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INSTITUTIONAL-SYNERGETIC APPROACH IN BENCHMARKING OF TERRITORIAL INDUSTRIAL POLICY

The authors argue that an industrial policy for a territory is a crucial means for its development and suggest theoretical and methodological outline for its benchmarking.

The fact of creating priority development areas (PDAs), which are similar to special economic zones, whose inefficiency is now recognized, confirms the suspicion that PDA creation is an outcome of political lobbing rather than economic planning. Governmental efforts on the federal, regional and municipal levels lack consistency. The current economic conditions lead to fierce competition for investment, which makes municipal and regional governments more open to investors, on the one hand, but on the other, may lead to some poor decision-making.

The authors argue that in view of the current priorities of technological innovation, coordination of diverse stakeholders' interests and goals in PDA dynamics, it is imperative to integrate a PDA development strategy into the industrial policy of a territory.

Conceptually, this research relies on the institutional-synergetic approach to benchmarking of territorial industrial policies. This approach can help us develop an industrial policy for a specific PDA by building upon this area's competitive advantages and by evaluating the available alternatives. To improve managerial decision-making, it is also recommended to study and adopt Russian and international experience in this sphere. PDAs should act as self-organizing systems in order to engage institutions and mechanisms of development 'in the right place at the right time' and employ tools of synergetic management ('stimulate trigger points') for positive synergetic effects.

Introduction

Since 2015, the Russian government has started setting up priority areas for socio-economic development (hereinafter we shall refer to them as priority development areas or PDAs). As of 26 September 2017, in Russia, there are 18 PDAs currently operating in the Far Eastern Federal District and 23 in single-industry municipalities. Enterprises that acquired the status of PDA residents can benefit from tax exemptions and a number of other incentives. A PDA is in fact a type of territory with a special legal status similar to free economic zones, special economic zones, and regional development zones.

Free economic zones (FEZ) appeared in Russia in the early 1990s but they were found inefficient for the following reasons: the lack of an adequate legislative framework (the President twice declined to approve the relevant federal law; the existing legal acts do not cover all aspects of FEZs and their operation); the lack of a systemic approach to project implementation (there are no institutional conditions for the operation of FEZs); constant struggle of regions for maximum benefits; and funding shortages (on the federal level, there is no well-established mechanism for providing FEZs with benefits, state guarantees and other support).

Since 2005, several special economic zones (SEZ) have been established. The law on the creation of SEZs[1] eliminated all the already existing SEZs (except for the ones in Kaliningrad and Magadan regions) and regulated the principles of their creation and operation. In 2014, the third SEZ was set up on the territory of the Crimea and the federal city of Sevastopol[2].

After the Auditing Chamber of the Russian Government had conducted an inspection of SEZs, which demonstrated their inefficiency, eight SEZs were closed down in 2016 and a moratorium was set for opening of any new SEZs. Thus, it became evident that it is necessary to devise a viable strategy of SEZ management, which will determine mechanisms for transferring responsibility for SEZs to regional authorities, and optimization of public expenditures [1, p.1].

Regional development zones (RDZ) have started to emerge since 2014 and their primary aim was to accelerate the socio-economic development of Russian regions by creating favourable conditions for investment in their economy. The federal law provides residents of such zones with state support. [3]

In general, the state seems to have failed to create a comprehensive and consistent institutional and legislative framework to regulate the operation of such zones. Although RDZs tend to imitate federal SEZs, regions invent their own original definitions to describe such initiatives. Thus, regional governments are juggling various terms to conceal the fact that they are using more or less similar practices of economic management and state support [2, p. 35].

Analytical justification of territorial industrial policy

The question about the efficiency of special economic zones still remains open for discussion. PDAs are set up in the so-called 'monotowns' (or single-industry towns) in order to turn these areas into the drivers of socio-economic growth, which is to be achieved within ten years. Such an ambitious objective as well as the numerous constraints, including tight deadlines, make it necessary to develop and apply a large-scale mechanism for regulation of these zones. We believe that the solution to this problem could be an adequate industrial policy comprising well-coordinated efforts of all participants (government, business and academic communities) to enhance the quality of living of the population. It is necessary to establish and maintain feedback connections within the system, which will enhance its development potential and create positive synergetic effects.

At the moment, the core element in our definition of an industrial policy is good coordination. PDAs are in many ways similar to SEZs, most of which were found inefficient. This fact shows that the solution to this problem has more to do with the lobby of certain influential groups in the federal government rather than with economic factors. Governmental efforts on the federal, regional and municipal levels lack consistency, which can be illustrated by the case of PDA 'Naberezhnye Chelny' in Kama agglomeration of Tatarstan. In the same agglomeration, there are a special economic zone 'Alabuga'; Kama innovative territorial production cluster 'Innokam'; Kama industrial park 'Master'; three industrial parks; and a technopolis (technology centre). Soon it is planned to open SEZ 'Alabuga-2' in Nizhnekamsk municipal region. Monotown Nizhnekamsk has been granted the status of a PDA while another monotown of Kama agglomeration – Mendeleevsk – is expecting to gain a similar status in the nearest future. Both towns are located within 45 km from PDA 'Naberezhnye Chelny'.

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[1] Federal Law of 22 July 2005 N 116-ФЗ 'On Special Economic Zones in the Russian Federation'// Official Legislation Web-Site 'Konsultant-Plus'. 1997-2016. [Electronic resource]. URL: http://www.consultant.ru/document/cons_doc_LAW_54599/ (last accessed date 27.07.2017).

[2] Federal Law of 29 November 2014 N 377-ФЗ 'On the Development of the Crimean Federal District and the Free Economic Zone on the Territory of the Republic of Crimea and the Federal City of Sevastopol' [Electronic resource]//Official Legislation Web-Site 'Konsultant-Plus'. 1997-2016. URL: http://www.consultant.ru/document/cons_doc_LAW_171495/ (last accessed date 27.07.2017).

[3] Federal Law of 3 December 2011. №392-ФЗ 'On Zones of Territorial Development in the Russian Federation and on Amendments to Specific Legal Acts of the Russian Federation//Official Legislation Web-Site 'Konsultant-Plus'. 1997—2016. [Electronic resource] URL: http://www.consultant.ru/document/cons_doc_LAW_122563/(last accessed date 27.07.2017).

The current economic conditions engender fierce competition for investment, which makes municipal and regional governments more open to investors but also results in some poor decision-making. For example, out of the eleven investment projects of PDA 'Naberezhnye Chelny', a half is constituted by the projects of the currently operating enterprises that expanded their production by establishing new legal entities that received the resident status. It is true that in harsh economic conditions enterprises seek to obtain preferential tax treatment to complete the investment phase of their development, to open production, and to create new jobs but what in fact happens is that these jobs would have been created even without this PDA. Therefore, the owners of these businesses gained their profits at the expense of the state budget.

Another question that arises in this context is associated with the local enterprises whose direct competitors obtain the status of PDA residents together with tax reductions and other benefits. For example, one of the residents of SEZ 'Alabuga' is a Turkish company competing with the cardboard and paper mill in Naberezhnye Chelny (both enterprises have their production facilities located within 35 km from each other). Another example is Chinese company 'Haier', which has the status of resident of PDA 'Naberezhnye Chelny' and at the same time acts as a direct competitor to enterprise 'Posis', located in the town of Zelenodolsk, 290 km away from Naberezhny Chelny.

One more question to be addressed in an industrial policy is what factors should provide momentum for the desired breakthrough and accelerated development. Among the five groups of factors which are traditionally considered to affect economic growth (economic-geographical, economic-political, socio-cultural, institutional, and technological), technological factors are believed to play a crucial role in the new model of regional economic development [3, p. 719].

As of 26 September 2017, 54 enterprises have the status of PDA residents in monotowns[4]. Economic analysis of their performance has shown that they are lagging behind in research and development, not having yet joined the fifth and sixths waves of innovation while advanced R&D is essential for ensuring quality growth in these areas.

At the moment there are no specific legal requirements to potential PDA residents in terms of their capability to ensure knowledge-intensive regional development. The Federal Law of 29 December 2014 № 473-ФЗ 'On Priority Areas for Socio-Economic Development in the Russian Federation' [5] outlines the following key requirements to potential PDA residents:

- they should be legal entities registered on the territory of this PDA;
- they should not be engaged in the process of reorganization, liquidation, or bankruptcy;
- they should not have any unpaid taxes, levies, insurance contributions to budget funds, or other similar unpaid liabilities;
- they should not have branches or offices outside the PDA;
- they should operate within the PDA and invest in its development (capital investment included).

Requirements to investment projects of residents are limited to authorized spheres of activity and minimal amounts of investment while residents of PDAs located in monotowns are also required to create a certain number of new jobs (these requirements are specified for each PDA individually).

Our analysis of international experience (Europe, Latin America, countries of the Pacific Rim) has revealed a great diversity of accelerated development models. What all these countries have in common, however, is that they have succeeded in a transition to innovative strategies of development and created high-tech manufacturing industries.

Accelerated development was achieved through clever industrial policy based on technology management, which comprises design, development, operation and use of technological products and

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[4] Register of Residents of Priority Development Areas Located on the Territories of Single-Industry Municipalities of the Russian Federation (Monotowns)//Ministry of Economic Development Official web-site. [Electronic resource] http://economy.gov.ru/minec/activity/sections/econreg/monitoringmonocity/2016160505 (last accessed date 18.08.2017)

[5] Federal Law of 29.12.2014 N 473-ФЗ 'On Priority Areas for Socio-Economic Development in the Russian Federation'. //Official Legislation Web-Site 'Konsultant-Plus'. 1997—2016. [Electronic resource]. URL: http://www.consultant.ru/document/cons_doc_LAW_172962 (last accessed date 27.07.2017).

services in physics, chemistry, biology and so on. Technology management enables companies to achieve competitive advantage by creating technologies of the sixth and seventh generations. As soon as they become leaders on the markets of high-technology products, areas and regions are granted R&D subsidies, which they should use to enhance their further prosperity.

The area's industrial development determines employment of its population and the demand for educational, scientific and other knowledge-intensive services. Thus, industrial policy gets 'embedded' into the general strategy, which has to reconcile contradictory objectives and aims of development [4, p. 13].

The fundamental part of any industrial policy should be organization of targeted and coordinated efforts to boost accelerated development of the area. It should be noted, however, that each PDA should have its own, unique industrial policy that takes into account the available resources, level of interaction between the participants, and ambitions of its leaders.

Conceptual framework for benchmarking studies of territorial industrial policies

Industrial policy tools are quite diverse and include direct and indirect support of specific companies and industries, such as grants, subsidies, loans, and tax incentives. Models for benchmarking of industrial policies can be created by adopting Russian and international experience on different levels (national, regional, and municipal).

The benchmarking approach and methodology were first introduced in 1972 within the PIMS Research Program of the Strategic Planning Institute (USA).

The approach that preceded that of benchmarking was called *'GAP-analysis'* and measured the *gap* between the company's actual performance and its potential performance, identifying and analyzing its strengths and weaknesses.

The first generation of benchmarking methods was called 'reverse engineering' and was based on comparing characteristics, functions, and efficiency of the analyzed aggregates [5]. In his study, Oelsnitz sought to prove that reverse engineering of a product basically focused on the analysis of specific functions and components of competing products [6]. According to Yasin, although reverse engineering is important for the analysis of the product's relation to its competitors, this method fails to reveal the reasons why such difference occurs [7].

Strategic benchmarking is a systematized analysis of various opportunities and strategies for improving the company's efficiency by researching and adopting the available efficient strategies. Strategic benchmarking takes a long-term view of the company's development. It seeks to enhance efficiency through evaluating different alternatives and application of viable strategies but without taking into consideration problems of operational efficiency [8].

Unlike operational benchmarking, strategic benchmarking mostly focuses on the key competencies which help the company achieve competitive advantage and meet its strategic aims [9].

Sarkis and Pozos see strategic benchmarking as analysis of trends and possibilities in the external environment and various business processes. Sarkis believes that strategic benchmarking can be used to forecast changes, anticipate them and act accordingly [10].

Benchmarking is an effective cognitive process reaching far beyond the limits of simple imitation. There is sufficient evidence showing that analysis of the best standards in industry is crucial for stimulating innovation [11]. Thus, benchmarking methodology seeks to identify and overcome the gap in performance, first and foremost, the gap in knowledge. A comprehensive approach to benchmarking implies managing change and innovation. Different stages of benchmarking constitute the components of the knowledge spiral (see works of Nonaka, Takeuchi, Adriani, and Hall).

Modern benchmarking is based on comparison, evaluation and analysis of multiple options: for example, Dalalah and Al-Rawabdeh introduce a new approach as an alternative to the dominant binary thinking [12].

Furthermore, the mathematical apparatus of benchmarking is continuously improved, which enables us to evaluate the efficiency level of processes much more precisely. For example, Henry Bi applied multi-criterion and multi-period performance benchmarking of products and services [13].

One of the modern tools used for benchmarking is the balanced scorecard methodology: for example, the model proposed by Ferreira, Silva, and Azevedo to assess the environmental performance of supply chains [14].

Benchmarking studies also focus on the application of fuzzy logic systems and other advanced AI tools. For instance, Metaxas, Koulouriotis, and Spartalis analyze multicriteria models for calculating the Sustainable Business Excellence Index [15].

Tools used in industrial policy are classified according to various characteristics. For example, we can distinguish between the three sets of tools: a) external interventions in the market such as import tariffs, quotas, licensing and local programs and export stimulation measures such as export subsidies, export processing areas and subsidized loans; b) stimulation of competition in internal markets, competition policy and legislation; and c) market measures such as requirements for direct foreign investment and regulation of capital, financial, and labour markets. Political tools that can be used to improve industrial policy are given in Table 1 [16].

Table 1.

Industrial policy tools

Classification criteria	Description
Economic signals and incentives	- Intellectual property rights; - Price regulation; - Exchange rate policy; - Monetary policy; - Countercyclical fiscal policy; - Tax incentives
Scientific and technological innovation	- Scientific policies; - Knowledge-intensive projects; - Funding university research; - Establishment of R&D centres; - R&D subsidies
Learning and improving technological capabilities	- Educational and training policies; - Brainstorming (to identify research priorities); - Labour training subsidies and tax/or tax incentives; - Professional training and retraining; - International cooperation in education and research; - Incentives for foreign direct investment
Selective industry support	- Import tariffs and/or quotas; - Export subsidies/ loans/support; - Creation of special economic zones; - Use of state-owned enterprises/privatization; - Creation of communal infrastructure; - Targeted funding/subsidies; - Providing public guarantees; - Direct state procurement policy
Selection mechanisms	- Entry and exit regulations for firms; - 'Live and let die' principle (end of state support for failing firms); - Anti-monopoly and competition policy; - State support for national trade companies; - Preferential access to finance; - Funding for long-term development
Distribution of information	- Collective action mechanisms; - Promotion of standards;

	- Use of consultative forums; - Use of business chambers; - Encouraging cooperation and partnership between companies; - Marketing of export industries; - Dissemination of successful experience
Improving productivity of firms and entrepreneurs	- Providing of subsidizing management training; - Monitoring and support for small and medium-size enterprises; - Infrastructure, funding and management for incubators and clusters; - Promotion of public-private partnership; - Location marketing and enhancement; - Modernization of economic infrastructure; - Creation of venture funds

Benchmarking studies of industrial policy based on the institutional-synergetic approach

In developed countries industrial policies predominantly rely on the principle of synergy and integration. As a rule, this integration is vertical rather than horizontal. Vertical integration leads to an increase in investors' share capital and enhances the capital's potential. It also improves the ability to change the area's industry focus and flexible movement of capital to develop high-tech manufacturing in the region. International policies for territory development emphasize synergetic efficiency, which means that companies not only seek to enhance their production facilities but also develop their educational, cultural, and transport infrastructure, which allows them to provide diversification, harmonization and the maximum efficiency.

Therefore, we propose to conduct benchmarking studies within the framework of institutional-synergetic approach.

Synergetics studies a specific class of phenomena in certain media at the moments when they are in their unstable, transient state. Synergetic effects occur when the process loses its equilibrium and are not related to the nature of this process [17, p. 162].

According to the institutional-synergetic approach, it is crucial to coordinate and balance the temporal and spatial aspects of all the key factors on all levels − global, national, and regional − by establishing institutions of development. These institutions should not be considered only as financial organizations existing on various spatial levels. This concept should also include awareness of individual people and communities of their role and their reflexive behaviour. Thus, here we are dealing with a self-organized process in which humanity ensures its preservation and the preservation of its environment in their co-evolutionary development and moves towards common goals based on the principles of humanism, harmony and social justice [18, p. 149].

Models based on the institutional-synergetic approach allow us to adjust control action by taking into account institutional factors. In this case, we will be able to prevent decline in the system's qualitative characteristics by controlling the internal and external environment [19].

Industrial policies serve as subsystems of PDA management and contribute to the overall performance of PDAs by reducing the time lag (gap) in the development of the external environment and PDA residents. To reduce such lags managerial decisions should be based on designing and organizing feedback connections in the system (self-organizing system).

We propose to use objectives and institutional conditions as key variables in the development of industrial policies based on the institutional-synergetic approach. Benchmarking studies should take into consideration the variables described in Table 2.

Table 2.
Industrial policy tools for benchmarking studies based on the institutional-synergetic approach

Classification criteria	Description
Objectives of an industrial policy	
Development priorities	- Improved competitiveness of local enterprises; - Increase in international investment; - Creation of new jobs; - Industrial robotics; - Growth of the GDP/GRP/gross territorial product; - Industrial restructuring; - Diversification; - Improvement of labour productivity; - Increase in the number of high-paying jobs; - Expansion of the taxable base; - Value chain development of enterprises; - Development of production and related services; - Development of specific industries
Development potential	- Existing/prospective; - Technological; - Intellectual; - Labour-related; - Scientific-technical; - Synergetic
Level and quality of interaction between stakeholders of an industrial policy	- Robust state-business partnership; - Democratic interaction; - Expert interaction; - Pragmatic interaction; - Authoritarian interaction; - Corrupt interaction
Institutional conditions of development	
Levels of an industrial policy	- State; - Regional; - Municipal; - Intermunicipal; - Terrritorial; - Corporate; - Industry-specific
Policy orientation	- Support of domestic exporters; - Development of the internal market; - Import substitution; - Sustainable use of non-renewable resources (oil, gas, wood, and so on)
Planning period	- Strategic; - Tactical; - Operative
Uncertainty of the external environment	- Recurrent ; - Expanding; - Changing; - Unstable; - Unpredictable

According to the institutional-synergetic approach, PDAs should act as self-organizing systems in order to engage institutions and mechanisms of development 'in the right place at the right time' and employ tools of synergetic management (to 'stimulate trigger points') for positive synergetic effects.

A synergetic effect occurs when the system outcomes are adequate to the input, including cases when a weak input signal leads to an inadequate output. Synergetic efficiency implies not only quantitative but also qualitative changes in the system, including changes caused by redistribution of interactions within the system; combinatorics of horizontal and vertical connections in the system; phase and structural transitions. We believe that the indicator of synergetic efficiency should also be one of the indicators in the implementation of accelerated development policy in this or that specific locality.

Conclusion

PDAs should be orientated towards long-term development and horizontal diversification, which can be achieved through high-tech advances, harmonization of objectives, and application of tools for industrial and socio-economic development.

Benchmarking studies of industrial policies allow us to devise strategies for PDAs and to conduct comprehensive evaluation of each area's competitive advantages and available alternatives. It is also essential that management of PDAs should benefit from successful experience of external and internal partners to create and maintain a positive synergetic effect.

Acknowledgement

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