Abstract. For performance national economy sectors are divided and grouped according to their economic importance. The authors put forward four parameters characterizing the efficiency of national economy sectors by justifying the choice and describing the tendencies in sectoral aspect. Are set the importance degrees for indicators on the basis of national priorities, availability, reliability and logical importance of information. Using the method of priorities, the industries are mutually compared between the absolute data. In result are determined most efficient national economy sectors. They are financial intermediation, business, agriculture and transport and communications sector, that is 44% of the total sectoral investment in the national economy. Based on these studies, for more rapid economic growth achievement in Latvia authors propose to review the Government's supported priority sectors of the economy.

Keywords: national economy sectors, sectoral efficiency, sectoral assessment.

1. Introduction

The goal of the work—national economy sector’s efficiency evaluation. The main task of any country's national economy development is the achievement of its population living standards and maintenance. Latvian situation was and it is still necessary in shortest time to approach the level which is in the world's industrial countries. Its sales model, in general, is well known - effectively exploitation of the limited resources (labour, technology, money, etc.). This condition is the starting point for ensuring the welfare improvement and overall economic growth.

To achieve such situation the Ministry of Economy of the Republic of Latvia like one of the main tasks is defining "... stimulation of origination the efficient and competitive structure of sectors" (www.em.gov.lv 2010) and raised the following main tasks:

- increasing productive capacity;
- development of human resources;
- establishment of innovations open economies;

Aware that Latvia is a small country and its resources and capacity is limited, for effective and competitive sectoral structure establishment the government must clearly define those sectors where development is the greatest.

In determining the best performing sectors, with the public policy help it is possible to achieve significant economic growth in the shortest period of time.

However, the authors stress that this national policy may be exercised only as a temporary measure, because state must ensure positive and proportionate national economic environment, and not artificially stimulate in individual sectors.

In the article is prompted complex of universal indicators, which describe both the overall national economy and each of its sectors, to identify the most perspective sectors of Latvian national economy. To achieve this, it is necessary to evaluate existing sectors of national economy and to determine their effectiveness.

Because in the research is scheduled to perform efficiency assessment, it is necessary to articulate clearly the meaning of that term and definition.

The word “efficiency” is one of those economic indicators, which are widely used in society, but are handled differently. For example:

- maximum yield of limited recourses and use with minimal damage;
- how easy, quick or cheap with each instrument, method or course of action the objective is accessible;
- maximum use of resources with minimal damage (Klaus 2002).
In turn, "economic efficiency" is defined as:

- public production efficiency - the socio-economic development effectiveness;
- correlation of useful results of producing with the amount of live materialized labour amount, which used to obtain it (Moisejs 1981).

Also the subcommission of terminology of the Ministry of Economy of the Republic of Latvia has been put forward their definition of effectiveness, based on existing literature into the effectiveness and its interpretations. Because definition of the subcommission of terminology of the Ministry of Economy of the Republic of Latvia is the most comprehensive, the authors of this paper also use it as the main formulation of efficiency.

Within the framework of paper the effectiveness is the degree to which a system or its components reach the desired result (carry out its functions) compared to the consumption of resources. In turn, the degree to which a system or its components reach the desired result compared with the consumption of resources measures by various indicators. Thus, efficiency is also an indicator by which measures the degree to which a system or its components reach the desired result (carry out its functions) compared to the consumption of resources. (www.politika.lv 2010)

Aforementioned formulation in equation is the ratio of economic output and consumption of resources (see formula (1)).

$$ E_{ef} = \frac{ER}{R} $$

Where:

- $E_{ef}$ - economic efficiency,
- $ER$ - the economic result, in the meaning of this paper is the state advanced priorities,
- $R$ - resources: material, financial, labor etc.

The authors are using in the research the general classification of economic activities NACE Red. 1.1. sectoral breakdown into sections that is narrowed, - combining the industry, which the Latvian national economy have not importance from the investment side in the state revenue [8]. Basically these are maintained by the state sector, which provides citizens with public goods and services. Separate distribution of these sectors in study would make it boundless and fragmented, but the efficiency of the sectors assessment - biased.

By creating the efficiency characterizing system, the authors relied on the following principles:

- data must be easily accessible - in a public database i.e. Data of Central Statistical Bureau of Latvia;
- indicators must comply with the principle of efficiency and must be indicative of economic outcomes gained by use of resources;
- set parameters must be logical and available in accordance with operational specificity by sectors;
- do not use the trends of separate indicator movements, because it is indicative of potential growth in sector and normalization of the situation, but not of efficiency trends.

The basic information in this work is statistical data. Therefore, paper is more restricted and these restrictions are in connection with the activities which are not recorded in official statistics. They are:

- underground economy - legal form unreported activity: importation and exportation of the goods by contraband, undeclared business and incomes hiding to avoid the payment of taxes etc.;
- non-market activities: housekeeper duties in the care of their family or personal home repair work carried out by the owner, as well as outstanding scientific researches and its descriptions of etc.;
- free time, possibilities of its use in human physical and mental development, working day, weekly working hours, working conditions etc. All this affects people's welfare, but not quantitatively measurable;
- product quality, because the gross domestic product is the quantity indicator, but not the quality accounting rate, so it cannot fully to display the improvements that affect people's material well-being;
• range of goods. Both harmful products (e.g. cigarettes) and healthy products (e.g. milk) value of the GDP calculation is listed in the same way;
• ecological consequence of production. (Bikse 1998)

Taking into account the requirements and nature of the work, the authors make the following those key indicators characterizing the efficiency of nature economy. 1. Labour productivity, or productivity (Pr) (see the Table 1.).
Labour productivity or productivity is the valid result of labour consumption, working efficiency. Labour productivity can be measured by the two methods.

1) Direct method (formula (2)).

\[ I = \frac{A}{S_s} \]  

Where:
I - output per worker,
Q - production (services) volume per unit time (year, month, etc.),
S_s - number of employees.

2) The reverse method. By this method calculates the labour-intensity of production (service) as the ratio of work time use and production (services) volume in natural units.
In macro level labour productivity is calculated and compared like the gross domestic product per worker. However, in the Ministry of Economy of the Republic of Latvia publications (www.em.gov.lv 20010), the productivity of the sectors is expressed as the amount of value added amount per worker.
State’s economic activity revenues described gross domestic product (CP), which is the total value of produced end products and services in the territory per year.
For statistical purposes, the value added is the component of gross domestic product, and it is calculated by subtracting intermediate consumption from the output of products and services at basic prices (www.csb.lv 2010)
Based on the definition of gross domestic product, and the added value, the authors suggest to use the formula in this work (3.), because the added value characterizes productivity indicators more accurately (will not be counted an intermediate consumption). This ratio indicates of the value added volume in lats which in the sector produces one employee.

\[ Pr = \frac{PV}{S_s} \]  

Where:
Pr - productivity,
PV - the value added, at current prices, thousand lats,
Ss - average number of employees, in thousands.

The highest productivity levels in the business (K) and financial intermediation (J) (see the table 1).
In commercial (C) sector, this index can be explained by the sub-sector within the group of this sector - real estate operations, which demand and value increased up to 10 times within a few years. Demand for property significantly affects the availability of credit too, which increases the productivity level of financial intermediation (J).

2. Management approach effectiveness indicator of enterprises
One of the main objectives of each company is to work with a better return. This means: the better the company will use its financial resources, the greater profit company acquires.
In the sectoral breakdown it is possible to obtain a series of indicators that describe the financial situation: solvency, liquidity, activity, profitability and data on certain balance sheet items. However, the author believes that the profitability is most characterizes the effectiveness of financial resources. Therefore, this research focuses to the economic profitability index (expressed in %), calculated as the
profit or loss before tax to net turnover, which shows the company's earnings per net turnover lat (see formula (4)).

\[ R = \frac{PZ}{NA} \]  \hspace{1cm} (4)

where:
- \( R \) - profitability, %,
- \( P \& L \) - Profit or loss before tax, LVL,
- \( NA \) - net sales, LVL.

Most cost-effective financial intermediation sector (J) (see tab.1), where earnings before taxes provide 19.3% of net sales. The relatively high indicators are also in sectors such as agriculture (A), mining industry (C) and transport (I) sector. High profitability of these sectors is positive, because by the other macroeconomic indicators these sectors are not dominated.

The analysis shows that in the revenue generating sectors the lowest cost-effectiveness is fisheries (B) industry.

3. Yield of funds or fixed assets (PL\text{atd})

This indicator shows how much production in financial terms the company gave within one year per one production of capital funds monetary unit, corresponding to formula (5) (Moisejs 1981)

\[ F_r = \frac{Q}{Fv} \]  \hspace{1cm} (5)

where:
- \( F_r \) – index of funds return,
- \( Q \) – quantity of produced and released production, LVL,
- \( Fv \) - the asset values, LVL.

Transforming this formula at the macro level, the authors advance such interpretation (see formula (6)). After the conversion of formula is taking the data of what is the amount of produced added value per one lat of fixed assets amount (land, buildings, equipment, etc.). This indicator can be regarded as fixed assets or technical efficiency.

\[ PL_{\text{atd}} = \frac{PV}{PL} \]  \hspace{1cm} (6)

where:
- \( PL_{\text{atd}} \) - return on fixed assets, LVL,
- \( PV \) - added value, in millions. LVL,
- \( PL \) – fixed assets amount, in millions LVL.

Higher technological efficiency have financial intermediation sector, which can be explained by the characteristics of the sector, but the second highest efficiency of revenue-bearing areas (more than three times smaller) - construction (F). The lowest fixed asset yield rates have the power (E) sector (see the Table 1).

4. Salary of employees (A\text{r})

The employer's motivation in the labor market is largely determined by the salary of employees. The higher pay and salary workers receive, the lower is the demand for labor and vice versa - the higher the salary being offered, the greater is the labor supply in the labor market.

Conversely, if the citizens will receive a higher salary, increase their ability to pay and demand for products and services that supported the local businesses. In the further analysis used the average monthly gross salary in lats. It includes salary for work results, monthly salary (post salary, wage rate) for worked
time or the amount of work, annual and extra vacation pay, disability payment, various allowances, such as for the additional work, incentive costs, social insurance contributions, which paid workers, and citizen income tax amounts.

This index is taken in absolute terms, because by the author's opinion, it describes each company’s opportunities and the efficiency of used resources (labor and financial) efficiency, and therefore wage rate is not advanced as a ratio.

The highest wages are observed in financial intermediation sector (J), which salary is more than twice than the average in national economy (see the first table). In this industry are observed the greatest increases of salaries over the last 5 years.

The second highest salary is observed in power sector (E). This industry wage levels affects, for example, the Latvian monopoly company PLC “Latvenergo” existence in sector, which is one of profitable Latvian companies.

The lowest salaries are in fishing (B), hotel and restaurant (H) sectors. Also, in the commercial sector is observed a relatively low pay, taking into account the sector's relatively high productivity and high employment amount.

Table 1. Sectoral performance indexes in absolute terms (Source: www.em.gov.lv)

<table>
<thead>
<tr>
<th>Sector according to NACE Red. 1.1.</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
<th>K</th>
<th>Other L, M, N, O, P, Q</th>
</tr>
</thead>
<tbody>
<tr>
<td>Productivity, Ls</td>
<td>1966</td>
<td>4067</td>
<td>7500</td>
<td>5575</td>
<td>7919</td>
<td>4461</td>
<td>7840</td>
<td>3743</td>
<td>10749</td>
<td>19239</td>
<td>22507</td>
<td>4666</td>
</tr>
<tr>
<td>Salary, Ls</td>
<td>179</td>
<td>129.5</td>
<td>224</td>
<td>187</td>
<td>331</td>
<td>174</td>
<td>168</td>
<td>129</td>
<td>242</td>
<td>482</td>
<td>230.5</td>
<td>220.5</td>
</tr>
<tr>
<td>Profitability, %</td>
<td>14.3</td>
<td>0.4</td>
<td>12.3</td>
<td>4.5</td>
<td>3.2</td>
<td>2.9</td>
<td>1.8</td>
<td>8.2</td>
<td>12.3</td>
<td>19.3</td>
<td>7.5</td>
<td>0.8</td>
</tr>
<tr>
<td>Return on fixed assets, Ls</td>
<td>2.08</td>
<td>0.67</td>
<td>0.99</td>
<td>0.99</td>
<td>0.23</td>
<td>2.41</td>
<td>1.84</td>
<td>0.66</td>
<td>0.89</td>
<td>9.70</td>
<td>1.17</td>
<td>3.54</td>
</tr>
</tbody>
</table>

Table 1 shows that the obtaining results by national economy sector are essentially beyond compare. To compare mutually these sectors, the authors expressed these in relative terms, using the formula (7).

Table 2. Efficiency indexes of the sectors in relative terms by the formula (Source: www.em.gov.lv)

<table>
<thead>
<tr>
<th>Sector according to NACE Red. 1.1.</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>R</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
<th>K</th>
<th>L, M, N, O, P, Q</th>
</tr>
</thead>
<tbody>
<tr>
<td>Productivity, Ls</td>
<td>0.02</td>
<td>0.04</td>
<td>0.07</td>
<td>0.06</td>
<td>0.08</td>
<td>0.04</td>
<td>0.08</td>
<td>0.04</td>
<td>0.11</td>
<td>0.19</td>
<td>0.22</td>
<td>0.05</td>
</tr>
<tr>
<td>Salary, Ls</td>
<td>0.07</td>
<td>0.05</td>
<td>0.08</td>
<td>0.07</td>
<td>0.12</td>
<td>0.06</td>
<td>0.06</td>
<td>0.05</td>
<td>0.09</td>
<td>0.18</td>
<td>0.09</td>
<td>0.08</td>
</tr>
<tr>
<td>Profitability, %</td>
<td>0.16</td>
<td>0.00</td>
<td>0.14</td>
<td>0.05</td>
<td>0.04</td>
<td>0.03</td>
<td>0.02</td>
<td>0.09</td>
<td>0.14</td>
<td>0.22</td>
<td>0.09</td>
<td>0.01</td>
</tr>
<tr>
<td>Return on fixed assets, Ls</td>
<td>0.08</td>
<td>0.03</td>
<td>0.04</td>
<td>0.04</td>
<td>0.01</td>
<td>0.10</td>
<td>0.07</td>
<td>0.03</td>
<td>0.04</td>
<td>0.39</td>
<td>0.05</td>
<td>0.14</td>
</tr>
<tr>
<td>The relative investment, total</td>
<td>0.33</td>
<td>0.12</td>
<td>0.34</td>
<td>0.22</td>
<td>0.25</td>
<td>0.24</td>
<td>0.23</td>
<td>0.21</td>
<td>0.37</td>
<td>0.98</td>
<td>0.44</td>
<td>0.28</td>
</tr>
</tbody>
</table>

The relative share in total sum must be equal to 1, while the relative amount of the investment at the sectoral level indicates the specific weight for each sector in the overall national economy structure (see the Table 2).

\[ R_r = \frac{N_A}{T_A} \]  \hspace{1cm} (7)

where:

\( R_r \) - resultant relative index,
\( N_A \) - absolute index of sector,
\( T_A \) - the appropriate national economy overall absolute index.
In aggregate form sectoral relative contribution to the overall national economy structure is in the Fig. 1.

![Fig. 1. Relative effectiveness assessment by sectors.](image)

The largest contributors to the national economy structure give the financial intermediation (J) - 25%. The authors would like to note that in the individual contribution of this sector was not included information about the banks, so important in this sector are insurance, leasing, pension companies and stock exchanges. High specific weight in these industries determined the highest return on fixed assets (0.39), profitability (0.22) and salary (0.18) ratio.

A large specific weight (12%) also makes a commercial (K) sector, which has the highest yield ratio (0.22).

The lowest share has the fishery (B) sector. Its economic performance has deteriorated, and there are low return on fixed assets and workforce indexes.

Relative sectoral assessment is sufficient adequate, if we assume that all the efficiency indicators are equally important. However, the author believes that the assessment is not complete, because it shows the sectoral contribution to the national economy as a whole, rather than the evaluation of effectiveness.

Therefore, the authors have done the efficiency estimates by using the priority method, where the assessment is made according to the absolute data, taking into account the importance of each index. This method includes in the expert assessment methods group. The method allows to manage the adjustment of the objects and to determine the characteristics of a quantitative assessment of expression level, where is clarifying how much and how many times one assessment is greater than the other.

Comparable variations put forward by prioritization method are comparable abovementioned sectors in turn the selection criteria of national economy efficiency are the sector indexes (see the first table).

In view of these criteria and compared according to their importance and the absolute value results are displayed on the 2.figure.

The most effective industries in Latvia are: financial intermediation (J), commercial (K), agriculture (A) and transport and communications (I) (see Fig.2.).

Financial intermediation sector (J), as well as a in relative assessment, high-efficiency provides the highest level of technology efficiency, wages and profitability and the second highest level of working population efficiency.

In turn the agricultural sector (A) in each country is very important, because with its help can square a bit the negative balance of commercial. As we know, this sector received a major one of the biggest funding from the European Union funds. With the help of these funds from many small economies developed just a few forms, but a large and profitable economies (as shown by the profitability index) (see the first table).
Evaluation of the effectiveness of national economy sectors within the priority method.

Abovementioned four the most efficiency sectors contribute around 44% of the total investment in the national economy. As already noted by the authors, a minimum of assistance to these sectors will provide the highest economic growth.

In some literature (www.politika.lv, www.eiroinfo.lv 2010) is published information that the power (E) sector should be put forward like priority in Latvia while this sector to be in work it is needed massive direct investments, because in this field Latvia have not comparative advantage. Its efficiency is 8% of the total investment.

Low efficiency is in the construction (F) and hotel and restaurant sectors (H), accordingly 8% and 6%. However, these industries have positive indicators of the dynamics therefore most likely they come nearer to increase their contribution into the overall national economy scale in the future.

The lowest efficiency (5%) is in fishing (B) sector. Various literature sources (www.politika.lv 2010) has commented that the fishery (B) experts in the field need to retrain, because "there is not and will not be" fishes, fishing vessels have become obsolete, independently imposed quota limits the catch and the sector’s overall efficiency by the most important indicators is double the less than in the effective sectors (Moisejs 1981).

Based on previous estimates, the authors propose a State revision of the first priority national economy sectors. Currently, Ministry of Economic has formulated a long-term support for fishing (B), power (E) and mining industrial (C) sectors. This sector support for the author's study is not the most effective, and, considering into account the limited resources and capacity, public support should concentrate on more profitable sectors, of which there was a greater return.

The authors are aware that their research does not constitute as a final research in this field, because the importance of indicators could be assessed after numerically more expert opinions by determining the degree of harmonization of views too.

The goal of worked out research is a complex evaluation of the efficiency of national economy sectors, but to be able to accurately discuss about the efficiency or inefficiency of each sector, should be ménage the sector profitability assessment of sub-section level. After that evaluation could identify the main factors that hinder the efficiency of the sector, and advance detailed (more precisely) indicators which characterizes each sector.

References

