

The Concept of Economic Growth of the Construction Industry in St. Petersburg

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Abstract. This article defines the concept of economic growth focusing on construction industry's needs in St. Petersburg. Authors analyse a broad range of conditions that impact competitiveness of this industrial sector. In addition to that, the article defines criteria for economic growth and sustainable development in relation to construction sector of St. Petersburg. Furthermore, authors provide a significant number of practical recommendations to ensure the rapid industry's economic growth, including suggestions regarding scientific and technological basis, impact of institutional reforms on national economy, corporate measures and measures related to environment.

1 Introduction

It is difficult to overestimate the importance of economic growth of the construction industry's sector for Russian economy and in particular, for St. Petersburg region. Being an important industry's sector, the competitive construction industry can significantly improve the industrial basis of national economy, enabling the country to solve its socio-economic problems and better meet its new national economic needs. The main strategic goal of the construction industry's structural transformation in St. Petersburg is the creation of prerequisites and conditions to neutralize and eliminate unfavourable trends constraining the sector's economic growth, while pushing for dynamic and sustainable development.

2. Materials and Methods

The modern economic science has put forward a new theory of the quality of economic growth, according to which economic growth can be indicated not only by rapid production increase, but also by other criteria like, for example, reduction of production costs, improvement of products' competitiveness due to resource-saving technologies, as well as by expansion to new markets due to implementation of successful marketing strategies [1, 2]. Indeed, the modern economic growth's definition is broader than the classical one. In fact, nowadays theory and methodology of economics do not separate production growth from production quality and other production-related conditions.

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More precisely, economic growth can be better defined not solely as an increase in production, but rather through a new quality of production [3]. Thus, while defining the essence of the construction industry's transition in St. Petersburg to a new quality of economic growth, it would be rather simplistic to reduce it to a purely quantitative increase related to production and services [4].

As it is well observed by economists, structural changes in economy may lead to a situation where decline in output of some products can be accompanied by rapid growth of other types of products, which happens due to structural changes in demand. In economically developed countries, the general pattern of structural economic change can be characterized by significant decrease in raw materials sector, simultaneous increase in services and general industrial modernisation. Major changes are taking place in less material- and energy intensive sectors.

Strategy of economic growth includes not only scientific rationale of a new quality, but also identifies ways and methods how to achieve it. Economic growth can be measured in physical and monetary terms. The first method can be regarded as more reliable, since it allows eliminating effects of inflation. However, in this case by calculating economic growth's rate it is difficult to derive to a general indicator. The second method is more used by researchers, but it does not exclude the inflationary changes.

Economic growth can be defined by a number of factors. By defining the industrial economic growth it is important to establish by which factors it has been determined. The latter can be distinguished by extensive or intensive characteristics, by one-time factor or permanent impact, different nature of production sources: renewable or non-renewable. The dynamics of development is only a relative indicator of economic growth. However, by assessing the quality of economic growth is necessary to consider combination of all factors as well as added value of each of them, including product quality, technical level of production, product's consumer-related properties, demand and supply situation in a particular market and many others. Thus, the most suitable economic growth's definition, which can be applied to analysis of the construction industry in St. Petersburg, is result of interaction of a significant number of factors and conditions that determine quality of economic growth [5].

Transition to a qualitatively new type of economic growth of any industrial sector is mainly determined by the main production factors- supply, demand and distribution factors. These factors significantly contribute to economic growth. Another important pre-condition of economic growth of many industrial sectors is developed scientific and technological basis which also plays a very important role for construction industry [6].

Supply factors can be defined as quantitative and qualitative characteristics of natural and human resources, level of investments or capital stock, as well as scientific basis and level of technological development. These supply factors enable the physical ability of industry to economic growth. In this context it is important to distinguish between capacity for economic growth and real growth, which depends on factor of demand. In case of production factor's increase one should ensure adequate increase of total production expenses. This will enable to use all additional production factors available.

Economic growth is also impacted by factors of distribution and allocation [7]. Indeed, rational distribution of resources can boost production ensuring economic growth.

In terms of the construction industry the last two factors - sufficient level of total production expenses and efficiency of production resources' distribution - are crucial conditions to a new quality of industry's economic growth.

Analysis of factors affecting economic growth of the city allows to indicate general characteristics that enable economic growth to the industrial sector:

- maximum use of available natural resources, material and production potentials;
- recurring and renewable sources of economic growth.

Based on data provided for US economy, it would be useful to perform structural analysis of factors that affect economic growth (Table 1).

Table 1. The share of factors affecting economic growth (Growth in real national income for US 1929-2010) [8]

Factors of economic growth	In percentage [%]
Increase in labour costs	32
Increasing productivity:	68
Including as follows:	
Due scientific and technological progress	28
Due increasing cost of capital (investment)	19
Due improvement in education and training	14
Due legal improvements and other factors	9
In total	100

The table shows that only 32% of growth in real national income was due to increase in labour costs. 68% of increase was due to increased productivity. As it been demonstrated by the example of US economy, the main factors that positively affected productivity include [9]:

- acceleration of scientific and technological progress (introduction of new technology by updating the fixed assets)
- investment growth;
- improving education and training.

Therefore, the main permanent and renewable sources of economic growth of any economy, and surely this statement can be also applied to the construction sector- are scientific and technical progress, investment growth, increased educational and vocational training of employees [10, 11].

Scientific and technological progress is the main engine of economic growth. It includes not only transformation of industrial manufacturing basis but also implementation of new forms of management and organization. Scientific and technological progress includes discovery of new knowledge, provides a new combination of limited production resources in order to increase production of high quality competitive products. In practice, scientific and technological progress and investments are closely linked: technological progress requires investment growth, which in turn is the basis for development of scientific and technical progress.

In modern society goals and directions of scientific and technical progress are changing. If earlier scientific and technological progress has been seen as a form for introduction of new equipment, technology and logistics, its modern concept is associated with need to reduce production costs, production of competitive products, implementation of energy-saving technologies as well as with increase in production efficiency. [12] Thus, in modern society scientific and technological progress is considered as a major, permanent and renewable source of economic growth. This is very true for construction industry for which investments in scientific and technological sector are indispensable. [5] Thus, one of the main conditions for transition of construction industry to a new level of economic growth is formation and development of national economy with a significant proportion of high-tech industries.

One of the conditions to ensure rapid economic growth is to take advantage of corporate integration in development of industrial sectoral structure that corresponds to national priorities.

The main activities of corporate structures that define trends, rates, proportions, and, ultimately, the prospects for their further development of the construction industry are as follows [13]:

- ensuring stable growth of output production and technical and consumer demand, satisfaction of domestic market, as well as access to foreign markets;
- technical and technological modernisation of production base, development of innovative capacity, based on production of high-tech products, including the high-tech production that is unique worldwide;
- reconstruction of deteriorated industrial, technological and financial relations with CIS and other foreign countries, development of integration and co-operation processes;
- financial recovery of economic agents and restoration of regular commodity-money circulation;

- improving reliability and increasing investment flows to real economy through integration of banking and industrial capital;
- development of corporate management mechanisms based on assets and capitals consolidation.

3 Results and Discussion

Heading towards those objectives can create real conditions for transferring of construction industry to a new level of economic growth.

However, qualitative improvement in construction industry cannot be limited only to production factors and conditions. Transition of construction industry to a new level of economic growth requires formation and development of institutional structure of national economy. Transition of production to a new level of economic development requires restructuring of organizational and economic mechanism of production management, introducing of new legal organisation of economic activity. [14, 15] The process of implementing the strategy to accelerate industrial growth generates a new set of macro- and micro-actors in each industrial sector that interacts with traditional institutions and creates new connections between actors. Consequently, development of construction industry is closely linked to its re-organisation of its economic actors. [16]

Task to improve competitiveness of regions and cities can be solved with help of instruments for sustainable development [17]. The concept of sustainable development means achieving sustainable economic growth that enhances quality of life in a city or territory, without putting environment and non-renewable natural resources at risk. The concept of a "sustainable development" encompasses the following characteristics [14, 18, 19]:

1. Ensuring basic needs of population, including access to safe drinking water, presence of residential areas, access to quality health services and education.
2. Resource efficiency in consumption of water, electricity and recycling of industrial waste.
3. Maintaining clean environment, limiting impact of dangerous and polluting substances.
4. Creating urban infrastructure that provides access to green zones and services of public transport.
5. Heading towards sustainable development in the future, confirming volume of resources devoted to area of sustainable development.

According to the article "New models of urban development" [8], there is no clear relationship between economic growth and sustainable development. More important role plays the safeguarding of basic needs of population in infrastructure development, environmental security, access to quality health services and education. Following this consideration, we can follow the practical example of St. Petersburg Region and make practical recommendations (Table 2).

Table 2. The gross regional product of St. Petersburg by economic activity (at current prices, bln. Rubles)

Period	2004	2005	2006	2007	2008	2009	2010	2011	2012
GRP	542.3	666.3	825.1	1119.6	1431.8	1475.8	1699.5	2092.9	2292
including types of economic activity									
production and distribution of electricity, gas and water	21.9	23.2	29.5	40.1	51.9	61.9	63.4	81.6	82.1
building	27	37.8	54.6	81.7	110.6	111.2	133.1	134.2	124.7
education	17.3	28.5	33.7	42.8	52.7	63.3	67.5	76.4	86.5
health and social services	21.4	34.7	44.4	52.6	66.1	76.7	85	102.9	119.6
other community and personal services	14.4	21.5	27.8	38.6	43.9	38.8	38.2	43.6	48.3

This table demonstrates that gross regional product of St. Petersburg increased in the period concerned in 4.23 times, while at the same time, the volume of production in construction industry increased in 4.63 times. In particular, the share of construction industry increased from 5.0% in 2004 to 7.8% by 2010 and further decreased by 5.4% in 2012. The share of health and education amounted to 5.2% and 3.8% in 2012 and 4.0 % and 3.2 % in 2004.

It should be noted that the growth rate data is not stable since 2009 (Table. 3).

Table 3. The growth rate of gross regional product of St. Petersburg by economic activity (in % to the previous period) [19]

Period	2005	2006	2007	2008	2009	2010	2011	2012
GRP	1.23	1.24	1.36	1.28	1.03	1.15	1.23	1.10
production and distribution of electricity, gas and water	1.06	1.27	1.36	1.29	1.19	1.02	1.29	1.01
building	1.40	1.44	1.50	1.35	1.01	1.20	1.01	0.93
education	1.65	1.18	1.27	1.23	1.20	1.07	1.13	1.13
health and social services	1.62	1.28	1.18	1.26	1.16	1.11	1.21	1.16
other community and personal services	1.49	1.29	1.39	1.14	0.88	0.98	1.14	1.11

Given the dynamics of price increase it is useful to evaluate dynamics of physical volume of gross regional product of St. Petersburg by economic activity. This indicator demonstrates sharp decline in output of construction industry. Negative growth trends in construction are due to slow pace of GDP growth as a whole. Difficult situation persists, so in 2013 turnover of construction companies in St. Petersburg was 94% in comparison to the same indicator in 2012, and 100.8% in comparison to the same indicator of 2014 (Jan-Nov 2014). In the same time, in the period from January till November 2014 617.0 thousand square meters of residential properties became operational. This indicator is 100, 4% compared to the same period in 2013.

4 Conclusions

Hence, it is important to note that construction industry in St. Petersburg is essential to achieve quality of life improvement, sustainable socio-economic development of territories through maintaining and creating of housing, infrastructure and jobs. On the other hand, development of construction industry in St. Petersburg can be a significant source of environmental pollution, environmental degradation through pollution of dangerous chemicals substances harmful to human health and environment, as well as depletion of natural resources.

Therefore, in order to ensure sustainable development of St. Petersburg, it is important to use legal tools that will enable development of construction industry, while avoiding the negative effects on human health and environment in the city. This can be achieved by means of close cooperation between St. Petersburg government and private sector.

Thus, the necessary condition for the St. Petersburg construction industry's transition to a qualitatively new level of economic growth is to increase effectiveness of institutional reforms and management of state property.

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