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ECONOMIC EFFICIENCY OF INVESTMENT PURPOSE VEHICLES

This article provides a brief description of investment purpose vehicles securitizing real estates, particularly the methods to measure their economic efficiency. Such economic efficiency may be of resource type or cost type, while the variants are increase in resource efficiency and increase in cost efficiency. Some of the indicators for measurement of the economic activity and some models, including a number of correlations measuring the efficiency are outlined in this article. The indicators and models may be used to plan, control and analyse the economic efficiency of the studied companies.

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Description of investment purpose vehicles securitizing real estates

In Bulgaria, investment purpose vehicles have been operating for some years now. An investment purpose vehicle is a joint-stock company investing funds raised through the issuance of securities in real estates or receivables (securitization of real estates or receivables) in compliance with the provisions of the Law on Investment Purpose Vehicles.[1]

An investment purpose vehicle securitizing real estates may raise funds through the issuance of securities and perform purchase of real estates and real rights on real estates, completion of construction works and real estate improvements with the purpose to make them available for rent, lease, tenancy, contractual management or sale. Of course the company acquires income from real estate activities.

An investment purpose vehicle may acquire real estates in the territory of Bulgaria only. Such vehicle is registered under Article 163 of the Law on Commerce. The maximal number of founders is 50, while at least 30% of the capital is to be subscribed by institutional investors. Institutional investors are banks not acting as investment intermediaries, collective investment schemes, national investment funds, insurance companies, pension funds or other companies whose scope of activity includes no requirement to acquire, hold or transfer securities.

An investment purpose vehicle is to notify the Financial Supervision Commission of its entry into the Commercial Register within 7 days as of entry date. The minimal capital of an investment purpose vehicle is BGN 500,000. The capital subscribed at the foundation meeting is to be 100% paid in as at the date of

[1] It should be noted that an investment purpose vehicle may securitize either real estates or receivables – no securitization of both is allowed.

filing the request for entry into the Commercial Register. Only cash contributions are allowed.

An investment purpose vehicle is managed and represented by a board of directors. The members of the board are to file an application for issuing a license to perform activity as an investment purpose vehicle to the Financial Supervision Commission within 6 months of the date of entry of such vehicle into the Commercial Register. In addition, they are to insure a real estate immediately after its acquisition (this applies to an investment purpose vehicle securitizing real estates). All funds raised through the issuance of securities are transferred by the persons who have acquired the securities to a special bank account opened by the investment purpose vehicle. The funds and the securities of an investment purpose vehicle are kept at a depository bank, which executes all payments on its behalf in compliance with the terms and conditions provided for in its bylaws and prospectus for public offering of securities.

An investment purpose vehicle allocates at least 90% of its profit for each financial year as dividends.

An investment purpose vehicle securitizing real estates has no right to directly operate or maintain acquired real estates. It assigns the servicing and maintenance of acquired real estates, the keeping and storing of accounts and other reporting and correspondence and the performance of other related activities to one or more commercial companies availing with the required organization and resources. Prior to the acquisition of a real estate, an investment purpose vehicle assigns its evaluation to one or more experts who have due qualifications and experience.

Economic efficiency of investment purpose vehicles securitizing real estates

The economic efficiency of an investment purpose vehicle securitizing real estates is the result realized through investing a unit of expenses or resources.

Generally, it is the benefits/victims correlation called ‘management ability’ by Prof. Dimitar Dobrev in his book *Principles of Individual Economy* published in 1941 г. It should be noted that the Bulgarian legislation provides for no legal definition of economic efficiency. In terms of the Bulgarian legislation, there may be distinguished two concepts of economic efficiency – resource efficiency and cost efficiency.

Resource efficiency is the economic effect (useful result) realized through employing a unit of resources (average availability). It is measured by correlating the economic effect and the average availability of resources employed in its realization. Economic efficiency is also the unit of economic effect whose realization employs certain resources (average availability). In this case, resource efficiency is measured by correlating the average availability of resources employed in the realization of a particular economic effect and the economic effect itself.

Resources include corporate capitals and assets, while economic effect may be defined as the useful result in various forms (a typical economic effect, realized by an investment purpose vehicle, is rental income).

Cost efficiency is the economic effect whose realization employs a unit of expenses. It is measured through correlating the economic effect and the expenses employed in its realization. Cost efficiency is also the unit of economic effect[2] whose realization employs certain expenses. In this case, cost efficiency is measured by correlating the expenses employed in the realization of a particular economic effect and the economic effect itself.

Resource efficiency and cost efficiency include categories with definitions provided for in the Bulgarian legislation and, within this context, these two concepts of efficiency are based on the provisions of such legislation. It includes definitions of items such as income, expenses, profit, assets, equity and liabilities.[3] Besides, these concepts also apply to companies registered and functioning in other countries as they operate with income, expenses, equity, etc. as well.

To ensure a better clarity, we hereby present the correlations used to measure economic efficiency:

$$(1)\ \frac{\text{Economic effect}}{\text{Resources (average availability)}} \qquad (2)\ \frac{\text{Resources (average availability)}}{\text{Economic effect}}$$

$$(3)\ \frac{\text{Economic effect}}{\text{Expenses}} \qquad (4)\ \frac{\text{Expenses}}{\text{Economic effect}}$$

Note. The economic effect, resources (average availability) and expenses are in BGN.

Correlation (1) measures the economic effect employing average availability of resources of BGN 1. Correlation (2) measures the average availability of certain resources employed in the realization of economic effect of BGN 1. Correlation (3) measures the economic effect employing expenses of BGN 1. Correlation (4) measures the expenses employed in the realization of economic effect of BGN 1.

Correlations (1) and (2) are used to measure resource efficiency, while correlations (3) and (4) are used to measure cost efficiency.

If the said correlations are multiplied by 100, the resulting figures will be interpreted otherwise: the economic effect whose realization employs average availability of resources of BGN 100, the average availability of certain resources employed in the realization of economic effect of BGN 100, the economic effect whose realization employs expenses of BGN 100 and the expenses employed in the realization of economic effect of BGN 100.

There are variants of resource efficiency and cost efficiency – increase in resource efficiency and increase in cost efficiency. They are measured by using the following correlations:

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[2] A unit of resources, a unit of expenses and a unit of economic effect mean resources, expenses and effect of BGN 1 or BGN 100.

[3] Liabilities, i.e. payables, are forms of debt capital.

$$(5)\ \frac{\Delta \text{ Economic effect}}{\Delta \text{ Resources (average availability)}} \qquad (6)\ \frac{\Delta \text{ Resources (average availability)}}{\Delta \text{ Economic effect}}$$

$$(7)\ \frac{\Delta \text{ Economic effect}}{\Delta \text{ Expenses}} \qquad (8)\ \frac{\Delta \text{ Expenses}}{\Delta \text{ Economic effect}}$$

Note. The symbol Δ means increase.

Correlation (5) measures the increase in economic effect whose realization employs increase in average availability of certain resources of BGN 1. Correlation (6) measures the increase in average availability of certain resources employed in the realization of increase in economic effect of BGN 1. Correlation (7) measures the increase in economic effect whose realization employs increase in expenses of BGN 1. Correlation (8) measures the increase in expenses employed in the realization of increase in economic effect of BGN 1.

Indicators measuring the economic efficiency of investment purpose vehicles securitizing real estates

The said correlations become specific through certain indicators measuring the economic efficiency of an investment purpose vehicle. Such indicators may be also used to plan, analyse and control efficiency. Some of them are:

$$(9)\ \text{Ratio of capital efficiency} = \frac{\text{Total income}}{\text{Total capital}}$$

$$(10)\ \text{Ratio of equity efficiency} = \frac{\text{Income from real estates + Income from administrative service fees}}{\text{Equity}}$$

$$(11)\ \text{Reciprocal ratio of equity efficiency} = \frac{\text{Equity}}{\text{Income from real estates + Income from administrative service fees}}$$

$$(12)\ \text{Ratio of efficiency of real estates made available for use under agreements} = \frac{\text{Income from real estates + Income from administrative service fees}}{\text{Real estates made available for use under various agreements}}$$

The four ratios are indicators of resource efficiency, and the related economic effect represents total income and income totalling the income from real estates and income from administrative service fees.

Resources include total capital, equity and real estates made available for use under various agreements (lease agreements, tenancy agreements, operating lease agreements and management agreements).

The formulas used to calculate indicator values reflect the average carrying amounts of total capital, of equity and of real estates. The average carrying amount of each of these resources for a certain period is calculated by summing up its carrying amount at the beginning of the period (it is the same as the carrying amount of such resource at the end of the prior period) and its carrying amount at the end of the same period, the result being divided by (2).

Real estates made available for use under various agreements are considered by an investment purpose vehicle as investment property (except for real estates made available under finance lease agreements).

Total income includes the total corporate income generated over the period for which the average value of the particular resource is calculated.

Total capital includes equity, debt capital[4] and deferred income.

Income from real estates include rental income (for real estates made available under rental agreements), income from tenancy payments (for real estates made available under tenancy agreements), income from lease payments (for real estates made available under operating lease agreements) and income under management agreements if there are real estates made available under such agreements. When calculating the indicators measuring efficiency, the income from administrative service fees (if any) is added to such income. The servicing is rendered by the service company (or companies) with which an investment purpose vehicle has entered into contractual relations. The users of real estates pay for such servicing to the investment purpose vehicle owning these real estates.

In case that income from real estate revaluation is reported for a particular period, it is also included when measuring economic efficiency.

If real estates are made available under finance lease agreements, lease payments are reported as financial income. In such case, the numerator of the formula used to calculate indicator (10) and the denominator of the formula used to calculate indicator (11) are to include such income. As an investment purpose vehicle does not consider any real estates made available under finance lease agreements as its own assets, the formula calculating indicator (12) should not include the lease payments under such agreements.

The formula used to calculate the indicator ‘ratio of capital efficiency’ is the specific expression of correlation (1). The formulas used to calculate the indicators ‘ratio of equity efficiency’ and ‘ratio of efficiency of real estates made available for use under agreements’ are also specific expressions of correlation (1). The formula used to calculate the indicator ‘reciprocal ratio of equity efficiency’ is the specific expression of correlation (2).

[4] I.e. provisions and similar liabilities as well as payables and funding.

Other indicators measuring economic efficiency are:

$$(13)\quad \text{Ratio of cost efficiency} = \frac{\text{Income from real estates + Income from administrative service fees}}{\text{Administrative expenses + Operating expenses}}$$

$$(14)\quad \text{Reciprocal ratio of cost efficiency} = \frac{\text{Administrative expenses + Operating expenses}}{\text{Income from real estates + Income from administrative service fees}}$$

$$(15)\quad \text{Ratio of increase in cost efficiency} = \frac{\Delta\text{ (Income from real estates + Income from administrative service fees)}}{\Delta\text{ (Administrative expenses + Operating expenses)}}$$

$$(16)\quad \text{Reciprocal ratio of increase in cost efficiency} = \frac{\Delta\text{ (Administrative expenses + Operating expenses)}}{\Delta\text{ (Income from real estates + Income from administrative service fees)}}$$

Indicators (13) and (14) measure cost efficiency, and indicators (15) and (16) – increase in cost efficiency.

The formulas used to calculate indicators (13) and (14) are the specific expressions of correlations (3) and (4). The formulas used to calculate indicators (15) and (16) are the specific expressions of correlations (7) and (8).

Administrative expenses are related to the administrative operations of an investment purpose vehicle (salaries and wages, electric power costs, etc.).Operating expenses include costs of real estate maintenance, remunerations of service companies, costs of real estate insurance, etc.

There are several methods to *increase economic efficiency*. The first method is to increase the economic effect and keep the resources (average availability) or the expenses employed in its realization unchanged. The second method is to increase the economic effect more than the resources (average availability) or the expenses employed in its realization – for example, a three-time increase in the effect and a two-time increase in the resources (average availability) or the expenses will result in increased economic efficiency. The third method is to decrease the resources (average availability) or the expenses more than the economic effect – for example, a three-time decrease in the resources (average availability) or the expenses and a two-time decrease in the effect will result in increased economic efficiency.

Economic efficiency is decreased through several methods as well. The first method is to decrease the economic effect and keep the resources (average availability) or the expenses employed in its realization unchanged. The second method is to increase the resources (average availability) or the expenses employed in the economic effect realization more than the economic effect – for example, a three-

time increase in the effect and a four-time increase in the resources (average availability) or the expenses will result in decreased economic efficiency. The third method is to decrease the economic effect more than the resources (average availability) or the expenses – for example, a three-time decrease in the effect and a two-time decrease in the resources (average availability) or the expenses will result in decreased economic efficiency.

The said methods apply to increase in economic efficiency in the same manner.

The indicators measuring the economic efficiency of an investment purpose vehicle securitizing real estates are used to plan, analyse and control such efficiency.

Models used to plan, analyse and control the economic efficiency of investment purpose vehicles securitizing real estates

The first one is the DuPont Model. According to that model, the profit/assets correlation is transformed into profit/income and income/assets correlations (when these correlations are multiplied, the result equals the first one), i.e.:

$$\frac{\text{Profit}}{\text{Assets}} = \frac{\text{Profit}}{\text{Income}} \times \frac{\text{Income}}{\text{Assets}}$$

Note. x is the multiplication sign.

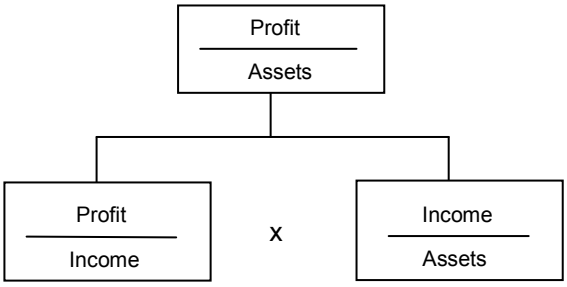
When applying this model, the average availability of assets for the particular period, i.e. the period for which the profit and income are reported, is taken into account. It should be clarified that the DuPont Model (also known as the DuPont Analysis, DuPont Equation, etc.) is presented in various literature sources in different manners. We have adopted one of these as presented herein. Moreover, the presented model is consistent with the statement of comprehensive income prepared Investment Purpose Vehicles.

This model was firstly used by the DuPont Chemical Company of America in 1920 and its name comes therefrom. In those years, the profit/income and income/ assets correlations enjoyed a wide spread. However, they were used separately. The DuPont Model links (multiplies) them, and the result is another correlation – the profit/assets correlation. The DuPont Model may be presented as a pyramid (see Scheme 1).

Profit is the difference between the bigger total of corporate income and the smaller total of corporate expenses. Assets are calculated as an average figure for the period for which income is reported. It is obvious that two of the correlations refer to resource efficiency, i.e. the profit/assets correlation and the income/assets correlation. The related economic effects are the profit and income and the resources – the assets. The profit/income correlation measures the profit per corporate income of BGN 1 (if both indicators are in BGN).

Scheme 1

The DuPont Model

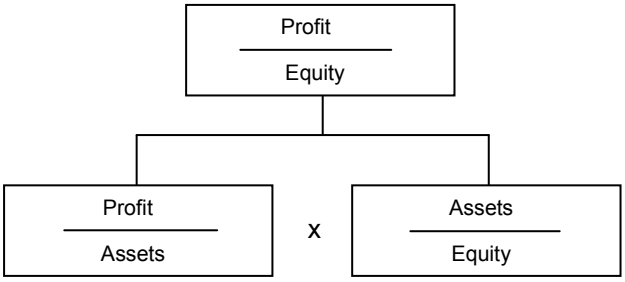


Note. x is the multiplication sign.

Theoretically, the experts who developed the DuPont Analysis were not innovators as they used the original concept of linking certain correlations, which was firstly launched by Alfred Marshall. It was discussed in his book *Elements of Economics of Industry* published in 1892. Nevertheless, the developers of the DuPont Analysis should be given credit for the first practical application of this concept on their insistence (Scheme 2).

Scheme 2

A variant of the DuPont Model



Note. x is the multiplication sign.

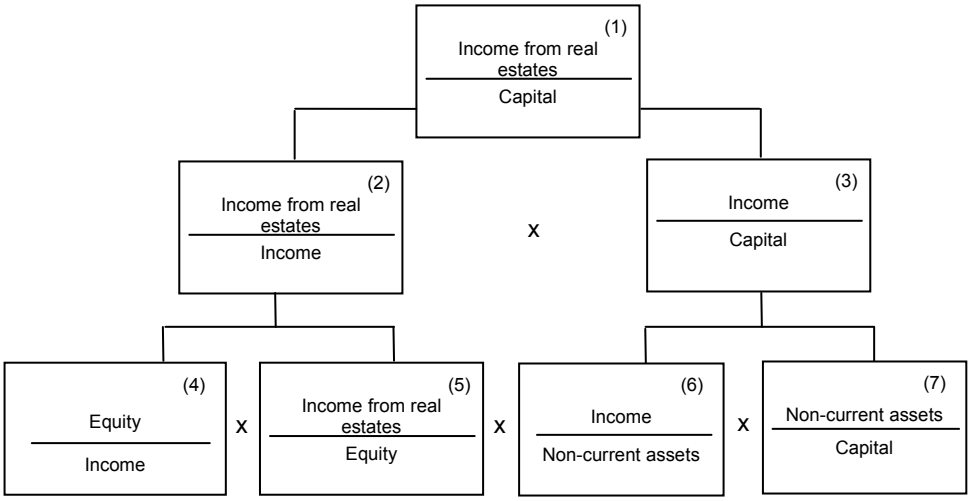
The said variant of the DuPont Model may also apply to an investment purpose vehicle. When applying such variant, the average values of the assets and equity for the period for which the particular profit is reported are to be taken into account. The profit/equity and profit/assets correlations measure resource efficiency. The assets/equity correlation calculates the portions of assets value per equity of BGN 1 financed by equity and by debt capital. For example, a correlation equalling 1,38 means assets of BGN 1,38 per equity of BGN 1 or assets of BGN 1 are financed by

equity of BGN 1 and assets of BGN 0,38 are financed by debt capital of BGN 1 (based on the assumption that no deferred income has been reported).

Based on the concept underlying the DuPont Model (linking two correlations by multiplication into a third correlation), we hereby introduce a model with seven correlations measuring economic efficiency (Scheme 3). Such model may be used to plan, analyse and control the economic efficiency of an investment purpose vehicle securitizing real estates (similar to the DuPont Model and its variant).

Scheme 3

A model with correlations measuring the economic efficiency of an investment purpose vehicle securitizing real estates



Note. x is the multiplication sign.

The resources used in the correlations include capital, equity and non-current assets, their average arithmetical values for the period, for which income from real estates and total income are reported, being used.

The introduced model includes five correlations measuring resource efficiency. One of them (correlation 2) calculates the relative share of income from real estates of total income, while another of them (correlation 7) calculates the value of non-current assets per capital of BGN 1, i.e. shows the manner of investing capital of BGN 1 – for example, a correlation equalling 0,68 means capital of BGN 1 invested in non-current assets of BGN 0,68 and in current assets of BGN 0,32.

Any increase in the values of correlations 1, 3, 5 and 6 may be assessed as favourable as this means that resources of BGN 1 is employed in the realization of higher economic effects on the average. Any decrease in the value of correlation 4 (where the resource is included in the numerator and the economic effect – in the

denominator) may be assessed as favourable as this means that fewer resources (equity) are employed in the realization of economic effect of BGN 1 (income) on the average.

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All the discussed indicators and models measuring the economic efficiency of an investment purpose vehicle securitizing real estates may be used to plan, analyse and control such efficiency by using them in accounts reporting. In other words, they have not only a cognitive aspect, but also a practical importance. Experts using the indicators and models measuring economic efficiency have to be skilful in 'reading' the accounting information required to use these indicators and models.

All the above indicators and models are in compliance with the Bulgarian legislation, which contributes to their practical importance. The knowledge of economic efficiency and the practical use of such knowledge, including all discussed indicators and models, by financial experts at investment purpose vehicles securitizing real estates is a prerequisite for the sustainable functioning of these vehicles.

References:

Aman, M., S., Cowen, S., Mandel (1986). Accounting Today, Principles and Applications. West Publishing Company.

Brigham, E., J. Houston (2009). Fundamentals of Financial Management, 12th edition. Cengage Learning.

Ciaran, W. (2008). Key Management Ratios. „InfoDAR" (*in Bulgarian*).

Dobrev, D. (1941). Principles of Individual Economy. Sofia: „Hristo G. Danov" (*in Bulgarian*).

Dourin, St. (2007). Enterprise Accounting. „ForCom" (*in Bulgarian*).

Georgiev, G., E. Evlogiev, B. Kostov (2008). Accounting for Managers. Troud & Pravo Publishing House (*in Bulgarian*).

Horne, J. (1989). Fundamentals of Financial Management. Prentice-Hall.

Kostova, N. (2010). Financial and Accounting Analysis. „AKTIV-K" Ltd. (*in Bulgarian*).

Nikolov, N. (1995). Financial Analysis. „Princeps" (*in Bulgarian*).

Timchev, M. (2011). Financial and Economic Analysis. „Nova Zvezda" (*in Bulgarian*).

Subramanian, T. (2009). Financial Management. New Age.

Viswanath, S. (2009). Cases In Corporate Finance. Tata: McGraw-Hill.

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