

# I ECONOMICS

UDC 658.8(574)

<sup>1</sup>Tovma N.A., <sup>2</sup>Hajek P.

<sup>1</sup>Highest School of Economics and Business, Al-Farabi Kazakh National University, Almaty, Kazakhstan

<sup>2</sup>Central Bohemia University, Prague, Czech Republic

E-mail:natalivictor45@mail.ru

## **Socio-Economic Growth Model Agglomerations: Practice and Prospects for Development**

**Abstract.** The new millennium has been proclaimed one of the cities. Issues of urbanization have become relevant in connection with tasks of entering of Kazakhstan among the 30 years of highly developed countries of the world. In The President of Kazakhstan, Nursultan Nazarbayev the people speak on the need to ensure the development of an infrastructure of the triad-centres, transport, energy. Agglomeration is the skeleton of the knowledge economy. Research methodology is based on a combination of methods: mathematical modeling, statistical groupings of sociological research methods.

**Key words:** agglomerations, mathematical modeling, socio-economic growth model, infrastructure.

### **Introduction**

In a historic settlement evolucii form replacing the traditional types of localities-isel skim urban settlements, developing relatively autonomously, is increasingly prihodâtnovye «group» the highly concentrated form of settlement, forming and shaping and prisbližennom settlements in between intense relationships. There are the urban agglomeration is a rapidly developing worldwide gatherings of inhabited places, often consisting of dozens, sometimes hundreds of naseleennyhpunktov, including rural settlements are closely related to each other. Urban agglomerations of people, become the basis of their material and spiritual culture, highly developed forms of life. Urban agglomerations in the world economy is one of the main forms of modernization and rapid development and increasing the competitiveness of territorial entities, and Therefore, national economies.

As world experience shows consolidation settlements in the metropolitan territory of the area makes sustainable and dynamic growth with significant social and economic impact. Development of virtuous cities contributes to the well-being of society, the development of culture, the diversity of social life. Development centres aims to expedite the modernization of the economy, its transformation into an innovative and knowledge-based. The Office is the main aspect in any economy, regardless of its magnitude. Of course, the new challenges fac-

ing nthe agglomerations, requires a new approach and new management.

### **Methods**

1) Description of the scientific methods used in the draft as justification of the ways to achieve the objectives, the rationale for the chosen approach.

To achieve this goal will apply methods from graph theory and cluster analysis, including methods for k-means, hierarchical clustering and dvuh-vhodovogo join.

To take account of the factors and risks that affect the development of agglomerations will apply methods for evaluating the effectiveness of the project, based on the discounted estimates because they a much more accurate, as are various types of inflation, interest rate, etc.

To develop a strategy for the development of urban agglomerations are used the methods of mathematical and econometric modelling. Forecasting models includes its development, experimental analysis, comparison of the results of the preliminary forecast calculations with the actual State data object, or process refinement and adjustment model.

For the development of the quality, management system will be used by expert prediction methods.

Software-target method will be used to develop a methodology for rating analysis of agglomerations and involves the development of a prediction, since the final assessment needs to under develop-

ment in further defining and finding effective ways and means to achieve them, as well as resources.

Towards the standardization of urban agglomerations will be used as a normative method of technical-economic justification of predictions using standards and norms.

In order to improve the management of urban agglomerations will use methods of sociological research (survey, observation and content analysis of the experiment). For the calculation of economic effects would apply mathematical models, taking into account the population size threshold; temporary availability threshold; the threshold level of the kernel, and to assess the applicability of statistics and compare them on a global scale is a method of panel data.

2) Critical point, alternative ways of realization of the project.

In this project, there are risks-industrial-technological risk, business risk, risks of volatility of market demand, the risk the unpredictable actions of project participants, natural damages, etc. An alternative way of realization of the project is to build a strong business management model based on discriminant analysis and the prediction by kointegratsionnyh ties.

3) Observance of the principles of scientific ethics.

This project will comply with all principles of scientific ethics. In particular: integrity, teamwork, universalism, selflessness.

4) Conditions of registration and the separation of intellectual property rights to the research results.

For the successful implementation of the project, it is necessary to protect the project, through the registration of intellectual property rights (copyright).

### **Main body**

The five leading largest agglomerations of the world include Tokyo, new-Jorrk, Mexico City, Sao Paulo, Shanghai. Among the CIS countries in terms of the level of urbanization is leading Russia, Armenia, Kazakhstan, etc.

Republic of Kazakhstan highly specific transition to oil and rare metals countries. There are 87 cities in Kazakhstan, including 2 cities of Republican subordination-Almaty and Astana, 40 cities of regional subordination, 45 cities of Raion subordination. Kashagan field firing at full power Kazakhstan will enter the five major oil exporters. The first modern urbanističeskimi centres of Kazakhstan to become the largest cities of Astana and Almaty, Shymkent and Aktobe then.

Urbanization also brings a lot of environmental, social, economic and other problems, which implies an integrated approach to the study.

Without analyzing the patterns of urbanization and without taking into account the particularities of their manifestation in different socio-economic systems cannot be accurately model further the development of society.

Questions of formation of spatial and settlement structure of cities and urban agglomerations were worked out by representatives of the various economic schools in the 19th and early 20th centuries century.

The term «metropolitan area» in relation to the resettlement was the French scientist m. Rouget, according to which agglomeration occurs when the concentration of urban activities beyond the administrative borders of the neighbouring irasprostranâetsâ human settlements [1].

The problem of economic growth have explored such scientists as Minh Dao, María Jesús Freire-Serén, Judith Panadés i Martí [2-3].

His contribution to the study of problems have made Henderson J.V., Rossi-Hansberg (E). to address urbanization and economic Government standards [4-5].

Contribution to this topic introduced Taylor P.who proposed the model of urban agglomeration based on minimizing the cost of moving [6-7].

At the end of the twentieth century in the West, a new interdisciplinary course-new urban economy (NUE) provided by Black D., Matthew e. [8-9].

Urban infrastructure and development of the resources discussed in the writings of Chinese scholars: Van Lina, Iuan Blue, Sunian Hu, Zeng Czenguan, du Cânžen, Li J nin , Nor Penfy, Zhu Bin, Zhang Sanuj, Wang Sujfen [10-19].

Urban environmental management issues at the regional level, considered in his works, Russian scientists: Ravens y. p., Zausaev s. a., Emelyanova n., Nešadin A., Kudryavtseva on.To., Lappo g.m., Luzhkov Y.m., Maksimov S. N., Mikhailov, Muza-levskij m.a., K.l., Percik, e. n., Pivavarova j. l. Polyan Tm, Ponosov a.n., Smirnov S. A., Yanickiy o.n., Ugryumova A.a. [20].

Among the scientists of Kazakhstan, dealing with the problem include: Aubakirov Z.g., Iskakova U.m. Djumabaeva, s.k., Dulambaevu g. Mutanov r.t., M, Sedenova W.c. Sedenovu, N.u. [35-41].

In the Republic of Kazakhstan, the issue is considered at the governmental level, in particular in the message of the President of the Republic of Kazakhstan. Nazarbayev, Kazakhstan's way: 2050: One goal, common interests, common future [42].

Covers this topic in the programme of development of the regions of the Republic of Kazakhstan [43]. The problem of the development of agglomerations is reflected in the law of the Republic of Kazakhstan «on administrative-territorial unit the Republic Kazakhstan» (with amendments and additions as at 03.07.2013). The Government of the Republic of Kazakhstan approved the programme for the development of single-industry towns in the 2012-2020 period, where the goal is to achieve sustainable socio-economic development in single-industry towns in the medium and long term.

Paying tribute to our scientific expertise in this area, it should be noted that, having published on these subjects affect only selected issues related to the management agglomerations. Along with this, the analysis of the literature shows that many of the management issues of socio-economic processes of major cities given the urbanization is studied. Despite the initial contribution of the scientists involved in this issue, are not investigated the factors that influence the development of urban agglomerations. Analysis of the studied literature also shows that there is still no clear and appropriate recommendations on strategy development and planning of urban agglomerations, methods quality management and control of the new urban economy. In General, not a regional system of rating analysis of the management of urban agglomerations. Almost no regulatory mechanism of virtuous urban agglomerations. Hence, there is a need to address the research approaches for developing management models and socio-economic growth of urban agglomerations, in particular, Almaty, as the virtuous town.

The lack of research into sustainable development of agglomerations is the relevance and the need to examine this issue, as from a scientific perspective, and practical point of view.

The scientific novelty of this work consists in the fact that for the first time, a mechanism for regulating the virtuous urban agglomerations and propose effective management and economic growth model Of agglomerations of Kazakhstan, in particular the city of Almaty.

2) Significance of the project in national and international scale.

Study on ranking countries according to the level of urbanization is the United Nations Department of economic and Social Affairs, which studies and publishes the results of comparative analysis of statistical data on the proportion of the urban population in the total population of the countries and territories of the world. Our research is aimed at developing a methodology for rating analysis of

sustainable management of agglomerations and includes indicators of the effectiveness of social and environmental policy, socio-economic analysis of urbanization, investment analysis and production processes. In addition, for the first time, we will identify economic, technological, social and organizational factors affecting urban agglomerations (for example, Almaty). An absolute novelty is the optimal strategy development and planning of urban agglomerations in the complex industry, agriculture, construction, transport, Almaty, for the next 15 years. Us first-time quality management system will be developed a new virtuous, urban-based economic, social and cultural conditions modernization and diversification. In addition, for the first time will be offered standards of agglomerations and their regulation mechanism has been improved.

The distinctive feature of our study is that we will develop structural models of growth urban agglomerations with high scientific and educational capacity, by increasing the efficiency of public management based on strengthening innovation capacities, integration of the country in the development of the industry.

This project will enable Kazakhstan to 2050 year become one of the world's 30 most developed, which implies the need to achieve a certain target indicators-GDP per 60 per thousand \$., an increase in non-oil exports up to 70% of the total exports, productivity growth in the 5 times from the current level, bringing the share of SMES in GDP up to 50%. Urbanized areas contribute to the growth of non-oil GDP, and will contribute to a further GDP growth at 2-3%.

A new model of efficient management of agglomerations Of Kazakhstan proposed in the project will contribute to increasing productivity, development of small and medium-sized businesses and allows you to measure the regional effects, to determine the direction of movement of the factors of production, goods and services, to identify the extent to which production and spatial factors on the rate of growth of the economy of the regions.

This may be the case, the system policy on territorial concentration of people, knowledge and capital in long-term growing points, and levelling negative effects of spontaneous agglomeration development and fostering agglomerations with the given properties. This in turn determines the significance of the project in national and international scale.

Internationally, contained provisions, recommendations and findings contribute to the development and management of urban growth of world

population, as well as a higher level of interaction with other countries.

Agglomeration in international practice, can always be used as a tool of crisis:

- smoothing of imbalances in the agglomeration territory development and strengthening inter-territorial ties through the creation of new industries in the new territories creates more comfortable environment for business development, will improve the quality of life;

- limited territorial resources and the possible directions in the outer zone of the metropolitan area. Often cities have no reserves of land for further development without restructuring the industrial zones. The closure of the industrial enterprises will give an opportunity for restructuring under the new market opportunities (related to the reconfiguration of the world economy);

- restructuring and modernization of the city-formation base of the city, the development of its «core» functions and industries that define the scientific and technological progress;

- improvement of the quality of the environment in the city by reducing the concentration of industrial production, transformation of the economy towards a post-industrial eco safe production;

- development of the agricultural zone of agglomeration-»import substitution» product line;

- housing solutions, Inc. modernization old low-rise residential development zones, old/dilapidated housing, the establishment of a new type of construction;

- infrastructure: transportation, engineering-key factors in the employment of the population in times of crisis.

3) social demand and (or) economic and industrial interest in the project and its results.

The results of the project can be used:

- The Ministry of investment of the Republic of Kazakhstan, the line ministries, the Office of the President, the Cabinet of the Prime Minister, Governors Office programming industrial and innovation development of Kazakhstan for the future,

- public authorities at various levels, the Agency of statistics of the Republic of Kazakhstan, the World Bank, the Government of the Republic of Kazakhstan, Association of appraisers, the National valuation standards, the labour code, the methodology for assessing the cost and others,

- various agencies in devising programmes of urban development, quality management practices, evaluation of investment projects, implementation and effectiveness of the management system,

- higher education institutions in the preparation of teaching materials and lecturing in the classroom, in the design and teaching of courses in the training system and and retraining of specialists in the field of quality management of public institutions, in particular (the Kazakh National University. Al-Farabi Kazakh National University, the Institute of Economics of the MINISTRY of EDUCATION and SCIENCE of RK, Kazakh economic University. T. Ryskulov, Eurasian National University. Gumilev, Kazakhstan Institute of management, economics and forecasting),

- researchers in conducting further research.

4) influence the results obtained on the development of science and technology and the expected social and economic benefits.

This study provides significant economic and social benefit and contribute to the system policy on territorial concentration of people, knowledge and capital in long-term points of growth, as well as the quality of service to the public. The effect will be the growth of per capita GDP up to 60 thousand. \$., an increase in non-oil exports up to 70% of the total exports, productivity growth in the 5 times from the current level, bringing the share of SMES in GDP up to 50%.

Most models of effective urban growth: integrating real regional factors, particularly the factors of production; use innovation and their distribution as a key factor in growth areas, especially distribution channels; possession of certain opportunities and align the interregional levels economic development through the diffusion of innovation and diversification.

Practical and scientific findings contribute to the strengthening and development of the cities, out of Kazakhstan on an equal footing with developed countries on the world market. Specific provisions and recommendations may be used by the Government of the Republic of Kazakhstan, Ministry of, Committees to create a practical, methodical and socio-economic floor for the development of effective management of large and small urban agglomerations.

Socio-economic impact of the development of agglomerations is the same in terms of their development contributes to:

- the strengthening and growth of small and medium-sized cities, the transformation of rural areas;

- the feasibility of more major infrastructure projects-energy, transport systems and the associated service, information communications, education and innovation infrastructure;

- growth of well-being of the population, increasing education opportunities and professional

self-realization to reduce migration outflow of the population;

- increasing the competitiveness of the economy and ensuring a stable flow of resources for development;

- modernization and integration of community resources to create a United territory of new businesses and homes;

- management of internal migration of small and medium-sized cities in the regional capital,

- monitoring the development of the city-core and prevent oversaturation and excessive pressure on infrastructure; stable development of the city centre through the shift in emphasis to development «periphery»;

Agglomerirovanie is becoming a key tool for the development of the country and its territories, providing a high quality of life, creating a comfortable environment for development business and raising the competitiveness of the Republic of Kazakhstan as a whole.

### Conclusion

The expected results will be:

1. The economic, technological, social and organizational factors affecting urban agglomerations (for example Almaty).

2. Proposed optimal strategy development and planning of urban agglomerations in the complex industry, agriculture, construction, transport, Almaty, for the next 15 years.

3. The quality management system is a new virtuous city economy.

4. A method for rating analysis of sustainable management of the centres, including the performance indicators of the social and environmental policies States, socio-economic analysis of urbanization.

5. Improved management of urban agglomerations, based on economic and social development indicators of the country's economy.

6. Proposed new standards for urban agglomerations, which will examine the economic and social factors, showing endogenous models economic growth.

7. Developed structural models of growth of urban agglomerations with high scientific and educational potential in enhancing competitiveness, investment attractiveness and socio-economic security, by increasing the efficiency of government regulation and based on building innovation capacity, integration in the development of the industry.

### References

1. Geographical dictionary: concepts and terms / Ed. by A.F. Treshnikov. – Moscow: Soviet encyclopedia, 1988. – 448 p.
2. Minh Dao. An Analysis of Growth of Urbanization in Developing Economies // *The Journal of Developing Areas*. – 2002. – Vol. 36, No. 1. – P. 81-91.
3. María Jesús Freire-Serén, Judith Panadés, Martí Tax. Avoidance, Human Capital Accumulation and Economic Growth // *Original Research Article Economic Modelling*. – 2013. – Vol. 30. – Pp.22-29.
4. Henderson J.V. The Urbanization Process and Economic Growth: The So-What Question // *Journal of Economic Growth*. – 2003. – No 8. – P. 47-71.
5. Rossi-Hansberg E. Optimal Urban Land Use and Zoning // *Review of Economic Dynamics*. – 2004. – No 7. – P. 69-106.
6. Taylor P. Specification of the World City Network // *Geographical Analysis*. – 2001. – Vol. 33, No. 2.
7. Taylor P. World Cities and Territorial States under Conditions of Contemporary Globalization // *Political Geographical Analysis*. – 2000. – Vol. 19, No. 5.
8. Black D., Henderson J.V. A theory of Urban Growth // *Journal of Political Economy*. – 1999. – No. 107. – P. 252-84.
9. Matthew E. Sprawl, Urban Growth, Edward L. Glaeser, Matthew E. Kahn. NBER Working Paper. – 2003. - No. 9733.
10. Van Lyina. Development of Urbanization in China and the Choice of Strategies // *Economy*. – Beijing, 2001. – No. 38. – P. 32-41.
11. Jan Sanuj. Analysis of the Development of the Famous Cities in the World // *Urban planning*. – Beijing, 2003. – No. – P. 47-65.
12. Van Sujfen. Experience and Practice of Urban Agglomerations // *Urban planning*. – Beijing, 2003. – No. 6.1. – P. 33-42.
13. Iuan blue. A new form of Urban Agglomeration Development of China's Urbanization / Ed. by Iuan Xin, Tang Xiaoping. – Shanghai, 2006. – No. 4. – P. 85-92.
14. Hu Sunian. The Development Strategy of Urbanization of China // Ed. by Hu Sunian, Joe Min Czu, Shui Iankej. – Beijing, 2002. – P. 120-153.
15. Zeng Czenguan. Development and Regulation of the Region in the Process of Urbanization // Ed. by Zeng Czenguan, Song Ping. – Beijing, 2003. – P. 90-146.
16. Do Cãnzen. A study of urban Japan // Do Cãnzen. – Shanghai, 1996. – P. 42-53.17. Lee J. Nin. A study of employment in urban areas of China. – Beijing, 2001. – P. 45-57.
18. Nor Penfy. The competitiveness of China's Theoretical Research of Cities and Practical Analysis. – Beijing, 2001. – P. 62-73.

19. Zhu Bin. A comparison of Economic Development in the Yangtze River Delta and Zhujiang Delta. – Shanghai, 2002. – P. 52-61.
20. Ravens Y.P., Zausaev S.A., Smirnov S.A. Metropolitan Area and Urban Cluster: Design and Management. Scientific notes of NGUEU. – 2008. – No. 4
21. Emelyanova N. Sinter processes and transformation of resettlement in Siberia. – M.: Eslan, 2010. – P. 263-281.
22. Maksimov S.N. Features and problems of development of modern megapolises // Problems of modern economy. – 2012. – № 2. – P. 352-355.
23. Mikhailov M.A. urban agglomeration as a new form of Intermunicipal Cooperation // Proceedings of the Irkutsk State Academy of Economics. –No. 6 (74). - P. 114-117.
24. Muzalevskij K.L. Spatio-rasselenčeskaâ structure of metropolitan area: harmonize the interests of the population and service companies (for example transport): katege. DIS. at soisk. Ouch. art. PhD. – Novosibirsk: IEOPP of SB RAS, 2012.
25. Nešadin A., Prilepin A. Urban agglomerations as a tool of dynamic social and economic development of the regions of Russia // The Society and Economy. – 2010. – No. 12. - P. 8-10.