (decrease) of population's money in the usage structure of their monetary income (II7 in the final Income matrix). Usually, this indicator declines during crisis periods, because the population and other economic entities are compelled to spend an increasing share of their own income on "increasingly expensive" consumption, including by using previously saved funds. According to J. M. Keynes, "if it goes far enough, the fall of income caused by lower employment can even cause the consumption to exceed income not only for individuals and organizations that use for consumption their financial reserves accumulated in better times, but also for the governments" [27, p. 97]. The opposite can be observed in times of economic recovery, when the relative growth of income allows people to make savings. These funds are also one of the sources for investments both at the regional and federal levels.

Next, in accordance with the proposed algorithm, we assessed the weight coefficients of above indicators by using the formulated criteria, such as population income growth, stability, and regionality.

The method of building matrices for pairwise comparison of indicators provides for assigning the value of 1 to the more significant of the two indicators and the value of 0 to the less significant indicator. This method was used to build a matrix, which consistently compares the indicators located horizontally with indicators located vertically. For example, II1 (population with incomes in the range from 14 thousand to 45 thousand rubles per month) in the second column is compared pairwise with other indicators. The obtained values are then summed up horizontally and normalized using a linear scaling formula. The results are presented in the last column. Similar calculations are made for other matrices.

The results of the assessment are shown in Tables 1–3.

In the resulting matrix, II2 and II3 are practically the same (0.8333 and 0.6667). However, they are weight coefficients, the value of which should be considered later in determining the block and final

Table 1

Final table of the matrix for weight coefficients of Income block indicators

		II1	II2	II3	II4	II5	II6	II7	Sum of values	Normalized indicators
II1	IC	1	1	1	1	1	1	1	7	1.0000
	SC	1	1	1	1	1	1	1	7	1.0000
	RC	1	1	1	1	1	1	1	7	1.0000
II2	IC	0	1	1	1	1	1	1	6	0.8333
	SC	0	1	1	0	1	1	1	5	0.6667
	RC	0	1	1	1	1	1	1	6	0.8333
II3	IC	0	0	1	1	1	1	1	5	0.6667
	SC	0	0	1	0	0	0	1	2	0.1667
	RC	0	0	1	1	1	1	1	5	0.6667
II4	IC	0	0	0	1	1	1	1	4	0.5000
	SC	0	1	1	1	0	0	1	4	0.5000
	RC	0	0	0	1	0	0	0	1	0.0000
II5	IC	0	0	0	0	1	0	0	1	0
	SC	0	0	1	1	1	0	1	4	0.5000
	RC	0	0	0	1	1	1	0	3	0.3333
II6	IC	0	0	0	0	1	1	0	2	0.1667
	SC	0	0	1	1	1	1	1	5	0.6667
	RC	0	0	0	1	0	1	0	2	0.1667
II7	IC	0	0	0	0	1	1	1	3	0.3333
	SC	0	0	0	0	0	0	1	1	0
	RC	0	0	0	1	1	1	1	4	0.5000

Notes: IC (Income Criterion): assessments of indicators based on the criterion of regional population income growth; SC (Stability Criterion): assessments of indicators based on stability criterion; RC (Regionality Criterion): assessments of indicators based on the regionality criterion.

Table 2

Final table of the matrices for weight coefficients of Work, Business, Environment blocks

Criterion	Work block	Normalized indicators	Business block	Normalized indicators	Environment block	Normalized indicators
IC	WI1	1.0000	BI1	0.1667	EI1	0.1667
SC		1		0.8333		0
RC		0.3333		1		0.1667
IC	WI2	1	BI2	0.5	EI2	0.6667
SC		0.8333		0.3333		0.1667
RC		0.5		0.6667		0
IC	WI3	0.8	BI3	0.3333	EI3	0.3333
SC		0.1667		0.1667		0.3333
RC		0		0.5		0.6667
IC	WI4	0.8	BI4	1	EI4	0
SC		0.6667		1		0.6667
RC		0.1667		0		0.5000
IC	WI5	0	BI5	0.8333	EI5	0.5000
SC		0.3333		0.6667		0.5000
RC		0.8333		0.3333		0.3333
IC	WI6	0.2	BI6	0.6667	EI6	1.0000
SC		0.5		0.5		1.0000
RC		1		0.1667		1.0000
IC	WI7	0.4	BI7	0	EI7	0.8333
SC		0		0		0.8333
RC		0.6667		0.8333		0.8333

Translation

Table 3

Final table of the matrices for weight coefficients of Society, Prospects, Finance blocks

Criterion	Society block	Normalized indicators	Prospects block	Normalized indicators	Finance block	Normalized indicators
IC	SI1	0.6000	PI1	0.1667	FI1	0.8333
SC		0.6		1		0.3333
RC		0		0.1667		1.0000
IC	SI2	0.2	PI2	0	FI2	1.0000
SC		1		0.8333		0.1667
RC		0.3333		0		0.3333
IC	SI3	0	PI3	0.3333	FI3	0
SC		0.8		0.6667		0.5000
RC		0.5		0.3333		0.5000
IC	SI4	1	PI4	0.6667	FI4	0.3333
SC		0.8		0.3333		0
RC		0.5		0.6667		0
IC	SI5	1	PI5	0.6667	FI5	0.5000
SC		0.2		0		0.6667
RC		0.6667		1		0.8333
IC	SI6	1	PI6	0.6667	FI6	0.6667
SC		0		0.1667		0.8333
RC		1		0.8333		0.6667
IC	SI7	0.4	PI7	1	FI7	0.1667
SC		0.8		0.5		1.0000
RC		0.5		0.5		0.1667

indexes for individual regions based on specific data of Rosstat, which differ by region. It is essential to identify their differences in the range from 0 to 1.

In all three proposed matrices, II1 has the most normalized value (equal to 1), which allows to conclude that the above hypothesis is correct, and the indicator of the population with incomes in the range from 14 thousand to 45 thousand rubles per month has the greatest significance in assessing the effectiveness of regional socio-economic system by criteria of income, stability, and regionality.

When calculating the already normalized specific indicators, we also need to consider that such indicators as the population with incomes in the range from 14 thousand to 45 thousand rubles per month, GRP per capita, ratio of GRP to actual final consumption (per capita), and the increase (decrease) of money available to the population (as a percentage of total monetary income) have a direct correlation with the block criterion of population income growth and, therefore, should be calculated in accordance with the formula (1). Such indicators, as the "population with incomes below 10 thousand rubles," "population with monetary incomes below the subsistence minimum," and R/P 10 % ratio are inversely dependent on income, that is, their growth indicates a decline of income available to most people in the region ("middle" class), and therefore they should be calculated in accordance with the formula (2).

At the same time, such indicator as "GRP per capita" does not by itself allow to assess the potential for population income growth and does not determine its sources. At the same time, when included in the set of other indicators, it can be used for comparative assessment of Russian regions in this area.

Factors affecting the population income

There are several main factors affecting the population income that need to be planned (as part of indicative or strategic planning), forecast, and monitored. Therefore, at the second level of proposed indicator system, we find it appropriate to identify 6 blocks, such as Work, Business, Environment, Society, Prospects, and Finance.

We suggest that the Work block includes indicators of population employment (unemployed population either has no income or it is minimal), such as the employment rate (in %; the higher it is, the

better; WI1 in the final Table 2); unemployment rate (%; WI2; accordingly, achieving its lower level is a goal of indicative planning; inverse dependence); structure of the employed population by education level (according to sample labor force surveys, as a percentage of the total; WI3; direct dependence); ratio of labor force to the average annual number of employees (WI4; direct dependence); ratio of the need for workers reported by employers to the state employment service institutions to the number of unemployed (WI7; direct dependence).

This block should also include indicators that have a negative impact on the income of workers and, therefore, have an inverse dependence, such as wage arrears as a percentage to the monthly payroll of organizations having arrears (WI5); wage arrears per worker with wage arrears (WI6). Normalized indicators of the Work block are presented in the final Table 2.

Business block should include indicators describing small businesses, which provide a certain stability for the regional economy, employment, and serves as a source of income for the regional budget, such as the number of small businesses per 10,000 people (BI1, direct dependence), turnover of small businesses per 10,000 people (BI2, direct dependence), share of the average number of employees of small businesses in the total employed population (BI3, direct dependence), balanced financial result (profit minus loss) of organizations per 10,000 of employed population (BI4, direct dependence), profitability of sold goods, products (works, services) of organizations operating in crop production (BI5, direct dependence), profitability of sold goods, products (works, services) of organizations operating in animal husbandry (BI6, direct dependence), number of businesses and organizations per 10,000 people (BI7, direct dependence). Normalized indicators of the Business block are presented in the final Table 2.

In the Business block, we specifically selected the crop production and animal husbandry because these activities are most common in rural areas in terms of the share of people receiving income from these activities at the regional level. However, in some Russian regions, there is a significant share of people living in rural areas and generating income in other sectors.

We suggest that the Environment block includes indicators describing the main aspects of the impact made by the regional socio-economic system on the biosphere, such as per capita emissions of pollutants into the air by stationary sources (EI1, inverse dependence), per capita capture of air pollutants emitted by stationary sources (EI2, direct dependence), per capita use of fresh water (EI3, inverse dependence), per capita discharge of polluted wastewater into surface water bodies (EI4, inverse dependence), per capita volume of circulation and successive water use (EI5, direct dependence), GRP to total land area (EI6, direct dependence), agriculture output to total land area (EI7, direct dependence). Normalized indicators of the Environment block are presented in the final Table 2.

Society block should include indicators describing the main social aspects in the regional socio-economic system, such as total birth rate (number of births per 1,000 people; SI1, direct dependence), total mortality rate (number of deaths per 1,000 people; SI2, inverse dependence), infant mortality rate (number of children deceased under 1 year of age per 1,000 live births; SI3, inverse dependence), natural population growth rate (per 1,000 people; SI4, direct dependence), average per capita area of residential premises(as of the end of year, sq. m; SI5, direct dependence), commissioning of residential houses per 1,000 people (sq. m of total area; SI6, direct dependence), disease incidence per 1,000 people (SI7, inverse dependence). Normalized indicators of the Society block are presented in the final Table 3.

In the Prospects block, we consider it appropriate to analyze such indicators as the per capita cost of fixed assets (PI1, direct dependence), depreciation of fixed assets (PI2, inverse dependence), per capita investments in fixed assets (actual prices, rubles; PI3, direct dependence), share of organizations involved in technological, organizational, marketing innovations in the total number of surveyed organizations (%; PI4, direct dependence), use of global information networks (% of total surveyed organizations in the corresponding subject of the Russian Federation; PI5, direct dependence), organizations having their own website (% of total surveyed organizations in the corresponding subject of the Russian Federation; PI6, direct dependence), number of students enrolled in bachelor, specialist, master's programs per 10,000 people (PI7, direct dependence). Normalized indicators of the Prospects block are presented in the final Table 3.

We suggest that the Finance block includes such indicators as per capita revenues of consolidated budgets of the subjects of the Russian Federation (FI1, direct dependence), per capita expenses of consolidated budgets of the subjects of the Russian Federation (FI2, direct dependence), ratio of per capita revenues and expenses of consolidated budgets of the subjects of the Russian Federation (FI3, direct dependence), share of gratuitous receipts in the revenue structure of consolidated budgets of

the subjects of the Russian Federation (FI4, direct dependence), ratio of per capita GRP to per capita revenues of the consolidated budgets of the subjects of the Russian Federation (FI5, direct dependence), ratio of per capita GRP to per capita expenses of consolidated budgets of the subjects of the Russian Federation (FI6, direct dependence), share of unprofitable organizations (FI7, inverse dependence). Normalized indicators of the Finance block are presented in the final Table 3.

Conclusion

The category of "regional socio-economic system" is quite polyphonic, and different authors fill it with different content. Still, all possible characteristics of the region as a system can be reduced to two assessment levels. In the first case, it is viewed as part of the world economy and can include territories represented both by individual states and their groups in intra- and intercontinental combinations. In the second case, the region is an administrative and territorial unit or a set of municipal entities within an individual state and, accordingly, a part of the national economy. It is in this sense that the regional socio-economic system represents interest for analysis at the meso-economic level, because the patterns of its development serve as the basis for elaborating methods and areas for public administration of territorial economic complexes.

The study of regional population income, which is an important indicator not only in terms of economic statistics, shows that it can be used as the basis to determine the factors directly affecting the welfare and wellbeing of each individual. As a result, the methodology and methods of indicative planning at the level of regional socio-economic system get additional tools for their development and improvement.

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