The Relationship Between Economic Growth and Human Development in RA: An Econometric Analysis

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ՀՀ տնտեսական աճի և մարդկային զարգացման փոխկապվածությունը. էկոնոմետրիկ վերլուծություն

Ղազարյան Ռոմիկ Ա.
Հայաստանի պետական տնտեսագիտական համալսարանի տնտեսամաթեմատիկական մեթոդների ամբիոնի ասպիրանտ (Երևան, ՀՀ)
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Ամփոփագիր. Ըստ մարդկային զարգացման հայեցակարգի՝ զարգացումն է մարդկային գործունեության վերջնական նպատակը, իսկ տնտեսական աճն ավելի շատ միջոց է դրան հասնելու համար: Սակայն այս երկու ցուցանիշներն ունեն շատ ամուր փոխկապվածություն: Մարդկային զարգացման ազդեցությունը տնտեսական աճի վրա կարտացոլվի այնքանով, որքանով մարդկանց հնարավորություններն ու ազատությունները կբարելավեն տնտեսական ցուցանիշները: Իսկ հակառակ ազդեցությունը կախված է նրանից, թե եկամուտների ավելացումը որքանով կընդլայնի բնակչության և կառավարության հնարավորությունների և ընտրության շրջանակները:
Սույն հոդվածում խնդիր է դրվել բացահայտելու Հայաստանում մարդկային զարգացման և տնտեսական աճի միջև փոխադարձ կապերը: Այդ նպատակով կառուցվել են երկու ռեգրեսիոն մոդելներ, որոնցից մեկը բնութագրում է տնտեսական աճի ազդեցությունը մարդկային զարգացման դինամիկայի վրա, իսկ երկրորդը՝ հակառակը: Մոդելները գնահատվել են ավտոռեգրեսիվ բաշխված լագի (ARDL) մեթոդով, իսկ գնահատումներն իրականացվել են EViews 10 ծրագրային փաթեթի միջոցով:
Գնահատման արդյունքները ցույց են տալիս, որ Հայաստանում տնտեսական աճն ու մարդկային զարգացումն իրապես ունեն փոխադարձ դրական ազդեցություն: Ընդ որում մարդկային զարգացման ազդեցությունն ավելի մեծ է տնտեսական աճի վրա, քան հակառակ ազդեցությունը, ինչը նշանակում է, որ առողջության և կրթության բարելավումներն ավելի ինտենսիվ են ազդում եկամուտների աճի վրա, քան եկամուտների աճը՝ առողջության և կրթության բարելավումների:
Հանգուցաբառեր՝ մարդկային զարգացում, տնտեսական աճ, կենսամակարդակ, կրթություն, առողջություն

Взаимосвязь между экономическим ростом и человеческим развитием в РА: эконометрический анализ

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Аннотация. Согласно концепции человеческого развития, развитие является конечной целью человеческой деятельности, а экономический рост — скорее средством для достижения этой цели. Тем не менее, эти два показателя имеют очень сильную взаимозависимость. Воздействие человеческого развития на экономический рост будет отражаться в той мере, в какой возможности и свободы людей улучшат экономические показатели. А обратный эффект зависит от того, насколько увеличение доходов расширит возможности и выбор населения и правительства.
Данная статья направлена на выявление взаимосвязей между человеческим развитием и экономическим ростом в Армении. Для этого были построены две регрессионные модели, одна из которых характеризует влияние экономического роста на динамику человеческого развития, а вторая – противоположное влияние. Модели были оценены с использованием метода ARDL, а оценки были выполнены с использованием программного пакета EViews 10.
Результаты оценки показывают, что экономический рост и человеческое развитие в Армении действительно имеют взаимоположительный эффект. Более того, влияние человеческого развития на экономический рост больше, чем противоположный эффект, а это означает, что улучшения в области здравоохранения и образования оказывают более сильное влияние на рост доходов, чем рост доходов на улучшения в области здравоохранения и образования.
Ключевые слова: человеческое развитие, экономический рост, уровень жизни, образование, здоровье

Introduction. To assess the standard of living of the population of any country, indicators such as GDP per capita, consumer price index, employment or unemployment levels are generally examined. These indicators are of great importance, and their growth (decrease) rates generally characterize the trends of economic development of the country and improvement of the population's standard of living. The growth of the population's standard of living is often equated with economic growth, but the standard of living is a much broader concept, therefore, in order to assess it comprehensively, it is necessary to analyze other, no less important indicators characterizing the quality of life and well-being. Nobel Prize laureate Amartya Sen states, that there are many fundamentally different ways of seeing the quality of living, and quite a few of them have some immediate plausibility. You could be well off, without being well. You could be well, without being able to lead the life you wanted. You could have got the life you wanted, without being happy. You could be happy, without having much freedom. You could have a good deal of freedom, without achieving much. We can go on [**6**, p. 1].

Human development has recently been advanced as the ultimate objective of human activity in place of economic growth. Human development reflects the expansion of the freedoms and choices of each individual. Human development is about expanding human freedoms and opening more choices for people to chart their own development paths according to their diverse values rather than about prescribing one or more particular paths. The human development approach reminds us that economic growth is more means than end. Unlike income or economic growth, health and education are not just means but ends in themselves. Human development is an ongoing journey, not a destination. Its center of gravity has always been about more than just meeting basic needs. It is about empowering people to identify and pursue their own paths for a meaningful life, one anchored in expanding freedoms [**9**, p. 6].

Literature review. It is obvious that there exists a very strong connection between human development and economic growth. On the one hand, economic growth provides sufficient resources that can promote sustainable human development, and on the other hand, human development leads to an improvement in the quality of the workforce, which in turn is a powerful stimulus for economic growth. The results of some studies document that countries that pursue policies that promote human development are much more successful than those that prioritize economic growth. This finding implies that, although both human development and economic growth should be jointly promoted, human development should be given sequential priority [**5**, p. 1]. Economic growth affects human development mainly through the activities of households and government, as well as various public organizations. The same level of GDP can affect human development in different ways, which is due to the efficiency of GDP distribution, as well as the behavior of households and the effectiveness of policies conducted by the government and non-governmental organizations.

The inequality of income distribution, the level of household income, as well as the control of expenses within the economy have a decisive role in the acquisition of goods that contribute to human development (such as healthy food, education, health, etc.). Low levels of per capita income, high levels of poverty or inequality in income distribution lead to low levels of household consumption of goods that promote human development. Households can increase their consumption of these goods, promoting human development, if they receive additional income, which means that reducing poverty and inequality contributes to human development. A number of studies have shown that in countries with low levels of inequality, enrollment in secondary education is significantly higher [**11**], and increasing household income has a significant impact on the demand for health services [**1**, p. 85].

The government should promote human development by competent management of public expenditures. The share of the Government's total expenses directed to human development areas, as well as the distribution of these expenses in the given areas, have a significant impact. It is also important to precisely define the priority areas, the funds directed to which should be a proper part of the country's GDP. A big problem for the government can be high demand in areas that don’t contribute to human development at all (such as expenses for the acquisition of military equipment). The activities of public organizations are mainly aimed at promoting human development: creating additional income for the poor, homeless, orphanages or schools, implementing various health programs, etc.

As a result of human development, people become better fed, healthy, educated and as a result contribute more to economic growth. Achieving a high level of human development is not an end in itself, but it has a direct impact on economic growth, as it increases people's capabilities and productivity, making them more creative. Secondary and vocational education contributes to the acquisition of skills, health increases productivity, and higher education develops science. Many studies show that income increases are associated with additional

years of schooling, with income levels varying by level of education [**4**, p. 1328]. The higher the educational level of the labor force, the higher the overall productivity, because highly educated workers can introduce certain innovations and thus affect the productivity of all workers. In other words, overall productivity increases as the average level of education increases [**3**, p. 37].

Data and model specification. In order to study the mutual relationship between economic growth and human development in Armenia, two regression models were constructed, one of which characterizes the impact of economic growth on the dynamics of human development, and the second one, the opposite. The models have the following appearance:

$$\ln HDI_t = \alpha_1 + \alpha_2 \ln GDP_t + \alpha_3 \ln FDI_t + \alpha_4 \ln MYS_t + \alpha_5 TR_t + \alpha_6 LF_t + \varepsilon_t \quad t = \overline{1990, 2021} \quad (1)$$

$$\ln GDP_\tau = \beta_1 + \beta_2 \ln HDIM_\tau + \beta_3 YEMP_\tau + \beta_4 SSE_\tau + u_\tau \quad \tau = \overline{1991, 2020} \quad (2)$$

Descriptions of and details about variables are in Table 1.

Table 1. Measurement units of variables, definition and data collection source

Variable	Definition	Measurement unit	Source
HDI	human development index	unit	UNDP Data Center
GDP	real GDP per capita	constant 2017 dollar, PPP	World Bank WDI
FDI	foreign direct investment (net inflows)	US dollar	World Bank WDI
TR	annual import and export	the sum of shares of GDP	World Bank WDI
MYS	mean years of schooling for adults ages 25 years and older	year	UNDP Data Center
LF	labor force participation rate	as a percentage of the population aged 15-64	World Bank WDI
HDIM	modified human development index	unit	UNDP Data Center and author's calculations
YEMP	employment rate among youth	as a percentage of the population aged 15-24	World Bank WDI
SSE	secondary school enrollment	ratio of actual and expected values	World Bank WDI

Table compiled by author

FDI and trade stimulate the labor market and economic growth [**7**, p. 53], provide an opportunity to obtain durable goods by promoting import and export in the region, create new employment opportunities in the society, contributing to human development [**10**]. As already stated, education has a significant impact on both economic growth and human development. In order to evaluate the achievements of human development, as an indicator describing education, the level of adult literacy (mean years of schooling for adults ages 25 years and older) was chosen, which is widely used as a measure of human capital in the country [**2**]. The desire to be employed by the healthy, educated and workable population of any country reflects the high level of human development. What are the employment opportunities in the given country is a different matter. In this context, the labor force participation rate among the working-age population, which includes people who are either employed or looking for work, was also selected as an explanatory variable. The expected relation between all explanatory variables and HDI is significant and positive.

The modified Human Development Index is calculated using the same methodology as the HDI, but includes only non-income components. That is, only health and education indices were calculated, and then their geometric mean. This modified index expresses human development without taking into account income growth, so it can perfectly characterize the achievements in the dimensions of health and education. In order to assess the impact on the dynamics of human development, the level of labor force participation was chosen as an explanatory variable, but only those who are engaged in any type of employment create a result in the country. Therefore, to study the dynamics of economic growth, the employment level was chosen as an explanatory variable. And since the people who ensure the development of the country in the coming decades are mainly young people, so we found it appropriate to take only the indicator characterizing the level of employment of young

people. The third explanatory variable is the level of participation in secondary education. The basis for the selection of this explanatory variable was the fact that people with secondary education have the greatest weight in the labor resources in Armenia (41% in 2020) [**12**, p. 31]. In this case too, a significant and positive effect is expected for all selected variables.

Results and discussion. To evaluate the constructed models, the stationarity of the series was first checked, for which the unit root (ADF) test according to Akaike's criterion was applied, the results of which show that all included variables are I(0) or I(1) processes (Table 2), which means that the models can be estimated using the autoregressive distributed lag (ARDL) method [**8**, p. 79].

Table 2. *Results of unit root test*

Group unit root test: Summary
Series: HDI, GDP, FDI, MYS, TR, LF, HDIM, YEMP, SSE
Sample: 1990 2021
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic lag length selection based on AIC: 0
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t	-9.60630	0.0000	9	242
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-8.77519	0.0000	9	242
ADF - Fisher Chi-square	104.452	0.0000	9	242
PP - Fisher Chi-square	119.730	0.0000	9	242

Source: author's calculations

Thus, the following ARDL models were estimated:

$$\Delta \ln HDI_t = C_1 + \sum_{i=1}^{p_1} \alpha_{1i} \Delta \ln HDI_{t-i} + \sum_{i=0}^{p_2} \alpha_{2i} \Delta \ln GDP_{t-i} + \sum_{i=0}^{p_3} \alpha_{3i} \Delta \ln FDI_{t-i} + \sum_{i=0}^{p_4} \alpha_{4i} \Delta \ln MYS_{t-i} +$$
$$+ \sum_{i=0}^{p_5} \alpha_{5i} \Delta TR_{t-i} + \sum_{i=0}^{p_6} \alpha_{6i} \Delta LF_{t-i} + \lambda_1 \ln HDI_{t-1} + \lambda_2 \ln GDP_{t-1} + \lambda_3 \ln FDI_{t-1} + \lambda_4 \ln MYS_{t-1} +$$
$$+ \lambda_5 TR_{t-1} + \lambda_6 LF_{t-1} + \varepsilon_t \qquad t=\overline{1990, 2021} \qquad (3)$$

$$\Delta \ln GDP_\tau = C_2 + \sum_{j=1}^{q_1} \beta_{1j} \Delta \ln GDP_{\tau-j} + \sum_{j=0}^{q_2} \beta_{2j} \Delta \ln HDIM_{\tau-j} + \sum_{j=0}^{q_3} \beta_{3j} \Delta YEMP_{\tau-j} + \sum_{j=0}^{q_4} \beta_{4j} \Delta SSE_{\tau-j} +$$
$$+ \delta_1 \ln GDP_{\tau-1} + \delta_2 \ln HDIM_{\tau-1} + \delta_3 YEMP_{\tau-1} + \delta_4 SSE_{\tau-1} + u_\tau \quad \tau=\overline{1991, 2020} \qquad (4)$$

where $\alpha_{1\text{-}6\,i}$ and $\beta_{1\text{-}4\,j}$ are the short-term coefficients, $\lambda_{1\text{-}6}$ and $\delta_{1\text{-}4}$ are the long-term coefficients, $p_{1\text{-}6}$ and $q_{1\text{-}4}$ are the number of lags of relevant variables, C_1 and C_2 are the free members of the corresponding models, and ε and u are the error terms of the corresponding models.

The first parts of the equations with α and β represent short-run dynamics of the models, and the second parts with λ and δ represent long-run relationships. The null hypothesis here is non-existence of long-run relationship.

Estimation of model (3). The optimal number of lags for each variable in the equation was determined by applying Akaike's information criterion. F-Bounds test was performed in order to check the cointegration between the selected variables. The results (Table 3a) of this test indicate that the value of the F statistic is greater than the critical value of I(1) at all levels of significance. This means that we have to reject the null hypothesis and accept the alternative hypothesis, which means that there is cointegration in the model, or, in other words, there is long-term dependence between the variables.

Table 3. *Results of tests for cointegration in models*

a					b				
F-Bounds Test		Null Hypothesis: No levels relationshi			F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)	Test Statistic	Value	Signif.	I(0)	I(1)
			Asymptotic: n=1000					Asymptotic: n=1000	
F-statistic	11.31027	10%	2.08	3	F-statistic	7.136588	10%	2.37	3.2
k	5	5%	2.39	3.38	k	3	5%	2.79	3.67
		2.5%	2.7	3.73			2.5%	3.15	4.08
		1%	3.06	4.15			1%	3.65	4.66

Source: author's calculations

After confirming the existence of cointegration, the error correction model (ECM) was estimated, which has the following form:

$$\Delta \ln HDI_t = C_1 + \sum_{i=1}^{p_1} \alpha_{1i} \Delta \ln HDI_{t-i} + \sum_{i=0}^{p_2} \alpha_{2i} \Delta \ln GDP_{t-i} + \sum_{i=0}^{p_3} \alpha_{3i} \Delta \ln FDI_{t-i} + \sum_{i=0}^{p_4} \alpha_{4i} \Delta \ln MYS_{t-i} + \sum_{i=0}^{p_5} \alpha_{5i} \Delta TR_{t-i} + \sum_{i=0}^{p_6} \alpha_{6i} \Delta LF_{t-i} + \omega_1 ECT_{t-1} + \varepsilon_t \qquad t=\overline{1990, 2021} \qquad (5)$$

where ECT_{t-1} is the error correction term obtained from the residuals of the estimated model, and ω_1 is the speed of adjustment. The results of this model estimation show that the error correction term is significant and negative (-0.679), which means that 68% of the deviation from the long-run equilibrium is adjusted within a year. Results of long-run dynamics are shown in Table 4a.

Table 4. *Results of the long-run dynamics of the models*

a					b				
ARDL Long Run Form and Bounds Test Dependent Variable: DLOG(HDI) Selected Model: ARDL(1, 1, 2, 0, 0, 2) Sample: 1990 2021 Included observations: 26					ARDL Long Run Form and Bounds Test Dependent Variable: DLOG(GDP) Selected Model: ARDL(1, 0, 1, 1) Sample: 1991 2020 Included observations: 18				
Levels Equation Case 2: Restricted Constant and No Trend					Levels Equation Case 2: Restricted Constant and No Trend				
Variable	Coefficient	Std. Error	t-Statistic	Prob.	Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(GDP)	0.092767	0.005742	16.15694	0.0000	LOG(HDIM)	14.87784	1.144539	12.99898	0.0000
LOG(FDI)	0.012349	0.002260	5.464256	0.0001	YEMP	0.061265	0.018775	3.263157	0.0076
LOG(MYS)	0.325344	0.134621	2.416745	0.0299	SSE	0.016820	0.006037	2.786289	0.0177
TR	0.000342	0.000126	2.716517	0.0167	C	9.956119	0.734731	13.55070	0.0000
LF	0.001049	0.001061	0.988570	0.3397					
C	-2.262405	0.227061	-9.963863	0.0000					
EC = LOG(HDI) - (0.0928*LOG(GDP) + 0.0123*LOG(FDI) + 0.3253*LOG(MYS) + 0.0003*TR + 0.0010*LF -2.2624)					EC = LOG(GDP) - (14.8778*LOG(HDIM) + 0.0613*YEMP + 0.0168*SSE + 9.9561)				

Source: author's calculations

This study uses the Correlogram Q-statistics to check autocorrelation, Serial correlation LM test to check the serial correlation and Breusch-Pagan-Godfrey test to check heteroscedasticity in the residuals. According to the results (Table 5) of the tests we have to accept the null hypotheses, which means that there is no autocorrelation, no serial correlation and the residuals are homoscedastic.

Table 5. *Residual diagnostics for model (3)*

Sample: 1990 2021 Included observations: 26
Q-statistic probabilities adjusted for 1 dynamic regressor

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob.
		1	-0.102	-0.102	0.3007	0.583
		2	-0.238	-0.251	2.0133	0.365
		3	-0.276	-0.357	4.4233	0.219
		4	0.293	0.156	7.2638	0.123
		5	0.017	-0.084	7.2737	0.201
		6	-0.193	-0.228	8.6255	0.196
		7	-0.304	-0.320	12.178	0.095
		8	0.315	0.087	16.197	0.040
		9	0.105	-0.098	16.671	0.054
		10	-0.065	-0.129	16.864	0.077
		11	-0.115	0.084	17.504	0.094
		12	0.198	0.100	19.546	0.076

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.890557	Prob. F(2,12)	0.4359
Obs*R-squared	3.360321	Prob. Chi-Square(2)	0.1863

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	1.678865	Prob. F(11,14)	0.1792
Obs*R-squared	14.78879	Prob. Chi-Square(11)	0.1924
Scaled explained SS	4.348454	Prob. Chi-Square(11)	0.9586

Source: author's calculations

As the obtained results show, the labor force participation rate among the population aged 15-64, contrary to our expectations, has a positive but not significant effect on human development in the long-run. A 1% increase in GDP per capita leads to a 0.1% increase, and a 1% increase in foreign direct investment leads to a 0.01% increase in human development index. A 1 percentage point increase in the share of imports and exports in GDP leads to a 0.035% increase, and a 1% increase in the duration of education leads to more than a 0.3% increase in human development index.

The CUSUM and CUSUM^2 were conducted to check the model's stability. The diagnostic test confirmed that the adopted model is well established and that the calculated results are reliable for policy implications, with the blue lines of both CUSUM and CUSUM^2 lying between the critical boundaries at the 5% level of significance, as shown in Figures 1 and 2, respectively, which confirms the accuracy of the model and the long-run parameters.

Figure 1. *The plot of cumulative sum of the recursive residual at 5% significance*

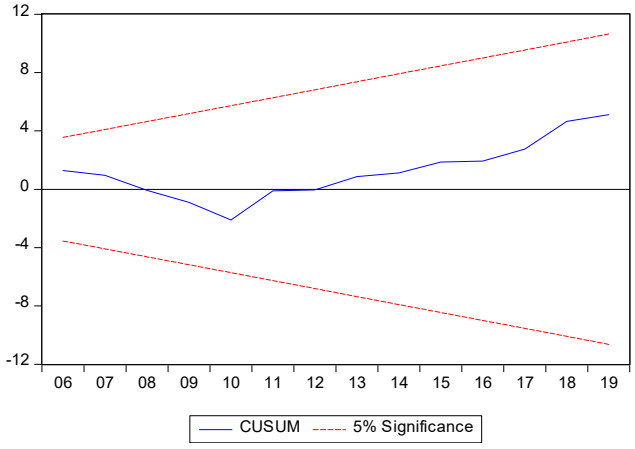
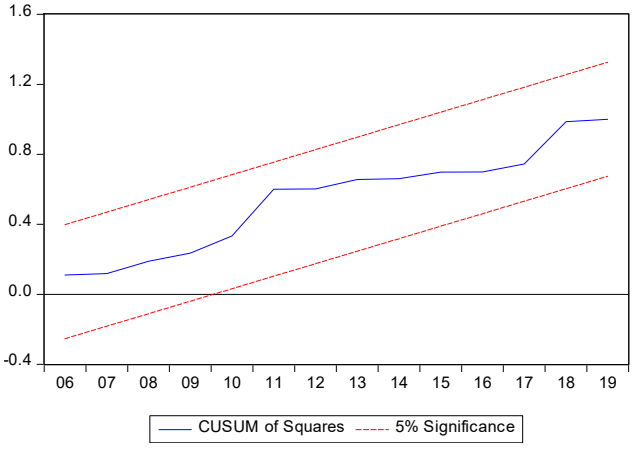


Figure 2. *The plot of cumulative sum of the square of the recursive residual at 5% significance*



Source: author's calculations

Estimation of model (4). As in the case of the previous model, here also the optimal number of lags for each variable in the equation was determined using the Akaike's information criterion. The presence of cointegration in the model was confirmed by the F-Bounds Test (Table 3b). Then the error correction model was evaluated, which has the following form:

$$\Delta \ln GDP_\tau = C_2 + \sum_{j=1}^{q_1} \beta_{1j} \Delta \ln GDP_{\tau-j} + \sum_{j=0}^{q_2} \beta_{2j} \Delta \ln HDIM_{\tau-j} + \sum_{j=0}^{q_3} \beta_{3j} \Delta YEMP_{\tau-j} + \sum_{j=0}^{q_4} \beta_{4j} \Delta SSE_{\tau-j} + \omega_2 ECT_{\tau-1} + u_\tau \quad \overline{\tau=1991, 2020} \tag{6}$$

The results of this model estimation show that the error correction term is significant and negative ($\omega_2 = -0.742$), which means that 74% of the deviation from the long-run equilibrium is adjusted within a year. Results of long-run dynamics are shown in Table 4b. Residual diagnostics in Table 6 confirms that there is no autocorrelation, no serial correlation and the residuals are homoscedastic.

Table 6. *Residual diagnostics for model (4)*

Sample: 1991 2020 Included observations: 18
Q-statistic probabilities adjusted for 1 dynamic regressor

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob.
		1	0.115	0.115	0.2785	0.598
		2	-0.052	-0.066	0.3395	0.844
		3	0.056	0.072	0.4157	0.937
		4	-0.190	-0.214	1.3477	0.853
		5	-0.232	-0.183	2.8438	0.724
		6	-0.122	-0.116	3.2867	0.772
		7	0.107	0.144	3.6641	0.818
		8	0.069	0.027	3.8367	0.872
		9	-0.119	-0.195	4.4033	0.883
		10	-0.257	-0.395	7.3775	0.689
		11	0.195	0.292	9.3383	0.591
		12	-0.229	-0.295	12.475	0.408

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.158427	Prob. F(2,9)	0.8558
Obs*R-squared	0.612156	Prob. Chi-Square(2)	0.7363

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	1.028135	Prob. F(6,11)	0.4566
Obs*R-squared	6.467459	Prob. Chi-Square(6)	0.3729
Scaled explained SS	1.351739	Prob. Chi-Square(6)	0.9687

Source: author's calculations

As the results in Table 4b show, a 1% increase in the modified human development index (ie, health and education gains) leads to a 14.9% increase in GDP per capita. A one percentage point increase in the youth employment rate leads to a 6.3% increase, and a unit increase in the secondary school enrollment rate leads to a 1.7% increase in GDP per capita.

Figure 3. *The plot of cumulative sum of the recursive residual at 5% significance*

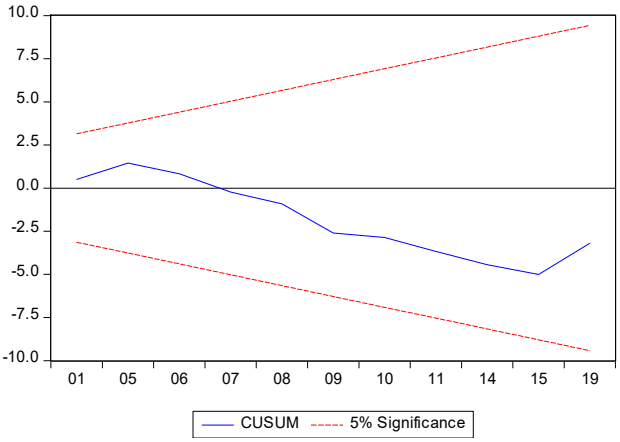
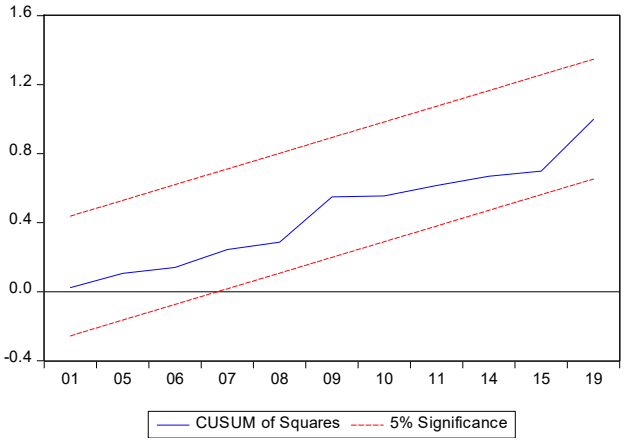


Figure 4. *The plot of cumulative sum of the square of the recursive residual at 5% significance*



Source: author's calculations

CUSUM and CUSUM^2 diagnostic tests, as shown in Figures 3 and 4, respectively, confirmed the accuracy of the model and the long-run parameters.

Conclusions and Recommendations. Summarizing the evaluation results of the two models, we can state that economic growth and human development in Armenia really have a mutually positive effect. Moreover, the effect of human development on economic growth is greater than the opposite effect, which means that improvements in health and education have a more intensive effect on income growth than income growth on improvements in health and education.

FDI provides society with capital and advanced technologies, creates a favorable tax environment, facilitates the exchange of resources, and thus promotes human development. Therefore, the government should improve the tax environment in the country, as well as achieve peace with the neighboring countries quickly and under the most favorable conditions for us, which will be a great incentive for increasing the flow of investments. Trade also has a positive impact on human development, so the government should develop trade ties with partner countries, as well as create new contact edges with potential partner countries. The adult literacy rate (expressed as the average duration of education) has a positive and significant impact on human development, so the government should increase the share of expenditure on education in GDP, creating favorable conditions that ensure the continuity of learning both in high schools and universities. This can be expressed by increasing the number of free places in universities, more flexible mechanisms for compensation of tuition fees, increasing the quality and quantity of educational hostels, etc.

The results of the second model indicate that young people have a great role in economic growth, so in order to promote it, the government and private companies should create favorable conditions to increase the employment rate of young people. The universities also play a big role here, which, by improving the environment of cooperation in the public and private sectors, they will provide their graduates with professional and highly paid work. Enrollment in secondary education also has a positive effect on economic growth, so the government should make it possible for all people of the appropriate age to attend school. The results of the households' integrated living conditions survey in 2020 showed that the main reason for not attending school in the case of the 6 and older age group, and in the case of persons aged 16-20 not continuing their education, was that they simply don't want to do it (they studied as much as they wanted) [**13**, p. 110].

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