

Fluctuations in the Socioeconomic Development of Russian Cities: Methodology and Results of Calculating the Rank Vector of Dynamics

B. S. Zhikharevich and O. V. Rusetskaya

International Center for Socioeconomic Research Leontievsky Center, St. Petersburg, Russia

e-mail: zhikh@leontief.ru, olga@leontief.spb.su

Received April 29, 2014

Abstract—We investigate fluctuations in the dynamics of social and economic development of 120 large cities of the Russian Federation in 2002–2011 based on statistical data on nine socioeconomic indices, such as population, average annual number of employees in organizations, average nominal monthly wages, etc. Cities are classified by types of trajectories based on rank vectors of dynamics calculated according to the author's technique. Approaches to verifying the obtained social and economic performance index are suggested. The possible causes that have affected the trajectories of rank vectors of dynamics are considered in a case study of Vladivostok, Kazan, Kaluga, Volgodonsk, cities of Tyumen oblast, Rubtsovsk, Dzerzhinsk, Pskov, and Kyzyl. It has been concluded that the obtained data reflect reality and can be used to check different hypotheses of the influence of various factors on the dynamics of the cities. The influence of one possible factor, namely, strategic planning, on the dynamics of cities is analyzed. The well-known observation was confirmed: in modern Russia, development factors of the first nature (natural resources, geographical position) prevail over institutional factors. Strategic planning can be an additional catalyst when there are also other prerequisites for development, but it cannot break negative trends by itself.

Keywords: Russian cities, factors, socioeconomic indicators, classification, strategic planning

DOI: 10.1134/S2079970515010128

Russia's largest cities are better studied using official statistics than are other types of cities; they are therefore popular research objects, including those related to the construction of various groupings, classifications, and integral and special ratings.

In particular, monitoring of the development of large cities and regional centers by the Independent Institute for Social Policy (IISP) can be called a regular and high-quality project [6, 7]. The general rating of attractiveness of the urban living environment (habitat) according to the results of the activities of cities in 2012 was prepared by the Russian Union of Engineers [4]. The Ministry of Regional Development of Russia together with the Russian Union of Engineers, the State Committee for Construction (Gosstroj), the Russian Federal Service for Surveillance on Consumer Rights Protection and Human Well-Being (Rosпотребнадзор), and Moscow State University [20] also prepared a rating of the attractiveness of Russian cities. An integral rating of Russia's 100 largest cities was developed by the Urbanika Spatial Planning Institute together with the Union of Architects of Russia [8]. There are also other ratings: the rating of cities by Russian Reporter magazine in terms of attractiveness of

cities for inhabitants; ratings of cities in terms of business conditions by Forbes magazine, as well as by the World Bank together with the International Finance Corporation [10].

The results of the study of the development dynamics of large cities have also been published. They analyze, in particular, the main characteristics and problems typical of Russian cities in the last decade [2, 3], changes in the economic structure of Russia's million-plus cities [1], and changes in the system of financing urban development from the local budget and the role of budgets in urban development [3, 9].

The specifics of our research is the monitoring of the relative development dynamics of a group of cities for subsequent identification of factors influencing change in the type of dynamics. No such research was found in a review of the literature.

The aim of this study is to assess the fluctuations in the dynamics of socioeconomic development of large cities of the Russian Federation in 2002–2011 (for further study of the possible relationship of positive changes in cities with the elaboration of a socioeconomic development strategy).

The object of our study was 120 large Russian cities, including 77 cities that are regional capitals.¹

The sampling principle was as follows: large cities having strategic planning documents known to us were added to the regional capitals.

The main information sources for calculating the performance index were the statistics of digests "Regions of Russia. Main Socioeconomic Indicators of Cities" for 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011 and 2012 [11–19].

Research Methodology:

1. Collection of baseline data. The study used nine indicators, an increase in which can be almost certainly interpreted as evidence of positive development of a city, namely: (1) population; (2) average annual number of employees in organizations; (3) average nominal monthly wages; (4) average living area per person; (5) physicians per 10000 people; (6) industrial production or shipment of own goods and services; (7) construction activity; (8) retail trade turnover; (9) fixed investment. The observation period was 2002–2011.

2. Calculation of growth rates. Growth rates for the respective year to 2002 were calculated for each indicator for each city.

3. Normalization of growth rates. Each of the resulting growth rates in each year was normalized by the total sample of cities by referring to the average growth rate for the aggregate of cities. As a result, for each city for each year and for each indicator a relative performance index was obtained. It shows how the city grew (faster or slower) in comparison with the sample of cities by this indicator.

4. Calculation of the integral performance index. The integral performance index was calculated for each city for each year as the arithmetic average of nine values of the relative performance index. This index shows how the city grew with respect to the studied sample of cities. For example, a city index of 1.04 means that in a given year, it grew 4% faster than the sample of cities on average. Integration of the performance indices of a city in one nine-dimensional vector (by the number of years of observation) gives the rank vector of dynamics. The sample of these vectors can be studied in many ways, including cluster analysis. We used a simpler and more easily interpretable pattern.

5. Grouping of cities (based on the performance index). In order to group cities in each of the periods, the sample of cities was sorted in descending order of the performance index. As a result, we can distinguish two groups of cities in each of the periods:

—Group A cities with performance index greater than 1, i.e., growing faster than the average for the studied sample of cities;

—Group B cities with a performance index less than 1, i.e., growing slower than the average for the studied sample of cities.

Cities of group A that are growing faster than the average make up from 30 to 45%, i.e., less than a half of the studied sample of cities. Accordingly, more than half the cities have a performance index below average in the studied sample.

The minimum value of the performance index in the sample of cities in the period under study had a tendency to decrease; i.e., there were cities far behind the average. Thus, the performance index of Nakhodka in 2007 amounted to 0.588, the minimum value in this period, as well as for the entire period from 2003 to 2011.

The maximum value of the performance index in the sample of all cities in the period under study had a mixed trend, namely: the growth of this indicator was replaced by its fall. The maximum value of the performance index was 5.444 in 2009 in Naryan-Mar; i.e., in this year it exceeds the average value more than five times.

Within groups A and B, two rank groups were allocated:

—Rank group 1—cities in which the performance index was above average in group A;

—Rank group 2—cities in which the performance index was below average in group A;

—Rank group 3—cities in which the performance index was above average in group B;

—Rank group 4—cities in which the performance index was below average in group B;

6. Construction of the rank vector for each city (rank vector of dynamics). After the rank groups for each city in each of the periods have been identified, the rank vector of dynamics is constructed for each city, which is a sequence of nine digits corresponding to the number of a rank group. Each of the nine digits characterized the city in each of the years from 2003 to 2011.

7. Classification of cities by types of trajectories based on rank vectors of dynamics.

We can distinguish the following types of development trajectories of cities among rank groups:

—*Consistently outperforming* cities occupy stable high places (rank group 1 or 2, there can be one movement to rank group 3);

—*Consistently lagging* cities occupy consistently low places (rank group 3 or 4, there can be one movement to rank group 2);

—Cities with *accelerated development* are unstable with positive dynamics and can transit from low to high places (there can be one reverse transition);

—Cities with *decelerated development* are unstable with negative dynamics and can transit from high to low places (there can be one reverse transition);

—*Hesitant* cities are with mixed trends.

¹ Except for Moscow, St. Petersburg, Grozny (Chechen Republic) and Magas (Republic of Ingushetia).

In determining the classification of trajectories of cities to the above types, it was assumed that the change in the quality of the urban development dynamics is manifested as a change in rank no less than two years in a row. Thus, the rules in parentheses are introduced.

The values of rank vectors of dynamics of cities within classification by types of trajectories are shown in Table 1.

Fifty-four cities can be characterized as stable types according the trajectory of the dynamics. Fourteen of them fall into the leading group, while 40 fall in the group of outsiders.

Thirty-nine large cities have an unstable type of trajectory of the dynamics, namely: 20 are unstable with positive dynamics, and 19 are unstable with negative dynamics.

Twenty-seven cities are classified as fluctuating with multidirectional dynamics. This group can be divided into three subgroups:

—Candidates for “consistently outperforming” cities are seven cities that for 6–7 out of 9 years were in rank groups 1 or 2: Birobidzhan, Blagoveshchensk, Gorno-Altaysk, Kyzyl, Lipetsk, Stary Oskol, and Yuzhno-Sakhalinsk;

—Candidates for “consistently lagging” cities are 17 cities that within 6–7 out of the considered 9 years belonged to rank groups 3 or 4: Artem, Astrakhan, Berezniki, Vladikavkaz, Vologda, Voronezh, Yoshkar-Ola, Kurgan, Naberezhnye Chelny, Nefteyugansk, Novoshahtinsk, Perm, Petropavlovsk-Kamchatskii, Samara, Saransk, Tver, and Chelyabinsk;

—Clearly, “fluctuating” cities are those that within 4–5 out of the considered 9 years belonged to rank groups 1 or 2, and to rank groups 3 or 4 in the remaining period.

The average size of a city in terms of population in the analyzed groups indicates that the “consistently outperforming” group of cities and group of cities with accelerated development have the largest average population relative to the other groups: 530 000 and 406 000 people, respectively. Cities of the “decelerated development” group have the lowest average population: 345 000 people. This agrees well with the known fact of accelerated population loss of smaller cities.

For almost of all federal districts except the Northwestern Federal District, we can select one typical development trajectory that characterizes the larger share of the studied cities of the district:

—in the Central, Northwestern, North Caucasian, and Volga federal districts, the typical trajectory is represented by a group of consistently lagging cities, accounting for 45.0, 30.0, 37.5, and 39.1% of the total number of cities in the respective federal districts;

—in the Southern and Urals federal districts, the typical trajectory is represented by a group of cities with accelerated development, and they account for

46.2 and 41.7% of the total number of cities in the respective federal districts;

—in the Northwestern and Siberian federal districts, the typical trajectory is represented by a group of cities with decelerated development, and they account for 30.0 and 47.6% of the total number of cities in the respective federal districts;

—in the Far Eastern Federal District, the typical trajectory is represented by a group of fluctuating cities, accounting for 46.2% of the total number of cities of the Federal District that participated in the study.

A natural question is the “correctness” of the performance index. The answer can be formal, such as the methodology is open and we get what we get. It is also possible to verify the index, saying that it gives results similar to those obtained by other researchers. This path takes on an interesting subject, namely: how are all the different ratings and grouping of large cities, seemingly created for the same purposes, similar to each other? Such comparisons were carried out, but this is a topic for another article. And you can verify the index, showing by specific examples that identified quantitative laws reflect the real processes, and not only the behavior of certain numbers.

Here are few observations that explain the behavior of rank vectors.

In September 2007, it was decided to hold an APEC summit on Russian Island in Vladivostok and 2009 was marked by growth in the index. On the contrary, the completion of preparations for major events was marked by a decline in the index, namely: in Kazan after celebration of the city’s 1000th anniversary, the index decreased. The transition of Kaluga from the third rank group to the second rank group and a further increase can be explained by the creation of the Kaluga industrial zone and commissioning of the largest enterprises, namely: Volkswagen in 2007, Volvo in 2009, and Peugeot—Citroën—Mitsubishi in 2010. Large-scale works for the construction of the second unit of the Rostov Nuclear Power Plant were deployed in Volgograd in 2006, and in 2006–2008, the rank group of Volgograd changed from fourth to second. In 2010, the unit was partially commissioned and in 2011 the rank again has become equal to three. Intensification of the development of cities of the Tyumen oblast in 2006–2007 may be related to the fact that in 2005 budget revenues in Khanty-Mansi Autonomous Okrug and Tyumen oblast significantly increased, because they received part of the tax arrears levied from Yukos Oil Company. The performance index follows the change of position of large enterprises in a natural way; examples include Rubtsovsk in 2006–2007 falling from the second to the fourth group and Dzerzhinsk in 2006–2007 falling from the first to the fourth group. The dynamics is influenced by local political crises, namely, in Pskov in 2004 and in Kyzyl in 2006. Curiously, most cities with decelerated development did this in 2005–2006, and it is possible that this was influenced by changes in intergovernmental

Table 1. Rank vectors of dynamics of cities in classification by types of trajectories

First year of strategizing	City name	2003	2004	2005	2006	2007	2008	2009	2010	2011
C—Consistently outperforming										
	Anadyr	1	3	1	1	1	1	1	1	1
2007	Belgorod	1	2	2	2	1	2	2	2	2
2008	Ivanovo	1	2	2	1	2	2	2	2	2
2002	Kaliningrad	2	1	2	1	1	1	1	1	1
	Makhachkala	2	1	1	1	1	3	2	1	2
	Nizhni Novgorod	2	2	2	2	2	2	2	2	2
2011	Nizhnii Tagil	2	1	2	2	2	2	3	2	2
2002	Omsk	2	1	2	2	2	2	2	2	2
2009	Pervoural'sk	2	2	3	2	2	1	2	2	2
2009	Rostov-on-Don	2	2	2	2	2	2	2	2	3
2005	Serpukhov	1	1	1	1	1	1	1	1	1
	Ufa	2	2	2	2	1	1	2	2	2
	Khanty-Mansiisk	1	1	1	1	1	1	1	1	1
2002	Engels	2	2	2	2	2	2	2	2	2
CL—Consistently lagging										
2004	Achinsk	4	4	4	4	4	3	4	4	4
2006	Bratsk	4	4	4	4	4	4	4	4	4
2012	Bryansk	3	3	4	3	4	3	4	3	3
2005	Vladimir	4	3	4	4	3	3	3	3	3
2007	Volgograd	4	4	3	3	2	3	3	3	3
2012	Volzhsii	3	4	4	4	4	3	4	4	4
2011	Dimitrovgrad	3	4	4	4	4	4	4	4	4
2001	Izhevsk	1	3	3	3	3	3	3	3	4
2012	Irkutsk	3	3	3	3	3	3	3	3	3
2010	Kirov	4	4	4	3	2	3	3	3	4
2010	Komsomolsk-on-Amur	3	3	4	4	4	4	4	4	4
2002	Kostroma	3	3	4	4	3	4	4	4	4
2011	Krasnoyarsk	3	4	3	3	3	3	3	2	3
	Kursk	3	3	3	3	3	3	2	2	3
2007	Magadan	3	4	4	4	4	4	4	4	4
2008	Magnitogorsk	4	2	3	3	3	3	4	4	4
2012	Murmansk	3	4	4	4	4	4	4	4	4
2003	Murom	4	4	4	4	4	3	4	4	4
2011	Nalchik	4	4	4	4	4	4	4	4	4
2006	Nakhodka	3	4	4	4	4	4	1	3	4
2010	Norilsk	4	4	4	4	4	4	4	4	4
2011	Orel	4	4	4	4	3	3	3	4	4
2011	Orenburg	3	3	3	3	2	3	4	3	4
2007	Orsk	4	4	4	4	2	4	4	4	4
2004	Petrozavodsk	2	3	3	4	3	3	3	3	3
2009	Pyatigorsk	3	3	3	3	4	4	3	2	3
	Saratov	3	4	3	4	3	4	4	4	4
	Smolensk	3	3	4	4	3	3	3	3	3
2008	Syzran	4	4	4	4	3	3	3	2	3
2011	Syktvykar	4	4	4	3	4	4	4	4	4
1999	Tolyatti	4	4	4	4	4	4	4	4	4
2006	Tomsk	2	3	3	3	4	3	3	3	3

Table 1. (Contd.)

First year of strategizing	City name	2003	2004	2005	2006	2007	2008	2009	2010	2011
	Tula	2	3	3	4	3	3	3	3	3
2007	Ulan-Ude	2	4	3	4	4	4	3	3	3
2006	Ulyanovsk	4	4	4	4	3	4	4	4	4
2006	Khabarovsk	3	2	3	3	4	4	4	4	4
	Cherkessk	3	4	3	3	3	4	4	4	4
2012	Shakhty	4	4	3	3	3	2	4	3	3
2002	Yakutsk	4	3	3	4	4	4	4	4	4
2002	Yaroslavl	3	4	4	4	3	4	4	4	4
A—Accelerated development										
2012	Bataisk	2	3	3	2	2	2	2	2	2
2011	Vladivostok	2	3	4	3	4	4	2	1	1
2012	Volgodonsk	4	4	4	4	3	2	2	2	3
2003	Yekaterinburg	3	3	2	2	1	1	2	2	2
	Kaluga	3	3	2	2	2	1	2	1	2
2007	Krasnodar	2	3	4	3	2	2	2	1	2
	Nar'yan-Mar	3	4	1	1	1	1	1	1	1
2009	Nevinnomyssk	4	3	4	3	4	3	2	2	3
2008	Nizhnevartovsk	4	4	4	3	2	1	2	2	2
2005	Novosibirsk	3	2	4	3	2	2	2	2	2
2007	Novocheboksarsk	4	2	2	2	3	2	2	2	1
2012	Novocherkassk	3	2	2	2	3	2	2	2	2
2008	Orekhovo-Zuevo	3	2	2	1	1	2	1	1	1
2007	Penza	3	3	3	3	2	2	2	3	2
	Salekhard	3	4	4	4	3	2	2	2	2
2009	Surgut	4	4	4	4	3	2	2	2	2
2012	Taganrog	2	3	3	3	2	1	2	2	2
2003	Tyumen	3	4	3	3	1	1	1	1	2
2004	Cheboksary	3	3	2	2	1	1	2	2	2
	Elista	4	2	2	2	1	1	1	1	1
D—Decelerated development										
	Abakan	2	2	3	3	3	3	4	3	3
2007	Angarsk	2	2	4	1	3	4	3	4	4
2008	Arkhangelsk	1	2	2	4	3	4	4	4	4
2008	Barnaul	2	2	2	2	3	3	3	4	4
2007	Biisk	2	2	3	4	4	4	3	4	4
	Dzerzhinsk	1	1	1	4	4	4	3	3	3
2003	Kazan	2	2	2	3	2	3	3	3	3
2007	Kemerovo	3	2	2	2	3	3	3	3	3
2010	Kislovodsk	2	1	2	1	4	3	3	3	4
	Maikop	2	2	2	3	3	4	3	3	4
2007	Mezhdurechensk	2	1	1	2	3	2	4	4	4
2007	Novokuznetsk	3	2	2	3	4	4	4	4	4
2010	Prokop'yevsk	1	1	2	2	3	3	3	3	2
2004	Pskov	1	2	4	4	3	3	3	3	3
2008	Rubtsovsk	1	2	2	2	4	4	4	4	4
2009	Ryazan	2	2	2	3	2	2	3	3	3
2012	Tambov	2	2	3	3	2	3	3	3	3
1998	Cherepovets	2	2	2	3	3	3	4	4	4
2003	Chita	1	2	2	2	4	4	4	4	4

Table 1. (Contd.)

First year of strategizing	City name	2003	2004	2005	2006	2007	2008	2009	2010	2011
F—Fluctuating										
2007	Artem	4	3	2	4	4	4	3	2	3
2011	Astrakhan	3	4	4	4	2	3	2	2	3
1999	Berezniki	4	4	4	4	4	2	2	3	3
	Birobidzhan	1	2	2	2	3	2	2	2	3
	Blagoveshchensk	3	2	2	2	3	2	2	2	1
	Veliki Novgorod	1	3	3	2	2	2	2	3	3
	Vladikavkaz	2	4	3	3	2	4	4	4	4
2008	Vologda	3	3	2	3	2	2	3	3	3
2010	Voronezh	3	3	3	3	3	2	2	3	3
2008	Gorno-Altaiisk	3	2	2	2	3	3	2	2	2
	Yoshkar-Ola	2	3	3	3	2	3	3	3	3
2004	Kurgan	2	3	3	4	3	3	2	3	3
	Kyzyl	2	2	2	3	4	3	2	2	2
2006	Lipetsk	2	2	2	3	2	2	2	2	3
2008	Naberezhnye Chelny	4	4	4	2	2	2	4	3	3
2009	Nefteyugansk	3	4	4	4	3	2	2	3	3
2001	Novoshahtinsk	1	4	4	4	2	4	3	3	3
2010	Perm	2	3	2	3	2	3	3	3	3
	Petropavlovsk-Kamchatskii	2	4	4	4	4	4	3	2	3
	Samara	3	3	3	3	2	2	3	3	3
2008	Saransk	2	3	4	3	2	3	3	3	3
2011	Stavropol	1	3	3	2	2	2	3	3	3
2008	Stary Oskol	3	2	2	2	2	2	2	2	3
2003	Tver	3	2	2	3	2	3	3	3	3
1998	Ussuriisk	2	3	2	3	4	4	3	2	2
2009	Chelyabinsk	3	2	2	3	3	2	3	3	3
2008	Yuzhno-Sakhalinsk	1	2	2	2	3	2	2	2	3

relations, recorded by amendments to the Tax and Budget Codes.

Thus, we believe that the findings reflect the reality and can be used to test hypotheses about the influence of various factors on the dynamics of cities. In particular, one of the possible uses of the obtained data is to find the influence of such a factor as strategic planning. Therefore, Table 1 includes a column with the year of approval of the first long-term strategic planning document of urban socioeconomic development [5].

Of the 120 large cities studied, 95 (79.2%) had in the period under review a document with an urban development strategy (Table 3). In the group of consistently outperforming cities, nine cities, or 64.3% of the total number of cities in the group, had such a document. Also, such documents were adopted in 35 cities, or 87.5% in the group of consistently lagging cities; in 16 cities, or 80.0% in the group with accelerated development; in 16 cities, or 84.2% in the group with decelerated development; and in 19 cities, or 70.4%, of the total number of cities in the last group. Thus, consistently lagging cities (87.5%) and cities with deceler-

ated development (84.2%) are slightly more than others involved in developing the strategy, but it is not helping them to change the trajectory. Many developing cities are doing this without a strategy.

To identify the correlation between the adoption of a strategy and a change in trajectory, we determined the number of cities in which at least in one of the years of the range “the year of adoption of a strategy + 2 years” was a change in rank (plus or minus). The sample of cities that started strategizing no earlier than 2002 and no later than 2010 (69 cities, or 57.5% of the total number of cities participating in the study) was sorted by the year of the beginning of strategization and by the change of rank, plus or minus.

Analysis of the data shows that in 42 out of 69 analyzed cities adopting strategy (or 60.9%) there were changes in the first three years of the approval and implementation of the strategic document (Table 4):

—In 15 cities (21.7%) positive dynamics was observed, i.e. the change of ranks, as a rule, for a unit in the direction of improvement;

—In 21 (30.4%) there was the change of ranks towards the worsening of the position of the city;

Table 2. Distribution of cities by types of trajectories of dynamics

No.	Type of trajectory	City name
1	C—Consistently outperforming	Anadyr, Kaliningrad, Pervoural'sk, Ufa, Serpukhov, Khanty-Mansiisk, Nizhni Novgorod, Engels, Belgorod, Omsk, Ivanovo, Nizhnii Tagil, Makhachkala, Rostov-on-Don
2	CL—Consistently lagging	Vladimir, Kursk, Smolensk, Krasnoyarsk, Volgograd, Shakhty, Kirov, Orel, Achinsk, Murom, Petrozavodsk, Tula, Ulan-Ude, Irkutsk, Pyatigorsk, Bryansk, Volzhskii, Orsk, Ulyanovsk, Bratsk, Nalchik, Norilsk, Tolyatti, Yaroslavl, Dimitrovgrad, Magadan, Murmansk, Syktyvkar, Orenburg, Kostroma, Komsomolsk-on-Amur, Saratov, Yakutsk, Cherkessk, Magnitogorsk, Khabarovsk, Syzran, Nakhodka, Tomsk, Izhevsk
3	A—Accelerated development	Tyumen, Nizhneartovsk, Surgut, Salekhard, Elista, Nar'yan-Mar, Kaluga, Orekhovo-Zuevo, Yekaterinburg, Cheboksary, Volgodonsk, Krasnodar, Taganrog, Vladivostok, Novosibirsk, Nevinnomyssk, Penza, Novocheboksarsk, Novocherkassk, Bataisk
4	D—Decelerated development	Ryazan, Kazan, Novokuznetsk, Mezhdurechensk, Prokop'yevsk, Angarsk, Pskov, Tambov, Abakan, Kemerovo, Biisk, Maikop, Dzerzhinsk, Barnaul, Cherepovets, Arkhangelsk, Kislovodsk, Rubtsovsk, Chita
5	F—Fluctuating	Berezniki, Astrakhan, Nefteyugansk, Voronezh, Naberezhnye Chelny, Samara, Novoshahtinsk, Kyzyl, Gorno-Altaysk, Vologda, Veliki Novgorod, Ussuriisk, Chelyabinsk, Stavropol, Tver, Petropavlovsk-Kamchatskii, Kurgan, Artem, Saransk, Yoshkar-Ola, Vladikavkaz, Perm, Blagoveshchensk, Lipetsk, Stary Oskol, Birobidzhan, Yuzhno-Sakhalinsk

Table 3. Presence of strategic planning documents in groups of cities by types of trajectories of dynamics

No.	Type of trajectory	Amount of cities in group	Cities with development strategy	Share of cities with development strategy, %
1	C—Consistently outperforming	14	9	64.3
2	CL—Consistently lagging	40	35	87.5
3	A—Accelerated development	20	16	80
4	D—Decelerated development	19	16	84.2
5	F—Fluctuating	27	19	70.4
	Total	120	95	79.2

—In 6 cities (8.7%) there was contradictory dynamics; changes occurred twice, both in the direction of improvement and worsening.

In 27 cities (39.0%) in the period under review there were no changes in ranks.

First look at the data in the table leads to the conclusion that strategic planning is rather harmful or useless. In 70% of the cities after the adoption of the strategy, the dynamics of development did not change, but even become worse. The argument in favor of stra-

Table 4. Correlation between strategy and change in trajectory

Direction of change in rank in first three years after adoption of strategy	Total		Including									
			C—Consistently outperforming		CL—Consistently lagging		A—Accelerated development		D—Decelerated development		F—Fluctuating	
	number of cities	%	number of cities	%	number of cities	%	number of cities	%	number of cities	%	number of cities	%
Positive dynamics	15	21.7	2	25	4	18.2	4	36.4	1	7.1	4	28.6
Negative dynamics	21	30.4	2	25	8	36.4	3	27.3	5	35.7	3	21.4
Contradictory dynamics	6	8.7	0	0	2	9.1	1	9.1	2	14.3	1	7.1
Without dynamics	27	39.1	4	50	8	36.4	3	27.3	6	42.9	6	42.9
Total	69	100	8	100	22	100	11	100	14	100	14	100

tegic planning can be, perhaps, only the fact that in the group of cities with accelerated development the share of cities with a positive influence was 36% and it is higher than in all other groups and twice as high as in the group of consistently lagging cities.

Thus, preliminary results confirm the well-known observation that in modern Russia first-nature factors (natural resource endowment, geographical location) are still more important than industrial factors. Strategic planning can be an additional catalyst in cases where there are other prerequisites for development, but by itself it cannot reverse negative trends.

ACKNOWLEDGMENTS

This work was supported by the Leontievsky Center Endowment Fund, 2013 R&D plan.

REFERENCES

- Animitsa, E.G., The Largest Russian Cities and Global Urbanisation Processes, *Ars Administrandi*, 2013, no. 1, pp. 82–96.
- Antonov, Ye.V. and Faddeev, A.M., Modern dynamics of development of industrial cities of eastern part of Orenburg oblast, *Reg. Issled.*, 2013, no. 3, pp. 69–78.
- Belkina, T.D., Minchenko, M.M., Nozdrina, N.N., Protokalistova, L.V., and Shcherbakova, Ye.M., Monitoring of the state and problems of development of Russian cities in the years of reforms, *Stud. Russ. Econ. Dev.*, 2011, vol. 22, no. 2, pp. 162–176.
- General'nyi reyting privlekatel'nosti gorodskoi sredy prozhivaniya (obitaniya) po itogam deyatel'nosti gorodov za 2012 god. Press-reliz Rossiiskogo soyuza inzhenerov ot 18.12.2013* (General Rating of Attractiveness of Urban Residential Environment According to the Results of Activity of Cities over 2012. Press-Release of the Russian Union of Engineers of December 18, 2013), Moscow: Inform. Agent. Ross., 2013. <http://www.российский-союз-инженеров.рф/generalnyy-reyting-kachestva-gorodskoy-sredy-prozhivaniya-obitaniya-po-rezultam-deyatelnosti-za-2012>
- Zhikharevich, B.S. and Pribyshin, T.K., Distribution of practice of strategic planning in Russian cities: 1997–2013, *Izv. Ross. Geogr. O-va*, 2013, no. 6, pp. 1–10.
- Zubarevich, N.V., Large cities of Russia: leaders and outsiders, *Demoskop Weekly*, 2013, nos. 551–552. <http://demoscope.ru/weekly/2013/0551/index.php>
- Zubarevich, N.V., Monitoring of development of large cities and regional centers. http://www.socpol.ru/atlas/overviews/social_sphere/goroda.shtml
- Integral rating of 100 largest cities of Russia. <http://delovoy-saratov.ru/press-center/ratings/city-rating>
- Kulikov, G.K., Dynamics of development of large cities and local budgets, *Vestn. Balt. Fed. Univ. im. I. Kanta*, 2012, no. 1, pp. 160–168.
- Best cities for living and business, *Siti-Menedzher*, 2012, July.
- Regiony Rossii. Osnovnye sotsial'no-ekonomicheskie pokazateli gorodov. 2004: Statisticheskii sbornik* (Russian Regions: General Socio-Economic Indices of the Cities, 2004: Statistical Handbook), Moscow: Rosstat, 2004.
- Regiony Rossii. Osnovnye sotsial'no-ekonomicheskie pokazateli gorodov. 2005: Statisticheskii sbornik* (Russian Regions: General Socio-Economic Indices of the Cities, 2005: Statistical Handbook), Moscow: Rosstat, 2006.
- Regiony Rossii. Osnovnye sotsial'no-ekonomicheskie pokazateli gorodov. 2006: Statisticheskii sbornik* (Russian Regions: General Socio-Economic Indices of the Cities, 2006: Statistical Handbook), Moscow: Rosstat, 2006.
- Regiony Rossii. Osnovnye sotsial'no-ekonomicheskie pokazateli gorodov. 2007: Statisticheskii sbornik* (Russian Regions: General Socio-Economic Indices of the Cities, 2007: Statistical Handbook), Moscow: Rosstat, 2007.
- Regiony Rossii. Osnovnye sotsial'no-ekonomicheskie pokazateli gorodov. 2008: Statisticheskii sbornik* (Russian Regions: General Socio-Economic Indices of the Cities, 2008: Statistical Handbook), Moscow: Rosstat, 2008.
- Regiony Rossii. Osnovnye sotsial'no-ekonomicheskie pokazateli gorodov. 2009: Statisticheskii sbornik* (Russian Regions: General Socio-Economic Indices of the Cities, 2009: Statistical Handbook), Moscow: Rosstat, 2009.
- Regiony Rossii. Osnovnye sotsial'no-ekonomicheskie pokazateli gorodov. 2010: Statisticheskii sbornik* (Russian Regions: General Socio-Economic Indices of the Cities, 2010: Statistical Handbook), Moscow: Rosstat, 2010.
- Regiony Rossii. Osnovnye sotsial'no-ekonomicheskie pokazateli gorodov. 2011: Statisticheskii sbornik* (Russian Regions: General Socio-Economic Indices of the Cities, 2011: Statistical Handbook), Moscow: Rosstat, 2011.
- Regiony Rossii. Osnovnye sotsial'no-ekonomicheskie pokazateli gorodov. 2012: Statisticheskii sbornik* (Russian Regions: General Socio-Economic Indices of the Cities, 2012: Statistical Handbook), Moscow: Rosstat, 2012.
- Rating of the most attractive Russian cities, *Gazeta.ru*, 2013, May 20. http://www.gazeta.ru/social/news/2013/05/20/n_2922661.shtml

Translated by L. Speranskaya