COMPLEX EVALUATION OF THE USE OF INFORMATION TECHNOLOGIES IN THE COUNTRIES OF EASTERN AND CENTRAL EUROPE

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Abstract. „New economy" is a specific economic phenomenon emerging when two processes including globalization and technological revolution are taking place simultaneously. A question arises what economic and institutional conditions in the states under transition would allow them to take the best advantage of the potential of „new economy". These conditions determine if a particular state is capable of accelerating its pace of long-term economic development and approaching the level achieved by highly-developed countries. In this context, the problem of evaluating the readiness of the states under transition to take advantage of „new economy" acquires great theoretical and practical value. To measure the above parameter, a so-called indicator of new economy (NEI) based on ten variables characterizing the development and effective use of „new economy" has been recently offered.
The INE indicator is a weighted sum of all ten variables for each state. It may also be calculated as a non-weighted sum of all the related criteria.
It may be assumed (based on the expertise) that the impact of any particular variable (criterion) on the general indicator of„new economy" varies to some extent, therefore, multiple criteria decision-making methods should be used for complex evaluation of NEI

Keywords: new economy, indicator of new economy, multiple criteria analysis.

1. Introduction

Modern economy is characterized by simultaneous development of many countries. These processes lead to globalization and the creation of information society. Globalization is primarily perceived as the integration of world markets and the increase of competition between nations, while the development of information society is associated with technological revolution based on the development of information and communication technologies (ICT). These new technologies have a great impact on all sectors of the state economy as well as increasing labour productivity and economic growth [1–5].

These integrated processes result in what may be referred to as the 'new economy' (NE). This may be a broader interpretation of NE, while in a narrower sense it embraces only a concept of technological revolution. This paper is based on the statistical data given in the references, therefore, NE is also perceived as the development of information society.

The latter principally relies on the development of information and communication technologies, not implying, however, that they automatically emerge in our life. To take full advantage of these new processes, the appropriate institutional basis and economic infrastructure should be developed. The whole process of developing and realizing the potential of the 'new economy' may be shown in the following way (see Fig 1).

Therefore, the successful development and realization of the potential of the 'new economy' by a particular country largely depends on its openness to NE principles. The adoption and implementation of the above principles depends, in turn, on the question if the conditions for the implementation of information and communication technologies are satisfied.

To answer this question, the problem associated with the specific character of the above conditions and their description by a single indicator should be resolved. This integrated indicator would allow us to compare various transit economies.
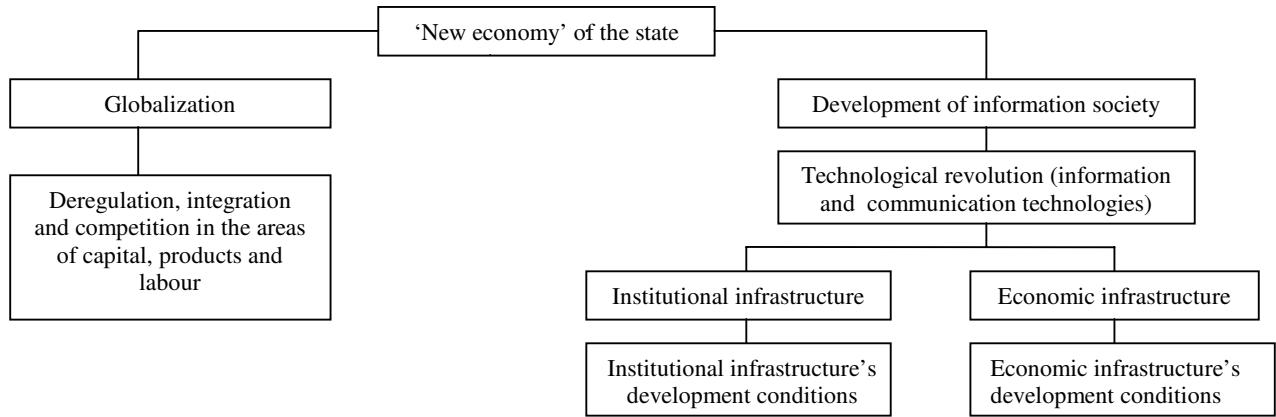
Fig 1. The process of development and realization of the 'new economy' potential by countries in transition

2. The indicator of the 'new economy'

The analysis of the states varying in the development level has shown that their economic growth depends on different factors, being mostly determined by the economic level achieved at a certain period of time [6–8]. High labour productivity and growth of other qualitative production indices in such countries as USA, Finland, Iceland, Sweden, Singapore, Canada and Australia were achieved by implementing new information and communication technologies. However, Malaysia, Philippines, Taiwan and South Korea achieved this by improving manufacturing processes rather than introducing ICT. Therefore, it may be concluded that the impact of the traditional factors and the use of new technologies on the development of transition economies in the nearest future will differ to a large extent (Fig 2).

As shown in Fig 2, the 'new economy' will play the leading role in the future development. In this respect, the creation of adequate environment for the development of the above new technologies is of paramount importance. The following ten criteria (Table 1) are suggested to describe these advanced technologies [6, 8, 9].

The criteria describing the development of information and communication technologies which are given in Table 2 can differ considerably from country to country. The trends of changing the criteria may also be different. In this environment, it is difficult to predict the readiness of a particular country to use the possibilities of steady development provided by the 'new economy'.

This problem may be approached by determining a so-called 'new economic indicator' (NEI) [1] based on the assumptions of theoretical and empirical macro-economics and institutional economics [9,10].

The indicator suggested integrates the criteria given in Table 2, representing their weighted sum. The criteria are assigned different weights depending on their significance. Thus, such criteria as legislative
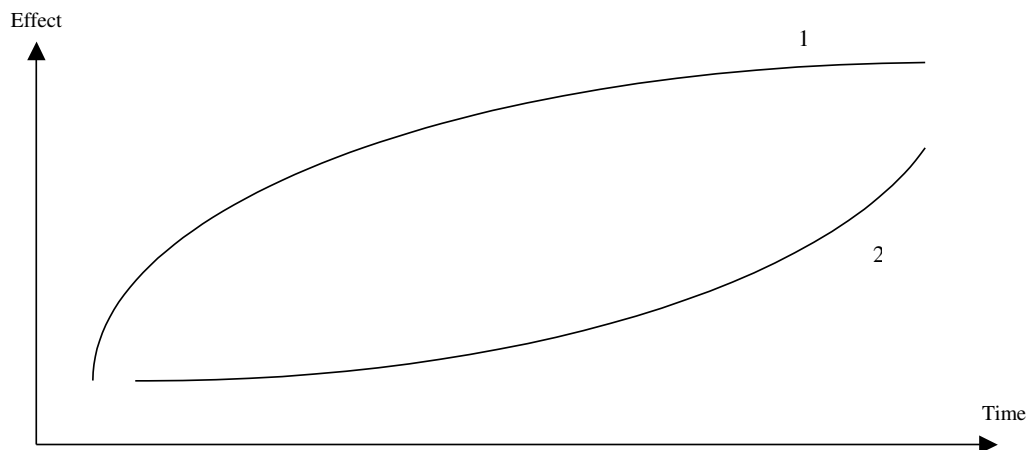

Fig 2. The effect of various factors on the development of transition economies (1 traditional factors, i.e. investments in technological development and labour force; 2 the effect of the development of information and communication technologies)

Table 1. Criteria describing the conditions needed for the introduction of information and communication technologies

No	Criterion	Criterion expression
1	Legislation and law observance, i.e. quality standard of legislative regulation and laws enforcement	Efficiency and comprehensiveness of legislation system
2	Infrastructure, i.e. communication, computer and telephone networks	Telephone lines, mobile telephones and public phones (total number plus the internet host per 100 people)
3	Openness of trade, i.e. export and import liberalization	Relationship between export and import and GNP
4	Financial system, i.e. the level of financing markets development	'Wide' GNP money
5	Expenditure on research and development of new technologies	The portion of GNP allocated for research and development of new technologies
6	Quality standard of human capital, i.e. the development of mathematics, information technologies and engineering sciences	Index of education in 1999
7	Mobility of labour market, i.e. ability to transfer to new technologies	Level of unemployment
8	Flexibility of commodity markets, i.e. regulation of cost restrictions and limitations for market entry	Index of competitiveness policy
9	Business development, i.e. the establishment of innovative firms	Private sector share of GNP
10	Macroeconomic stability, i.e. land inflation rate	Inflation

Table 2. Rating of transition economies based on NEI index

Country	Legislation and laws observance	Infrastructure	Trade openness	Financial system	Expenditure on research	Human capital	Mobility of labour market	Flexibility of commodity markets	Business development	Macroeconomic stability
Slovenia	1.085	2.386	0.439	1.291	3.253	1.188	0.527	1.003	0.411	0.379
Czech Republic	0.431	2.006	1.064	2.453	2.668	-0.270	0.357	1.473	1.335	0.383
Estonia	0.823	1.346	1.760	0.948	0.133	1.188	-0.173	1.003	1.027	0.513
Hungary	1.085	1.489	0.809	0.887	0.367	0.896	0.336	1.473	1.335	0.338
Slovakia	-0.027	0.894	1.206	1.998	1.069	0.313	-0.607	1.473	1.335	0.396
Poland	1.085	0.484	-1.395	0.677	0.562	1.188	-0.300	1.473	0.719	0.393
Bulgaria	1.085	0.440	0.027	0.360	0.016	0.022	-0.607	0.377	0.719	0.294
Latvia	1.085	0.579	-0.518	-0.004	-0.530	0.896	-0.109	0.377	0.411	0.622
Lithuania	0.823	0.508	-0.241	-0.327	-0.062	0.896	-0.342	-1.659	0.719	0.636
Croatia	0.823	1.044	-0.752	-0.877	-0.530	-0.562	-0.417	0.377	0.103	0.431
Russia	-0.027	-0.406	-0.869	-0.664	1.342	0.605	0.262	0.377	0.719	-0.004
Kazakhstan	1.085	-0.840	0.030	-0.726	-0.530	0.605	0.654	-0.093	0.103	0.355
Ukraine	-0.484	-0.488	0.224	-0.562	-0.530	0.605	0.845	0.377	0.103	-0.199
Moldavia	0.431	-0.661	0.015	-0.470	-0.530	0.022	1.057	-0.093	-0.513	0.051
Kyrgyzstan	0.170	-1.036	-0.352	-0.905	-0.530	0.605	0.697	-0.093	0.103	0.359
Romania	0.627	-0.175	-0.869	-0.316	-0.335	-0.562	0.177	0.377	0.103	-0.709
Armenia	-0.223	-0.834	-1.008	-0.762	-0.530	0.605	0.135	-1.659	0.103	0.670
Macedonia	-0.288	-0.123	0.298	-0.332	-0.530	-1.145	-2.113	-0.093	-0.205	0.386
Turkmenistan	-2.641	-1.041	1.677	-0.470	-0.530	0.605	1.290	-1.659	-2.054	0.431
Tajikistan	-1.530	-1.179	2.305	-1.059	-0.530	-0.562	1.025	-0.563	-1.130	-1.396
Georgia	-0.680	-0.627	-1.041	-1.120	-0.530	-0.270	0.198	-0.093	0.103	0.444
Azerbaijan	-0.680	-0.695	-0.746	-0.915	-0.530	-0.562	-0.130	-0.093	-0.821	0.608
Bielorussia	-1.792	-0.378	0.830	-1.002	-0.530	0.605	1.068	-0.093	-2.362	-2.994
Uzbekistan	-0.223	-1.080	-0.124	-0.900	-0.530	-1.728	1.227	-0.093	-0.821	-0.274
Albania	-0.680	-0.862	-1.660	1.609	-0.530	-2.894	-0.491	-0.563	1.027	0.540
FR Yugoslavia	-0.027	0.013	-0.574	-0.470	-0.530	-1.145	-1.604	-1.659	-1.130	-3.199
Bosnia and Herzegovina	-1.334	-0.765	-0.534	-0.096	-0.530	-1.145	-2.961	-1.659	-1.438	0.547

regulation and observance of laws, the level of financial markets development, openness of trade, infrastructure, expenditure on research and development of new technologies and quality standard of human capital are assigned the weight value of 0.5, while other criteria are given lower weight values.

'New economic indicator' is formed based on Zinner's competitiveness index [11] in the following way. First, the criteria are chosen so that any of them is in absolutely positive or absolutely negative correlation with a basic concept. Second, if the correlation of the criteria is inverse (e.g. inflation), their values are

multiplied by one for a positive change to be ensured. Third, the criteria are standardized, implying that the average value of any observation is determined with the consequent division of the result obtained by the deviation of the observation average value. In this way, the average value will be equal to zero, while the countries will be defined by a standard deviation. This means that all the results will be compared and their aggregation will be feasible.

3. A description of the criteria relating to the infrastructure of information and communication technologies

1. Legislation and law observance. The country's well-being largely depends on legislative regulation and quality standard of law enforcement [12]. The analysis has shown that respect for property and efficient contract realization considerably reduce the transaction costs. Moreover, the observance of the existing laws is important for using information and communication technologies. The innovative firms can hardly operate successfully in the environment where their efforts are not legally supported. In the opposite case, they tend to contribute to the 'shadow economy' as the experience of transit economies has shown. Therefore, the development of the 'new economy' depends on the condition that a system of legal support of transactions be established.

2. Infrastructure (communication, computer and telephone networks). This is self-evident condition allowing for the development of the 'new economy'. On the other hand, to obtain the so-called benefit from network effect, the critical mass of network development should be exceeded. In this case, the economic value of the network is growing more than proportionally [1].

The analysis has shown that communication and computer networks are developed to a much lower extent in the majority of the countries-candidates to the European Community than in its member states [13]. For example, there are 31 portable computers per 100 inhabitants in Slovenia, while its number in Bulgaria is 4.9. The same applies to the availability of the internet-host per 100 inhabitants when the corresponding numbers are 1.5 for Slovenia, 0.3 for Bulgaria and 3.5 for the European Community.

On the other hand, the use of advanced technologies, such as mobile telephones, provides a perfect opportunity for less developed countries to reduce the gap between them and highly-developed states.

3. Open trade (liberalization of import and export).

Export and import liberalization is believed to correlate well with the increase of labour productivity and the volume of production [1]. This may be accounted for the fact that free trade is favourable for exchanging information and developing innovative technologies. Lifting of trade restrictions stimulates the exchange of ideas and research results, thereby increasing the rate of economic growth of the states. It is of paramount importance for the developing countries because the expenditure on research and development play a vital role in increasing the volume of production in these countries [14]. It has been found that in the countries pursuing an active import policy, labour productivity is growing faster than in other states due to the intense exchange of research data [15].

4. Financial system (level of financial markets development). The investigators have shown that the financial markets make a relevant factor determining the economic development of the country because they help to accumulate capital which is later redistributed for the production purposes [16–18]. It is evident that they are equally important for the development of the 'new economy'.

The main channels of financing the 'new economy' are venture capital and investments and the equity market [1]. It should be noted that these channels are not sufficiently developed in the countries which are under way to market economy. For example, the venture capital in the investments in Poland made only about 0.1 % in 2000, while in Israel it made 1.5 % and in USA – 1.0 % [19]. In the countries of Central and Eastern Europe the relationship between equity amount at the stock exchange and GNP in 2001 increased by about 1.3 %, while in Great Britain it grew by more than 5.1 %, in Sweden by 3.3 % and in France by 2 % [20].

It may be concluded that in transition economies, the infrastructure of the 'new economy' has not been properly developed and this is an obstacle to utilize the economic potential of information and communication technologies.

5. Expenditure on research and development of new technologies. Today it is a common truth that this is a decisive factor associated with economic development of any country. It plays a particularly important role in less developed countries. Another important conclusion is that these countries obtain the greatest benefit not from their own research but rather from the transfer of technologies.

Unfortunately, the investments in research and development of new technologies are not large making about 1 % of GNP. However, in the developed countries they make 2 % [21].

Another aspect of the above problem is the ability of the countries to use the acquired knowledge. Centralized economic development in the previous years resulted in the fact that even now investigators carrying out highly theoretical research at various research institutes and organizations are hardly aware of their possible application in business and industry. On the other hand, the enterprises of these countries are not yet ready to effectively use the innovations developed at home or abroad. One of the reasons is the lack of local research in the area where new development took place [1]. The analysis has shown that in 1999 the expenditure of enterprises of the sectors where new technologies were being developed and the research was carried out made 0.42 % of the gross product in Poland, 0.33 % in Hungary, 0.69 % in Slovakia, 0.95 % in Czech Republic, while in Sweden it reached 4.7 %, with 1.84 % in OECD (Organization for Economic Cooperation and Development) countries [22].

A promising approach to solving this problem is to use foreign investments for absorbing new scientific and technical achievements. However, the direct annual investments into the development of transition economies make 30 billion dollars which is even less than the investments in Brazil economy [1]. Therefore, it may be concluded that special attention should be paid to this problem for the developing countries to be able to enjoy the advantages and benefits provided by the 'new economy'.

6. Quality standard of human capital (the development of mathematics, information technologies, engineering sciences, etc.). Human capital plays a vital role in creating the 'new economy' because the implementation of information and communication technologies requires competent and qualified manpower [23, 24]. This problem may be considered from two perspectives. First, it concerns the structure of the academic programmes, and, second, the provision of continuous education. The study of the subjects introducing new technologies to Bachelor and Master degree students should be stimulated and the programmes of studies oriented to acquisition of this innovative information should be available for postgraduate students. It may be concluded that these studies should be biased towards mathematics, information and engineering sciences rather than being based on humanities [1].

It should be noted, however, that as far as the human capital is concerned, the previous socialist epoch has left us a good heritage, though today more specific knowledge is needed, especially in the area of new technologies. First, there is a lack of graduates with profound knowledge of mathematics, information technologies and engineering. Second, there is practically no need for continuous learning and skills improvement. This, in turn, results in a situation when high-tech products are not in demand [9]. However, a positive factor is that young people from Eastern Europe and Asia are more apt to adopt new technologies than their counterparts in highly developed countries [1].

7. Mobility of labour market (ability to transfer to new technologies). It has been known for some time that mobile labour markets can reduce unemployment [25, 26]. This is also an influencing factor in developing the 'new economy' because the emergence of electronic business and new organizational and managerial structures requires from people quick adaptation and prompt problem solution, as well as manoeuvring and new approaches to entrepreneurship. The emergence of new products and fields of activities is hardly possible without the mobile labour force, moving from one company or sector to another, therefore, the availability of flexible labour markets is one of the most important conditions determining the development of the 'new economy' [1].

Flexibility of commodity market (regulation of cost and barriers to entry). Many investigators have shown the importance of this factor [24]. Companies introducing new effective technologies should be competitive in the market. Market regulation should be aimed at eliminating many of the barriers to market entry [1]. Market liberalization in some countries, for instance in the area of telecommunication (in USA, EC, South-East Asia), resulted in the fast growth of quality standard of services provided at much lower cost [8]. It follows that the above factor is very important for creating the 'new economy'.

Business development (establishment of innovative firms). This is relevant for the 'new economy' as a mechanism to implement new technologies and knowledge in our life. The activity of businessmen is aimed at making innovations profitable as well as providing the finances to be allocated to research and economic development of the state (Fig 3)
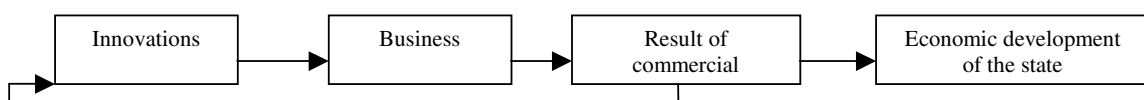

Fig 3. Contribution of business to economic development of the state

The importance of business development has been shown by research. The innovative companies replace the traditional firms, increasing labour productivity. Therefore, their development should be considered as a decisive factor in the context of the 'new economy':

Macroeconomic stability (low inflation rate). If the inflation rate in the country is high, the feeling of uncertainty grows and the efficiency of cost mechanism of resources redistribution decreases [1]. This has a negative effect on productivity and investment policy. As a result, the economic development of the country is slowed down. This makes macroeconomic stability an important factor of the 'new economy' development.

Other factors. In order to assess the ability of a particular country to adopt the main principles of the 'new economy' and satisfy the conditions needed for the introduction of new information and communication technologies, some other relevant aspects, including political freedom and stability, culture, corruption, religion, ethnic features and even the knowledge of foreign languages should also be taken into consideration [1].

In this paper, these factors have not been considered because their formalization is rather complicated. It is clear, however, that they may be analyzed in further investigation.

4. Multicriteria evaluation of the 'new economy'

Practically, the rating of the evaluated objects against all the criteria, taking into consideration their statistical values or expert estimates, is hardly possible because certain criteria may have higher values for the particular objects, while others have higher values for another group of objects. Thus, in rating the countries based on NEI (new economic indicator) [1], Slovenia, which was ranked the first, has got the highest values only against two criteria (Table 2).

Moreover, the significances (weights) of the criteria with respect to the object being evaluated also differ. It is hardly possible to agree with the statement that according to NEI, the initial six criteria are assigned the same weight 1, while four remaining criteria are given only a half of this weight, i.e. 0.5.

Besides, the rating of the states largely depends on the criteria values, i.e. on the values of 10 variables from Table 2, in our case. Therefore, it is not clear why the values of some criteria are the same for a number of countries, e.g. the values of the expenditure on research and development of new technologies are the same for 16 countries out of 27 states considered.

A general principle of integrated estimation of the objects $A_1, A_2, ..., A_m$ against all the criteria $R_1, R_2, ...R_n$ (in this case, $m = 27$, $n = 10$) is illustrated by the method of simple additive weighting (SAW) [27–29], when the aggregate estimate S_i of the object A_i ($i = 1, ..., m$) is computed by the formula:

$$S_i = \sum_{j=1}^{n} \omega_j r_{ij} , \qquad (1)$$

where r_{ij} the value of the j-th criterion for the i-th object, ω_j weight (significance) of the *j*-th criterion. In this case, the criteria values r_{ij} should be dimensionless, the sum of the weights should not necessarily be equal to one.

When determining the weights ω_j of the criteria, a group of experts evaluated the significance of each criterion. The average weights of the criteria are given in Table 3.

The weighted sum of the criteria is equal to 10. In Table 4, the calculations of NEI made by M. Piatkowski [1] for the weights $\omega_j = 1$ ($j = 1, ..., 6$) and $\omega_j = 0.5$ ($j = 7, ..., 10$) and the rating of the countries according to NEI are given.

The rankings of the countries based on NEI values calculated by SAW for the same weights $\omega_j = 1$ ($j = 1, ..., 10$) and the weights specified by the experts which are taken from Table 3 are also provided for the sake of comparison. In the latter case, the modules of rating deviations with respect to the calculations made by M. Piatkowski are also given.

The particular method used in assessing the objects may have a certain impact on the rankings obtained. The final decision may be taken, if the rankings obtained by various approaches differ insignificantly. Every method is specific, taking into account the inherent properties of the evaluated objects. Therefore, in the present investigation a new sensitive method of compromise solution VIKOR [30] was used alongside a simple classical method of quantitative evaluation SAW.

Table 3. The values of the criteria weights

criterion №	1	2	3	4	5	6	7	8	9	10
criterion weight	1.131	2.131	0.606	0.625	1.475	1.119	0.425	0.813	0.813	0.375

Table 4. Rating of the countries obtained by various methods

Country	Rating accor- ding to NEI	NEI (index)	Ranks of the coun- tries with the same weight	VIKOR with NEI weights (1 to 0.5)		SAW with expert weights		VIKOR with expert weights	
				Ranks of the countries	Differences in rating and NEI	Ranks of the countries	Differences in rating and NEI	Ranks of the countries	Differences in rating and NEI
Slovenia	1	10.801	1	2	1	1	-	1	-
Czech Republic	2	10.126	2	1	1	2	-	2	-
Estonia	3	7.383	4	5	2	4	1	5	2
Hungary	4	7.273	3	4	-	3	1	4	-
Slovakia	5	6.751	5	3	2	5	-	3	2
Poland	6	3.742	6	7	1	6	-	6	-
Bulgaria	7	2.340	7	6	1	8	1	7	-
Latvia	8	2.158	8	10	2	7	1	9	1
Lithuania	9	1.275	11	8	1	9	-	8	1
Croatia	10	1.147	9	11	1	11	1	10	-
Russia	11	0.657	10	9	2	10	1	11	-
Kazakhstan	12	0.133	12	12	-	12	-	16	4
Ukraine	13	-0.672	13	14	1	13	-	13	-
Moldavia	14	-0.943	14	15	1	14	-	15	1
Kyrgyzstan	15	-1.516	15	16	1	16	1	21	6
Romania	16	-1.656	16	13	3	15	1	12	4
Armenia	17	-3.127	17	18	1	17	-	20	3
Macedonia	18	-3.132	19	17	1	21	3	14	4
Turkmenistan	19	-3.396	20	19-20	0.5	20	1	24-25	5.5
Tajikistan	20	-3.586	24	19-20	0.5	23	3	26	6
Georgia	21	-3.943	18	21	-	18	3	19	2
Azerbaijan	22	-4.347	23	22	-	22	-	22	-
Bielorussia	23	-4.457	25	24	1	19	4	18	5
Uzbekistan	24	-4.565	22	25	1	24	-	24-25	0.5
Albania	25	-4.761	21	24	1	25	-	23	2
FR Yugoslavia	26	-6.527	27	26-27	0.5	26	-	17	9
Bosnia and Herzegovina	27	-7.159	26	26-27	0.5	27	-	27	-

VIKOR is based on normalization of the initial data when the normalized values $\tilde{r}_{ij}$ of the j-th criterion for the i-th country ($i = 1,..., m; j = 1,..., n$) are calculated by the formula:

$$\tilde{r}_{ij} = (\max_i r_{ij} - r_{ij})/(\max_i r_{ij} - \min_i r_{ij}) . \qquad (2)$$

This method relies on three characteristics for quantitative evaluation of the distribution of the objects considered.

The characteristic S_i is calculated from the formula:

$$S_i = \sum_{j=1}^{n} \omega_j \tilde{r}_{ij}, \qquad (3)$$

i.e. it is the approach SAW with the values of the criteria r_{ij} replaced by their normalized values obtained from the formula (2); the characteristic R_i is calculated in this way:

$$R_i = \max_j \omega_j \tilde{r}_{ij} . \qquad (4)$$

The main characteristic of VIKOR Q is calculated from the formula:

$$Q_i = v(S_i - S^*)/(S^- - S^*) + (1 - v)(R_i - R^*)/(R^- - R^*) , (5)$$

where $S^* = \min_i S_i$, $S^- = \max_i S_i$, $R^* = \min_i R_i$, $R^- = \max_i R_i$ v is the majority criterion (in this case, $v = 0.5$).

Table 4 illustrates the rating of the countries based on the values of Q_i calculated by the formulas (2) – (5) with the weights of M. Piatkowski (1 and 0.5) and expert weights taken from Table 3, with the deviations in ranking according to the initial NEI value.

The calculations have shown that the values of the criteria weights ω_j have a considerable effect on the rating of the countries, therefore, special attention should be paid to their determination. If the rank of the country is taken into account in providing the financial or other kind of support to it, then the weights of the criteria should be determined by a group of highly-qualified experts including repre-

sentatives of most of the countries being considered. Then, the estimates obtained should be officially confirmed and generally accepted.

The application of quantitative methods in the final evaluation would yield more stable results, if the values of the criteria adequately reflected the actual state of development of particular countries. Statistical values would be more appropriate for this purpose.

5. Conclusions

The analysis made allows us to conclude that the conditions for the development of the 'new economy' in the countries in transition differ to a large extent. To assess the ability of these countries to accept innovations, an indicator describing ten variables reflecting the development of the 'new economy' and implementation of its achievements may be recommended.

This complex evaluation relies on the so-called 'new economic indicator', obtained by summing up the products of the weights and values of the variables. It has been found that methods of determining the above values and weights are not sufficiently precise. This may be shown by the fact that the calculated expenditure on research is the same for seventeen out of twenty seven countries. The same applies to the criteria weights because as many as six main variables are assigned the same weights. Moreover, the simplest method of the criteria aggregation based on the summation has been used.

In this paper, some new approaches are suggested to improve the 'new economic indicator'. It is offered to determine the weights of the criteria by expert evaluation, while using more accurate multicriteria methods for their aggregation, i.e. SAW and VIKOR.

The data obtained in calculations allow us to make several conclusions. First, the method of weight

determination has a great impact on the results of complex evaluation of the variables. A set of criteria should be jointly developed by many countries, while the international expert team should determine and approve their weights.

Second, the results of multicriteria evaluation also depend on the particular method used. This may be demonstrated by comparing the ratings obtained by NEI, SAW and VIKOR. The accuracy of the above methods may be assessed by comparing the obtained data with the information about global competitiveness published by the World Economic Forum [31]. As shown in the paper, the data obtained by the methods

considered do not differ much from those provided by the Forum. It follows that both 'old' and 'new' economies are important for the development of the states.

However, the countries in transition should create the environment favourable for the development of the 'new economy'. This is of special importance for the new member-states of the European Community.

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