

# THEORETICAL ASPECTS OF CHANGES IN ECONOMIC STRUCTURE

**Arturas Vitas\***

*Vilnius University, Lithuania*

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**Summary.** *The aim of the study was to analyze the theoretical essence of economic structure, present the concept of economic activity and compare the classification systems of economic sectors. The author analyzes the composition of an economic structure and compares their classification systems on the national, EU and world levels. Changes in the economic structure of the Baltic States are also evaluated. The analysis is performed using the data valuation, grouping and comparison methods. The obtained results are summarized and presented in conclusions.*

**Key words:** *economic structure, economic sector, economic activity, classification of economic activities, part of economic sector*

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## Introduction

The aim of economic policy in any country is a sustainable economic growth and effective economic development. It is important for the economic growth to be sustainable and attained at a lowest cost, without disrupting the ecological balance. Economic growth depends on the features of economic structure, its peculiarities and interrelations among its elements. Its formation relies on the peculiarities of public demand, features of foreign trade, attracted foreign capital and the financing of economic sectors by commercial banks. These factors cause the economic structure to change, transform and adapt to changing market conditions. It is a necessary condition in seeking economic growth.

The main issue faced by governments is the formation of an effective economic (and structural) policy which would ensure a long-term economic growth. Various countries have a similar history of economic development; however, their economic growth and development of economic sectors differ.

There are a few publications by Lithuanian scientists about economic structure and development of economic sectors: N. Balciunas (2000), K. Matuzeviciute, S. Skuncikiene, E. Tamosaityte (2010), P. Misiunas, B. Kaminskiene (1999). The majority of Lithuanian authors analyzed the economic structure and economic sectors when the Baltic countries were creating market economies. The issues of valuating the economic structure are more thoroughly studied by foreign scientists: Агибалов, Григорьев (2010), Алиакберова

\* *Address for correspondence:*

Vilnius University, Sauletekio Ave. 9, LT-10222 Vilnius, Lithuania; e-mail: arturas.vitas@yahoo.com

(2009), Асемоглу (2009), Белоусов (2001), Бильчак, Сафонова И.Ю (2008), Гасанов (2009), Гашимова (2009), Данеев (2004), Жерлицина (2007), Клинов (2008).

*The study object* is economic structure, its composition, economic sectors and the classification of economic activities.

*The study methods* are analysis of scientific literature, expert evaluation, synthesis of economic indicators.

## 1. The essence of economic structure

The existence and development of society are preconditioned by satisfaction of its material needs. Only with the help of goods these needs might be satisfied. Goods are rendered through aggregate supply or demand (Fig. 1).

Society searches for goods and services in the market in order to satisfy its needs; in this way, aggregate demand (*AD*) is formed. Companies carry out different economic activities in order to satisfy the needs of society and form aggregate supply (*AS*). Resources (tangible goods) are needed in order to pursue economic activities; therefore, companies produce goods. Since the needs of society are unlimited and resources are limited, tangible goods must be used cost-effectively. Depending on the country's economic conjunction, its social welfare increases or decreases. If goods or services become more

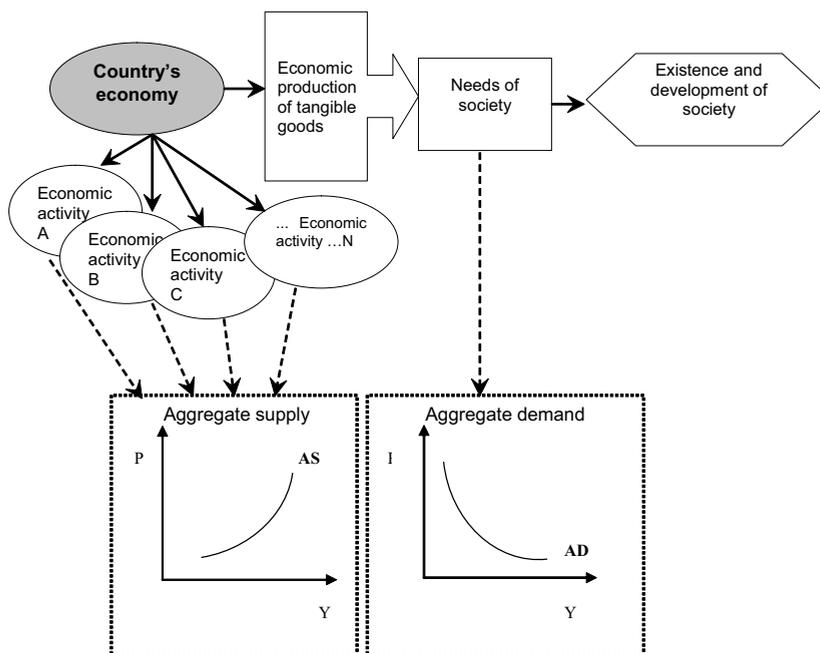


FIG. 1. Relationship between economic and social development of a country

Source: compiled by the author based on Голубев (2011).

expensive, their aggregate demand (*AD*) decreases; the opposite also holds true: if goods or services become cheaper, their aggregate demand increases. The rising aggregate demand encourages companies to increase prices and produce more goods or provide more services, while a decrease in aggregate demand causes a decrease in aggregate supply (if no additional regulations). Thus, a country's economy faces growth or decline.

Economic activity is a complex integrated system to which economic laws apply (for instance, essence of formation of aggregate demand and supply, Fig. 2). Various economic processes based on economic logic are constantly taking place in this system. According to Gylys (2008), economic activity is a rational activity of an entity, directed towards the realized benefit. Benefit in this case is perceived as a profit. Descriptions of the term “economic activity”, found in scientific literature, are presented in Table 1.

TABLE 1. Descriptions of economic activity

Year	Author	Description
2005	Михалев	Activities of entities directed towards satisfying the needs of society and obtaining profit
2007	Орехова	Activities of economically interrelated entities aimed at producing goods and providing services
2008	Проклин	Expedient activities of entities, rooted in economic laws, based on which goods are created to satisfy the needs of society
2010	Пыжев и др.	Activities of entities, directed towards the production of goods from limited recourses, based on economic logic and carried out in order to enlarge assets of the owners
2010	Федоляк	The totality of economic relations of entities, based on which the production, distribution and supply of goods and services take place
2010	Statistical yearbook	Activities of entities, which are necessary for creating goods or services; the way of employing recourses in order to create goods and satisfy the needs of society

Source: composed by the author.

The descriptions presented in the table show that the majority of authors distinguish the following main purposes of economic activities (in the narrow sense):

- satisfaction of social needs;
- enlargement of possessed assets.

Existence of an individual in society entails the satisfaction of his / her needs. Meanwhile, the enlargement of owners' assets is necessary in order to survive in the market and realize profit. Thus, society is developing, and its needs are changing, too. The satisfaction of changing needs causes new economic entities to enter the market which forms the totality of the economic structure. At the beginning, the economic structure moves through the stage of modification and adjustment to new market conditions, whereas later it develops together with the changing needs of society. After some time needs and

market conditions change again; then, the previous economic structure has to transform and adjust to the new market conditions all over again. In this way, the development of economic structure takes place.

Economic structure is a totality of a country's economic sectors in which goods are produced, services are provided and revenues are attained. Differences in labour force, capital and other available resources force every country to have a different economic structure. Economic structure also depends on the geographical location of a country: countries with access to seas develop water transport sector; countries closer to the tropical climate zone develop the tourism sector and agriculture by growing fruits which can be exported to countries where they do not grow (oranges, bananas, apricots, etc.); countries with a colder climate develop winter sports, such as skiing (Austria, Czech Republic, Slovakia), etc.

The economic structure could be divided by economic sectors, based on the classification of economic activities. The composition of economic structure based on economic sectors allows the analysis of a relative share of economic segments (financial, economic and social indicators), as well as enables the authors to explain and assess the main economic sectors and the formation of their tendencies.

A production unit might engage in one or more types of economic activity. This depends on the available resources, economic and financial possibilities. Whether an economic sector is central in the economic system depends on the percentage of gross value-added it creates. The main economic sector not necessarily produces or provides for 50% of goods or services or more than a unit of gross value-added.

The formation of economic structure based on economic sectors is highly dependent on the structural policy pursued by the government. The government is able to directly influence the economic structure through various investment programs (for instance, by attracting foreign investment), financial and tax reliefs. The development of economic sectors relies on the priorities of the structural policy, domestic and external demand for goods and services, the cost of production, export demand, etc. Political priorities rest on the following main criteria (Crew, Kleindorfer, 2002):

- Level of employment.
- Use of resources in other economic sectors.
- Growth of gross domestic product.
- Changes in labor productivity.
- Production receptivity to science.
- Competitiveness of economic sectors in the market.
- Effect on the ecological environment.

These are several main criteria based on which the priorities of structural policy are set. If the above-mentioned priorities in economic sectors are not applied, the economic structure forms and develops naturally, under the effect of market mechanisms (demand and supply, changes in internal and foreign markets, etc.).

The economic structure is perceived and valued as proportions of separate economic sectors and their share in the whole market. All economic sectors are divided as shown in Fig. 2.

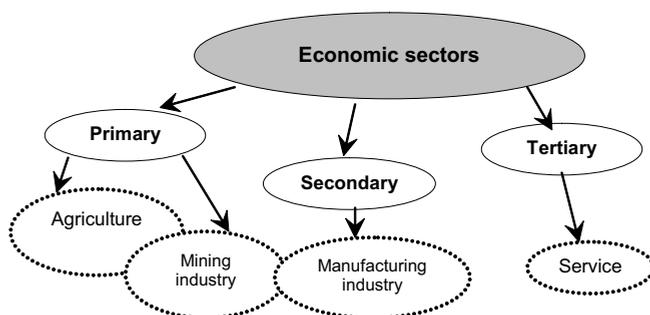


FIG. 2. Division of economic sectors.

Source: compiled by author based on Пыжев, Рущкий (2010).

Noticeable structural changes were taking place in the worlds' economic structure at the end of the 20th and early in the 21st century. Countries with well-developed industry (Germany, France, etc.) enjoyed the growth of the service sector in economic structure, while primary and secondary sectors declined. Finance-credit and construction were given most attention in the service sector, and the transportation sector reached its boom.

*Agriculture.* This sector is very important for society (potential consumer), since it provides food and other essential goods. It is easy to develop if the weather conditions are favourable. The development of agriculture also depends on the governmental policies directed towards this sector, various subsidies, support and privileges (for instance, diesel fuel discounts for farmers). This primary sector would start to decline over time if the government does not give proper attention to its regulation. The development of the agricultural sector is also highly dependent on export possibilities of the country: export possibilities emerge for the production of this sector if the national prices of the agricultural products are lower than the world prices. Other factors influencing the prosperity of this sector are economic ownership and expansion possibilities, qualification structure and abilities of society. The development of the agricultural sector could be retarded due to a low labour productivity, lack of investments, lack of expansion possibilities, etc.

*Industry* is a leader in the global economy in manufacturing tangible goods. Satisfaction of social needs and development of other sectors depend on a proper development of industry. Modern industry is highly specialized and composed of smaller sectors. Countries with highly developed economies contain more than a hundred smaller industry sectors. The modern mining industry is declining; however, the manufacturing industry is growing. Manufacturing industry accounts for about 9/10 of the whole industry in de-

veloped countries. Energy, fuel and chemistry sectors account for the largest part of the manufacturing sector. All the human civilization and social development era is related to an intensive use of energy resources, which also supply the entire industry. Besides oil, gas is also widely used in global economy; it supplies 1/4 of needed energy resources. (Пыжев, Рущкий, 2010).

*Services.* The global service market refers to buying and selling services in the global market. Service is a targeted activity related to direct satisfaction of consumers' needs. The concept of service has more definitions; nevertheless, all of them include the same conclusion that service is a diverse activity with non-tangible result expression. When comparing services to produced goods in a tangible form, services are "invisible" and never stored; therefore, operating costs might be lower. The main forms of services could be management, auditing, leasing, rent, know-how, etc. Services are an important part of cross-border economic relations and a connecting link for expanding the global trade. The growing number of service consumers is related to scientific and technological progress, as well as to the increased economic efficiency of production. The largest service "production" and export centers are located in countries with highly developed industry, such as the USA, Italy, Germany, France and Japan (Пыжев, Рущкий, 2010). Therefore, this sector is highly important for economy and society.

To conclude, the tertiary economic sector, especially the service area, has played a great role in the economic structure at the end of the 20th and in the early 21st century (Пыжев, Рущкий, 2010). This is shown by the increasing rate of the financial sector development, which reached the top in 2008. Economic structure depends on a plethora of endogenous (national prices of commodities and services, policies of internal economic development, subsidies from the government) and exogenous (export demand of goods and services) factors. Nevertheless, the optimal economic structure which would guaranty a long-term economic development of the country is yet to be discovered.

## **2. Classification of economic sectors**

In order to gather precise statistics regarding the economic processes taking place in economic sectors, national departments of statistics in the world use a classification system which is called the classification of economic activities (CEA). The NACE classification (Classification of Economic Activities in the European Community) is prepared by the Statistical Office of the European Communities (EUROSTAT) and used in Lithuania. All the EU members use this classification. The NACE classification is based on the classification of the international economic activity ISIC (international classification of the United Nations for all standard production activities). This classification is an important comparison and valuation measure for statistical information based on economic activities worldwide. The classification of economic activities is needed in order to compare national and international statistical data.

**TABLE 2. Statistical system prepared based on NACE**

Level	Economic activity	Products	Commodities
World	ISIC	CPC <sup>1</sup>	HS <sup>2</sup> , SITC <sup>3</sup>
EU	NACE	CPA <sup>4</sup> , PRODCOM <sup>5</sup>	CN <sup>6</sup>
National	NACE national version	CPA national version	PRODCOM national version

Source: compiled by author based on CEA (2008) publication by Department of Statistics.

The application of an integrated system, such as the one shown in Table 2, ensures a more reliable and effective statistical data comparison among different countries and different levels (regional or global). Currently, the EU countries apply a unified classification of economic activities. Economic activity is coded as is shown in Table 3.

**TABLE 3. Coding of economic activities**

Section	- H. Transportation and storage	
Division	- 51. Air transport	- 52. Storing and service activities related to transport
Group	- 51.1 Passenger air transport	- 52.2 Service activities related to transport
Class	- 51.10 Passenger air transport	- 52.21 Service activities related to land transport
Subclass	-	- 52.21.10 Organization and regulation of train traffic

Source: compiled by the author based on CEA publication (2008) of Department of Statistics.

The codes of economic activities would be H, 51, 51.1, 51.10, etc. As is seen in Table 4, CEA is composed of two main parts – the alphabetical part (single letter) and the six-digit numeric part. The alphabetical part and the first four digits of the numeric part match the NACE 2 codes, and the other two digits match the CEA subclasses. The sixth digit of the subclass is a reserve number and is always “0”. Therefore, the CEA is composed of five levels: four levels (section, division, group and class) match the NACE 2 structure, whereas the fifth level is obtained by the further division of the NACE 2 into classes. Therefore, the CEA code is composed of six digits: the fifth and the sixth are used to determine the subclass code. According to the example presented in Table 3, the subclass is not formed; nevertheless, it is formed in other economic activities, for instance, 52.21.10 “Organization and regulation of train traffic”, etc. The advantages and differences of CEA 2 and NACE 2 are shown in Table 4.

<sup>1</sup> Central Product Classification of the United Nations.

<sup>2</sup> Harmonized commodity description and coding system of the World Customs Organization.

<sup>3</sup> Standard International Trade Classification of the United Nations.

<sup>4</sup> European classification of Products by Activity.

<sup>5</sup> European System of production statistics for mining and manufacturing.

<sup>6</sup> Combined Nomenclature – European classification of goods.

**TABLE 4. Comparison of CEA 2 and NACE 2**

CEA 2	NACE 2
21 sections	21 sections
88 divisions	88 divisions
272 groups	272 groups
615 classes	615 classes
255 subclasses	

*Source:* based on CEA publication (2008) of Department of Statistics.

Data in Table 5 show that CEA 2 and NACE 2 are unified on four levels. This allows us to compare, analyze and evaluate statistics on the international level. The CEA version applied in Lithuania contains 21 sections. According to this classification, the main economic sectors are shown in Table 5.

**TABLE 5. Main economic sectors according to CEA 2**

CEA section	Economic sector
A + B	Agriculture
C + D + E	Industry
F	Construction
G + I	Trade
H	Transportation and storage
J	Information and communication
K + L	Financial intermediation
M ÷ U	Other economic sectors

*Source:* based on CEA publication (2008) of Department of Statistics.

The previously used classification in Lithuania included only 17 sections, whereas the CEA 2 includes 21 sections, i.e. 4 new sections were added. One of the new sections is “Information and communication”. It includes publishing activities, movie production, production and broadcasting of programs, telecommunications, programming and consulting, information services. This section is characterized by the application of high technologies which allow for the minimization of operating costs and time, which in turn increases the competitiveness in the market of the production or services provided by this economic sector.

All used classifications of economic activities have their advantages and disadvantages (Table 6).

This classification must be appended, corrected and renewed. This might impede a comparison of statistics on the international level until classification systems are unified again. The main reason for renewing and correcting the classification is that economic activities can face bankruptcy due to the changing economic conditions (unfavorable tax policy, the lack of investments, etc.) or disappear completely due to the changing

TABLE 6. Advantages and disadvantages of classification of economic activities

Classification of economic activities	
Advantages	Disadvantages
1. Possibility to compare national statistics of economic activities on international level	1. Statistical data are two, three or sometimes even six months late
2. All statistical information about the created value-added of economic sectors, unemployment levels in these sectors, attracted investments and other macroeconomic indicators is collected and systemized	2. Complicated processing of statistical data
3. Easily accessible statistical data	3. Necessity to update classification due to the changing economic conjunction
4. Analytical information regarding national economic structure	4. The scope of classification is too large

Source: compiled by the author.

economic conjuncture, while in the classification it will be named as the main. According to the authors, some disadvantages might be removed by the further automation of statistical data processing: employees of economic sectors, who are responsible for the preparation of reports, could submit all statistical forms in real time by accessing the database of the department of statistics, which would process statistical data automatically. In this way, the delay of statistical data would be minimized, and this would increase the accuracy of the economic analysis.

### 3. Changes in the economic structure of the Baltic States

Lithuania and the other Baltic States form independent economic (and structural) policies. In 2010, it was only 20 years since Lithuania started obeying the rules of market economy. During those twenty years, a plethora of structural changes took place in Lithuania, and the process is still ongoing. Its economic structure is also changing due to these dynamic processes taking place in the country.

TABLE 7. Structure of gross value-added (%) in Lithuania, 2001–2010

Economic sector	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Agriculture	5.5	5.4	5.0	4.7	4.8	4.3	3.9	3.7	3.4	3.5
Industry	24.7	23.4	24.5	25.8	25.3	24.1	22.4	21.6	20.5	22.3
Construction	5.9	6.3	7.1	7.2	7.5	8.8	10.2	10.0	6.4	5.8
Trade	31.0	32.4	32.3	31.7	31.4	30.8	30.8	31.0	32.1	33.3
Financial intermediation	12.3	12.5	12.3	12.4	13.8	15.0	16.3	16.7	16.5	16.0
Other	20.6	20.0	18.8	18.2	17.2	17.0	16.4	17.0	21.1	19.1
Total:	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Statistical Yearbook of Lithuania (2001–2010).

Industry and trade sectors are dominant in the economic structure. This shows that Lithuania is still an industrial country. In the qualitative sense, this type of economic structure is perceived negatively, since high technologies are not applied and innovative ideas are rarely realized. Greater economic structure changes took place in agriculture. The share of agriculture declined by 36% in 2001–2010. This might be related to inappropriate agricultural policies, the lack of financing from the budget (in the form of subsidies) and prices of agricultural products in the internal market. During the period 2004–2010, the share of agriculture in the economic structure declined by 24%. This shows that the integration into the EU further augmented the decline of agriculture. This could be explained by a decrease in the competitiveness of agricultural products, as it required time to adjust to the new markets. Lithuania needed a more active structural policy in agriculture in order to compete in the new markets.

The Latvian economy, similarly to Lithuania's, was managed according to the priorities of other countries; therefore, no independent economic (and structural) policy did exist. This type of political and economic situation influenced the formation of Latvia's economic structure (see Table 8).

TABLE 8. Structure of gross value-added (%) in Latvia, 2001–2010

Economic sector	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Agriculture	4.5	4.6	4.1	4.4	4.0	3.5	3.6	3.0	3.3	4.1
Industry	17.5	17.2	16.7	16.4	15.5	14.5	14.2	14.0	14.0	16.8
Construction	5.6	5.5	5.6	5.8	6.1	7.4	9.0	9.0	6.6	5.0
Trade	34.0	34.1	34.6	35.3	35.5	34.2	31.8	29.4	28.0	30.2
Financial inter- mediation	18.4	18.9	18.6	18.9	20.1	21.7	22.3	23.5	26.1	23.6
Other	20.0	19.6	20.3	19.1	18.8	18.7	19.1	21.0	22.0	20.2
Total:	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Eurostat statistical books (2001–2010).

Latvia's economic structure is oriented towards the development of trade, industry and financial intermediation sectors. The financial intermediation sector was developing most rapidly in the period of ten years. The share of this sector increased 1.3 times in 2001–2010 due to the growth of the Latvian economy. The growing economy caused its financial sector to develop; loans for economic sectors were easier to get due to forecast of economic changes. The agricultural sector was developing less. In 10 years, its share declined by about 10%. An effective agricultural policy, governmental subsidies and the price levels of agricultural products in regional markets are essential for competitiveness and export development in this sector. The share of the industry sector declined 1.3 times in nine years. This shows that industrial policy in Latvia is inappropriate for sustaining the long-term growth. The development of financial intermediation and real estate market fostered the expansion of construction sector. The share of the

construction sector increased 1.6 times in 2001–2008. This was also influenced by the dynamic real estate market in the Baltic States. The economic structure of Latvia is oriented towards trade; nevertheless, during the economic downturn in 2008, the share of the trade sector declined by 16% as compared with 2001. This decline was caused by the falling internal demand, decreasing disposable income and other reasons typical of economic downturns.

Estonia, characterized by a stabile economic growth and a tight credit policy, is a leader among the Baltic States. Its economic structure is presented below.

**TABLE 9. Structure of gross value-added (%) in Estonia, 2001–2010**

Economic sector	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Agriculture	4.7	4.2	3.9	3.9	3.5	4.2	3.1	2.8	2.6	3.5
Industry	22.6	22.5	22.8	21.9	21.5	21.1	20.6	20.6	19.5	22.8
Construction	5.6	5.9	5.8	6.0	7.1	8.7	9.	8.7	7.0	5.7
Trade	28.2	28.2	28.5	28.4	27.6	27.3	26.2	25.2	25.4	25.2
Financial inter- mediation	22.6	22.7	22.5	23.2	23.9	24.1	24.4	24.7	24.8	23.8
Other	16.3	16.5	16.5	16.6	16.4	14.6	16.2	18.0	20.7	19.0
Total:	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Eurostat statistical books (2001–2010).

The Estonian market is oriented towards the development of industry, trade and financial intermediation sectors. The development of the service sector is one of Estonia's priorities. Due to the changes in its economic structure, the share of the agricultural sector has declined. The share of this sector shrunk 1.3 times during the period 2001–2010. This decline is related to changes in the priorities of the structural policy, noncompetitive prices in foreign markets and the development of other sectors. The trade sector remained stabile in Estonia. In ten years, the industry sector increased by 1%. The economic downturn decreased the development possibilities for the trade sector in Estonia. In the period 2007 through 2010, the share of the trade sector declined by 4%. The growth of the real estate market fostered the growth of the construction and financial intermediation sectors. In nine years, the share of the construction sector increased 1.3 times, whereas the share of the financial intermediation sector grew by about 10%. The economic structure of Estonia is similar to that of Lithuania when considering the share of the industrial and agricultural sectors. Nevertheless, the construction and the financial intermediation sectors are more similar to Latvia's economic structure.

The global financial crisis has brought deficiencies in the financial regulation to the fore and motivated remedial policy actions in many countries (de Mello, Padoan, 2010), not least in the United States where the initiatives to improve financial regulation are among policy priorities for the economic growth.

## Conclusions

The analysis of scientific literature in respect of economic structure and its valuation, economic sectors and the classification of economic activities has shown that the formation of economic structure depends on the policy of internal market development, demand for exports of goods and services, and subsidies from the government to economic sectors. Literature analysis of foreign scientists has shown that there are no recommendations for optimal changes (at what rates should the sectors grow) in the economic structure. In order to compare the results of economic sectors internationally, national departments of statistics apply classifications of economic activities.

Scientists in their articles indicate that the economic structural policy is a policy that should be related to attracting investment, promoting exports, tax and loan reliefs, the use of high technologies in economic sectors, subsidies and other financial programs. Structural policy is a necessary measure for supporting economic growth; nevertheless, whether the effect will be short-term or long-term depends on its effectiveness. The economic structure changes, deforms, transforms to the new structure and adjusts to the changing market conditions due to the social, tax, export, structural and credit policies formed by the government.

The research of economic structures in the Baltic States shows that the creation and development of economy based on market principles attracted more foreign capital, increased export, made it easier to acquire financing for the development of economic sectors. The industry and trade sectors dominate in Lithuania's economic structure, which shows that the country is still industrial, whereas the markets of Latvia and Estonia are oriented towards the development of trade, industry and financial intermediation sectors. The expansion of the financial sector in these countries becomes a priority of economic growth. Nevertheless, the Baltic States have a common problem: FDI is attracted to the primitive economic sectors (industries of food, oil and chemistry), and low value-added production dominates the export structure. Conclusively, the economic structure of the Baltic States is primitive, and their economic sectors do not produce high value-added production.

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