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# THE IMPACT OF ECONOMY FINANCIALIZATION ON THE LEVEL OF ECONOMIC DEVELOPMENT OF THE ASSOCIATE EU MEMBER STATES

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**ABSTRACT.** Dynamic development of the financial system has an increasing impact on the state and development of both national economies and the world economy. This problem is especially acute in developing countries and is predetermined by their economic, social and political development. It also requires constant evaluation and control over the level of their economic development in terms of financialization. Within the framework of the European Neighborhood Policy, the EU cooperates with the countries of the region to deepen and strengthen the relations and helps to increase the stability and sustainability of its Eastern neighbors. Ukraine, Moldova, and Georgia today are currently Associated Eastern Partnership members. Using the panel data for these countries over the period of 2007–2017, the relationship between economic growth and indicators of financialization of the economies was determined. To this end, a fixed-effect regression model, the statistical adequacy of which was confirmed by many indicators (significance levels, R-squared coefficients, the Breusch-Pagan test), is also used. It was determined that employment, exports of goods and services, added value created in the industrial sector, the ratio of bank capital and reserves to total assets, the share of M1 monetary aggregate in GDP, deposit rate, and Gini index had a positive influence on economic growth of the countries in question.

**Keywords:** panel data, GLS methods, financial globalization, financial system, industry output, direct investment in the economy, Gini index

## Introduction

Evolutionary transformational processes in many countries have predetermined the gradually increasing attention to economic development overall and factors stimulating it. Therelevance of this issue has been confirmed by the fact that in 2018, Paul M. Romer and William D. Nordhaus won the Nobel Prize in Economics for studying the relationship between economic growth and technological and climatic changes taking place in a globalized world.

Defining the indicators of economic development is one of the tasks that need constant attention due to the change dynamics. Contemporary economic processes balance between real and financial sectors of the economies. The process of financialization, in its turn, should serve as a service mechanism for the real sector. Dynamic tracking of changes in interests and goals of economic entities becomes a prerequisite for predicting the state of economic development.

The EU is interested in deepening its relations with the Eastern Partnership countries in the context of their two-way cooperation. The closest cooperation in the region is with the EU associate members (Ukraine, Moldova, and Georgia), which are reforming their socio-political life to improve population living standards. Today, these partner countries are at the stage of reforming and thus require comprehensive support to prioritize and optimize the allocation of scarce resources to achieve better results. The European Commission identified 20 key deliverables for 2020: economic development and market opportunities, strengthening institutions and good governance, connectivity, energy efficiency, environment and climate change, mobility and people-to-people contacts, etc. The general framework for maintaining relations with the EU is determined by the Association Agreements and the Partnership Priorities. Partners also participate in initiatives such as Erasmus+, TAIEX, Twinning, SIGMA and the Neighborhood Investment Facility.

The purpose of the article is to determine the economic growth indicators in the context of economy financialization in the EU associate member states.

## 1. Literature review

Theories of economic growth are current trends in research at any time, especially in the face of modern dynamic change, and are being explored by scholars from various research areas. Some studies determine the drivers of economic growth.

In particular, Smirnov and Wang (2018) proposed a new (logistic) growth model, which is a natural continuation of previous research on economic growth.

Themba, Chirva, and Nicholas (2016), based on the neoclassical Solow-Swan's (1956) economic growth theory, state that factors that determine the level of economic growth differ depending on the economic level of a country. Besides, the same factors may manifest themselves differently. Various scholars actively explore this model from different perspectives. For example, in addition to labor-intensive technological progress, Liashenko (2013) has included capital-intensive technological progress in this model by introducing an effective capital indicator. In addition, the neutral technological progress is considered by introducing an autonomous multiplier into the production with a given pace of neutral technological progress.

Boldeanu and Constantinescu (2015) explore a wide range of factors that can determine economic growth. These factors were grouped as economic and non-economic. Lychkina (2004) implemented complex stimulation modeling of regional socio-economic development, which makes it possible to develop an optimal system of managerial decision-making. Shyrmay (2005) proposed a comprehensive approach to analyzing the impact of technology, population, health care, education, industrial development, international

assistance, and other factors on the level of socio-economic development. Kooros and Badeaux (2007) conducted a comparative analysis of economic development models. Among the key theories discussed were the Markov chain and the Leontiev-Kooros model, which generally allowed for highlighting the benefits and drawbacks of resource allocation in the process of socio-economic development.

Economic development research involves the use of various economic and mathematical tools. In particular, Iyer and Gupta (2019) analyze the economic development of India using Bayesian vector autoregression (BVAR) techniques. They predict quarterly GDP growth in the country, identify potential vectors for changing the nature of monetary policy, and outline alternative approaches to monetary policy.

Some publications identify the influence of a particular factor on economic growth. Ongoing research tends to reveal the impact of the financial component on economic growth, both globally and nationally. Eddien, Ananzeh, and Othman (2019) examine the impact of financial development on economic growth in a country, using Jordan as an example. They employ various economic and mathematical tools such as Johansen co-integration test (VECM) and Granger causality test. According to the authors, it is important to increase foreign investment, but institutional reforms are needed to improve functioning of the financial sector. Masoud and Hardaker (2012) and Osuji (2015), using regression models, investigate the impact of financial determinants on economic growth in Nigeria. Petkovski and Kjosevski (2013) explored the impact of the financial sector on economic growth in the case of 16 transition economies from Central and South Eastern Europe, using the Generalized Method of Moments (GMM). Karagiannis and Kvedaras (2016) assessed the impact of financial development on economic growth in EU countries.

Some authors try to identify the most important factors from a large list of indicators, usually using panel data. Such studies are more systematic and make it possible to assess the situation more comprehensively and objectively. In particular, the study on the economic growth factors in V4 countries (Czech Republic, Hungary, Poland, and Romania (Simionescu et al. (2016, 2017) Korauš et al. (2017) empirically analyzes data from 2003–2016 using the Bayesian generalized ridge regression. Direct foreign investment, which has essentially contributed to economic development, has been considered a significant factor among a wide range of indicators for these countries, and only in the Czech Republic education spending is the most important driver.

There are studies that specify the prospects for economic growth, as well as the factors that encourage it. Among them, it is worthwhile to highlight Kharlamova et al. (2019) who defined the potential GDP using a production function and one-dimensional and multidimensional Hodrick-Prescott filter to build the trends. They identified that the backlog in the manufacturing industry plays a significant role in monetary policy, acting as an inflation factor.

Vinnychuk et al. (2015) and Bilan et al. (2017) propose a dynamic model of economic growth, taking into account the environmental component.

Many scientists examine economic development through the lens of financial technology (Azarenkova et al., 2018), financial security (Vladychyn et al., 2018), investment security (Blakyta et al., 2018), etc.

Boldyrev et al. (2019) constructed stochastic models of the socio-economic development of regions. Adelman and Morris (1958), one of the founders of econometric modeling of socio-economic changes, considered socio-economic changes in the least developed countries. The Indian scholars Saseendran and Rodríguez (2018) analyzed socio-economic development in terms of changing human potential. Duman and Kurekova (2012)

investigated the role of public administration and industrial development in socio-economic development.

Analyzing the role of financialization as an inevitable process in contemporary development is a particular focus of attention in economic growth studies. Kozmenko and Korneev (2014) analyze the relationship between the real and financial sectors in the context of financialization. The authors formulate positive and negative effects of the financial sector on the real economy sector, analyze the periods of financialization of the world economy and determine the forecasted effects of financialization of the Ukrainian economy.

Barradas (2019) analyzes the relationship between financialization and labor market in EU countries during 1995–2013. The results point to a gap in the development levels between the financial sector and the labor markets of the countries in question. Alvarez (2015), using panel data from 2004–2013, investigates the relationship between the degree of financialization in France and the uniform distribution of revenues. Peralta and Escalonilla (2011) also analyzed the processes of labor market change influenced by financialization.

Svilokos and Burin (2017) examined the extent to which financialization affects deindustrialization in the European Union. The study was based on a fixed-effects regression model in the period of 1995–2015. It was clarified that in the process of financialization, the manufacturing sector is reduced and replaced by service activities. However, the service sector does not compensate for job losses in the manufacturing sector. Besides, financialization negatively affects the added value of the manufacturing sector.

Theoretical analysis of current developments outlined the range of existing scientific and methodological developments in the chosen research area. Most scholars have been found to be in line with key trends in covering the effective features of socio-economic development. Also, a list of existing factors that have an impact on the complex phenomenon under investigation was compiled. Meanwhile, there is a lack of possible directions to expand existing basic models of socio-economic development. In the current study, this will be done through the alternate inclusion of indicators, which should further determine the factors influencing the level of socio-economic development of the country group studied.

The theoretical material developed will be the basis for a practical study that combines basic construction of economic growth models, economic and mathematical tools to determine the interrelationships between productive and factor characteristics. Particular attention is drawn to the process of financialization in the context of economic growth concepts. The theoretical ideas obtained will be the basis for studying economic growth influenced by financialization processes within the EU associate member states, which are in the process of dynamic transformation of social and political life under reforms. Reform requires constant monitoring of factors and results of measures taken to change certain problematic aspects. The results may be a recommendation to draw up a reform roadmap in selected countries as a source for defining particularly promising or problematic indicators of economic growth.

### **3. Output data**

The study used data describing the economic development of countries that have a EU Association Agreement. These include Ukraine (the Agreement came into effect on September 1, 2017), Georgia (July 1, 2016), and Republic of Moldova (July 1, 2016). This type of partnership in EU is aimed at the cooperation of associated members and the EU in economic, trade, political and other fields. These countries share the common historical past of the former Soviet republics and countries whose economies are being transformed from command-administrative to market-type ones. According to the World Bank's income-based

classification, these countries are lower- and middle-income economies (Ukraine, Moldova, and Georgia). The impact of economy financialization on the level of economic development in the countries was analyzed for the 2007-2017 period based on the World Development Indicators (WDI), which characterize relevant and accurate global, national and regional assessments compiled from officially recognized international sources.

#### 4. Methodology

The choice of the observation period of 2007–2017 for the three countries results in a two-dimensional array with a temporal and spatial component, which makes it necessary to manipulate the panel data. The panel data allow capturing a large number of objects over a period of time. Among the advantages of using panel data, one can highlight the fact that this increases the number of degrees of freedom and, accordingly, reduces collinearity between the explanatory variables, which improves the estimate efficiency. Works by Bassanini and Scarpetta (2001), and Dewan and Hussein (2001) are the examples of using panel data in studying the economic growth factors. The data regression analysis tools of the STATA software complex will make it possible to establish the type of relationship between the studied variables. The regression of these panels implies the possibility of using two types of models: fixed effects and random effects model (Torres-Reyna, 2007). The fixed effects model is most appropriate when investigating a certain unique homogeneous set of observables, whereas the random effects model is more applicable in the case of non-correlation and heterogeneity of randomly selected observational objects in the total population.

#### 5. Findings

The panel data regression model provides a dependent variable and several factor variables. GDP per capita was taken as an indicator of economic growth (dependent variable). The reason for this is that GDP is one of the indicators of economic development and the most complete indicator of the total volume of production of goods and services over a certain period. The United Nations' System of National Accounts 2008 confirms this. The document outlines three possible indicators of economic growth in a country, namely, the volume of gross domestic product (GDP), real gross domestic income, and real gross national income. But the total GDP is only an absolute measure, and GDP per capita is a real indicator of development, which gives grounds for ranking the states according to their economic development.

Given the publicly available statistical information for the period of the study, the following factors were selected that may have an impact on the level of economic development in the countries under investigation:

X1 – the ratio of employed to total population over the age of 15 (based on the International Labor Organization data) (Employment);

X2 – exports of goods and services (% of GDP) (Export\_of\_goods);

X3 – the share of gross value added created in the industry sector (Industry);

X4 – the amount of direct foreign investment (% of GDP) (dir\_invest);

X5 – GDP (n-1 period) (in USD).

The GDP of the previous period was taken with the assumption that it is the basis for economic development in the current period. After collecting statistics on selected metrics, the ratio between them was calculated. As a result, there is a strong or moderate association

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between most of the factors. Consider the results of the relationship between GDP per capita and selected factor variables, using the fixed effects model in the STATA software package.

```
. xtreg GDP_per_capita Employment Export_of_goods Industry dir_invest GDP, fe

Fixed-effects (within) regression      Number of obs   =       32
Group variable: id                    Number of groups =        3

R-sq:                                  Obs per group:
    within = 0.8233                    min =          10
    between = 0.6379                   avg =         10.7
    overall = 0.6534                    max =          11

corr(u_i, Xb) = -0.3030                F(5, 24)        =       22.36
                                         Prob > F         =       0.0000
```

GDP_per_capita	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
Employment	75.05482	30.90509	2.43	0.023	11.26986	138.8398
Export_of_goods	35.99765	10.53957	3.42	0.002	14.24505	57.75026
Industry	46.31589	19.5837	2.37	0.026	5.89712	86.73467
dir_invest	-42.25979	11.51604	-3.67	0.001	-66.02774	-18.49185
GDP	.0034365	.0018942	1.81	0.082	-.0004729	.0073459
_cons	-3370.034	1034.966	-3.26	0.003	-5506.099	-1233.969
sigma_u	554.64181					
sigma_e	169.55146					
rho	.91453682	(fraction of variance due to u_i)				

F test that all u\_i=0: F(2, 24) = 4.08 Prob > F = 0.0299

Figure 1. The results of the economic growth and factor characteristics correlation (fixed effects)

Correlation of individual effects,  $\text{corr}(u_i, Xb) = -0.303$ , means relatively weak flexibility of the fixed effects model. The quality of fitting of the calculated interrelations between the economic growth indicator and the factor variables is due to the high value of “R-squared within”, which is 0.82. The “R-squared between” indicator is smaller than previously analyzed and is 0.64, that is, interindividual differences appear to be worse than dynamic ones.

The random effect model is a compromise between through regression, which imposes great homogeneity constraints on all regression equation coefficients for any  $i$  and  $t$ , and fixed effect regression, which allows each sample object to enter its constant and thus take into account the existing heterogeneity that cannot be observed. In a random effects model ( $u_i$  – random), individual heterogeneity is taken into account not in the equation itself, but in a covariance matrix that has a block-diagonal form, since random effects correlate within each group. Generalized least squares (GLS) method should be used to evaluate such regression. Let's estimate a random effects model for the same set of factor variables.



indicates that the model does not have random effects, and it is necessary to use a fixed effects model.

This result is due to the fact that specific indicators were chosen for regression, and their composition did not change from year to year. The random effects model may be relevant in the case of non-correlating random effects with regressors. In this case, a large number of indicators correlate with each other.

The following interconnection of economic growth with factor variables was obtained:

$$Y_x = 75.1X_1 + 35.9X_2 + 46.3X_3 - 42.3X_4 + 0.0034X_5 - 3370. \quad (1)$$

In this regression model, the employment rate (+75.1) had the most significant impact on GDP per capita change in this country group. The factor of exports of goods and services has a positive impact on the growth of the dependent variable (+35.9). The share of gross value added created in the industrial sector positively affects the country's economic growth. Foreign direct investment (-42.3%) harmed the GDP per capita change rate in the regression. For example using the heterogeneous panel of cointegration methods that are resistant to missing variables and endogenous regressors, D. Herzer revealed that FDI influenced economic growth in 44 developing countries. The main result of his study was that FDI, on average, had a negative impact on economic growth in developing countries, but there were significant differences in effects across countries. The average negative impact in the current model can be explained by the fact that in the present group of countries, there is a specific factor of state intervention, volatility, the significant level of risk and other factors.

The negative impact of investment on the level of economic development in the associate EU member states can be explained by the fact that the investment structure has a certain share originating from offshore zones. Accordingly, there is a suggestion that these funds do not cause real investment impact. The structure of the economies of countries surveyed does not have sufficiently developed high-tech branches with a high proportion of value added. Analyzing the business environment according to Doing Business 2018, Georgia ranks 9th, Moldova 44th and Ukraine 76th. This rating indicates that among the countries in question, there are some barriers in the protection of shareholders' interests, business taxation, enforcement of contractual relations and insolvency issues. Besides, corruption is a negative prerequisite for the investment climate in the countries studied. In particular, the Corruption Perceptions Index 2018 shows that, compared to other countries, Georgia ranks 41st, Moldova 117th, and Ukraine 120th.

Some indicators of financialization may be included in an existing regression of economic growth. In turn, one indicator is regressed to identify the most significant factors. When considering financialization indicators, models were constructed using the following indicators:

- X1 – the ratio of bank capital and reserves to total assets (bkap);
- X2 – the liquid reserves to bank assets ratio (liq\_res);
- X3 – the share of non-performing loans in total loan portfolio (nonperf\_cred);
- X4 – the share of the M1 money aggregate in GDP, % (cash in circulation and transferable deposits in the national currency) (broad\_money);
- X5 – deposit rate (dep\_rate);
- X7 – the amount of loans provided by financial sector (dom\_cred);
- X8 – Gini index (GINI).



As a result of the calculations, the most statistically significant were the regressive relations with the following indicators: the ratio of bank capital and reserves to total assets, the share of M1 monetary aggregate in GDP, %, and Gini index.

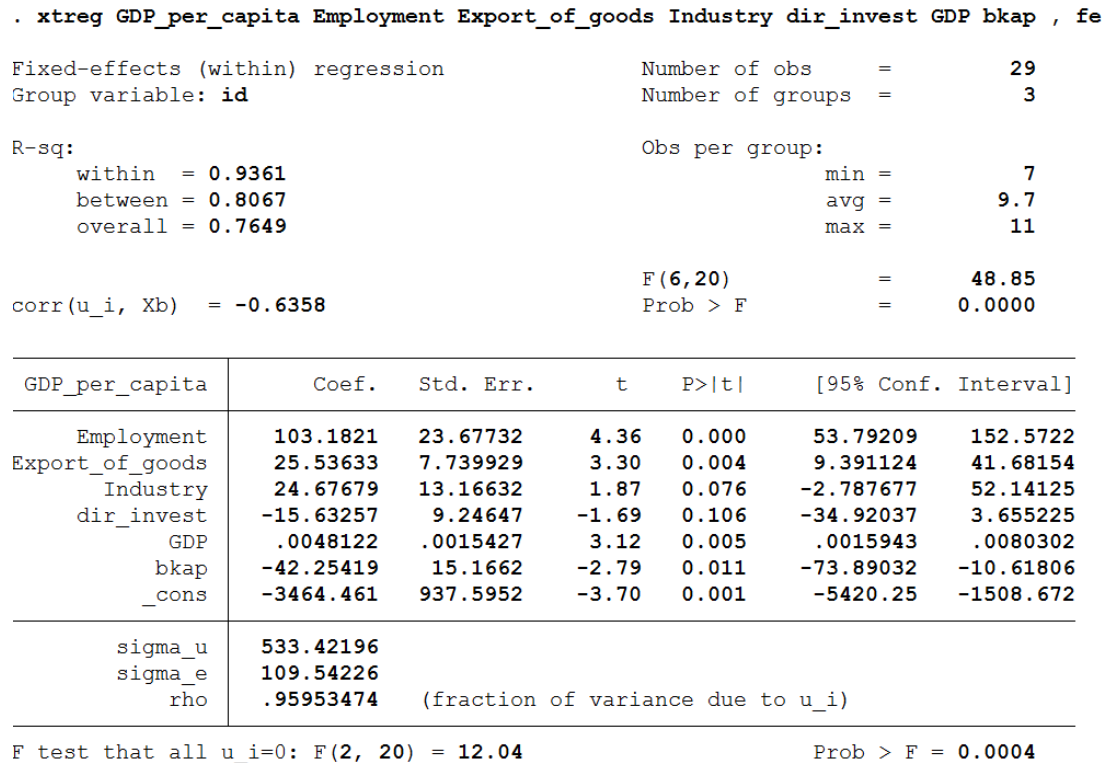


Figure 3. An assessment of the impact that theratio of bank capitaland reservestototal assets has oneconomic growth

The ratio of bank capital and reserves to total assets is statistically significant (0.01). For the group of the associate member countries, the indicator analyzed has the non-stimulant effect. It is likely that significant banking system capitalization distracts financial resources from the real sector of production, but it is only a hypothesis based on the obtained regression analysis.

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. xtreg GDP_per_capita Employment Export_of_goods Industry dir_invest GDP broad_mone
> y , fe
```

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Fixed-effects (within) regression      Number of obs   =      32
Group variable: id                    Number of groups =       3

R-sq:                                  Obs per group:
    within = 0.8623                    min =          10
    between = 0.4911                   avg  =         10.7
    overall = 0.5470                   max  =          11

                                F(6, 23)           =      24.00
                                Prob > F              =      0.0000

corr(u_i, Xb) = -0.0351
```

GDP_per_capita	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
Employment	64.13459	28.19722	2.27	0.033	5.804201	122.465
Export_of_goods	24.38481	10.53814	2.31	0.030	2.585002	46.18461
Industry	41.55724	17.75899	2.34	0.028	4.819978	78.29451
dir_invest	-34.9506	10.77311	-3.24	0.004	-57.23647	-12.66473
GDP	.0012784	.0019061	0.67	0.509	-.0026647	.0052215
broad_money	16.53945	6.481944	2.55	0.018	3.130532	29.94838
_cons	-2937.516	948.6111	-3.10	0.005	-4899.868	-975.1648
sigma_u	623.59942					
sigma_e	152.90333					
rho	.94328901	(fraction of variance due to u_i)				

Figure 4. The results of the assessment of the M1 monetary aggregate share in GDP on the economic growth level

The second regression includes the share of M1 monetary aggregate in GDP. The M1 monetary aggregate in GDP has a positive effect on economic development in the group of countries in question. It is likely that a sufficient amount of cash in circulation is a factor of the normal conduct of business transactions between entities. According IMF studies, the level of the shadow economy of the studied countries in 1991–2015 is: Ukraine – 44.8% of GDP, Georgia – 64.87% of GDP, and Moldova – 43.4% of GDP. Shadowing the economy is one of the consequences of cash payments.

According to Voinov (2017), there is a positive correlation between the level of economic inequality and the financialization degree against the background of the lag of productive capacity. According to the author, an increase in the uneven distribution of income reduces the usefulness of economic growth and makes it unsustainable, which increases the systemic crisis risk. Let's analyze the regression dependence of the Gini index and economic development of the associate EU member states. The obtained regression dependence is marked by the negative influence of the index of the uneven distribution of income on economic growth (–52.9).

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```
. xtreg GDP_per_capita Employment Export_of_goods Industry dir_invest GDP GINI , fe
Fixed-effects (within) regression      Number of obs   =      32
Group variable: id                    Number of groups =       3

R-sq:                                Obs per group:
    within = 0.8818                    min =          10
    between = 0.3495                    avg  =         10.7
    overall = 0.4024                    max  =          11

corr(u_i, Xb) = -0.5086                F(6, 23)        =      28.59
                                          Prob > F         =      0.0000
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GDP_per_capita	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
Employment	71.44958	25.84578	2.76	0.011	17.9835	124.9157
Export_of_goods	33.53784	8.836802	3.80	0.001	15.25752	51.81816
Industry	47.17037	16.36571	2.88	0.008	13.31532	81.02541
dir_invest	-26.64553	10.67841	-2.50	0.020	-48.7355	-4.55549
GDP	.0030243	.0015875	1.91	0.069	-.0002596	.0063082
GINI	-52.98817	15.71138	-3.37	0.003	-85.48963	-20.4867
_cons	-1527.686	1022.88	-1.49	0.149	-3643.675	588.3036
sigma_u	833.68138					
sigma_e	141.67378					
rho	.9719318	(fraction of variance due to u_i)				

F test that all u\_i=0: F(2, 23) = 10.12 Prob > F = 0.0007

Figure 5. An assessment of the Gini index impact on economic growth

## 6. Conclusion

The countries under investigation that are associate EU members have similar characteristics, namely a shared historical past, a transition from the command and administrative economy to a market economy, and ongoing reform of the socio-political system. Besides, there is a lack of research in the scientific literature on reform countries with sufficient common characteristics to compare. These characteristics became the basis for the possible determination of common indicators of economic growth.

The regression obtained resulted in economic growth largely dependent on employment rate. The factor of export of goods and services and the value added in production sector also play a significant role among the welfare factors of the selected countries. The negative impact of foreign direct investment is noted in this regression, which may be related to poor business conditions, lack of investor interests, corrupt and bureaucratic barriers.

Given that economy financialization in the countries studied is an integral part of their existence, the most statistically significant indicators of financialization have been identified within the existing regression model of economic development. Among the indicators analyzed, the most notable were the ratio of the bank's capital and reserves to total assets, the share of the M1 monetary aggregate in GDP (%), and Gini index. The banking sector, as the largest participant in the financial market, is expected to have an uneven relationship between equity and liabilities, which causes potential problems in the event of crises. The share of the monetary aggregate M1 in GDP positively influences the level of economic development in the analyzed countries. This is due to the fact that a significant part of the transactions is conducted in cash, and at the same time, it is a risk factor for the shadow economy, as

confirmed by the IMF's shadowing indicators. The Gini index reaffirmed the suggestion that increasing uneven income distribution is driving economic decline.

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## APPENDIX A

Table A1. Statistical 2007–2017 indicators of the associate EU members

Country	Year	GDP per capita	Employment to population ratio, 15+, total (%) (modeled ILO estimate)	Exports of goods and services (% of GDP)	Industry (including construction), value added (% of GDP)	Foreign direct investment, net inflows (% of GDP)	GINI index (World Bank estimate)	Bank capital to assets ratio (%)
UKR	2007	3220.0	51.38	42.46	32.38	7.15	29.8	11.5
UKR	2008	3311.9	51.35	44.43	29.25	5.95	27	12.8
UKR	2009	2834.3	50.07	43.91	25.85	4.07	26.6	13.0
UKR	2010	2965.1	50.53	47.05	25.90	4.74	25.3	14.6
UKR	2011	3138.4	50.88	49.82	25.11	4.42	24.8	14.7
UKR	2012	3153.7	50.77	47.72	24.54	4.65	24.6	15.0
UKR	2013	3160.0	51.55	42.96	22.67	2.46	24.7	15.0
UKR	2014	3123.9	49.25	48.59	22.82	0.63	24.6	11.2
UKR	2015	2828.8	49.58	52.60	21.73	3.35	24	8.0
UKR	2016	2905.8	49.35	49.30	23.18	3.69	25.5	9.7
UKR	2017	2991.6	49.08	47.95	23.99	2.52	25	11.9
MDA	2007	1497.1	43.40	45.26	18.78	12.18	34.4	..
MDA	2008	1616.9	42.57	45.58	19.44	12.00	34.7	..
MDA	2009	1521.8	40.17	40.82	19.12	4.75	32.9	16.0
MDA	2010	1631.5	38.87	36.87	17.16	4.92	32.1	15.9
MDA	2011	1743.4	39.49	39.23	17.08	4.96	30.6	15.8
MDA	2012	1731.5	38.48	44.97	17.63	3.44	29.2	17.2
MDA	2013	1894.7	39.36	43.48	17.81	3.03	28.5	15.0
MDA	2014	1986.9	39.71	43.34	18.12	4.28	26.8	13.1
MDA	2015	1980.2	42.47	41.53	18.66	3.32	27	..
MDA	2016	2070.6	41.01	42.80	18.84	1.40	26.3	17.3
MDA	2017	2165.1	40.56	43.46	18.51	1.98	25.9	17.0
GEO	2007	2719.3	55.01	31.21	20.90	18.48	38.1	20.4
GEO	2008	2821.0	53.08	28.62	18.94	12.48	38.5	17.1
GEO	2009	2753.6	52.97	29.74	18.93	6.11	38.2	18.2
GEO	2010	2964.4	54.28	34.95	19.32	7.74	39.5	16.9
GEO	2011	3220.3	56.04	36.24	20.51	8.08	39.6	16.5
GEO	2012	3469.6	57.12	38.15	21.07	5.95	39	16.6
GEO	2013	3633.7	56.96	44.69	20.88	6.37	38.6	16.7
GEO	2014	3851.7	58.83	42.94	20.64	11.01	37.6	17.3
GEO	2015	3973.2	59.97	44.74	21.33	11.86	36.5	13.9
GEO	2016	4083.9	59.56	43.60	21.45	10.92	36.6	13.1
GEO	2017	4283.9	59.79	50.27	22.64	12.13	37.9	12.8