УДК 332.145

THE ROLE OF CONSTRUCTION IN TERRITORIAL DEVELOPMENT: NEW DIMENSIONS

Papikian Lusine Manveli, graduate student

Plekhanov Russian University of Economics, Stremiannyi lane, 36, Moscow, Russia, 117997; e-mail: lusine.pm@gmail.com

Purpose: to investigate the impact of construction activities on development of regions given multiplication of socio-economic processes. *Discussion*: fs construction has a significant impact on economic development, we have specified its macroeconomic functions. Based on them, construction's function of multiplicative influence on territorial development is stated. The author makes a review and presents distinctive characteristics of approaches that cover evaluation of multiplier effects. A comparison of Russian and foreign scientific works, which deal with quantitative assessment of such effects, is conducted by designated in the article eight criteria. As a result, the necessity of comprehensive quantitative assessment of both direct and indirect effects of construction in three development areas (spatial, economic and social) is justified. It is shown that main types of construction's effects within these three areas are similar for various sectors of construction industry and differ only by the degree and the time of their occurrence. *Results*: five levels of construction's effects assessment are proposed, and for each options of application of evaluated effects for decision-making by authorities and private investors are suggested. Classification of investment and construction projects according to criteria of multiplicative influence reflecting the nature and strategic significance of these impacts is developed.

Keywords: construction industry, sectors of economy, projects, multiplier effects, multiplicative influence, development.

DOI: 10.17308/meps.2016.2/1338

1. Introduction

Currently stimulation of territorial development (TD) is of obvious importance. Meanwhile many strategic and spatial planning goals are often achieved by implementation of investment and construction projects (ICP). Thus, during the post-crisis period (excluding the year 2015) the share of investments in fixed capital in gross regional product (GRP) in all regions of Russia had a range of 8.5 to 71%. The ratio of the number of regions where this rate is less than 25%, is in the range 25-35% or is more than 35% on average can be assessed

as 2:2:1. The proportion of construction works in GRP of Russian regions for the same period, logically, were lower – from 3.8 to 40% (and up to 20% in more than 90% of the regions). The share of construction industry in GRP for all Russian regions in that period ranged from 1.2 to 26.1% and was 10-15% for half of the regions1. These data confirm the considerable role of construction and investments in fixed capital in Russia's economy. However, while during past 15 years GDP and investments in fixed assets at country level have seen continuous growth, at regional level investment volume during past 5 years in 43 of 83 regions saw fluctuation, a steady decrease or a sharp decline last two or three years.

Due to low investment attractiveness of territories and budget deficit (which was fixed in municipalities of 78 from 83 regions on 1st January of 2014 [12]), as well as crisis situation in construction industry, governments often have to accept any ICPs investors are willing to implement. Thus, choosing ICPs authorities take into account mostly short-term benefits, ignoring more significant impact on TD that ICP's implementation could bring. Naturally, overall strategic priorities of territorial development are neglected, and a discrepancy between documents of territorial and strategic planning occurs. Reasonably, it appears rational to make an estimation of ICPs' effects as part of territorial development management. To do this it is needed to understand the interaction of construction and other spheres of economic activity and assess construction's potential overall impact on TD.

2. Methodology

To study this problem, we adhere to a systematic approach and use system – functional analysis in order to build up construction's relations with various areas of territorial development. In addition, this study applies general scientific methods of comparison, compilation, analysis and synthesis, as well as the historical method to solve the issues raised in the article.

3. Discussion

Now in developed areas a decrease in the volume of construction works (excluding their expanding exports) is observed – due to the lack of free sites, oversaturated property markets, revaluation of urban and environmental development priorities, transition to post-industrial stage of development. However, it doesn't mean regression of construction's role in any national economies. For more detailed study of its role in TD, we specified for construction industry functions that G.N. Makarova [7] assigns to any sector of economy:

1 All the figures mentioned above are calculated with the use of data provided by RF Federal State Statistics Service (excluding the data for the Republic of Crimea and Sevastopol).

Table 1

Functions of construction industry in territorial development

No.	General name of industries' function (according to G.N. Makarova)	Description of the function for construction industry	Level of correspondence between a function in column 2 and a function in column 3
1	Satisfaction of needs arising along a territory	creation of fixed assets for population and all sectors of economy to meet their needs in these property items	high
2	participation in general economic development of territories through interaction with other sectors of economy	construction closely interacts with a large number of sectors which are its suppliers and customers; this determines the important role of construction in formation of investment activities, attractiveness and economic development of territories, their markets development and capitalization	high
3	participation in the «preparation of the macroeconomic future» of territories	development of construction industry determines the quality of fixed assets in national economy; it acts as a «tool» for implementation of other industries investment plans, so it generates the potential for future territorial development	high
4	«indicator of possible macroeconomic outlook»	construction industry provides significant information for forecasting potential TD; connection with property and financial markets allows it to reflect and indicate potential change in the balance of forces in markets of goods and services	high

Below we consider in more detail all these functions in relation to construction.

1. The function of satisfying needs arising along territories.

Great variety of objects is created by construction: industrial, social, household, transport, agricultural, irrigation, water management and power generation facilities, housing, civil buildings, pipelines, etc. Construction industry meets the needs of national economy and population in these objects creating a material base for their functioning. Four levels of construction produce could be distinguished (see also fig. 1 below):

1) housing (the highest level);

2) buildings and facilities for production, storage and sale of food, consumer goods and services;

3) buildings, facilities and premises used in manufacturing of means of production for producing food and consumer goods, for provision of services;

4) buildings, facilities and premises for manufacturing of means of production for enterprises acting at the third level.

The total capital of investors (including public ones) is distributed among these levels forming a chain of activity which depends on demand for produce at a current level from consumers a level higher. Competition between investors makes possible the effective use of capital they own for an area's development.

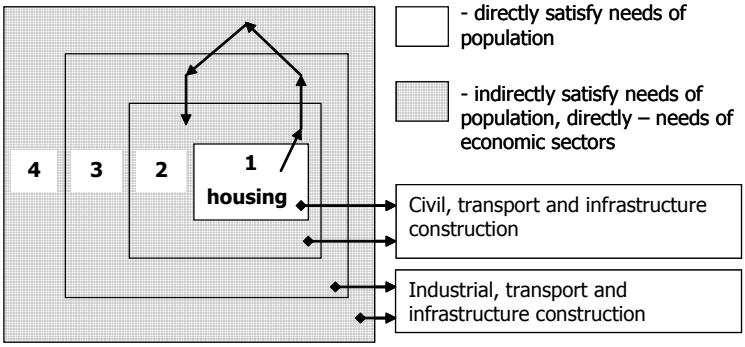

Fig. 1. Levels of construction produce in national economies

2. The function of participation in general economic development of territories through interaction with other sectors of economy.

To manufacture construction produce direct or indirect participation of more than 70 sectors of economy supplying building materials, construction machinery, vehicles and energy is needed. Construction industry uses 50% of building materials production industry's output, 40% of lumber, about 18% of steel and more than 10% of mechanical engineering's industrial output. Construction uses all types of transport, and it accounts near 20% of overall construction costs [13].

Thus, activity in construction industry depends on industries providing for it technical, labor and financial resources. Along with this all sectors of economy show demand for construction industry. Development of new products or services in most cases implies new construction, reconstruction, expansion, re-equipment and modernization of fixed assets. Many industries are both suppliers and consumers for construction industry. In addition, construction is a straight «conductor» of development in other sectors of economy. The greater is the strength of this interaction between construction and all other spheres of economic activity and the number of participating sectors, the greater is the impact of construction industry on economic development of territories. Activity in construction industry has direct impact on business activity, on the structure and level of territories' capitalization, on development of markets.

3. The function of participation in the «preparation of «the macroeconomic future» of territories.

This function indicates how significantly the current development of an industry determines the economic development of a territory in the future. First and foremost, basic industries should be attributed to such type of industries. Compared with other system-formative industries, namely the construction can be described as a «tool» for implementation of investment goals of both the investment and construction sector and all other sectors of economy. As a result, types and volume of implemented, ongoing or planned ICPs reflect the current level and the potential for development of these sectors in the future.

Along with this, the development of construction industry itself, resources and technologies (building, informational, organizational and economic) used in

construction, the level of innovational development, the condition and structure of fixed assets – all this determines the structure and quality of generated fixed property.

4. The function of «indicating possible macroeconomic outlook».

This function stems from the previous one and means that industries are able to provide information on the prospects of economic development depending on the volume of sales in the sector and its structure.

Construction industry in a significant way forms «the macroeconomic future», and therefore can provide information for analysis and forecasting potential territorial development in the future. In addition, construction industry is directly linked with real estate markets, which, in turn, interact with financial and other markets. This can reflect and indicate potential changes in the balance of forces at the markets of goods and services.

Given the above, we can see the irreplaceable and unique role of construction industry in creation and maintenance of fixed assets for life and for business to implement their investment plans. This distinguishes and differentiates construction among other system-formative industries. And we can conclude that all the functions suggested by G.N. Makarova highly correspond to the influence construction industry has on determining territorial development (this is also shown in the Table 1).

Table 2

Theoretical and methodological concepts of multiplier effects in economy

No.	Name	Main characteristics
1	Theories of multiplier and economic growth	• theoretic basis for development of ME concepts; • founded in 1930s, developed throughout all XX century; • wide range of multipliers; • applied in the USA, some Western European, Anglo-Saxon, Scandinavian and Asian countries; • main methodology – interindustry analysis (input-output tables), computable general equilibrium models.
2	Theories of investment projects' public effectiveness	• commonly based on a classical theory of investment projects' effectiveness valuation; • likely to be applied at project, portfolio and program level; • indirect effects (economic, social, ecological) of projects' implementation for governments, business and population; • main method – project's cash flows model.
3	Theories of investment projects' social effectiveness	• got wide spread in the past two or three decades; • an offshoot of theories in line 2 of the table; • wide range of diverse social indicators; • besides the classical theory of investment projects' effectiveness, Value for Money, Social Welfare Functional, cost-benefit and cost-effectiveness analysis are used [11].
4	Theories of territorial impact assessment (TIA)	• formed on the border of XX and XXI centuries in EU countries be applied for administration purposes; • belongs to a group of impact assessment (IA) concepts and can be seen as their combination; • economic, social, environmental, cultural etc. impacts; • used for projects, programs, plans management decisions; • implemented in Germany, the Netherlands; • all methods mentioned above and wide range of other methods for forecasting, assessment of structural interactions.

Such collaboration and influence of construction industry on development of territories pointes out another function of construction sphere – creation of significant multiplier effects (ME) in socio-economic development of regions, municipalities and settlements. The idea of multiplier effects in different forms is found in the following concepts.

ME are examined and assessed within the framework of multiplier theories, however other approaches described in the table 2 indeed deal with the same phenomenon – evaluating impact of one activity on other one.

The issue of multiplier effects with different extent of coverage is raised in studies of Russian researchers: A.Ie. Murov, V.V. Belianin (ME of road construction); M.V. Mishenin, I.V. Kaltyrina, G.M. Kharisov, T.A. Spitsyna (ME of infrastructure construction); S.N. Manerov, O.M. Lenkovets, K.P. Gorodnicheva, T.L. Kobaliia, R.M. Abdullaeva, E.V. Kamaletdinova (ME of housing construction and residential real estate markets), etc.

Quantitative assessment of multiplier effects is more complicated, and less studies deal with it. Such works are more valuable for developing assessment techniques and ways of ME application. So we analyzed such Russian [1, 2, 8-10] and foreign [1-15] studies about construction's ME by the following criteria:

- type and volume of an exogenous indicator;
- the size and expression (absolute or relative) of an endogenous indicator;
- type of evaluation (actual or forecast);
- theoretical and methodological basis of calculation;
- the level of estimation (industrial, sectoral, program, project level, etc.);
- the scale of the territory for which the estimation is done;
- implied application of the estimated results;
- contractor and customer (if any) of the study.

Some of the results and conclusions reached while analyzing the chosen studies and other theoretic works are presented below.

4. Results

First of all, we should note that the studies analyzed evidence significant potential of construction's multiplicative influence on TD. This, coupled with territorial development problems indicated in the introduction to this article, determines the feasibility of construction's multiplier effects estimation. First, it is necessary to form theoretic and methodological foundations for such assessment. For this purpose, results of our research are presented below.

1) Though existing theories enable assessment of various effects, in construction sphere usually only economic effects are considered – an impact on gross output, investment, tax revenues and employment. In addition, the majority of studies cover only positive impacts. Moreover, some researchers (for instance, N.F. Khasanova) interpret these effects only as positive ones. Only some of them (Ie.V. Korotkova, D.A. Sofronov, S. Iu. Iermakova) insist on consideration of negative effects. Among construction's negative effects could be destructive influence on

the environment and creating hostile environment for habitation; high loads on infrastructure; lack of social facilities; unsustainable spatial organization, etc.

Therefore, we state the necessity of a comprehensive assessment of multiplier effects in three dimensions – economic, social and spatial (the latter including urban and environmental effects). Fig. 2 below shows construction's influence on the above aspects of TD considering the consequence (C) of processes, demand (D) and supply (S). Thus, the role of construction in this development is that

- converting one type of capital (financial resources of investors) to another type of capital (fixed assets)
- construction sector, according to the will of investors, distributes this capital among all sectors of economy and among territories in whole, thus
- leading to spatial transformation of different areas and forming their urban development potential,
- determining the overall direction of territories' spatial development, including environmental changes,
- affecting the size and structure of territories' capitalization,
- forming a basis for economic development and, as a result,
- having influence on the level of social welfare.

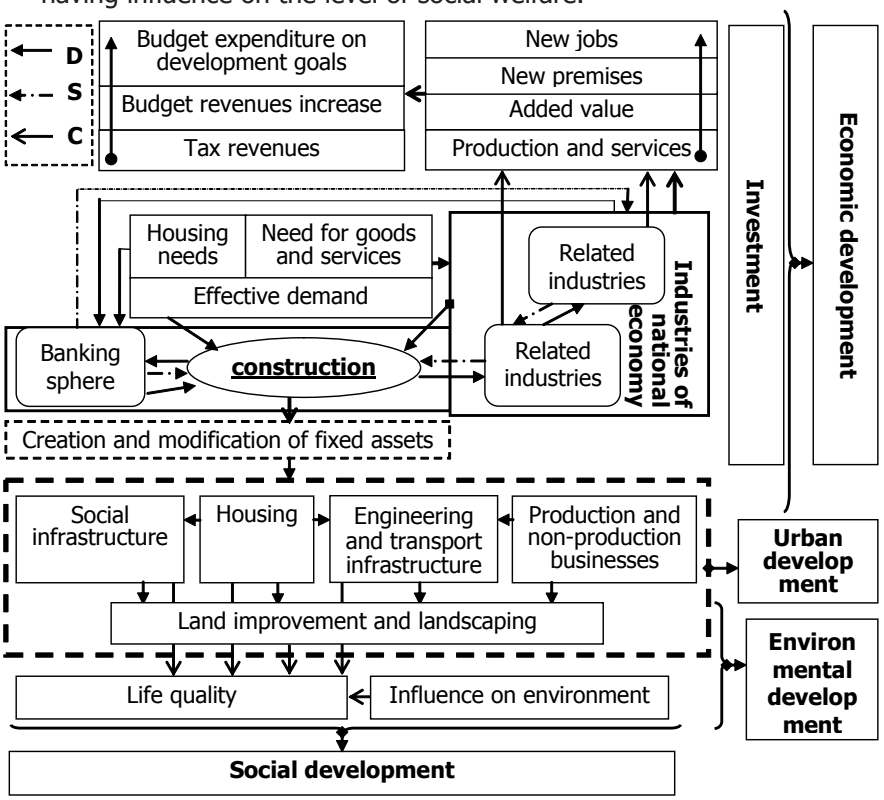

Fig. 2. Construction's influence on development of territories: spatial, economic and social

2) While some researchers imply by multiplier effects only indirect ones, others consider them together with direct effects generated by some changes. The direct impact of ICPs' implementation on territorial development is significant itself. Therefore, in our opinion, it is seen more correct and appropriate to include into construction's multiplier effect direct and indirect impacts on TD resulted from changes in some indicators of construction industry. The exception is the case when a change of an indicator in construction industry affects the same indicator throughout all economy (for example, investment in construction affects investments in all economy). Here the direct impact is excluded from the overall effect as it shows the initial change in construction investment.

Moreover, while the first wave of construction's effects, usually in the form of spatial transformations, is the same for all sectors of construction, the following waves of effects vary. However, though each wave can include different types of effects depending on the construction sector, eventually with different extent any ICP affects all aspects of territorial development distinguished in the first point of this section (see table 3): urban (U), environmental (E) , economic (Ec), social (S).

Table 3

Direct and indirect effects of construction by sector

<table>
<tr><td colspan="6">Construction's multiplier influence on territorial development</td></tr>
<tr><td rowspan="2">No</td><td rowspan="2">Construction of:</td><td colspan="2">Direct effects</td><td colspan="2">Indirect effects</td></tr>
<tr><td>I wave</td><td>I-I wave</td><td>II wave</td><td>III wave</td></tr>
<tr><td>1</td><td>Housing</td><td rowspan="6">Spatial conversion of areas (U); impact on the environment (E); quality of the environment (U, E, Ec, S) investment, taxes, GRP growth, construction loans (Ec)</td><td>Mortgage loans (Ec), housing provision, social infrastructure (S)</td><td>Social infrastructure, asset types 1-5, small business (S, Ec)</td><td>Retail (Ec), quality of life (S)</td></tr>
<tr><td>2</td><td>Cultural and leisure buildings</td><td rowspan="5">Jobs, employment (Ec, S)</td><td rowspan="2">Small business (Ec)</td><td rowspan="2">New wave of investment, taxes (Ec)</td></tr>
<tr><td>3</td><td>Commercial buildings</td></tr>
<tr><td>4</td><td>Roads</td><td>Asset type 3 (Ec)</td><td rowspan="2">Jobs, employment, population income (Ec, S)</td></tr>
<tr><td>5</td><td>Infrastructure</td><td>Asset types 1-6 (Ec)</td></tr>
<tr><td>6</td><td>Industrial premises</td><td>Population income (S, Ec)</td><td>Asset type 3 (Ec, S)</td></tr>
<tr><td colspan="2"></td><td colspan="4">Related industries: investment, taxes, GRP</td></tr>
</table>

3) The majority of construction's ME studies are done at level of the industry and its sectors, and much less at project level. However, from a theoretic and methodological point of view, these effects might be considered (and it makes sense) for programs and projects (for example, there are quite many research conducted at project level in other fields by D.A. Sofronov, T.M. Kobaliia, N.F. Khasanova, A.V. Larionov, N.V. Pavlov). Therefore, the authors see it worthwhile

to suggest assessment and application of construction's ME for administration and management purposes at industry, sectoral, program, portfolio and project levels (see fig. 3).

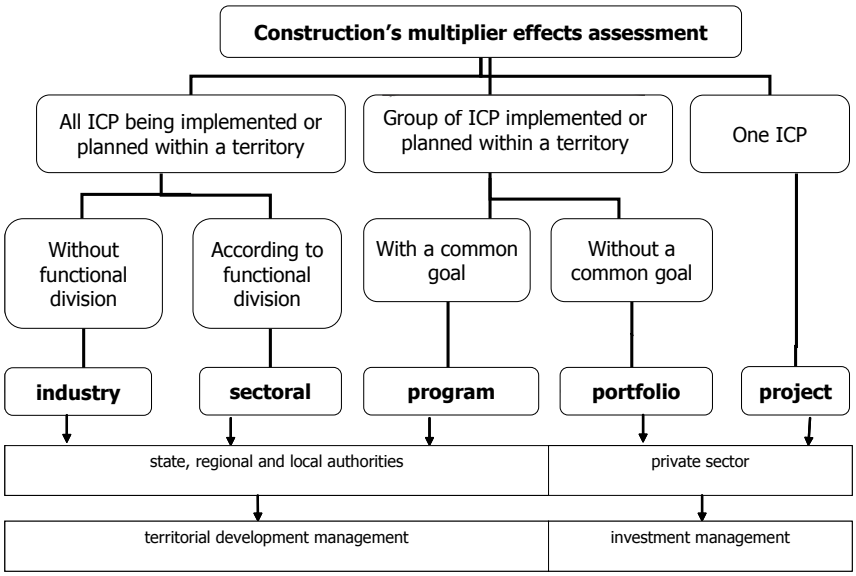

Fig. 3. Suggested levels of construction's multiplier effects assessment

Although the term of portfolio generally refers to private investors, in fact, authorities can use construction's ME evaluation at all five levels for planning and forecasting territorial development; indicating drivers of multiplicative growth and prior directions for investment; selecting the most competitive and efficient (from this point of view) projects; for spatial and economic optimization of investment; evaluation and mobilization of territories' resource potential to boost and maintain development, etc.

The private sector might also have a need for construction's ME assessment at all levels above: for projects promotion; for obtaining public funding, including public-private partnerships; for optimization of investments.

For all five levels above a common structural element is an investment and construction project. Therefore, in order to provide a theoretic and methodological basis for implementation of measures proposed in the previous point, first of all, it is seen necessary to present a classification of ICP which can be used for evaluation of their potential multiplier influence on key indicators of territorial development (see tab. 4). Now only the first criterion exists, others are proposed by the authors.

As we can see from the tab. 4, types of projects are classified not just by nature and extent, but also by strategic priority of projects' potential multiplicative influence on territorial development. It makes the proposed ICPs' classification more useful for making and implementing managerial decisions. Moreover, the classification criteria from number 5 to number 9 can be applied for programs and portfolios as well.

Table 4

Proposed classification of ICP for evaluation of their ME in the framework of territorial development management

No.	Classification criterion	ICP type / The typical characteristics
1	Type of relation with other projects	• independent / implementation of one ICP does not lead to a decision on implementation of another ICP; • mutually exclusive; • alternative (substitute); • complementary; • related
2	Degree of strategic importance	• projects of high strategic importance (correspond to the strategic priorities of territorial development – goals and objectives of the project are connected with strategic objectives); • projects of average strategic importance (indirectly promotes the development of the territory in strategic areas – project goals and objectives are not directly related to the strategic objectives, but the implementation of the project contributes to it); • projects of low strategic importance (does not meet the strategic priorities of territorial development); • projects contrary to the strategic priorities of territorial development
3	Belonging to a development program	• included in a federal / regional / municipal program; • not included in a federal / regional / municipal program
4	Importance for national economies	• system-formative projects (engineering, manufacturing, petrochemicals, other industries, utilities, etc.); • not system-formative projects (office, retail buildings, buildings for cultural events, leisure and entertainment purposes)
5	Sphere of multiplicative influence	• projects with significant (prevailing) economic multiplier effects; • projects with significant (prevailing) social multiplier effects; • projects with significant (prevailing) environmental multiplier effects; • projects with mixed multiplier effects
6	Character of multiplier effects from a project	• projects causing changes in the territory's resource potential – material and natural (resource); • projects affecting investment flows and the structure of financial capital within the territory (financial capital) • projects leading to price changes (price); • projects affecting labor market and the quality of human capital within the territory (labor); • projects changing innovation and scientific potential of the territory (innovative); • projects transforming the characteristics of quality of life (social); • projects affecting the cultural potential of the territory (cultural)
7	Direction of the multiplicative influence	• projects with a predominance of positive multiplier effects; • projects with a predominance of negative multiplier effects
8	Extent of the multiplicative influence	• projects with large multiplier effects; • projects with average multiplier effect; • projects with slight multiplier effects; • projects with negligible multiplier effects
9	Territorial focus of the multiplicative influence	• projects with a predominance of multiplier effects within the territory where the project is implemented; • projects with a predominance of multiplier effects external to the territory where the project is implemented

It is also should be noted that by proposing the criterion number 8 we suggest assessing the share of every specific effect in a targeted level of the respective indicator. For instance, if social infrastructure provision after an ICP's implementation increases by a certain amount which is, let's presume, 10% from the respective targeted indicator, it could be considered as a large multiplier effect. We suggest this, because effects expressed by absolute numbers are not sufficient: the same effect for underdeveloped areas might be a great one while for developed regions – just meager. Thus, this lead to the necessity of ICPs' multiplier effects quantitative assessment, however this is not a topic for the current article.

5. Conclusion

Thus, specific features and the role of construction industry in the formation of macro-economic framework determine its significant multiplier effects in territorial development. As a consequence, it appears rational to evaluate ICPs' implementation multiplicative influence on strategic development of territories. The review of approaches considering such effects showed that, although from a theoretical point of view they are sufficiently mature, their applied use is complicated by methodological difficulties. The analysis of studies in which a quantitative estimation of construction's ME is conducted, enabled us to propose that such assessments should take into account direct and indirect effects of construction in spatial, economic and social dimensions. Moreover, it is possible to carry out such assessment on five levels – industrial, sectoral, program, portfolio and project. To form theoretical foundations of this assessment aimed to provide information for decision-making we developed a classification of ICPs by criteria of multiplicative influence. Its full use implies a quantitative assessment construction's ME, a methodical basis for which is to be formed in coming research.

References

1. Brookman G. *Bridging the gap: Backing the construction sector to generate jobs*. CBI, 2010.

2. Economic impacts of planned school construction projects in New Jersey. Dr. Michael L. Lahr, Dr. Aaron R. Fichtner, The State University of New Jersey, July 2008.

3. Economic impacts of residential construction. Altus Group Economic Consulting, 2009.

4. Economic impacts of the construction industry on the state of Colorado. Mary Ellen C. Nobe, Ph.D., Matthew Linke. Department of Construction Management, Colorado State University, January 2008.

5. Kataeva Iu.V., Perskii Iu.K. [Development of housing construction sector as a stimulus for regional economic growth: the multiplier effect]. *Journal of the Ural State University of Economics*, 2009, no. 3 (25), pp. 101-108. (In Russ.)

6. Levkin S.I., Kievskii L.V., Shirov A.A. [Multiplicative effects of the construction complex of Moscow]. *Industrial and Civil Engineering*, 2014, no. 3, pp. 3-9. (In Russ.)

7. Makarova G.N. [Building and construction sector as indicator of macroeconomic trends and prospects for further development]. *Izvestiya of Irkutsk State Economics Academy*, 2011, no. 6 (80), pp. 125-128. (In Russ.)

8. Miakshin V.N. [The conceptual approach to the management of structural change in the economy of the region through the identification of key points of

investment growth]. *Regional economics: theory and practice*, 2015, no. 14 (389), pp. 40-50. (In Russ.)

9. Plotnikova O.N. [Methodological issues of priorities choice for budget investment: a case study of road construction in Primorskii Krai]. *Economic Sciences*, 2009, no. 8 (57), pp. 31-37. (In Russ.)

10. Prikhodchenko K.I. [Evaluation and growth of multiplier in the construction industry as a condition for formation of building rent]. *Economic and humanitarian sciences*, 2013, no. 2 (253), pp. 84-91. (In Russ.)

11. Sazykina S.A., Rastopchina Yu.L. [Social effectiveness estimation for regional public-private partnership project]. *Modern Economics: problems and solutions*, 2015, no. 5 (65), pp. 113-121. (In Russ.)

12. Sevost'ianov A.V., Papikian L.M. [Application of construction's multiplier effects in territorial development management]. *Journal of Economy and entrepreneurship*, vol. 9, no. 5-2, pp. 206-213. (In Russ.)

13. Stepanov I.S. [Construction economics]. Moscow, Iurait-Izdat Publ., 2007. 620 p. (In Russ.)

14. The economic multiplier effects of housing: the importance of housing to the wider economy. HIA Economics Group, Australia, 2010.

15. Using Multipliers to Measure Economic Impacts. California Economic Strategy Panel, 2009.

РОЛЬ СТРОИТЕЛЬСТВА В ТЕРРИТОРИАЛЬНОМ РАЗВИТИИ: НОВЫЕ НАПРАВЛЕНИЯ И АСПЕКТЫ

Папикян Лусине Манвели, асп.

Российский экономический университет им. Г.В. Плеханова, Стремянный пер., 36, Москва, Россия, 117997; e-mail: lusine.pm@gmail.com

Цель: исследовать влияние строительной деятельности на развитие территорий с позиций мультипликации социально-экономических процессов. *Обсуждение*: исходя из идеи, что строительство имеет существенное воздействие на развитие экономик любого вида, мы конкретизировали макроэкономические функции строительства, на основе чего выделена также функция мультипликативного воздействия строительства на развитие территорий. Проведен обзор и представлены отличительные характеристики теорий и методологических подходов, в рамках которых происходит оценка мультипликативных эффектов. Проведен сравнительный анализ набора отечественных и зарубежных исследований, посвященных количественной оценке таких эффектов, по обозначенным далее в статье восьми критериям. В результате чего обоснована необходимость комплексной количественной оценки прямых и косвенных эффектов строительной деятельности в трех направлениях развития территорий – пространственном (градостроительном и экологическом), экономическом и социальном. Показано, что основные виды эффектов этих трех направлений для различных секторов строительной отрасли схожи и отличаются степенью и временем их проявления. *Результаты*: предложены пять уровней оценки таких эффектов и представлены основные цели использования подобных оценок при принятии решений органами власти и частными инвесторами. Разработана классификация инвестиционно-строительных проектов по критериям мультипликативного воздействия, отражающим характер и стратегическую значимость этого воздействия.

Ключевые слова: строительная отрасль, отрасли экономики, проекты, мультипликативные эффекты, мультипликативное воздействие, развитие.

Список источников

1. Brookman G. *Bridging the gap: Backing the construction sector to generate jobs*. CBI, 2010.

2. Economic Impacts of Planned School Construction Projects in New Jersey. Dr. Michael L. Lahr, Dr. Aaron R. Fichtner, The State University of New Jersey, July, 2008.

3. Economic impacts of residential construction. Altus Group Economic Consulting, 2009.

4. Economic impacts of the construction industry on the state of Colorado. Mary

Ellen C. Nobe, Ph.D., Matthew Linke. Department of Construction Management, Colorado State University, January, 2008.

5. Катаева Ю.В., Перский Ю.К. Развитие сегмента жилищного строительства как фактор экономического роста региона: мультипликативный эффект // *Известия Уральского Государственного экономического университета*, 2009, no. 3 (25), с. 101-108.

6. Левкин С.И., Киевский Л.В., Широв А.А. Мультипликативные эффекты строительного комплекса города Москвы // *Промышленно-гражданское строительство*, 2014, no. 3, с. 3-9.

7. Макарова Г.Н. Отрасль строительства как индикатор макроэкономических тенденций и перспектив развития // *Известия Иркутской государственной экономической академии*, 2011, no. 6 (80), с. 125-128.

8. Мякшин В.Н. Концептуальный подход к управлению структурными преобразованиями в экономике региона на основе выявления ключевых точек инвестиционного роста // *Региональная экономика: теория и практика*, 2015, no. 14 (389), с. 40-50.

9. Плотникова О.Н. Методические вопросы выбора приоритетов бюджетного инвестирования на примере дорожного строительства Приморского края // *Экономические науки*, 2009, no. 8 (57), с. 31-37.

10. Приходченко К.И. Оценка и факторы роста мультипликатора в строительстве как условие формирования строительной ренты // *Экономические и гуманитарные науки*, 2013, no. 2 (253), с. 84-91.

11. Сазыкина С.А., Растопчина Ю.Л. Оценка социальной эффективности регионального проекта государственно-частного партнерства // *Современная экономика: проблемы и решения*, 2015, no. 5 (65), с. 113-121.

12. Севостьянов А.В., Папикян Л.М. Применение оценок мультипликативных эффектов строительства в управлении развитием территорий // *Экономика и предпринимательство*, 2015, no. 5 (ч. 2), с. 206-213.

13. Экономика строительства: учебник / под общ. ред. И.С. Степанова. 3-е изд., доп. и перераб. Москва, Юрайт-Издат, 2007. 620 с.

14. The economic multiplier effects of housing: the importance of housing to the wider economy. HIA Economics Group, Australia, 2010.

15. Using Multipliers to Measure Economic Impacts. California Economic Strategy Panel, 2009.