HOW TO PROMOTE SUSTAINABLE HUMAN DEVELOPMENT IN POST-SOCIALIST COUNTRIES?

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ABSTRACT

Development used to be considered to be equal with economic growth and welfare was equal to financial well-being. These approaches have been exploded, and now more and more interpretations of development and well-being take into consideration qualitative effects as well. Experts tend to believe that development means not only economic growth, but it also incorporates social factors.

The paper focuses on the effect of the main socio-economic indicators on human development. After describing what human development means and how it can be measured, it examines how monetary poverty, income inequality, labour market and education level influence human development. Monetary poverty is measured with poverty headcount index and relative poverty gap and income inequality is measured with Gini coefficient. As for labour market conditions, regional cohesion and long-term unemployment rates are taken into consideration, while the indicator of education is the rate of early school-leavers. To measure human development, Human Development Index is used. The hypothesis states that poverty reduction, the decrease of income inequalities, the decrease of long-term unemployment rate and of regional cohesion and the fall in the rate of early school-leavers promote human development.

The paper also focuses on the effect of intra-generational income redistribution on human development. I hypothesize that there is a significant positive relationship between the rate of social and welfare expenses and human development. The hypothesis implies that social and welfare expenses aiming to reduce income inequalities do not moderate human development, but support it.

The area of the research includes the countries classified to the same income category by the World Bank. Upper-middle income Eastern European countries consist of eight countries (Croatia, Czech Republic, Estonia, Latvia, Lithuania, Hungary, Poland and Slovakia) that all changed their political and economic system from planned economy to market economy at around 1990. Thus the analysis examines the time period since 1990. I use multiple regression and correlation analysis to test the hypotheses.

The results of the analysis can highlight how human development has been affected by the socio-economic changes in the last years. It can reveal how the global economic crisis affected human development. Moreover, it will be possible to identify the areas where improvement is necessary in order to ensure sustainable human development.

Key words: post-socialist countries, human development, unemployment, inequality, poverty, redistribution

JEL code: O15

Introduction

Development used to be considered to be equal with economic growth and welfare was equal to financial well-being. Lately, however, this approach has been exploded, and now more and more interpretations of development and well-being take into consideration qualitative effects as well. Experts tend to believe that development means not only economic growth, but it also incorporates social factors.

The paper focuses on the effect of the main socio-economic indicators on human development. After describing what human development means and how it can be measured, it examines how monetary poverty, income inequality, labour market and education level influence human development. Monetary poverty is measured with poverty headcount index and relative poverty gap and income inequality is measured with Gini coefficient. As for labour market conditions, regional cohesion and long-term unemployment rates are taken into consideration, while the indicator of education is the rate of early school-leavers. To measure human development, Human Development Index is used.

The paper also focuses on the effect of intra-generational income redistribution on human development. It examines whether social and welfare expenses aiming to reduce income inequalities moderate or support human development.

Well-being and human development

The ultimate goal of human life is well-being. That is why research works about happiness has become important in sociology, psychology, and in economics. Research results show that subjective well-being, which can express happiness, is not associated with material well-being above a certain income level (G. Fekete – Siposné Nándori 2013; Takács 2009). There are several explanations for this phenomenon, called welfare paradox:

- Problems with leisure time: Regardless of high income level, individuals may not be able to spend their leisure time in a meaningful way.
- Status competition: In spite of the fact that individuals make efforts to improve their relative living standard, the improvement of the living standards of each individual is not possible as the total amount of income is fixed. The struggle for the improvement of living standard results in a stressful life, which can be harmful for subjective well-being.
- Treadmill effect: Far-reaching changes can modify subjective well-being only temporarily. They do not have any effect on it in the long run.
- Choice paradox: The improvement of material well-being is usually associated with an increase in the available options, often resulting in the phenomenon of cognitive dissonance, which can decrease subjective well-being.
- “Time-saving” inventions: Inventions designed to help the individuals saving time (like washing machine, dishwasher or car) do not create more leisure time for their users. They only reach better results over the same time than earlier solutions

(trough, washing with hands or coach with horses) (G. Fekete – Siposné Nándori 2013; Takács 2009).

In order to be able to measure well-being and not only material wealth, different indices have been elaborated. The Human Development Index (HDI) is the most widely used measure of them. It makes the comparison of human development in different countries possible by taking into account other factors in addition to economic growth. The HDI is made up of three components:

- average life expectancy as a measure of long and healthy life;
- mean years of schooling and expected years of schooling as measures of education level;
- GNI per capita in USD as a measure of living standard (Zambrano 2011).

The values of the three dimensions range from zero to one, so a transformation of the original values is necessary by taking into account the maximum and minimum values of the given variable. The HDI is then calculated as the average of the three transformed values. Before 2010, the HDI used to be calculated as their arithmetic mean, since then, however, their geometric mean has been used.

$$HDI = \sqrt[3]{I_{education} \cdot I_{education} \cdot I_{income}} \qquad (1)$$

(Fóti 2003, Husz 2001, Husz 2002, Zambrano 2011)

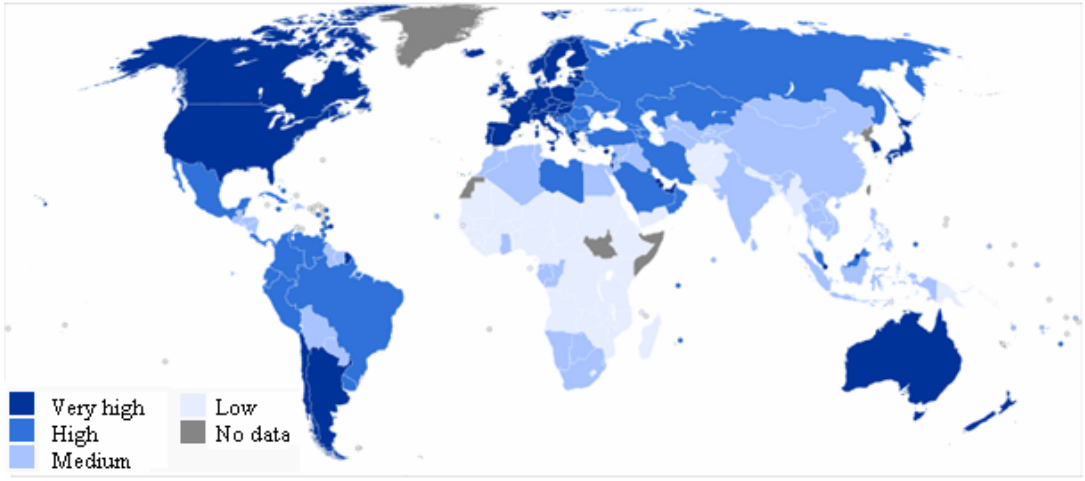
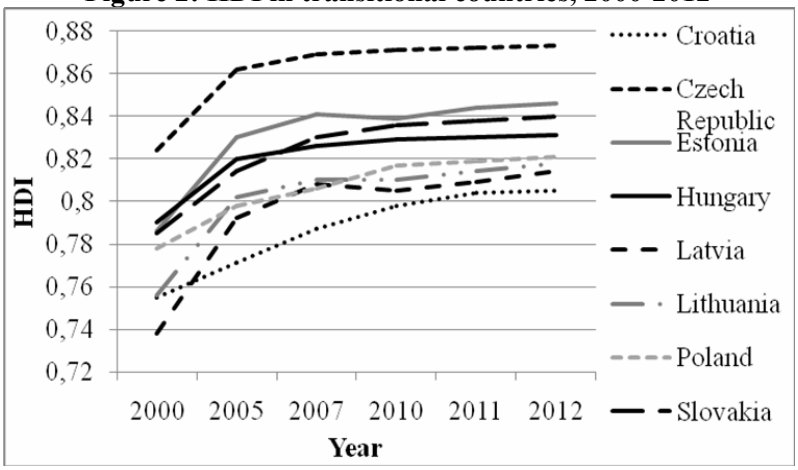


Figure 1: HDI values in the world, 2011
Source: G. Fekete – Siposné Nándori 2013

Nowadays, HDI values are very high in North America, Western and Central Europe, Australia and South America. In most of the African countries, however, this value is extremely low (Figure 1). In transitional European countries (Figure 2), HDI has been increased since 2000. The HDI of the Czech Republic outstands from other countries' values.

Figure 2: HDI in transitional countries, 2000-2012



Source: own compilation based on Human Development Report 2013

Methodology

The area of the research includes the countries classified to the same income category by the World Bank. Upper-middle income Eastern European countries consist of eight countries (Croatia, Czech Republic, Estonia, Latvia, Lithuania, Hungary, Poland and Slovakia) that all changed their political and economic system from planned economy to market economy at around 1990. The analysis examines the time period since 1990.

The effect of the socio-economic indicators on human development is examined with multiple regression and correlation. The following socio-economic indicators are included in the analysis as explanatory variables:

- Poverty rate (x_1): the ratio of the population living below the poverty line.
- Poverty threshold (x_2): the value of the 60% median national equalized income.
- Poverty gap (x_3): the average distance of the poor individuals' income and the poverty threshold.
- Regional cohesion (x4): the coefficient of variation of the employment rates at NUTS2 level regions expressing labour market regional disparities. As Latvia, Lithuania and Estonia are made up of only one NUTS2 region each, regional cohesion cannot be calculated in this way. In order to include regional cohesion in Baltic states as well, the study calculates employment rates at the NUTS3 level for these countries.
- Long term unemployment rate (x5): total long-term unemployed (unemployed for at least a year) population expressed as a proportion of the total active population as an indicator of labour market;
- Rate of early school leavers (x_6): as an indicator of knowledge level;
- Gini coefficient (x_7): as an indicator of income inequalities

The dependent variable is HDI (signed by Y).

Before examining which socio-economic indicators have a significant effect on human development, testing the relationship between the independent variables is necessary. If these variables are highly correlated, the multiple regression model may not give valid

results about the predictors because of multicollinearity (I have to be careful of this problems as some of the explanatory variables refer to similar phenomenon, therefore there is a change they are highly correlated). In practice, the presence of multicollinearity can be considered to be dangerous if in the correlation matrix of the independent variables, there are any values higher (in absolute values) than the coefficient of multiple correlation. In my case, each value in the correlation matrix is lower than the coefficient of multiple correlation (0.943) (Table 1).

Multicollinearity, however, can be present in more than two predictors as well. The linear relation among more than two predictors can be detected with the variance inflation factor (VIF). A VIF of 5 (or 10) and above indicates a multicollinearity problem (Kutner – Nachtsheim – Neter 2004). Based on VIF values (refer to Table 2), multicollinearity problem arises in the case of poverty rate and the Gini coefficient. Therefore further analysis can only be carried out with the exclusion of these variables.

Table 1 Correlation matrix of the independent variables

	x_1	x_2	x_3	x_4	x_5	x_6	x_7
x_1	1	-0.447	0.739	-0.107	0.040	0.279	0.737
x_2	-0.447	1	-0.573	-0.002	-0.359	-0.392	-0.520
x_3	0.739	-0.573	1	0.029	0.072	0.128	0.722
x_4	-0.107	-0.002	0.029	1	0.338	-0.051	-0.279
x_5	0.040	-0.359	0.072	0.338	1	-0.473	-0.017
x_6	0.279	-0.392	0.128	-0.051	-0.473	1	0.329
x_7	0.737	-0.520	0.722	-0.279	-0.017	0.329	1

Source: own computation

Table 2 Variance inflation factors of the predictors

Predictors	***R^2***	***VIF***
Poverty threshold	0.783	4.61
Relative poverty gap	0.672	3.05
Poverty rate	0.945	18.18
Regional cohesion	0.374	1.60
Rate of early school leavers	0.697	3.30
Long term unemployment rate	0.666	2.99
Gini coefficient	0.948	19.23

Source: own computation

The hypothesis concerned the effects of socio-economic indicators states that poverty reduction, the decrease of income inequalities, the decrease of long-term unemployment rate and of regional cohesion and the fall in the rate of early school-leavers promote human development.

When the effect of intra-generational income redistribution on human development is examined, explanatory variables are selected based on Cashin (1995).

Cashin (1995) states that the production function has the following form for each economic actor:

$$y(t) = A \cdot k(t) \cdot \left[\frac{G(t)}{K(t)}\right]^{\alpha} \cdot \left[\frac{T(t)}{K(t)}\right]^{\beta} \quad (1)$$

where A is the parameter expressing technology, k(t) is the per person private sector capital, G(t)/K(t) is the ratio of the aggregate public capital stock, T(t)/K(t) is the ratio of aggregate public transfer payments, α is the output elasticity of the G(t)/K(t) ratio and β is the output elasticity of the T(t)/K(t) ratio. For the elements of the formula, K(t) = Nk(t) is true, where N is the total number of the economic actors (Cachin 1995).

The included explanatory variables and economic growth is related in the following way:

$$GRWKR_{it} = \beta_1 \ln(IGOV_{it}) + \beta_2 \ln(SOCSEC_{it}) + \beta_3 \ln(CURREV_{it}) + \beta_4 \ln(INIT_{i,\,t-T}) + \varepsilon_{it} \quad (2)$$

where GRWKR is the growth rate of per capita GDP, IGOV is the change in the stock of public capital as a share of GDP (%), SOCSEC is the expenditure of social security and welfare as a share of GDP (%), CURREV is the rate of current tax revenue as a share of GDP, INIT is the natural logarithm of the GDP rate of growth, $\varepsilon it = \alpha i + \nu it$ (i = 1, …, N signs the countries and t = 1, …, T stands for years) and βi is the coefficient of regression. Based on the theoretical model, SOCSEC and IGOV are positively, while CURREV is negatively related to economic growth, assuming that other variables in the model are constant. Cachin (1995) also includes EDUC, the gross enrolment of children aged 12 to 17 years at secondary school as the share of the population of children in the country's school age group in his analysis.

For my analysis, I use a modified version of Cachin's (1995) model. Instead of the growth rate of per capita GDP, I use the growth rate of HDI as dependent variable (signed with Y). Furthermore, CURREV is excluded from the model when calculating the effect of redistribution on human development.

I hypothesize that there is a significant positive relationship between the rate of social and welfare expenses (SOCSEC) and human development (Y). The hypothesis implies that social and welfare expenses aiming to reduce income inequalities do not moderate human development, but support it.

Data for the calculations are derived from the public database of Eurostat, World Bank, International Monetary Fund, from International Financial Statistics and Government Finance Statistics (published by the International Monetary Fund) and from the Human Development Reports of the United Nations. In multiple regression analysis, backward method is used to find the optimal regression. Because of the limited available statistical data, the analysis to examine the effect of different socio-economic indicators on human

development is carried out for the period from 2000 to present. Based on the available data, the analysis to examine the effect of intra-generational income redistribution on human development can be carried out for the period 1994-2008.

Effect of socio-economic indicators

Based on the regression analysis, the effect of four predictors is proved to be significant (Table 3): poverty threshold, relative poverty gap, regional cohesion and rate of early school leavers.

Table 3 The effect of socio-economic indocators on human development (t-values are in brackets)

Predictor	*Step 1*	*Step 2*
Constant	-0.274 (-2.270)	-0.358 (-4.270)
Relative poverty gap	0.040 (1.778)	0.046 (2.131)
Poverty threshold	0.069 (2.778)	0.087 (5.101)
Regional cohesion	-0.032 (-2.285)	-0.031 (-2.204)
Long term unemployment rate	-0.009 (-0.957)	-
Rate of early school leavers	-0.034 (-2.245)	-0.023 (-2.333)
F	12.508	15.507
F significance	0.000	0.000
R^2	0.839	0.827

Source: own computation

Poverty threshold – which is the 60 percent of the median equalized income in this case – can be regarded as a measure of economic growth as well, so its strong correlation with human development is not surprising. A 10 percent increase in the rate of early school leavers decreases human development by 0.2 percent. This supports the fact that the role of human capital keeps increasing in development (Besenyei 2007). The growth of regional cohesion decreases development. Human development is thus affected by monetary poverty (poverty line and relative poverty gap), knowledge level (measured by the rate of early school leavers) and labour market processes (regional cohesion) (Siposné Nándori 2011).

Effect of intra-generation income redistribution

The optimal regression analysis is carried out in two steps: with and without the inclusion of the EDUC variable. As for the significant independent variables, the two models have the same results.

The effect of income redistribution is significant in both cases. A 10 percent increase in the expenditure on social security and welfare as a share of GDP will raise human development by 0.32 percent (Siposné Nándori 2012).

Table 4 Growth regressions for upper middle income Eastern Europe, 1990-2007 (t-values are in brackets)

Predictor	Included predictors	
	INIT, IGOV, SOCSEC	INIT, EDUC, IGOV, SOCSEC
Constant	0.063 (4.025)	0.063 (4.025)
IGOV	-0.008 (-1.750)	-0.008 (-1.750)
INIT	0.003 (2.524)	0.003 (2.524)
SOCSEC	0.032 (3.321)	0.032 (3.321)
EDUC	...	-

… The given variable is not included
- The effect of the given variable is not significant on the dependent variable.

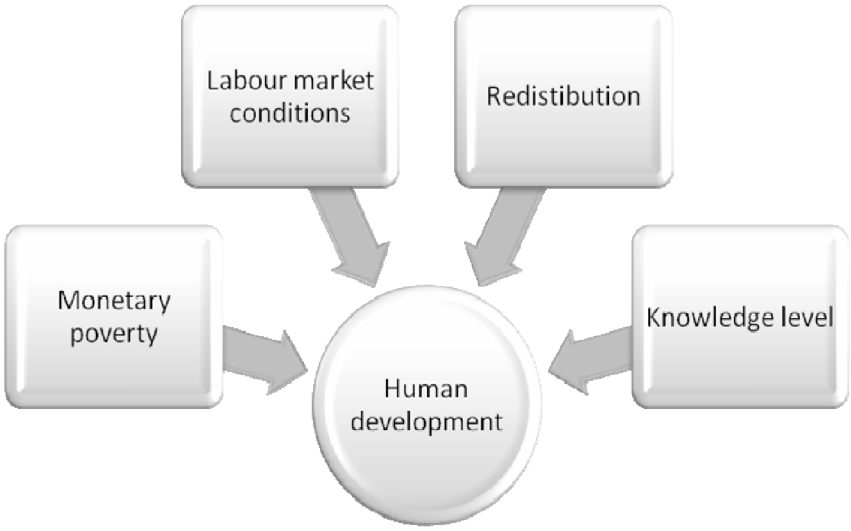
Source: own compilation

Conclusion

Human development in post-socialist countries is significantly affected by many socio-economic indicators. Besides monetary poverty, labour market conditions, intra-generational income redistribution and average knowledge level of the individuals play an important role in influencing human development (Figure 3).

In the recent global economic crisis it is crucially important to highlight that redistribution does not slow down human development. On the contrary, it promotes it. If governments of these countries try to promote economic growth, which is one of the most important aims in the recent global crisis, they have to be aware of the fact that redistribution is not against this aim. In the realization of redistribution, however, it is important to focus on poverty reduction instead of the decrease of income inequalities – like applying higher tax rates for higher income levels.

Figure 3: Socio-economic indicators influencing human development



Source: own compilation

In other words, the aim is to ensure that each member of the society can reach a minimal living standard and not to reduce the differences between the wealthiest and the poorest parts of the society. This latter would slow down human development partly directly partly indirectly through the decrease of income inequalities

In the future, the study can be extended to examine the relationship between poverty and economic growth at country level to reveal any potential differences among post-socialist countries.

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