THE ECONOMIC COMPONENTS OF SUSTAINABLE DEVELOPMENT FUNCTION AT THE LEVEL OF THE INDUSTRIAL ENTERPRISES

Phd Gabriela DOBROTĂ
Constantin Brâncuși University of Târgu Jiu, gabi.dobrota@utgjiu.ro

Abstract: Abstract The activities carried out under industrial enterprises often involves, obtaining financial surpluses on the base of excessive use of natural resources and the absence of environmental protection measures. Or, the need to ensure optimal conditions for future generations requires the correlation the economic, technological, political and social measures with requirements of sustainable development. The present research aims at outlining the components of sustainable development and the identification of indicators that enable sustainable economic development tool in the industrial entities, specifying factors influence them.

Keywords: sustainable development, economic function, factors of influence, industrial enterprises

1. REQUIREMENTS AND COMPONENTS OF SUSTAINABLE DEVELOPMENT

The emphasis of problems generated by the environmental pollution and the need for medium protection, generated emergence of the concept of sustainable development. Although there are many controversies on its use, now is noted increasingly an expansion of the interest sphere, being targeted and economic and social issues at the level of the quality of life.

The limited degree of resources, the dependence of activities performed by the people and organizations by these, population explosion and economic development represent fundamentals of sustainable development. It aims at providing theoretical elements for fundamentation and adoption of decisions in accordance with the influences exercised by the correlations between man or entities and their environment. In this context, it is imperative a retooling process based on innovation but and on important financial resources. This impose a gradual action, starting from improvement from the technologies currently in use so that it can be reduced and even eliminated the negative environmental influences. In addition, the correlation of economic, technological, political or social measures with sustainable development should be an essential objective in each country.

The main directions of action must be reported to:

- the relocationization of economic growth, based on appropriate and efficient use of resources that allows obtain a high quality products with a degree of pollution as light as possible;
- the ensure of a high quality of life;
- protection environment and existing resources (rational exploitation of natural resources);
- implementation of policies focused on providing of a correlation between economic development and environment.
It should be noted that sustainable development is not relate exclusively to the environment. An important element also relates to the social component, but we cannot be omitted neither the economic part[2].

Practically, these are the fundamental components of sustainable development, determined by the action of two important factors: population growth and diminishing natural resources. A study realised at the level of some Canadian companies in the oil and gas, mining, forestry and industry, during 1986-1995 revealed that corporate sustainability is influenced both by resource as well as by the institutional organization [3]. A series of studies performed in recent decades have attempted to identify indicators that allow correlating economic and environmental issues and the development of assessment systems that address economic, social and environmental issues. The indicators have been identified created at the corporate level [4, 5], the sector level [6, 7, 8, 9] and the market level [10]. Unfortunately, there are few organizations that use by it in making decisions underlying the activity.

Therefore, promoting a development model that ensures a balance between economic growth, a high quality of life and protect the environment in the context of rational use of existing resources allow explaining and supporting of sustainable development.

Based on these considerations, the aim of research is the grouping of the most important indicators of economic component which can be used is the identification of a components of mathematical function of sustainable development in industrial organizations.

2. SUSTAINABLE DEVELOPMENT IN THE INDUSTRIAL ENTERPRISES

In the policies implemented by the state, an important component in ensuring sustainable development is represented by the economic entities, the ones industrial being determined. They create value by using resources and interacting with the environment. Therefore, they must act in towards achieving its goals due observance of important goals, including: maximum efficiency use of natural resources, protect the environment and its resources, carrying out activities and providing products that improve the quality life. Specifically, the essential requirement of an economy is to ensure a competitive environment and effectively responding to customer demands amid protecting of natural environment and ensure future resources required.

In this sense, industrial entities that contribute to sustainable development are those that:
- are based on promotion of performant management methods and techniques that include and ecologic components;
- easily adapts to the requirements of customers;
- uses production capacities correlated with the objectiv of activity and apply technologies that allow recording a significant efficiency;
- determines the obtaining of financial surpluses from the work carried and record sufficient liquidity, which support the economic potential;
- provide adequate income for social protection of employees;
- contributes to formation of the general funds of the society.

Obviously, at the level of the industrial organizations the apply of the principles of sustainable development can cause losses.
Thus, at present there is a number of issues with a direct impact on the environment, without a reflection at the level of the cost of production and selling price.

An ecological production causes, on the one hand, the obtain a small amount, and on the other hand, an increase of the sales price. In this context, the question arises: how many industrial entities are ready to sacrifice high profits and their market dominance to ensure a sustainable industry?

The answer could be „more”, if they receive financial support and if the consumers demands will focus on ecological products. However, the practice of such industry has at least two major advantages: protecting the environment and increasing the health of the population.

3. THE COMPONENTS OF THE ECONOMIC FUNCTION OF SUSTAINABLE DEVELOPMENT IN THE INDUSTRIAL ENTERPRISES

Optimizing of sustainable development process in the industrial enterprises impose the use of mathematical models that include as many variables and their influence factors. As previously we stated, sustainable development involves three major components, a special place having the one economical. The modelling of economic function can be achieved by taking into account a number of indicators that reflect economic and financial efficiency and establishing a number of restrictions on these.

Is defined the economic function of industrial organizations through that is dimensioned the sustainable development, that being of the form:

$$F_e(t) = V_1(t), V_2(t) \ldots V_n(t)$$  \hspace{1cm} (1)

where: t is time in years.

Proposed indicators for the elaboration of the economic function are presented in Table. 1 ($v_1, v_2, \ldots, v_{20}$), with the specification that others may be included in correlation with the specific of activity performed.

<table>
<thead>
<tr>
<th>No. crt.</th>
<th>Indicators</th>
<th>The formula for calculating</th>
<th>Explanations</th>
<th>Influence factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Current liquidity</td>
<td>$L_c = \frac{AC}{Dex}$</td>
<td>AC – currentassets</td>
<td>Financing of temporary use</td>
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<tr>
<td></td>
<td></td>
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<td>Dex- payables of exploitation</td>
<td></td>
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<td>2</td>
<td>Rapid liquidity</td>
<td>$L_r = \frac{AC - S}{Dex}$</td>
<td>S - stocks</td>
<td>The existence of unsaleable</td>
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<td></td>
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<td></td>
<td></td>
<td>stocks or difficult to sell</td>
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<td></td>
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<td>Funding policy of exploitation</td>
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<td></td>
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<td></td>
<td></td>
<td>cycle</td>
</tr>
<tr>
<td>3</td>
<td>The borrowing rate of term</td>
<td>$R_t = \frac{Df}{K per} \times 100$</td>
<td>Df – financial debts</td>
<td>Debt policy</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>K per permanent</td>
<td>The level of equity and debt on</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>capitals</td>
<td>the medium and long</td>
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Tabel no. 1 Indicators of economic function of sustainable development
<table>
<thead>
<tr>
<th></th>
<th>Interest Coverage Ratio</th>
<th>( R_{ad} = \frac{PBIT}{D} )</th>
<th>PBIT – profit before interest payments and profit tax D - interest</th>
<th>The amount of loans and the conditions of their contracting The ability to use existing capital</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Rate of financial autonomy</td>
<td>( R_{af} = \frac{K_{pr}}{K_{s}} )</td>
<td>Kpr – own capital Ks -foreign capital</td>
<td>Composition of capital used</td>
</tr>
<tr>
<td>5</td>
<td>Global solvability rate</td>
<td>( R_{tg} = \frac{AT}{DT} )</td>
<td>At – total assets DT – total debts</td>
<td>The volume of debts The volume of assets</td>
</tr>
<tr>
<td>6</td>
<td>Financing rate with equity</td>
<td>( R_{f_{Kpr}} = \frac{K_{pr}}{A_{I}} )</td>
<td>AI – fixed assets</td>
<td>The amount of own resources</td>
</tr>
<tr>
<td>7</td>
<td>Rotational speed of current assets</td>
<td>( V_{Q} = \frac{AC}{Q_{e}} )</td>
<td>Qe – The production of exercise</td>
<td>Change of the current assets The variation of the production of exercise</td>
</tr>
<tr>
<td>8</td>
<td>Rotational speed of fixed assets</td>
<td>( V_{CA} = \frac{CA}{A_{I}} )</td>
<td>CA – turnover</td>
<td>The income from the sale of goods and products made</td>
</tr>
<tr>
<td>0</td>
<td>The rate of collection of trade receivables</td>
<td>( R_{tc} = \frac{S_{el}}{CA \times 360} )</td>
<td>Average outstanding</td>
<td>Customer credit policy</td>
</tr>
<tr>
<td>9</td>
<td>The rate of collection of supplier payables</td>
<td>( V_{F} = \frac{S_{F}}{CA \times 360} )</td>
<td>S_{F} – The average outstanding of suppliers account</td>
<td>Supplier credit policy</td>
</tr>
<tr>
<td>10</td>
<td>Economic rate of return</td>
<td>( R_{re} = \frac{Pn}{A_{t}} \times 100 )</td>
<td>Pn – net profit At- total active</td>
<td>The size of realised profit; Tax rate</td>
</tr>
<tr>
<td>11</td>
<td>Financial rate of return</td>
<td>( R_{rf} = \frac{Pn}{C_{pr}} \times 100 )</td>
<td>Cpr- equity</td>
<td>Financial structure</td>
</tr>
<tr>
<td>12</td>
<td>Commercial margin rate</td>
<td>( R_{M_{c}} = \frac{M_{c}}{CA} \times 100 )</td>
<td>Mc – commercial margin (commercial addition)</td>
<td>Market constraints; Policy of sales prices.</td>
</tr>
<tr>
<td>13</td>
<td>The rate of profit</td>
<td>( R_{pr} = \frac{P}{CT} \times 100 )</td>
<td>P – profit CT – totale costs</td>
<td>Production costs; Selling price; Volume, structure and quality of production</td>
</tr>
<tr>
<td>14</td>
<td>The added value</td>
<td>( VA = Q_{e} + M_{c} - C_{i} )</td>
<td>Ct-the consumptions coming from third parties</td>
<td>Organization of production; Modalities of activity financing</td>
</tr>
</tbody>
</table>
The efficiency of production costs

\[ E_{cp} = \frac{(CF + CV)}{CA} \times 1000 \]

CF – fixed costs
CV variable costs

The structure of costs and production volume

Net profit per share

\[ P_a = \frac{PNA}{Na} \]

PNA – annual net profit
Na Total number of shares

The size of annual net profit

Rate of financing of need of revolving fund

\[ R_{f,NFRN} = \frac{FR}{NFR} \]

FR – revolving fund
NFRN - need of revolving fund

The resources and assets structure

The rate of pay ability of operating cycle

\[ R_{cp} = \frac{AC}{Dts} \]

Dts – short-term debt

The amount of short-term debt

Inclusion and analysis of economic and financial indicators in a mathematical model allow identifying strengths and weaknesses in the internal environment of industrial organization and the opportunities and risks that may arise as influence of the external environment thereon. By the resulting mathematical model that is elaborated, result a precise method to the study of these economic indicators transposing information into precise points of entry and exit.

The importance of indicators is dependent by the specific of organizations, in concordance with their object of activity and size, and their correct interpretation and analysis, which are nothing than some models of predicting that present the "health status" of the organization, according to internal requirements of management team are important for everyone and is a responsibility of top of management directly interested in business development and their consolidation[10]. Obviously, the optimization process requires certain requirements related to homogeneity of dates, identifying of corresponding indicators with the sector in which is realised the activity, respectively of the most important in the moment in wich the analysis is done.

4. CONCLUSIONS

The sustainable development require respecting a set of principles and values, the most important referring to: environmental protection, economic efficiency, social equity and a high quality of life. Ensuring the sustainable development enables meeting consumer needs through rational exploitation of resources and maintaining an environment that will enable future generations procuring the elements of they need. As a result, both the states as well as economic organizations must action in the sens of monitoring and resource management and implementation of appropriate programs so as to ensure quality of life.

The industrial companies can refer to a number of indicators that allow the development of mathematical functions of components of sustainable development so as to maintain their power and the results recorded.
In this paper are highlighted a number of indicators and their influence factors that can be used in the management methods applied in the industrial organizations but not limited to these. It is advisable that managers begin to apply the indicators and models of knowledge of reality in order to identify correlations between economic processes and the ones financial

REFERENCES