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MONITORING BALANCED DEVELOPMENT: THE CASE OF POST-SOCIALIST COUNTRIES

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Abstract

This paper presents an index based methodology which is offered for analysing interregional differences, identifying suitable combination of policies, investigating ex-post whether there is progress towards convergence and balanced development, and suggesting possible changes in the allocation of funds by international organisations. The objective is to operationalize aspects of development and to show how these can be integrated into practical decision-making and analysis. As an illustration, the methodology is applied the case of the post-socialist countries of the Former Soviet Union (FSU).

Keywords: balanced development, post-socialist countries

JEL Classification: O10, O20, O40, O50, D10

Introduction

Development is a "value-word" implying change that is desirable. As a result of its content there is no consensus as to its meaning. What constitutes development

depends on what social goals are being advocated by the development agency, adviser, analyst or government.[1]

We consider development as a vector of desirable social objectives. To be more specific, we take into account a list of attributes which society seeks to maximize. This vector might include elements of the following type: increases in real income per capita, improvements in health and nutritional status, educational achievement, access to resources and distribution of income, increases in basic freedoms, etc. Correlation among these elements, permit development to be represented by a single "proxy" indicator. This is an issue pursued in this article. The measure most widely entertained as a single indicator is real income per capita.[2]

Aspects of economic, social and natural environment can be expressed by properly defined indices, e.g., quality of life indices. Such indices have been used in the past by Hope and Parker (1990, 1995), Hope et al (1991, 1992), Giannias (1996,1997,1998), Giannias, Liargovas and Manolas (1999), Roback (1982, 1988), Blomquist et al (1988) and Gyourko and Tracy (1991). A common characteristic of all these indices is that they are having the form of a weighted average of a set of economic, social and environmental characteristics and that they focus on West European or on North American countries. To compute a quality of life index for France, Italy, and the UK, Hope et al (1995) considered 15 environmental indicators which reflected most of the major environmental concerns in western countries. To form suitable weights for their environmental indices, they used the European Omnibus Survey, which covers all the EU Member States and, therefore, helps to improve the comparability of the

[1] see Barbier (1987, 1988) for elaboration and further discussion.
[2] On this debate see Stewart (1985) and Lal (1988).

environmental indices. The weights used are different for each one of the countries considered and are derived from the results reported for the individual countries.

Gyourko and Tracy (1991), Blomquist et al (1988), Roback (1982, 1988) and Rosen (1979) define a quality of life index which is a weighted average of local amenities and use that index to rank a set of areas; the contention is that the well being of economic agents depends (among other factors) on the characteristics of each area. The weights assigned to local amenities are linear in the amenities' implicit prices from the housing and/or labour market. To obtain these weights, they estimate a hedonic housing price equation and/or wage equation. Hedonic functions are empirically approximated using fitting criteria to derive them; this provides the flexibility of letting the data determine the hedonic functional forms. Giannias (1996, 1997 and 1998), introduced an equilibrium approach that provided a consistent way of testing whether the assumed functional forms are consistent among themselves and the underlying economic structure.

The objective of this article is to review and extend index based approaches that may operationalize interesting aspects of development and integrate them into practical decision-making and analysis. As an illustration, our methodology is applied to compare and comment on the development process and regional inequalities of the members of the Former Soviet Union (FSU).

In this article we suggest a simple definition of balanced development and convergence, and elaborate a set of minimum conditions for a balanced development.

Development of indices for measuring various aspects of development in the post-socialist countries of the Former Soviet Union (FSU)

Societies express in various ways their need to improve their knowledge and information about all aspects of natural and non-natural environment that eventually determine regional development. Therefore, it is important to bring reports and statistics to life. Towards this end, the development of regional or other development indices can be extremely useful just as indices of prices, unemployment, and output are widely and successfully used to summarise various aspects of economies. As an example of the need for the construction of such indices, we recall that in 1990 the Federal Government of Canada made a commitment to developing and releasing, on a regular basis, a comprehensive set of environmental indicators.

In this paper we use a quality of life index that takes into consideration economic, social and environmental characteristics of a consumer's life. It is assumed that the quality of life is linear as in previous studies, but the weights are obtained directly from survey results and not indirectly from a hedonic housing price and/or wage equation.

To be more specific, the quality of life is defined as follows:

$$QOL_{ji} = \Sigma_{k=1}^{N} (w_k a_{ki}) / \Sigma_{k=1}^{N} (w_k) \qquad \text{for } i = 1, 2, 3, ..., m$$

where a_{ki} is the kth economic, social and environmental characteristic of region i, w_k is the weight for the characteristic k, N is the number of characteristics considered, and m is the number of regions being examined.

The above quality of life index formula can be used to compare living conditions in the post-socialist countries of the FSU (Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgystan, Moldova, Russia, Tajikistan, Turkmenistan, Uzbekistan) plus Mongolia. To compute such indices we consider variables which have a direct or indirect relation to the sectors which are financed by the Tacis programme.[3] The availability of data was an additional constraint as regards the choice of variables and/or countries. Therefore, the following variables were available for the FSU countries for the periods 1993, 1995 and 1997:

1. Life expectancy at birth
2. Value added per capita in Agriculture
3. Adult Literacy rate (% of total population)
4. Telephones, per 1000 inhabitants
5. Private sector as per cent of GDP
6. Urban population (% of total)
7. Energy use per capita (Kg)
8. Annual fresh water withdrawals (as % of total water resources)

A quality of life index that takes into consideration all the above aspects of a consumer's life could be taken to be equal to the mean of these variables. However, a mean cannot be computed directly, because of differences in the units of measurement of the above variables. Therefore, these variables need to be

[3] The Tacis programme provides support in the form of grant finance to foster the exchange of knowledge and expertise through partnerships, links and networks. The twelve countries of the former Soviet Union (Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgystan, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan) plus Mongolia receive funding from the Tacis programme. It is the largest programme of its kind in the region, and has launched more than 3,000 projects worth over EURO 3,290 million since its inspection in 1991.

scaled before a mean is computed. To be more specific, the above variables for each country are scaled from 0 to 100 using the following transformations:

1) $$y_{ij}^{*} = 100\,(Y_{ij} - Y_{ijmin})/(Y_{ijmax} - Y_{ijmin})$$

where, y^{*}_{ij} is the transformed variable, Y_{ijmin} is the minimum value of Y_{ij}, and Y_{ijmax} is the maximum value, for i = 1,2,3,4,5,7 that is, for all variables having a positive relationship with QOL, and all j, and

2) $$y_{ij}^{*} = 100 - [100\,(Y_{ij} - Y_{ijmin})/(Y_{ijmax} - Y_{ijmin})]$$

where, y^{*}_{ij} is the transformed variable, Y_{ijmin} is the minimum value of Y_{ij} in the sample of countries and Y_{ijmax} is the maximum value, i = 6, 8, that is, for all variables having a negative relationship with QOL, and all j.

To compute the QOL for each country we used data from the World Development Indicators (various issues), the Human Development Report (various issues) and the EBRD Transition Report (various issues). Finally we have taken the mean of the scaled variables y_{ij}^{*}. The weights of the scaled variables y_{ij}^{*} were based on a 1999 expert's opinion survey. In this opinion survey we asked 86 experts (University professors and/or researchers) involved in social, economic and/or environmental sciences research to value on a 0-100 scale the importance of each one of the above 7 variables for the quality of life a region. The average weights for each variable were used to compute environmental quality. The weights are given in Table 1. Table 2 presents the allocation of responders according to their country of origin and their discipline.

Table 1. Weights from Experts' Opinion Survey

Variable	Weight
1.Life expectancy at birth	99
2. Value added per capita in Agriculture	60
3. Adult Literacy rate (% of total population)	80
4. Telephones, per 1000 inhabitants	70
5. Private sector as per cent of GDP	50
6. Urban population (% of total)	69
7. Energy use per capita (Kg)	70
8. Annual fresh water withdrawals (as % of total water resources)	80

Note : 86 experts participated in this survey that was conducted in 1999. All experts have been involved in socio-economic and /or environmental sciences research projects in the last 3 years

Table 2. Allocation of experts according to country of origin and discipline

	Economics	Social Sciences	Environment	Total
Armenia	4	1	2	7
Belarus	5	1	4	10
Azerbaijan	2	0	1	3
Georgia	4	2	2	8
Kyrgyzstan	1	0	0	1
Kazakhstan	1	0	0	1
Moldova	5	3	3	11
Mongolia	1	0	0	1
Russia	12	5	5	22
Ukraine	8	2	5	15
Tajikistan	1	0	1	2
Turkmenistan	1	1	0	2
Uzbekistan	0	1	2	3
Total	45	16	25	86

Note : 86 experts participated in this survey that was conducted in 1999. All experts have been involved in socio-economic and /or environmental sciences research projects in the last 3 years.

The per capita income, I, of each country is also scaled from 0 to 100 using the following transformation:

$$I_j^* = 100\ (I_j - I_{min})/(I_{max} - I_{min})$$

where, I^*_j is the transformed index, I_{min} is the minimum index value in the sample of countries and I_{max} is the maximum value, and j = 1, 2, 3, ..., m.

The results and a ranking which is based on the quality of life values for the years 1993, 1995 and 1997 are given in Table 3. Table 3 implies that Russia is systematically on the top of the ranking followed by Belarus, Ukraine Georgia, Armenia and Kazakhstan. We also observe the relative improvement of the Quality of Life in Azerbaijan and Turkmenistan as well as the relative worsening of the Quality of Life in Moldova and Kyrgystan (in 1997 compared to 1995). Mongolia is systematically at the last position.

Table 3. Quality of Life values and rankings of the NIS (1993,1995,1997)

	Quality of Life (values)			Quality of Life (rankings)		
	1993	1995	1997	1993	1995	1997
Armenia	55,5	43,6	45,2	3	5	5
Azerbaijan	38,8	36,2	39,2	9	8	7
Belarus	56,2	60,6	57,5	2	2	2
Georgia	45,9	46,9	49,1	6	4	4
Kazakhstan	55,0	42,9	41,9	4	6	6
Kyrgystan	28,7	29,1	25,4	12	10	12
Mongolia	19,1	20,0	20,7	13	13	13
Moldova	39,1	38,5	27,8	8	7	10
Russia	60,6	61,1	61,3	1	1	1
Tajikistan	33,5	26,1	26,7	10	12	11
Turkmenistan	33,1	32,1	28,5	11	9	9
Ukraine	51,6	51,8	53,6	5	3	3
Uzbekistan	39,5	28,0	33,6	7	11	8

The EU financing to the FSU countries: an assessment

Given that the Tacis Programme focuses on integration, we would like to investigate whether the EU supports this process by directing the available funding to the countries with lower living standards, i.e. whether in the long run it is supporting the objective of accession and integration. This criterion is justified for reasons of efficiency and possibly fairness. Consequently, our first task is to identify a way of comparing life in the post-socialist countries of the FSU. This information is then coupled with the per capita EU funding for regional development allocated to each country, allowing us to determine whether the funding is going to the countries that need it most.

Table 4 gives a ranking based on the per capita EU funding that each of the NIS receives. The above criterion will be met if the sum of the quality of life and the per capita based rankings equals m+1 for each country, where m is the number of countries.[4] If the sum of the two rankings is less than m+1 for a country, this country is receiving relatively more than it deserves. On the other hand, if the sum of the two ranking is greater than m+1, this country receives relatively less than it deserves. Table 4 shows that the first condition is satisfied only for Kyrgystan and Ukraine in 1993 and for Belarus in 1997. The second condition is satisfied for Russia, Georgia, Armenia (1993 and 1997), Ukraine (1995 and 1997), Belarus (1993 and 1995), Moldova (1995) and Kazakhstan (1993). These countries are over-financed. The last condition is satisfied for Azerbaijan, Kyrgystan, Mongolia, Tajikistan, Turkmenistan, Uzbekistan, Moldova (1993 and 1997), Kazakhstan (1995, 1997) and Armenia (1995). These countries are under-financed.

[4] In our case m=13.

Table 4. Quality of Life and EU funding per capita rankings

	EU funding per capita			EU funding per capita ranking			sum of QOL and EU funding per capita rankings		
	1993	1995	1997	1993	1995	1997	1993	1995	1997
Armenia	7,8	1,5	3,5	1	11	2	4	16	7
Azerbaijan	2,8	1,8	2,0	6	8	8	15	16	15
Belarus	3,2	1,9	0,5	5	7	12	7	9	14
Georgia	3,7	2,8	3,2	3	3	3	9	7	7
Kyrgystan	4,3	1,6	2,6	2	10	5	14	20	17
Kazakhstan	2,5	1,7	1,5	7	9	10	11	15	16
Mongolia	0,0	4,0	3,2	12	2	4	25	15	17
Moldova	2,3	4,8	4,5	10	1	1	18	8	11
Russia	3,3	2,1	1,8	4	6	9	5	7	10
Tajikistan	0,0	1,3	0,0	13	12	13	23	24	24
Turkmenistan	2,5	2,4	2,3	8	4	7	19	13	16
Ukraine	2,3	2,4	2,6	9	5	6	14	8	9
Uzbekistan	0,9	1,1	1,2	11	13	11	18	24	19

Note: shaded areas indicate countries where the sum of QOL and EU per capita funding rankings is greater than m+1(=14), where m is the number of countries. These countries are under-financed.

The choice of the best-suited policy measures for the FSU countries

In addition to the above, EU and national policy makers might wish to know the best suited regional-economic and/or environmental policies. A way to solve this problem is to position the FSU countries on a quality of life and per capita income mapping taking deviations from their means. This positioning is shown in Figure 2. The countries are then classified in four groups based on the differences of their quality of life index and per capita income from their means as shown in Figure 1.

From Figures 1 and 2, the countries may be identified as high amenity (relatively low income and high quality of life; area B in Figure 1), low amenity (relatively high income and low quality of life; area D in Figure 1), high productivity (relatively high consumer income and high quality of life; area A in Figure 1), and low productivity (relatively low consumer income and low quality of life; area C in Figure 1).

Regions falling in area B (D) of Figure 1 are classified as high (low) amenity because the above (below) average quality of life in the region is associated with decreases (increases) in income reflecting the consumers willingness to pay relatively more (less) for the effects of the regions characteristics embodied in the region's quality of life index.

Figure 1. An Amenity-Productivity Map

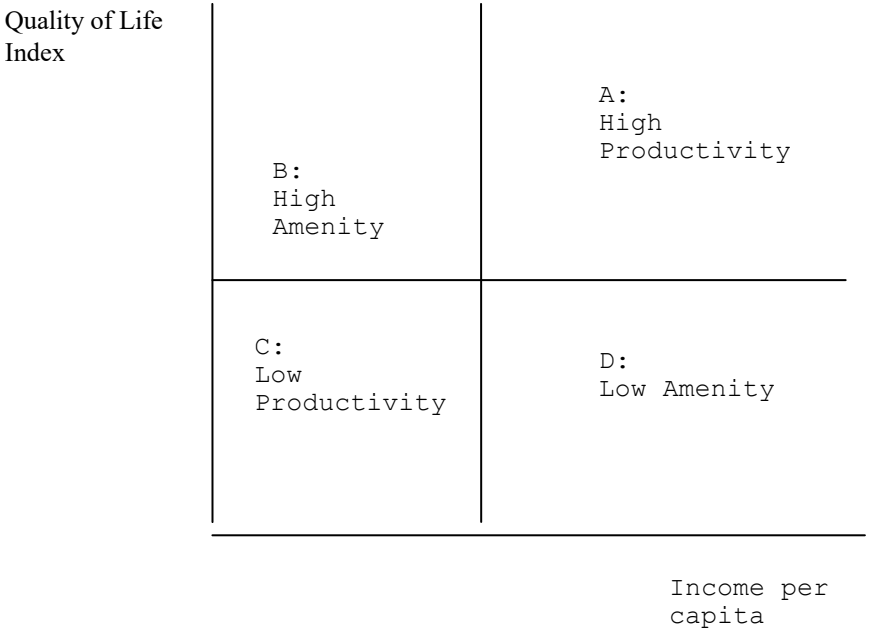
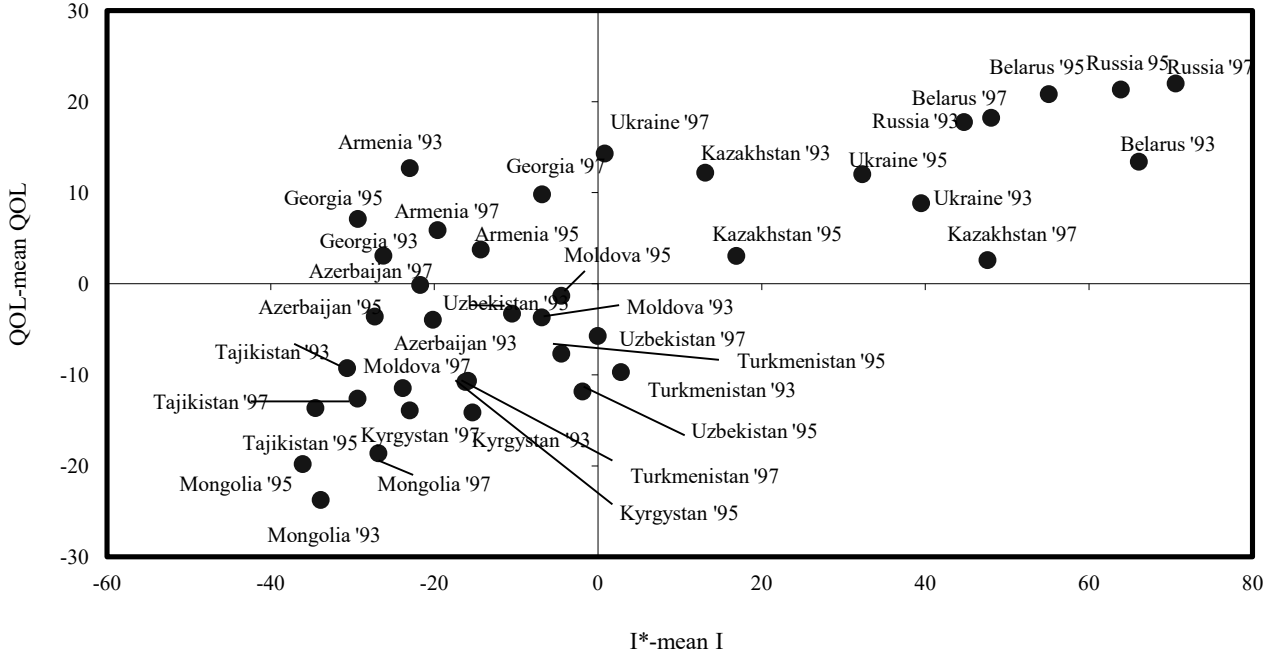


Figure 2. Quality of Life and Income per capita in the NIS



Regions with a quality of life - income combination that positions it in area A (C) of Figure 1 are classified as high (low) productivity because the primary reason that this region's income and quality of life differ from those of the average region is the above (below) average productivity effects of quality of life. This above (below) average productivity effect is reflected in the ability of producers in these regions to pay above (below) average incomes for having at their disposal a greater (lesser) than the average quality of life.

This classification is useful because it may assist policy makers to formulate the best-suited combination of regional-income and social-environmental policies for a set of regions under consideration. High amenity countries or regions, for example, require economic and regional policy measures so as to increase their income. Similarly, low amenity countries or regions require environmental or social policy measures so as to increase their quality of life. Regional-income and socio-environmental policies are important for increasing consumer's income and quality of life, respectively, in low productivity countries. Relatively more funds should be allocated to the low productivity regions (1) for social and environmental policies, since this may be an effective mean for increasing their quality of life, which is lower than the mean, and (2) for regional policies since this may be an effective mean for increasing their per capita income, which is lower than the mean.

Our analysis identifies a large group of countries (Azerbaijan, Tajikistan, Kyrgystan, Turkmenistan, Moldova, Mongolia and Uzbekistan in area C that is characterized by low income per capita as well as low quality of life.[5] The more

[5] Marginally, Uzbekistan in 1997 and Turkmenistan in 1993 are located in area D.

suitable policy response for these countries is a mixture of both regional-income and social-environmental policies. A second group of countries consists of Georgia and Armenia. These countries are in area B and are characterized by high quality of life and low income per capita. The EU should give more emphasis to regional-income policies in these countries. Finally, another group of countries consists of Russia, Belarus, Kazakhstan and Ukraine. These countries are systematically in area A, and enjoy both higher incomes per capita and higher quality of life compared to the average. Consequently if the goal of policy is to reduce regional disparities and give equal opportunities for EU integration, it may be appropriate to focus the attention of both economic-regional and socio-environmental policies elsewhere.

Analytical tools for measuring various aspects of development

An interesting extension of the above analysis is to examine issues of convergence and balanced development.

A desirable process of balanced development and convergence should be characterised by the following:

1. The distances from the 45^{o} line passing through the relevant means do not increase overtime.
2. The variables/indices having values greater (smaller) than their mean should increase less (more) than the mean. Furthermore, in order the development process to be as stable as possible these changes should not be large or small enough to change the positioning of a a country on the amenity-productivity mapping of Figure 1.

The above two criteria are satisfied for a country a, b, c, d, e, f, if they lie in the sub-areas A(a), A(b), A(c), A(d), A(e), A(f) of Figure 3, respectively. This happens if the following conditions are satisfied:

For a high productivity country lying above the 45^o line, e.g., a in Figure 3:

(A1) $DI_t + \Delta m(DI) > DI_{t+1} > m(DI_t) + \Delta m(DI)$

(A2) $I_t + \Delta m(I) > I_{t+1} > m(I_t) + \Delta m(I)$, and

(A3) $0 < \Delta DI^*/\Delta I^* < 1$

For a high amenity country, e.g., b in Figure 3:

(B1) $DI_t + \Delta m(DI) > DI_{t+1} > m(DI_t) + \Delta m(DI)$ and

(B2) $I_t + \Delta m(I) < I_{t+1} < m(I_t) + \Delta m(I)$

For a low productivity country lying above the 45^o line, e.g., c in Figure 3:

(C1) $DI_t + \Delta m(DI) < DI_{t+1} < m(DI_t) + \Delta m(DI)$

(C2) $I_t + \Delta m(I) < I_{t+1} < m(I_t) + \Delta m(I)$, and

(C3) $0 < \Delta DI^*/\Delta I^* < 1$

For a low productivity country lying below the 45^o line, e.g., d in Figure 3:

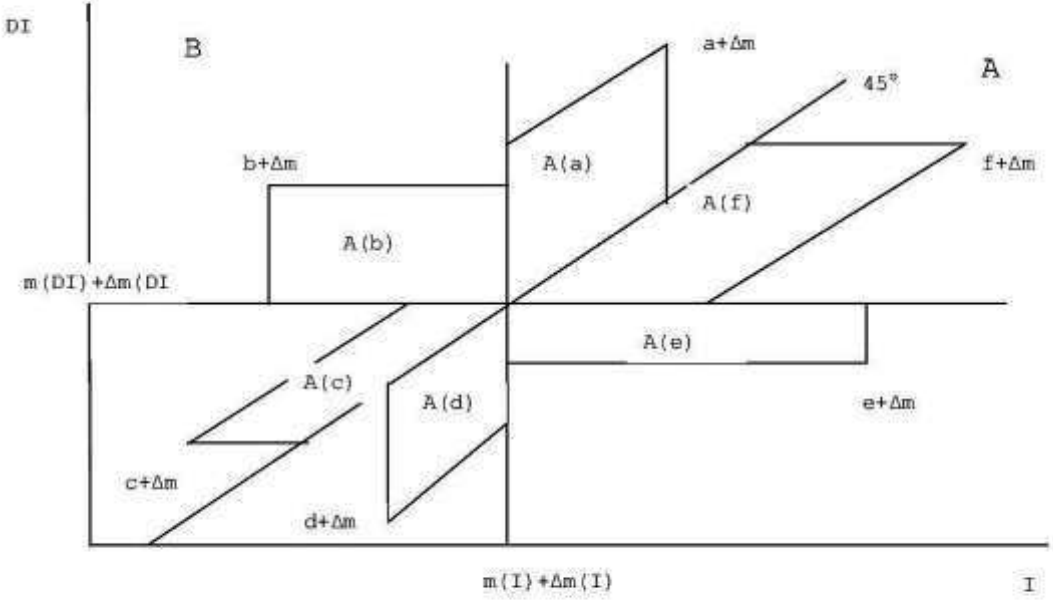
(D1) $DI_t + \Delta m(DI) < DI_{t+1} < m(DI_t) + \Delta m(DI)$

(D2) $I_t + \Delta m(I) < I_{t+1} < m(I_t) + \Delta m(I)$, and

(D3) $\Delta DI^*/\Delta I^* > 1$

FIGURE 3

GRAPHICAL REPRESENTATION OF (DI, I) CRITERIA FOR BALANCED DEVELOPMENT & CONVERGENCE



where, m(X) is the mean of X for X = DI, I, Y = (DI,I) for Y = a, b, c, d, Δm = (Δm(DI),Δm(I))

FIGURE 4

GRAPHICAL REPRESENTATION OF (ΔDI, ΔI) CRITERIA FOR BALANCED DEVELOPMENT & CONVERGENCE

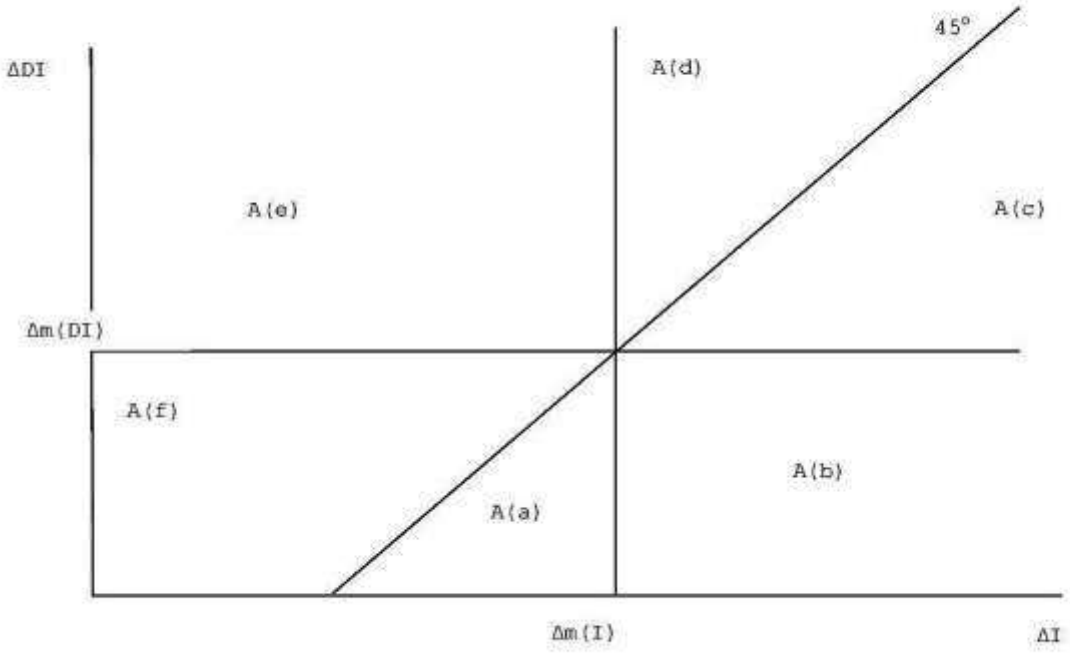
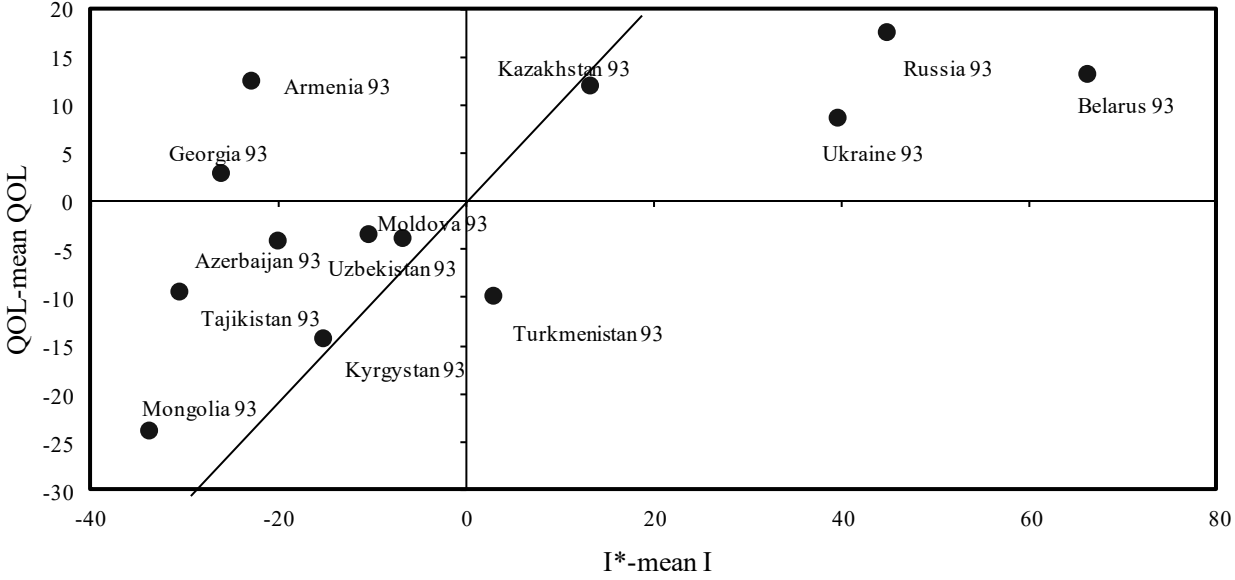


Figure 5. Quality of Life and Income per capita in the FSU, 1993



For a low amenity country, e.g., e in Figure 3:

(E1) $DI_t + \Delta m(DI) < DI_{t+1} < m(DI_t) + \Delta m(DI)$, and

(E2) $I_t + \Delta m(I) > I_{t+1} > m(I_t) + \Delta m(I)$

For a high productivity country lying below the 45^o line, e.g., f in Figure 3:

(F1) $DI_t + \Delta m(DI) > DI_{t+1} > m(DI_t) + \Delta m(DI)$

(F2) $I_t + \Delta m(I) > I_{t+1} > m(I_t) + \Delta m(I)$, and

(F3) $\Delta DI^*/\Delta I^* > 1$

where,

$\Delta DI^* = DI_{t+1} - DI_t - \Delta m(DI) = \Delta DI - \Delta m(DI)$,

$\Delta I^* = I_{t+1} - I_t - \Delta m(I) = \Delta I - \Delta m(I)$, and

m(X) is the mean of a variable X for all X.

The above condition λ(i) is equivalent to λ(i.1) and λ(i.2) for i = 1, 2, and λ = A, B, C, D, E, F, where,

(A1.1) $\Delta DI < \Delta m(DI)$ A(1.2) $DI_{t+1} > m(DI_{t+1})$

(A2.1) $\Delta I < \Delta m(I)$ A(2.2) $I_{t+1} > m(I_{t+1})$

(B1.1) $\Delta DI < \Delta m(DI)$ B(1.2) $DI_{t+1} > m(DI_{t+1})$

(B2.1) $\Delta I > \Delta m(I)$ B(2.2) $I_{t+1} < m(I_{t+1})$

(C1.1) $\Delta DI > \Delta m(DI)$ C(1.2) $DI_{t+1} < m(DI_{t+1})$

(C2.1) $\Delta I > \Delta m(I)$ C(2.2) $I_{t+1} < m(I_{t+1})$

(D1.1) $\Delta DI > \Delta m(DI)$ D(1.2) $DI_{t+1} < m(DI_{t+1})$

(D2.1) $\Delta I > \Delta m(I)$ D(2.2) $I_{t+1} < m(I_{t+1})$

(E1.1) $\Delta DI > \Delta m(DI)$ E(1.2) $DI_{t+1} < m(DI_{t+1})$

(E2.1) $\Delta I < \Delta m(I)$ E(2.2) $I_{t+1} > m(I_{t+1})$

(F1.1) $\Delta DI < \Delta m(DI)$ F(1.2) $DI_{t+1} > m(DI_{t+1})$

(F2.1) $\Delta I < \Delta m(I)$ F(2.2) $I_{t+1} > m(I_{t+1})$

The above conditions, excluding λ(i.2), i = 1, 2 and λ = A, B, C, D, E, F, are satisfied for a country a, b, c, d, e, f, if it lies in the sub-areas A(a), A(b), A(c), A(d), A(e), A(f) of Figure 4, respectively.

The conditions λ(i.2), i = 1, 2 and λ = A, B, C, D, E, F, are satisfied if in period t+1 country b is high amenity, e low amenity, a and f high productivity, and c and d low productivity.

Consequently, to operationalize the above observations and results of our theoretical analysis, we apply the following 5-step procedure which is illustrated using the case of the FSU countries plus Mongolia.[6]

STEP 1: we position the FSU countries on the graph of Figure 3. This gives Figure 5. Subsequently, we assign to each country the following scores:[7]

S(a) = 11 for a country located in the same area with country a in Figure 3.

[6]It is worth-mentioning that in order to obtain the above information regarding the development process of a set of countries there is no need for time series data. A minimum of data for two time periods is needed. In case there is data for more, eg, n periods, the above analysis may be applied for the (n-1) intervals to investigate whether we have the strong case for a country, where the criteria are met every period of time, or the weak one, in which the criteria are met for the last available period.

[7] The above scores are arbitrary and are equivalent to any set of scores with the characteristic that any three of them sum up to a unique number.

S(b) = 22 for a country located in the same area with country b in Figure 3.

S(c) = 33 for a country located in the same area with country c in Figure 3.

S(d) = 43 for a country located in the same area with country d in Figure 3.

S(e) = 54 for a country located in the same area with country e in Figure 3.

S(f) = 61 for a country located in the same area with country f in Figure 3.

STEP 2: we position the FSU countries on the graph of Figure 4. This gives Figure 6. Subsequently, we assign to each country the following scores:

S(a) = - 10 for a country located in the area A(a) in Figure 4.

S(b) = - 20 for a country located in the area A(b) in Figure 4.

S(c) = - 30 for a country located in the area A(c) in Figure 4.

S(d) = - 40 for a country located in the area A(d) in Figure 4.

S(e) = - 50 for a country located in the area A(e) in Figure 4.

S(f) = - 60 for a country located in the area A(f) in Figure 4.

STEP 3: we position the FSU countries on the graph of Figure 1. This gives Figure 7. Subsequently, we assign to each country the score: -1 if it is a high productivity country, -3 if it is a low productivity, -2 if it is a high amenity, and -4 if it is a low amenity.

STEP 4: we sum the above three scores for each FSU country to obtain Table 5.

STEP 5: we conclude that the above specified 2 criteria for a converged and balanced development process are satisfied for a country where the sum of its three scores sums up to zero. It can be seen from Table 5 that among all countries in our sample this is satisfied only for Armenia and Mongolia.[8]

[8] Alternatively, one could check directly whether the conditions (A1) – (A3), …, (F1) – (F3) are satisfied or measure the relevant to the concept of balance and convergence distances on Figures 5 and 7. However, the above 5-step procedure is computation-wise more straightforward. It is worth-mentioning, too, that in order to obtain the above information about the development process of a set of countries there is no need for time series data. A minimum of data for two time periods is needed. In case there is data for more, eg, n periods, the above analysis may be applied for the (n-1) intervals to investigate whether have the strong case for a country, where the criteria are met every period of time, or a weak one, in which the criteria are met for the last available period but not for one or more of the previous ones.

Table 5. Total scores

	Figure 5 score	Figure 6 score	Figure 7 score	*Total score*
Armenia	22	-20	-2	*0*
Azerbaijan	33	-50	-3	*-20*
Georgia	22	-30	-2	*-10*
Moldova	33	-60	-3	*-30*
Russia	61	-30	-1	*30*
Ukraine	61	-50	-1	*-20*
Belarus	61	-50	-1	*10*
Kazakhstan	61	-20	-1	*40*
Kyrgystan	33	-50	-3	*-20*
Mongolia	33	-30	-3	*0*
Tajikistan	33	-20	-3	*10*
Turkemenistan	54	-60	-3	*-19*
Uzbekistan	33	-20	-3	*10*

Figure 6. Quality of Life and Income per capita changes in the FSU

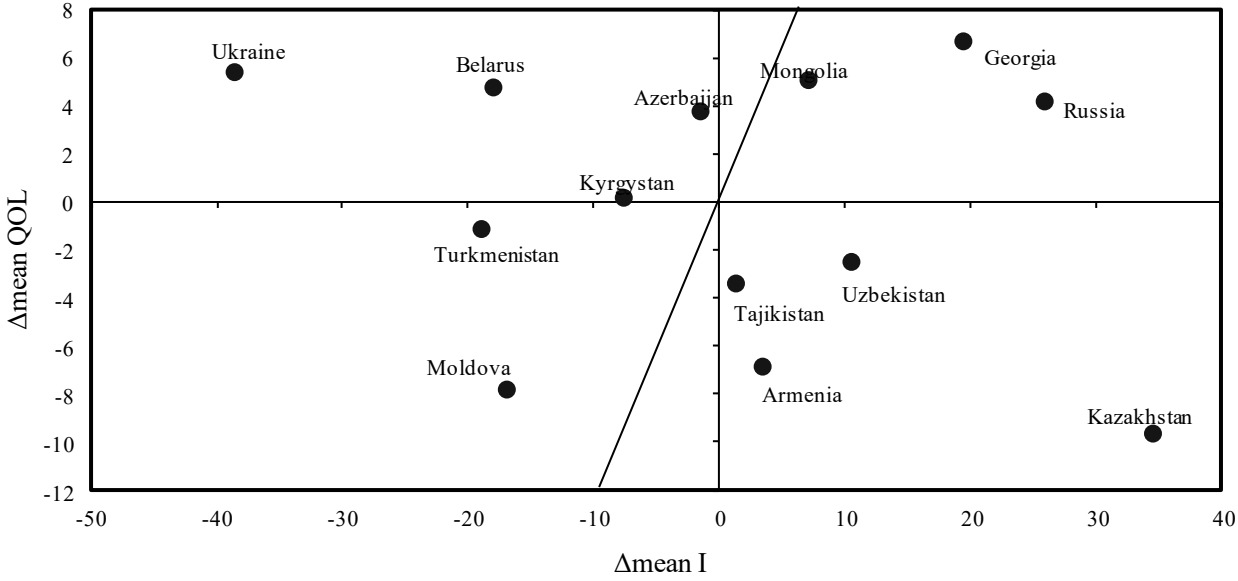
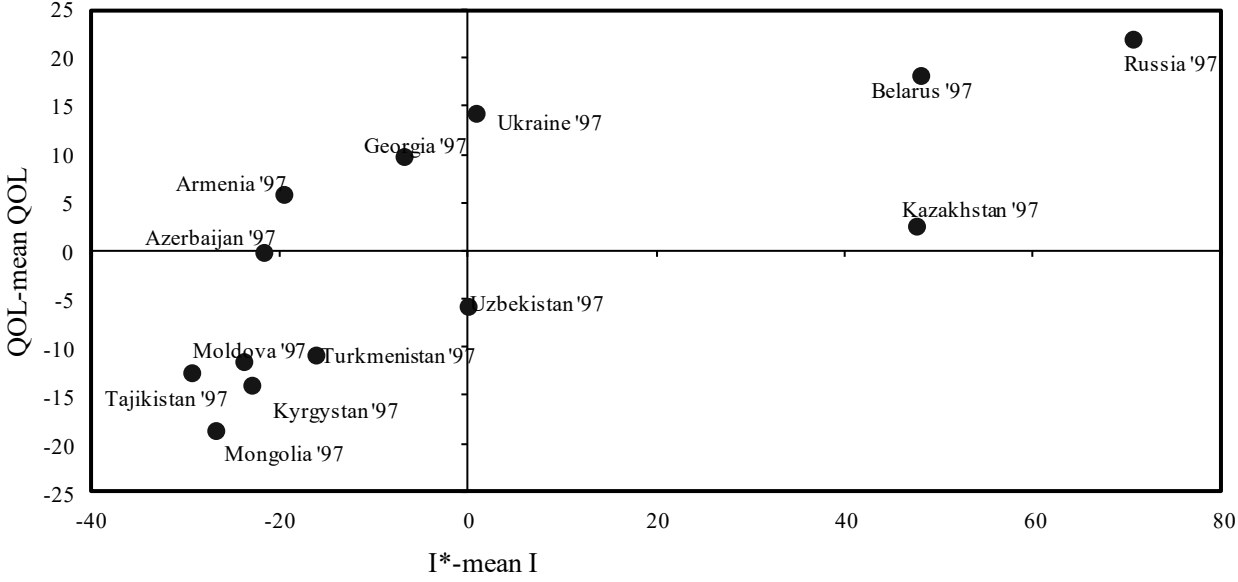


Figure 7. Quality of Life and Income per capita in the FSU, 1997



Conclusions

This paper developed a composite Quality of Life Index in order to first analyze interregional differences and identify suitable combination of policies for the post-socialist countries of the FSU.

The analysis showed that Russia is systematically on the top of the ranking followed by Belarus, Ukraine Georgia, Armenia and Kazakhstan. We also observe the relative improvement of the Quality of Life in Azerbaijan and Turkmenistan as well as the relative worsening of the Quality of Life in Moldova and Kyrgystan (in 1997 compared to 1995). Mongolia is systematically at the last position.

In addition to the above, a comparison of the quality of life values with the per capita EU funding indicates that the allocation of funds does not support the poorer countries. The EU funding allocation is inclined to support the already "stronger" (in terms of quality of life index) former Soviet republics, such as Russia, Georgia, Ukraine, Belarus and is less supportive of the "weaker" ones, such as Azerbaijan, Mongolia, Tajikistan, Turkmenistan and Uzbekistan .

Our analysis also indicated that the process of convergence and balanced development is satisfied only for Armenia and Mongolia. Policy makers of the European Union and of other international organizations should take this into account when they design their developmental policies.

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