

Barriers to Modernization and the Degree of Coherence of Its Main Components in a Macro-Region of the Russian Federation*



Mariya Aleksandrovna

LASTOCHKINA

Institute of Socio-Economic Development of Territories of RAS
56A, Gorky Street, Vologda, 160014, Russian Federation
mashkop@mail.ru

Abstract. The author considers the issue regarding modernization change in the set of economic, social and cultural transformations. The paper looks into the essence of modernization, its importance to man and society, and the problems of its implementation in Russia and regions. In the framework of various modernization doctrines quite a few theoretical-methodological concepts were designed to explain possible aspects of social development. The purpose of this study is to assess the degree of coherence among the economic, social, and cognitive components of the modernization process in the macro-region of the Russian Federation. The study has the following tasks: to review the data on evolutionary processes of modernization, obtained by the author in the framework of the program “Problems of sociocultural evolution of Russia and its regions” (supervisor – RAS Corresponding Member N.I. Lapin); to consider methods for measuring modernization and analyzing its components; to assess the consistency of these components in regions of the Northwestern Federal District (NWF) in 2000–2012. A study of quantitative estimation of integrated modernization as the relative gap between

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the level of modernization in different areas and the high global standard has shown the unevenness of its development in constituent entities of the Russian Federation. The study has revealed positive dynamics of growth of the integrated index of modernization and its balance, which is undoubtedly a positive aspect. Due to a different level and different opportunities for development, regions will need different time to implement each stage of modernization. Apparently, it is expedient to carry out a moderately balanced development of all territories. The emergence of the information economy, based on knowledge and new industrialization makes it necessary to promote productivity growth in respective industries, to increase the proportion of people engaged in intellectual work and, most importantly, to increase the contribution of knowledge and innovation in economic growth. To fulfill this challenging task, it is necessary to pursue a science-based modernization policy, to form and adjust the strategy for its implementation timely.

Key words: modernization, modernization level, culture, modernity, regional development, balance.

The interrelationship of economic, political and cultural transformations is very close, which makes it possible to forecast the nature of their impact on social development. This statement forms a basis of many scientific studies conducted by supporters of modernization theory since M. Weber and K. Marx. Although for over two centuries, there has been a continuous controversy concerning its objectivity, it is being used successfully to identify major trends in social development and general social forecasts. As is known, it is impossible to predict the exact changes in the development of a specific socio-cultural process or event.

The interest and controversy of Marx's idea about a logical interconnection between social and economic changes immediately attracted the attention of many scientists. And this was caused not only by Marx explaining the nature of economic, social and political transformations, but also by the opportunity to forecast social change

to some extent. However, making a forecast is a rather ungrateful job, and it often can only satisfy the ego of the researcher. The reason for the failure and impossibility of any attempt to give a precise and completely unambiguous forecast concerning the development of an individual and society lies in the multifaceted nature of man, and the exposure of his conduct to the action of numerous factors that are difficult to be taken into consideration, including subjective factors.

The impossibility to forecast the exact path of social change in view of the above reasons does not allow us to claim that we make accurate predictions. However, one cannot deny the interrelated transformations of certain sets of cultural, political and economic factors, taking into account different probabilities of possible development options. Some social processes that have gained considerable circulation may lead in the long term to significant

value changes in society and the state. For example, in any society, phenomena such as urbanization, growth of professional specialization, and institutionalization are generated by the development of a long-term social process – industrialization. Less obvious phenomena that have a profound influence on the development of the situation in the country, for example, raising the level of political participation, mass higher education, etc. are also of great importance¹. In general, such ways of development of society that are characterized by the emergence and improvement of a whole set of elements are called modernization.

Knowledge of the level of political activity of the population does not provide an opportunity to predict the precise decisions and actions of certain political leaders or government, but makes it possible to suggest, in what countries at a given moment in time it can be crucial for the initiation of radical change, and in what countries there will be no development leaps. In addition, it is possible to diagnose the most acute contradictions and problems of the state or region that may become the driving force of important changes in the political life of society, and the reliability of such a forecast is quite high.

But we can talk not only about political processes. A wide range of socio-cultural

transformations is also very closely related to the process of modernization. For example, there is a practical blurring of the differences in the social roles of men and women in a mature industrial society; an increasing interest of the population to savings and investment is formed under the influence of certain cultural values generated at the initial stage of industrialization.

But it should be noted that social change that is developing implicitly is non-linear. Any trend, having reached a certain level in its development, begins to wane or is supplanted by another, more relevant one. This is what happened when, in the course of modernization, mature industrial societies at a certain level of their development made a turn in a new direction – post-industrialization. If we consider not only industrial development but also the development of the entire set of related socio-cultural and political factors, then a new direction of the evolution of society can be called neo-industrialization.

The emerging modern worldview is gradually and increasingly supplanting the views of the world that prevailed during the industrial revolution. These new views reflect the expectation of certain changes. A new worldview is shaped so as to reflect people's desire to change the nature of the underlying norms of labor, political, religious, family and social life. The process of economic development has led to the fact that modernization transformations at a certain

¹ Inglehart R. Modernizatsiya i postmodernizatsiya [Modernization and postmodernization]. *Novaya post-industrial'naya volna na Zapade: antologiya* [A new postindustrial wave in the West: anthology]. Ed. by V.L. Inozemtsev. Moscow: Academia, 1999. 631 p.

stage contributed to the change in priorities, and there emerged post-modernization – a movement in a new direction with the latest content, features, and a set of beliefs and values. Post-modernization (an unproductive, outdated term), which is closely related to the processes in industrial and economic structure of society, is a later stage of development of society. A set of beliefs and faiths accompanying it, which emerged initially as a result of gradual economic and social change, reaches the “critical mass”, turns on and starts to form new socio-economic conditions, while beginning to experience their impact as well.

In accordance with the essence of modernization, socio-political transformations everywhere, connected together, lead to industrialization. Speaking of the modern or industrial society, it is necessary to note that its model is not single, universal and common to any country. There is every reason to believe that broad social, cultural and political transformations are generated by economic development and associated not only with industrialization but also the whole set of changes, covering urbanization, occupational specialization, mass education, development of mass communications, and bureaucratic and democratic institutions in society².

² Inglehart R. Modernizatsiya i postmodernizatsiya [Modernization and postmodernization]. *Zapadnaya sotsiologiya: sovremennye paradigmy: antologiya* [Western sociology: current paradigms: anthology]. Compiled by G.N. Sokolova, L.G. Titarenko. Minsk: Belaruskaya navuka, 2015. Pp. 432-449.

Great interest in the theory of modernization, noted recently, emerged on the basis of the prospects that it opened in the field of socio-cultural forecasting. This theory argues that the society embarked on the path of industrialization will come with all probability to certain changes and transformations in all spheres of public life, including those of cultural and political nature; there will emerge natural effects such as the strengthening of the role of government, increased life expectancy, lower fertility, increased political activity, and development of civil society. Opponents of this concept criticized the fact that it argued the inevitability of widespread establishment of liberal democracy as a necessary result of economic development, claiming that this thesis is quite naive and ethnocentric. Many scientists involved in the development of modernization theory in the course of one and a half centuries agreed that there was a relationship between economic and technological transformations on the one hand, and socio-cultural and political transformations of the social structure on the other. And all this time there have been continuous disputes about the essence and particular nature of causality, about what comes first: economic transformations affect changes in culture and politics or, vice versa, social demands and needs form the economic model of relations that is able to satisfy them.

The position of the Marxists was based on the assertion that the technological level of development of a society predetermines its economic model, which, in turn, forms the superstructure of this society and determines its cultural and political and legal features³. The Russian followers of Marx shifted the emphasis and paid more attention to the role of ideology and culture in the emergence and resolution of a revolutionary situation, in contrast to economic determinism that implies spontaneous emergence of a revolutionary leap in the social structure⁴. In contrast to Marx, the influence of culture was highlighted by Weber and his followers, who saw injustice in the assessment of culture as a secondary phenomenon, its inability to be reduced to the level derived from the economic system. Weber proved the importance of culture as an independent factor able to shape people's economic behavior and reflect the existing economic model of society. It was thus postulated that the formation of a certain system of human beliefs and faiths could influence political and economic development of society; in turn, public views themselves began to fall under the influence of economy. The relationship between cultural diversity and economic growth is considered in detail in

³ Marx K. K kritike politicheskoi ekonomii (predislovie) [To the criticism of political economies (foreword)]. In: Marx K., Engels F. *Soch.*: v 3 t. [Writings: in three volumes]. Moscow, 1979. Vol. 1.

⁴ Fedotova V.G. *Modernizatsiya i kul'tura* [Modernization and culture]. Moscow: Progress-Traditsiya, 2015.

the works of M. Berliant and M. Fujita⁵, who empirically came to the conclusion about the presence of direct relationship between the heterogeneity of culture workers and performance of creating new knowledge⁶. Unanimity of religious views of the population promotes the revitalization of trade relations (M. Helble)⁷, invention of new technologies and innovations (J. Bradford DeLong)⁸, having a beneficial effect on the economy (R. Barro, R. McCleary)⁹.

The question whether modernization inevitably leads to the establishment of democracy remains open. Let us consider, for example, the Soviet Union since the Great Patriotic War (1941–1945). The collapse of the Communist system in the 1990s only confirmed this trend. The desperate attempts made by democratic countries in the 2000s to “export democracy” by force – through military incursions, “color revolutions” and economic sanctions – have destroyed many authoritarian regimes, but

⁵ Berliant M., Fujita M. *Culture and Diversity in Knowledge Creation, RIETI: Discussion Paper Series II-E-046*. 2011. Available at: <http://www.rieti.go.jp/jp/publications/dp/11e046.pdf>.

⁶ Limonov L.E., Nesena M.V. Kul'turnoe raznoobrazie rossiiskikh regionov i ekonomicheskii rost [Cultural diversity of Russian regions and economic growth]. *Obshchestvennye nauki i sovremennost'* [Social sciences and modernity], 2016, no. 1, pp. 63-79.

⁷ Helble M. Is God good for trade? *Kyklos*, 2007, vol. 660, pp. 385-413.

⁸ Bradford DeLong J. Productivity growth, convergence, and welfare: comment. *American Economic Review*, 1988, vol. 78, pp. 1138-1154.

⁹ Barro R., McCleary R. *Religion and Economic Growth. National Bureau of Economic Research Working Paper*, 2003, no. 9682. Available at: <http://www.nber.org/papers/w9682.pdf>.

have not led to the triumph of democracy, rather, they have caused de-industrialization and degradation of the countries on the ruins of which rose the barbaric extremist and terrorist regimes, much more dangerous and very far from democratization and modernization.

The majority of sociologists and economists today are skeptical about the concept that states that economic development promotes democratization and industrialization has demonstrated its ability to lead to democracy or dictatorship.

We are not going to argue with the supporters of the modernization theory in relation to the main thesis concerning the existence of a logical and, to some degree, predictable relationship between political change, socio-cultural transformations and economic development of society; instead, we want to draw attention to the possibility of analyzing and modelling the most probable development paths for society (out of many valid and possible ways). Thus, N.I. Lapin notes that now, in the era of spreading telecommunications and increasing mobility of the population, many people compare life in their country to that in other countries; they make conclusions and respond accordingly (they adapt to these living conditions or protest against them)¹⁰. In addition, competition between countries

and peoples for resources and better living conditions is becoming tougher. Therefore, it is important to take into account their nature and dynamics, otherwise there is a risk of social disaster. The political elite should see not only technological and economic development in modernization, but also to initiate its socio-cultural content. It becomes necessary to take into account the strengths and weaknesses of territories' development and respond immediately and correctly to emerging threats.

Integrated modernization index and the balance of its components

Modernization development of Russian regions was carried out according to the methodology developed by He Chuanqi¹¹ and N.I. Lapin¹², with the help of the information-analytical system "Modernization" (<http://mod.vscs.ac.ru/>)¹³. Out of the three proposed indexes let us analyze the integrated modernization index, which represents a relative difference between the level of modernization in different countries

¹¹ He Chuanqi. *Modernization Science: The Principles and Methods of National Advancement*. Beijing: Science Press, 2010; Martinelli A. Chuanqi H. *World Modernization Report*. Beijing: Science Press, 2014; Zongsheng Z. Shuyao W., Chuanqi H. Comparison of Quality of Life in 120 Countries in the World. *Theory and Modernization*, 2006, no. 4, pp. 15-20.

¹² Lapin N.I. Izmerenie modernizatsii rossiiskikh regionov i sotsiokul'turnye faktory ee strategii [Measurement of modernization of Russian regions and the socio-cultural factors in its strategy]. *Sotsiologicheskie issledovaniya* [Sociological studies], 2012, no. 9, pp. 4-24.

¹³ Lastochkina M. Development of the tools to assess the level of modernization of Russia's regions. *IJAS*, 2015, vol. 5, no. 3, pp. 85-89.

¹⁰ Lapin N.I. Sotsiokul'turnye faktory rossiiskoi stagnatsii i modernizatsii [Socio-cultural factors in Russian stagnation and modernization]. *Sotsiologicheskie issledovaniya* [Sociological studies], 2011, no. 9, pp. 3-18.

(regions) and the high global level¹⁴, as each country had and has its own way of economic development and its own model of modernization reforms in the period of industrialization (primary modernization) and in the period of neo-industrialization (secondary industrialization)¹⁵. In turn, the coordinated development of these stages includes an integrated modernization, which are the basis of both economic development and quality of life, and ecology.

Having assessed the integrated modernization index (IMI), we note that by 2005, all the subjects in the Northwestern Federal District that had a low level of modernization have raised it and moved to the group with the level below median (*Tab. 1*). Saint Petersburg moved to the median level of IMI. After seven years, the indices in the regions increased, but not significantly; thus, in 2012, the picture remained virtually unchanged: the group with the median level received only two

regions – Nenets Autonomous Okrug and the Murmansk Oblast; and Saint Petersburg had the high level of development.

A key feature of modernization reforms in Russia is the uneven development of territories. Causes of this inequality are found in the disparities in economic and social development, a non-diversified structure of economy, low innovative activity, and ineffective administration at all levels of government, mainly the spontaneous nature of modernization processes. Significant influence during the reporting period was caused by the financial and economic crisis of 2008 and its aftermath, which caused stagnation and even regression of modernization development.

Let us analyze in more detail the constituent elements of the integrated modernization index, the calculation of which is based on three integrated sub-indices: economic (*IEI*), social (*ISI*), and knowledge (*IKI*). We will try to identify the factors hindering and stimulating the dynamics of modernization, especially its secondary stage.

Figure 1 shows significant differences in the values of the secondary modernization index. In 2000, the integrated social modernization sub-index (*ISI*) was much higher than the IMI, so that most regions of the Northwestern Federal District had the difference (Δ) of 15–25 p.p. The fact that the social sub-index is in the lead suggests that social factors shape social

¹⁴ He Chuanqi. *Obzornyi doklad o modernizatsii v mire i Kitae (2001–2010)* [China modernization report outlook (2001–2010)]. Translated from English; under the general supervision of N.I. Lapin; foreword by N.I. Lapin, G.A. Tosunyan. Moscow: Ves' Mir, 2011. 256 p.

¹⁵ Lastochkina M.A. Territorial'nye osobennosti modernizatsii Rossii [Territorial peculiarities of Russian modernization]. *Regional'naya ekonomika i upravlenie: elektronnyi nauchnyi zhurnal* [Regional economy and management: electronic scientific journal], 2013, no. 2 (34), pp. 29-41; Lastochkina M.A. Razvitie metodologii i instrumentariya otsenki modernizirovannosti regionov Rossii [Development of methodology and tools for assessing the degree of modernization in Russia's regions]. *Problemy razvitiya territorii* [Problems of territory's development], 2015, no. 4 (78), pp. 69-79.

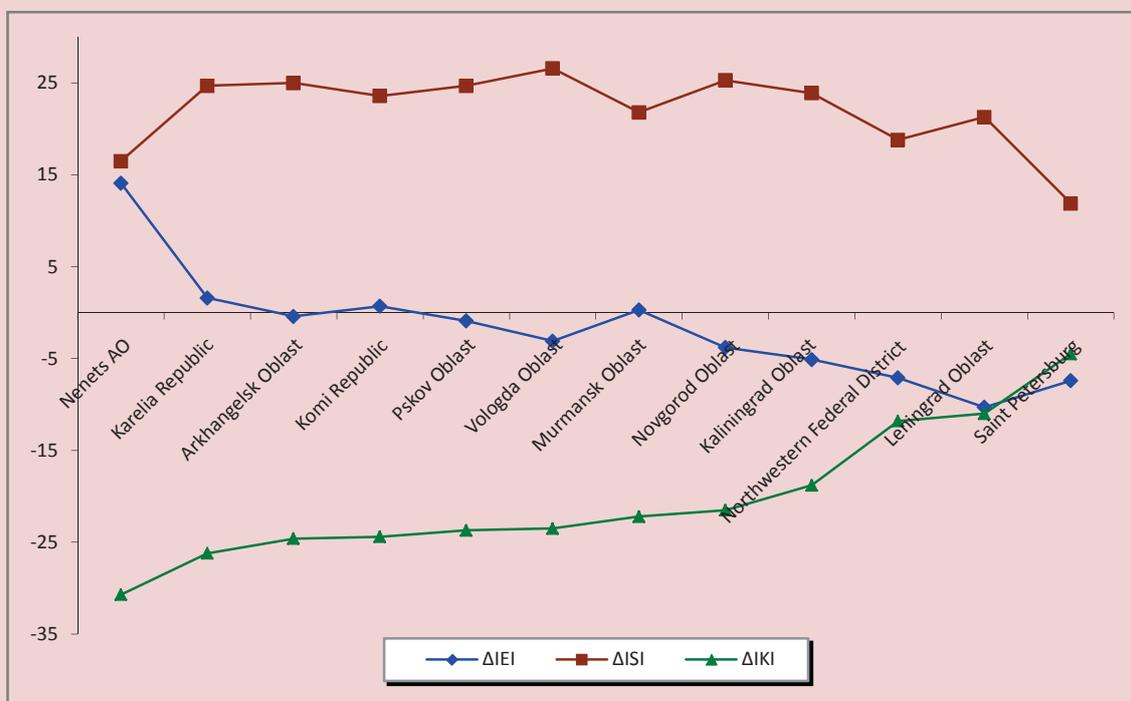
Table 1. Dynamics of the structure of modernization in the regions of the Northwestern Federal District (the number of regions according to the level of integrated modernization index – IMI)

Year	Low ($32.5 \leq \text{IMI} < 47.5$)	Below median ($47.5 \leq \text{IMI} < 63.5$)	Median ($63.5 \leq \text{IMI} < 77.5$)	Above median ($77.5 \leq \text{IMI} < 87.5$)	High ($87.5 \leq \text{IMI}$)
2000	Kareila Republic, Arkhangelsk, Vologda, Leningrad, Novgorod, Pskov oblasts (6)	Saint Petersburg, Nenets AO, Komi Republic, Kaliningrad, Murmansk oblasts (5)			
2005		Nenets AO, Karelia and Komi republics, Arkhangelsk, Vologda, Kaliningrad, Leningrad, Murmansk, Novgorod, Pskov oblasts (10)	Saint Petersburg (1)		
2008		Nenets AO, Karelia and Komi republics, Arkhangelsk, Vologda, Kaliningrad, Leningrad, Novgorod, Pskov oblasts (9)	Saint Petersburg, Murmansk Oblast (2)		
2009		Nenets AO, Karelia and Komi republics, Arkhangelsk, Vologda, Kaliningrad, Leningrad, Novgorod, Pskov oblasts (9)	Murmansk Oblast (1)	Saint Petersburg (1)	
2010		Nenets AO, Karelia and Komi republics, Arkhangelsk, Vologda, Kaliningrad, Leningrad, Novgorod, Pskov oblasts (9)	Murmansk Oblast (1)	Saint Petersburg (1)	
2011		Karelia and Komi republics, Arkhangelsk, Vologda, Kaliningrad, Leningrad, Novgorod, Pskov oblasts (9)	Murmansk Oblast (1)	Saint Petersburg (1)	
2012		Karelia and Komi republics, Arkhangelsk, Vologda, Kaliningrad, Leningrad, Novgorod, Pskov oblasts (8)	Nenets AO, Murmansk Oblast (2)	Saint Petersburg (1)	

Note. The number of regions in the group is given in parentheses.

Source: compiled with the use of IS "Modernization". Available at: <http://mod.vscs.ac.ru/>

Figure 1. Difference (Δ) between the IMI sub-indices (*ISI*, *IEI*, *IKI*) and the IMI index in the regions of the Northwestern Federal District in 2000, p.p.



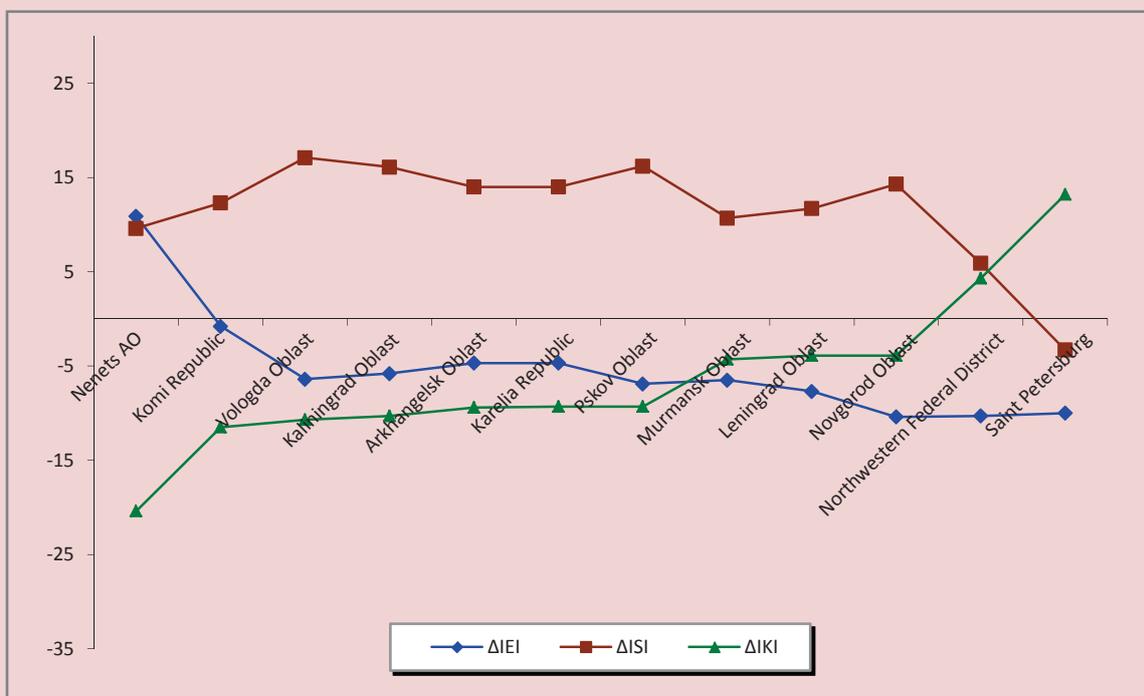
Source: compiled with the use of IS "Modernization". Available at: <http://mod.vsc.ac.ru/>.

challenges of modernization in the regions. The gap between the IMI and the integrated economic modernization index (*IEI*) is not more than 15 p.p., the difference is negative in eight regions, so that this sub-index is a factor that hinders modernization. The third sub-index – the integrated knowledge modernization index (*IKI*) in all subjects without exception was a factor that hindered their development (the difference between it and the IMI is from 43 to 30%). The indicators involved in its calculation such as the share of R&D expenditures in GRP and the number of residents who filed patent

applications (per one million people) are much lower than the world standard (in Russia on average they were equal to 10 and 1%, respectively). Increasing their level is an important step toward modernization.

By 2012 compared to 2000 the situation has changed in the following way: there was an overall decrease in the gap between the IMI and all the sub-indices (the amount of variation was from -20 to 17 p.p.). Saint Petersburg, where an integrated knowledge modernization index began to exceed the IMI, is the “engine” of modernization (Fig. 2).

Figure 2. Difference (Δ) between the IMI sub-indices (*ISI*, *IEI*, *IKI*) and the IMI index regions of the Northwestern Federal District in 2012, p.p.



Source: compiled with the use of IS "Modernization". Available at: <http://mod.vsc.ac.ru/>.

The distribution of regions into groups depending on the degree of remoteness of the sub-index from the integrated modernization index will help describe trends in the changes in the components of the IMI. We divide the difference (Δ) between the indicators into intervals as follows:

- lagging development with delays at $\Delta \leq -15$;
- moderately lagging development at $-15 < \Delta \leq 0$;
- moderately advanced development at $0 < \Delta < 15$;

– rapidly advanced development at $\Delta \geq 15$.

So, in 2000, all the constituent entities of the Northwestern Federal District belonged to the cluster with the rapidly advanced development of the integrated social index. Most of them (7 regions – 64%; *Tab. 2*) had the moderately lagging development of the integrated economic modernization index. The most balanced development at that time was observed in Saint Petersburg and the adjacent Leningrad Oblast – two sub-indices (IKI, IEI) had a trend of moderate development.

Table 2. Clustering of the NWFD regions according to the integrated index of modernization imbalance (2000 and 2012)

	Lagging development with delays <i>IKI</i> ($\Delta \leq -15$)		Moderately lagging development <i>IKI</i> ($-15 < \Delta \leq 0$)		Moderately advanced development <i>IKI</i> ($0 < \Delta < 15$)	
	2000	2012	2000	2012	2000	2012
Rapidly advanced development <i>IS/</i> ($\Delta \geq 15$) and moderately lagging development <i>IE/</i> ($-15 < \Delta < 0$)	Arkhangelsk, Pskov, Vologda, Novgorod, Kaliningrad oblasts (5)		Leningrad Oblast, Saint Petersburg (2)	Vologda, Kaliningrad, Pskov oblasts (3)		Saint Petersburg (moderately lagging development <i>IS/</i>) (1)
Rapidly advanced development <i>IS/</i> ($\Delta \geq 15$) and moderately advanced development <i>IE/</i> ($0 < \Delta < 15$)	Nenets AO, Karelia and Komi republics, Murmansk Oblast (4)					
Moderately advanced development <i>IS/</i> ($0 < \Delta < 15$) and moderately lagging development <i>IE/</i> ($-15 < \Delta < 0$)				Komi and Karelia republics, Arkhangelsk, Murmansk, Leningrad, Novgorod oblasts (6)		
Moderately advanced development of 2 sub-indices: <i>IS/</i> and <i>IE/</i> ($0 < \Delta < 15$)		Nenets AO (1)				

Note. The number of regions in the group is given in parentheses.
Source: compiled with the use of IS "Modernization". Available at: <http://mod.vscs.ac.ru/>

In 2012, a marked increase in the balance of the IMI sub-indices was observed: half of the regions (6 regions – 55%) moved to the cluster with the median development of all the sub-indices (see lower right quarter of Table 2).

The knowledge modernization index began to correspond to the moderate

development (with the exception of Nenets Autonomous Okrug). Consequently, we can speak about the growth of the balance of integrated modernization processes in the constituent entities of the Northwestern Federal District, and the increase in the balance of modernization processes in 12 years.

Let us present the balance of the components of the IMI using the balanced index of integrated modernization (IDSM)¹⁶ in the form of this model:

$$IMI = \frac{100}{\Delta IEI^2 + \Delta ISI^2 + \Delta IKI^2} ,$$

where $\Delta IEI = IEI - IMI$ is the difference between the integrated economic modernization index and the IMI,

$\Delta ISI = ISI - IMI$ is the difference between the integrated social modernization index and the IMI,

$\Delta IKI = IKI - IMI$ is the difference between the integrated knowledge modernization index and the IMI.

Table 3 shows the dynamics of the balance of the integrated modernization index. Judging by the distribution of territories in *Table 3*, in 2009 the balance in the regions of the Northwestern Federal District decreased. Since 2010, the balance of the index began to grow once again, so that in 2012, its low level was observed only in Nenets Autonomous Okrug. The high level of balance was marked in the Murmansk Oblast, the level above median – in the Leningrad Oblast.

The study of the model for quantitative evaluation of the integrated modernization

¹⁶ Lapin N.I. *Problemy sotsiokul'turnoi modernizatsii regionov Rossii* [Issues of socio-cultural modernization of Russian regions]. Compiled and edited by N.I. Lapin, L.A. Belyaeva. Moscow: Academia, 2013. 416 p.

(index) as a relative gap between the level of modernization in different regions and a high global standard has shown the unevenness of development in the Northwestern Federal District. Due to the fact that Russia is a huge country divided into many regions with different capabilities and levels of development, these regions will need different periods of time for different stages and phases of modernization. Apparently, it is expedient to implement a moderately balanced development option. The emergence of the information economy based on knowledge and neo-industrialization dictates the necessity to increase productivity in knowledge-based industries, to increase the share of people employed in intellectual work and, most importantly, to increase the contribution of knowledge and innovation in economic growth.

In order to address modernization tasks efficiently, it is necessary to achieve national consolidation: only a united people can become a master of its destiny¹⁷ and achieve high development goals. Economic growth, and enhancement of the standard of living and quality of life are inseparable

¹⁷ Shemyakin Ya.G. Fenomen modernizatsii: tsivilizatsionnoe izmerenie. Stat'ya 2. Tsennosti modernizatsii na Zapade i v "nezapadnom" mire: osobennosti vospriyatiya i dinamika evolyutsii identifikatsionnykh strategii [The phenomenon of modernization: civilizational dimension. Article 2. The values of modernization in the West and in the "non-Western" world: specifics of perception and the dynamics of evolution of identification strategies]. *Obshchestvennye nauki i sovremennost'* [Social sciences and modernity], 2016, no. 1, pp. 117-128

Table 3. Dynamics of the balance structure of regions in the Northwestern Federal District (the number of regions by the integrated index of balance of modernization – IID).

Year	Low (IID < 0.18)	Below median (0.18 ≤ IID < 0.31)	Median (0.31 ≤ IID < 0.44)	Above median (0.44 ≤ IID < 0.57)	High (0.57 ≤ IID)
2000	Nenets AO, Karelia and Komi republics; Arkhangelsk, Vologda, Kaliningrad, Leningrad, Murmansk, Novgorod, Pskov oblasts (10)			Saint Petersburg (1)	
2005	Nenets AO, Karelia and Komi republics; Arkhangelsk, Vologda, Kaliningrad, Novgorod, Pskov oblasts (8)	Leningrad, Murmansk (2)			Saint Petersburg (1)
2008	Kareila Relublic, Arkhangelsk, Vologda, Kaliningrad, Pskov oblasts (5)	Nenets AO, Komi Republic, Leningrad, Novgorod oblasts (4)	Murmansk Oblast (1)		Saint Petersburg (1)
2009	Kareila Relublic, Arkhangelsk, Vologda, Novgorod, Pskov oblasts (5)	Nenets AO, Komi Republic, Kaliningrad, Leningrad, Murmansk oblasts (5)		Saint Petersburg (1)	
2010	Vologda, Pskov oblasts (2)	Karelia and Komi republics; Arkhangelsk, Kaliningrad, Leningrad, Novgorod oblasts (6)	Murmansk Oblast, Saint Petersburg, Nenets AO (3)		
2011	Nenets AO (1)	Saint Petersburg, Kareila Relublic, Arkhangelsk, Vologda, Kaliningrad, Novgorod, Pskov oblasts (7)	Komi Republic, Leningrad Oblast (2)	Murmansk Oblast (1)	
2012	Nenets AO (1)	Vologda, Kaliningrad, Novgorod, Pskov oblasts (4)	Karelia and Komi republics; Arkhangelsk Oblast, Saint Petersburg (4)	Leningrad Oblast (1)	Murmansk Oblast (1)

Note. The number of regions in the group is given in parentheses.
Source: compiled with the use of IS "Modernization". Available at: <http://mod.vscs.ac.ru/>

from each other and are interrelated; besides, social equality and justice are also engines of modernization. In addition, it is advisable to combine European and native traditions of the Russian population. It is important not only to analyze the degree of modernization in developed countries

and compare it with that of Russia, but also to carry out continuous research into regional modernization. To achieve the high goal, it is necessary to pursue a science-based modernization policy, to form it and introduce timely adjustments in the strategy of its implementation.

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Information about the Author

Mariya Aleksandrovna Lastochkina – Ph.D. in Economics, Senior Research Associate, Institute of Socio-Economic Development of Territories of Russian Academy of Science (56A, Gorky Street, Vologda, 160014, Russian Federation, mashkop@mail.ru)

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