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# **THE IMPACT OF ABSORBED EUROPEAN FUNDS ON THE ECONOMIC GROWTH OF BULGARIA AND NEW MEMBER STATES**

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**Abstract:** The aim of this research is to analyze the short- and long-term relationship between the absorbed European funds and the economic growth in the 11 new member states as a group, and in Bulgaria in particular, during the period 2014–2020. To achieve the aim of the research, we have adopted the autoregressive distributed lag (ARDL) model. The results show that, as public investments, the absorbed European funds have an impact on the economic growth of the 11 new member states in the short, but not in the long term. The relationship between the economic growth and the rate of absorption of European funds in Bulgaria indicates a short-term positive, but not long-term impact of the absorbed European funds on the rate of growth of the real GDP of our country.

**Key words:** new member states, European funds, economic growth.

This article shall be **cited** as follows: **Durova, K.** (2022). The Impact of Absorbed European Funds on the Economic Growth of Bulgaria and New Member States. *Economic Archive*, (4), c. 17-36.

**URL:** [www2.uni-svishtov.bg/NSArhiv](http://www2.uni-svishtov.bg/NSArhiv)

**JEL:** F15, F43, O47.

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## **1. Introduction**

**T**he cohesion policy of the European Union (EU) is a system of shared management of the European funds for stimulating the harmonized development of the Union as a whole. It is subject to changes on the basis of the processes of deepening integration and expansion of the EU. The health crisis caused by the COVID-19 pandemic has turned into an economic one as a

result of the adopted restrictive measures for preventing the spread of the disease. These conditions have transformed the EU funds into an important means for overcoming the negative health and economic effects of COVID-19; the importance of the efficient and expedient use of the EU funds constantly increases.

The main users of cohesion funds are the new member states, which shall convert to the “old” member states in nominal and real terms and draw level with them in terms of degree of economic development. To realize this process of economic convergence, the new member states shall grow faster than the countries in Northern and Western Europe. Therefore, the determinants and the means of acceleration of the economic growth of the new member states is the object of increased interest in economic literature (Todorov, 2014; Todorov and Durova, 2016; Stoilova and Todorov, 2021; Ganchev and Todorov, 2021; Todorov and Stavrova, 2022, etc.).

The aim of this article is to research the short- and long-term relationship between the absorbed European funds and the economic growth of the 11 new member states (Estonia, Latvia, Lithuania, Poland, Slovakia, Hungary, the Czech Republic, Bulgaria, Romania, and Croatia) as a group, and Bulgaria in particular, during the period 2014–2020. The aim is achieved by completing the following objectives:

- We have analyzed the management and absorption of European funds in the 11 new member states during the period 2014–2020;
- We have provided an account of the changes in the budget of the 11 new member states as a result of the COVID-19 pandemic;
- We have performed an empirical analysis of the relationship between economic growth and percentage of absorption of European funds in the 11 new member states for the period 2014–2020;
- We have empirically analyzed the relationship between economic growth and percentage of absorbed European funds in Bulgaria for the period 2014–2020;
- We have formulated conclusions and recommendations for maximizing the benefit of European funds for the economies of the 11 new member states, and of Bulgaria, in the conditions of economic crisis caused by the COVID-19 pandemic and the structural transformation towards digitalization and conservation of the environment.

The implemented research methods are comparative analysis, autoregressive distributed lag (ARDL) model and formulating policies and measures for maximizing the benefit of European funds for the economies of the 11 new member states, and of Bulgaria, in the conditions of health and economic crisis caused by the COVID-19 pandemic.

## **2. Specific aspects of European funds by member states for the period 2014–2020**

During the programme period 2014–2020, the cohesion policy undergoes changes due to the new context in which the EU develops – it is simplified with focus on results (<https://cohesiondata.ec.europa.eu>). The goals of the EU for 2020 envisage providing more employment, investment in research and development activities, reducing the emissions of greenhouse gases, education, fight against poverty, and social isolation. The cohesion policy during the programme period 2014–2020 complies with the Europe 2020 Strategy (through the orientation towards 11 thematic goals derived from the strategy) and the European Semester (by considering the specific recommendations to each country and the national reform programme). The cohesion policy is paid more attention during the period 2014–2020 due to its specific budget weight (around 32.5% of the EU Budget for common policy), thematic scope, spatial orientation, and its importance in the Partner Agreements and the Operative programmes and in the accounting requirements in the EU ([www.europa.eu](http://www.europa.eu)).

The cohesion policy of the European Union for the period 2014–2020 provides for EUR 351.8 billion, which equals 32.5% of the total budget of the EU ([www.efunds.bg](http://www.efunds.bg)). The amount of the European funds for the period 2014–2020 varies from country to country – the highest budget is allocated to Poland, which is the country with the highest population in Central and Eastern Europe. The European Funds per capita are the highest in Estonia and Slovakia. Poland and Romania receive approximately 50% of the funds allocated to Central and Eastern Europe. Along with the Czech Republic and Hungary, their share reaches 75% of the total budget of the EU for Central and Eastern Europe (<https://eumis2020.government.bg>).

The process of absorbing funds during the programme period 2014–2020 consists of four main steps:

- Planning;
- Negotiations with the EC;
- Signing an agreement with the EC;
- Realizing projects.

Most countries in Central and Eastern Europe move together through the four stages of absorbing the funds for the new programme period 2014–2020. (<https://ec.europa.eu/>).

The 2014–2020 period is characterized by some changes in carrying out the cohesion policy, such as:

- ❖ Stronger emphasis on results: clearer and more measurable goals for better accounting;

- ❖ Reporting: one set of rules for the five funds;
- ❖ Introduction of special preliminary requirements which shall be met, before the funds are granted;
- ❖ Increased urban dimension and fight for social inclusion;
- ❖ Connection with the economic reform: the EC can temporarily terminate the funding of a certain member state if it does not conform to the EU's economic rules.

### 3. Changes in the budget of the new member states due to the COVID-19 pandemic

Table 1 presents data about budget, contracted, and absorbed funds, percentage of contracting and percentage of absorbing of European funds by the new member states for the programme period 2014–2020.

*Table 1*

*Budgeted, contracted, and absorbed funds, share of the contracted funds in the total budget and share of the absorbed funds in the total budget of the European Structural and Investment Funds (ESIF) of the 11 new member states during the programme period 2014–2020*

Country	Budgeted funds (EUR billion)			Contracted funds (EUR billion)	Absorbed funds (EUR billion)	Contracted to the budgeted funds (%)	Absorbed to the budgeted funds (%)
	EU	National co-funding	Total				
<b>Estonia</b>	4.42	1.35	5.77	5.11	3.33	88.48	57.59
<b>Lithuania</b>	8.44	1.56	9.99	9.37	5.80	93.75	58.03
<b>Latvia</b>	5.63	1.273	6.91	6.38	3.94	92.29	57.05
<b>Poland</b>	86.11	18.83	104.94	92.69	52.01	88.32	49.56
<b>Slovakia</b>	15.14	4.00	19.13	17.75	7.98	92.78	41.71
<b>Slovenia</b>	3.93	1.03	4.95	4.36	2.61	88.03	52.67
<b>Hungary</b>	25.01	4.75	29.76	31.27	16.12	105.08	54.16
<b>Czechia</b>	23.87	8.42	32.28	28.56	16.84	88.48	52.16
<b>Bulgaria</b>	9.87	1.83	11.70	10.23	5.68	87.38	48.52
<b>Romania</b>	30.88	5.89	36.77	40.05	15.81	108.93	42.98
<b>Croatia</b>	10.73	1.91	12.65	13.39	5.53	105.86	43.76

Source: <https://cohesiondata.ec.europa.eu/> and author's own calculations.

In March 2020, the European Commission (EC) allowed the EU member states to use EUR 37 billion of cohesion funds for fight against coronavirus measures. A total of EUR 1.8 trillion were used to aid Europe's recovery after COVID-19. (<https://cohesiondata.ec.europa.eu>). As a result of those decisions of the European Commission, the budget of the 11 new member states for the programme period 2014–2020 underwent certain changes (cf. Table 1).

The contracted funds in absolute expressions have their highest value in Poland amounting to EUR 92.69 billion, followed by Hungary with EUR 31.27 billion, and The Czech Republic with EUR 28.56 billion. The least contracted funds by the ESIF are for Slovenia amounting to EUR 4.36 billion, followed by Estonia with EUR 5.11 billion, and Latvia with EUR 6.38 billion. The funds contracted by Bulgaria amount to EUR 10.23 billion.

As a share of the total budget of the funds allocated for each EU member state, the contracted funds have their highest value in Romania with 108.93%, followed by Croatia with 105.86%, and Hungary with 105.08%. The lowest percentage of contracted to the budgeted European funds is observed in Bulgaria with 87.38%, which, however, is above the average value for the EU as an indicator.

The absorbed funds in absolute expression by funds have their highest value in Poland – EUR 52.01 billion, followed by The Czech Republic and Hungary, respectively with EUR 16.84 billion and EUR 16.12 billion, and Romania with EUR 15.81 billion. The ESIF funds absorbed by Bulgaria amount to EUR 5.68 billion. The least absorbed funds in absolute expression by the end of January 2021 are in Slovenia, Estonia, and Latvia, respectively amounting to EUR 2.61 billion for Slovenia, EUR 3.33 billion for Estonia, and EUR 3.94 billion for Latvia.

By share of absorbed funds in the total European funds budget, Lithuania performs the best with 58.03%, followed by Estonia with 57.59% and Latvia with 57.05%. Next, again with values of above 50% absorption, rank Hungary with 54.16%, Slovenia with 52.67%, and The Czech Republic with 52.16%. Bulgaria ranks 8<sup>th</sup> among the 11 new member states with 48.52% absorbed to budgeted European funds. The lowest percentage of absorbed to budgeted European funds is observed in Croatia – 43.76%, Romania with 42.98% and Slovakia with 41.71% based on data as of 31 January 2021.

## 4. Empirical analysis of the relationship between economic growth and percentage of absorption of European funds in the 11 new member states for the period 2014–2020.

### 4.1. Methodology and data

In this chapter, we have adopted an autoregressive distribution lag (ARDL) to model the relationship between economic growth and absorption of European funds in the 11 new member states. We have used annual data by Eurostat and the website <https://cohesiondata.ec.europa.eu/> for the period 2014–2020. The ARDL model comprises the following variables: **GDPGR** – the growth rate of the real GDP in country *i* in year *j*; **EU FAR** – rate of the absorbed European funds in country *i* in year *j*. **EU FAR** is calculated as a percentage ratio between the really absorbed and the planned at the beginning of the programme period European funds for the corresponding country.

### 4.2. Stationary tests

The stationary tests of the variables in ARDL show that the **GDPGR** is stationary at base values, whereas **EU FAR** – at first differences. The different order of integration of the variables requires applying autoregressive distribution lag (ARDL).

### 4.3. Optimal number of lags

The test of the optimal number of lags in the autoregressive distribution lag (ARDL) shows that based on the FPE and AIC criteria this number is one lag.

Table 2

*Test of the optimal number of lags in ARDL*

VAR Lag Order Selection					
Criteria					
Endogenous variables:	D(GDPGR)				
D(EU FAR)					
Exogenous variables:	C				
Date:	01/28/21	Time:	09:46		
Sample:	2015				
	2019				
Included observations:	22				
LogL	LR	FPE	AIC	SC	HQ

-89.36662	NA	13.87970	8.306056	8.405242	8.329422
-73.32315	27.71145*	4.659278	7.211195	7.508753*	7.281291
-68.47647	7.490325	4.369403*	7.134224*	7.630153	7.251050*
* indicates lag order selected by the criterion					
LR: sequential modified LR test statistic (each test at 5% level)					
FPE: Final prediction error					
AIC: Akaike information criterion					
SC: Schwarz information criterion					
HQ: Hannan-Quinn information criterion					

Source: Author's own calculations.

#### 4.4. Results of the econometric evaluation of ARDL and ECM

The ARDL model is valued at one lag (cf. Table 3). The ARDL model looks as follows:

$$(1) D(\text{GDPGR}) = C(1) + C(2)*D(\text{GDPGR}(-1)) + C(3)*D(\text{EUFAR}(-1)) + C(4)*\text{GDPGR}(-1) + C(5)*\text{EUFAR}(-1)$$

Table 3

#### Results of the econometric evaluation of the ARDL model

Dependent Variable: D(GDPGR)				
Method: Panel Least Squares				
Date: 01/28/21 Time: 08:47				
Sample (adjusted): 2017 2019				
Periods included: 3				
Cross-sections included: 11				
Total panel (balanced) observations: 33				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.596064	0.802374	4.481779	0.0001
D(GDPGR(-1))	-0.007242	0.157004	-0.046125	0.9635
D(EUFAR(-1))	0.020972	0.090973	0.230526	0.8194
GDPGR(-1)	-0.614606	0.229077	-2.682967	0.0121

EUFAR(-1)	-0.131861	0.063799	-2.066804	0.0481
R-squared	0.507163	Mean dependent var	0.181818	
Adjusted R-squared	0.436757	S.D. dependent var	1.376466	
S.E. of regression	1.033031	Akaike info criterion	3.041599	
Sum squared resid	29.88029	Schwarz criterion	3.268342	
Log likelihood	-45.18638	Hannan-Quinn criter.	3.117891	
F-statistic	7.203466	Durbin-Watson stat	1.629748	
Prob(F-statistic)	0.000404			

**Source:** Author's own calculations.

The bounds test shows that there is a long-term relationship between the variables in the ARDL model. This necessitates constructing an error correction model (ECM).

*Table 4*

***Bounds test for the existence of long-term relationship between the variables in the ARDL model***

Wald Test:			
Equation: ARDL			
Test Statistic	Value	df	Probability
F-statistic	9.852551	(2, 28)	0.0006
Chi-square	19.70510	2	0.0001
Null Hypothesis: C(4)=C(5)=0			
Null Hypothesis Summary:			
Normalized Restriction (= 0)		Value	Std. Err.
C(4)		- 0.614606	0.229077
C(5)		- 0.131861	0.063799
Restrictions are linear in coefficients.			

**Source:** Author's own calculations.



The results of the evaluation of the model with error correction are shown in Table 4. The error correction term (ECT) is statistically significant and negative, which means that a long-term equilibrium relationship exists between the economic growth and the absorption of European funds in the 11 new member states. The absolute value of the ECT (0.78) indicates that any deviation from the long-term equilibrium between **GDPGR** and **EU FAR** is eliminated with a speed of 78% per annum. The short-term coefficient before **D(EUFAR(-1))** is not statistically significant, which means that in the short term, the absorbed European funds do not affect the economic growth in the 11 new member states.

The ECM model is of two types:

$$(2) \text{D(GDPGR)} = \text{C(1)} + \text{C(2)*D(GDPGR(-1))} + \text{C(3)*D(EUFAR(-1))} + \text{C(4)*ECT(-1)}$$

Table 5

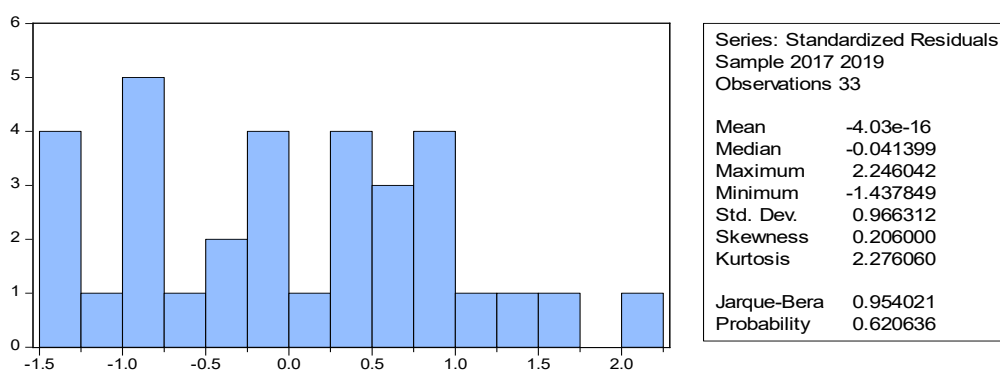
*Results of the econometric evaluation of the ECM*

Dependent Variable: D(GDPGR)				
Method: Panel Least Squares				
Date: 01/28/21 Time: 09:27				
Sample (adjusted): 2017 2019				
Periods included: 3				
Cross-sections included: 11				
Total panel (balanced) observations: 33				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.713349	0.383834	1.858483	0.0733
D(GDPGR(-1))	0.063660	0.170126	0.374195	0.7110
D(EUFAR(-1))	-0.113600	0.083102	-1.366998	0.1821
ECT(-1)	-0.782808	0.242081	-3.233664	0.0030
R-squared	0.382852	Mean dependent var		0.181818
Adjusted R-squared	0.319010	S.D. dependent var		1.376466
S.E. of regression	1.135889	Akaike info criterion		3.205922
Sum squared resid	37.41710	Schwarz criterion		3.387316
Log likelihood	-48.89771	Hannan-Quinn criter.		3.266955
F-statistic	5.996793	Durbin-Watson stat		1.489747
Prob(F-statistic)	0.002614			

Source: Author's own calculations.

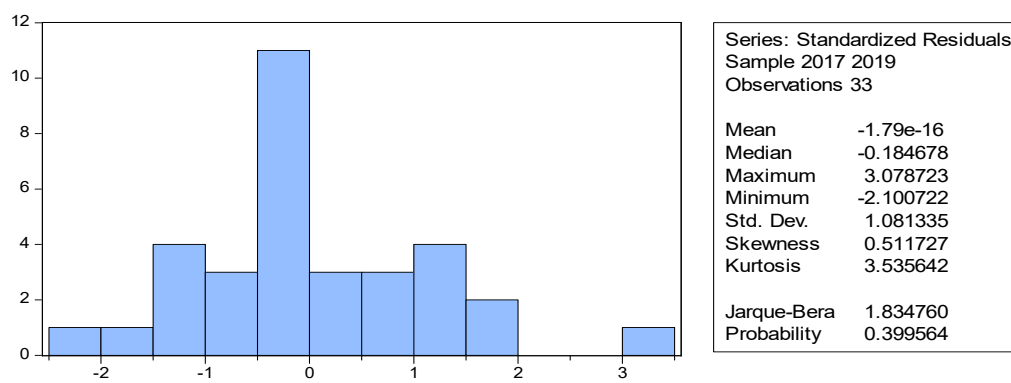
#### 4.5. Diagnostics of the ARDL and ECM

The tests of normal distribution of the residuals in the ARDL and ECM indicate that in both models the residuals are normally distributed, which is an indicator of the reliability of those models. Other indicators of this reliability are relatively high coefficients of determination (0.51 for ARDL and 0.38 for ECM) and the low probabilities of the F-ratio (0.002614 for ECM and 0.000404 for ARDL).



Source: Author's own calculations.

Figure 1. Test of normal distribution of the residuals in ARDL



Source: Author's own calculations.

Figure 2. Test of normal distribution of the residuals in ECM

#### 4.6. Interpretation of the results

The results of the empirical analysis of the relationship between the economic growth and the rate of absorption of European funds in the 11 new member states in the programme period 2014–2020 confirm the conclusions of

the previous empirical analyses in this research. Being public investments, the absorbed European funds affect economic growth in the short, but not in the long term.

The statistically significant and negative regressive coefficient before **EUFAR (-1)** in Table 6 means that in the long term, the absorbed European funds have a negative impact on the economic growth in the 11 new member states. This negative effect can be due to various reasons – inefficient absorption of European funds, corruption, and moving private investments away from public ones.

In the period 2014–2020, we ascertain a negative long-term, but not short-term impact of the absorbed European funds on the economic growth in the 11 new member states. This negative long-term impact can be explained with the inefficient absorption of European funds, corruption practices, and diverting private investments from the public ones (Ascani et. al, 2021).

The author's opinion is that the cohesion policy is an important, but insufficient condition for achieving economic and social cohesion between the 11 new member states and the wealthy EU economies. In the conditions of health and economic crisis caused the coronavirus, the European funds can be used not only for short-term stabilization purposes (overcoming the negative consequences of the crisis), but also for long-term orientation – by investing in digital and “green technologies” for structural transformation of the economies of the new member states.

## **5. Empirical analysis of the relationship between economic growth and rate of absorption of European funds in Bulgaria for the period 2014–2020**

### **5.1. Methodology and data**

In this chapter, we have adopted autoregressive distribution lag (ARDL) to model the relationship between economic growth and absorption of European funds. We have used quarterly data by Eurostat and (<https://eumis2020.government.bg>) for the period 2014–2020. The **ARDL** model comprises the following variables: **GDPGR<sub>t</sub>** – rate of growth of the real GDP of Bulgaria in quarter **t**; **EUFAR<sub>t</sub>** – percentage of the absorbed European funds in Bulgaria in quarter **t**. **EUFAR<sub>t</sub>** is calculated as a percentage ratio between the really absorbed European funds in quarter **t** and the funds planned for Bulgaria at the beginning of the programme period.

## 5.2. Stationary tests

The stationary tests of the variables in the ARDL model (cf. Table 9) indicate that the **GDPGR** is stationary at base values, whereas **EUFAR** – at first differences. The different order of integration of the variables requires the adoption of autoregressive distribution lag (ARDL).

## 5.3. Optimal number of lags

The test of the optimal number of lags in the autoregressive distribution lag (ARDL) indicates that this number is one lag (cf. Table 6).

Table 6

### *Test of the optimal number of lags in the ARDL*

VAR Lag Order Selection

Criteria

Endogenous variables: D(GDPGR)

D(EUFAR)

Exogenous variables: C

Date: 02/13/21 Time: 13:26

Sample: 2014Q2 2020Q3

Included observations: 23

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-95.24778	NA	16.13005	8.456329	8.555067	8.481161
1	-75.94831	33.56430*	4.276672*	7.125940*	7.422156*	7.200437*
2	-73.65267	3.593181	5.015288	7.274145	7.767838	7.398307

\* indicates lag order selected by the criterion

LR: sequential modified LR test statistic (each test at 5% level)

FPE: Final prediction error

AIC: Akaike information

criterion

SC: Schwarz information

criterion

HQ: Hannan-Quinn information criterion

Source: Author's own calculations.

#### 5.4. Results of the econometric evaluation of ARDL

The ARDL model is evaluated with one lag (cf. Table 7).

Table 7

#### *Results of the econometric evaluation of the ARDL model*

Dependent Variable: D(GDPGR)

Method: Least Squares

Date: 02/13/21 Time: 13:29

Sample (adjusted): 2014Q4 2020Q3

Included observations: 24 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.672378	2.057393	-0.326811	0.7474
D(GDPGR(-1))	-2.213812	2.077714	-1.065504	0.3000
D(EUFAR(-1))	1.399342	0.468970	2.983863	0.0076
GDPGR(-1)	0.861430	2.001406	0.430413	0.6717
EUFAR(-1)	-0.466221	0.445415	-1.046712	0.3084
R-squared	0.764610	Mean dependent var		0.154167
Adjusted R-squared	0.715054	S.D. dependent var		3.723834
S.E. of regression	1.987794	Akaike info criterion		4.394980
Sum squared resid	75.07516	Schwarz criterion		4.640408
Log likelihood	-47.73976	Hannan-Quinn criter.		4.460092
F-statistic	15.42928	Durbin-Watson stat		1.997145
Prob(F-statistic)	0.000009			

Source: Author's own calculations.

The bounds test indicates the there is no long-term relationship between the variables in the ARDL model (cf. Table 8). This result makes it impossible to construct an error correction model (ECM). In the short term, however, the rate of absorption of European funds has a positive impact on the economic growth in Bulgaria with a delay of one quarter (the regression coefficient before **D(EUFAR(-1))** in Table 13 is statistically significant). Its value of 1.4 indicates that the increase of the rate of absorbed European funds by 1% increases the economic growth of Bulgaria by 1.4%.

Table 8

**Bounds test for the existence of a long-term relationship between the variables in the ARDL model**

Wald Test:

Equation: ARDL

Test Statistic	Value	df	Probability
F-statistic	0.874756	(2, 19)	0.4331
Chi-square	1.749512	2	0.4170

Null Hypothesis:  $C(4) = C(5) = 0$

Null Hypothesis Summary:

Normalized Restriction (= 0)	Value	Std. Err.
C(4)	0.861430	2.001406
C(5)	-0.466221	0.445415

Restrictions are linear in coefficients.

Source: Author's own calculations.

### 5.5. Diagnostics of ARDL

The tests on the residues in the ARDL indicate absence of heteroskedasticity and serial correlation (cf. Table 9 and Table 10). The CUSUM test indicates that the ARDL is dynamically stable (cf. Figure 3), whereas Ramsey's test – lack of errors in the specifics of the ARDL.

Other indicators of reliability of the ARDL are the relatively high coefficient of determination (0.76) and the low probability of the F-ratio (0.000009).

Table 9

**Results of the heteroskedasticity tests of the residues in the ARDL**

Heteroskedasticity Test: ARCH

F-statistic	0.148036	Prob. F(1,21)	0.7043
Obs*R-squared	0.161000	Prob. Chi-Square(1)	0.6882

Test Equation:

Dependent Variable: RESID<sup>2</sup>

Method: Least Squares

Date: 02/13/21 Time: 13:36

Sample (adjusted): 2015Q1 2020Q3

Included observations: 23 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.536622	2.162466	1.635458	0.1169
RESID <sup>2</sup> (-1)	-0.083646	0.217402	-0.384755	0.7043
R-squared	0.007000	Mean dependent var		3.264134
Adjusted R-squared	-0.040286	S.D. dependent var		9.607270
S.E. of regression	9.798877	Akaike info criterion		7.485354
Sum squared resid	2016.378	Schwarz criterion		7.584093
Log likelihood	-84.08157	Hannan-Quinn criter.		7.510186
F-statistic	0.148036	Durbin-Watson stat		2.003404
Prob(F-statistic)	0.704288			

Source: Author's own calculations.

Table 10

**Results of the serial correlation test of the residues in the ARDL**

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	1.06E-05	Prob. F(1,18)	0.9974
Obs*R-squared	1.42E-05	Prob. Chi-Square(1)	0.9970

Test Equation:

Dependent Variable: RESID

Method: Least Squares

Date: 02/13/21 Time: 13:35

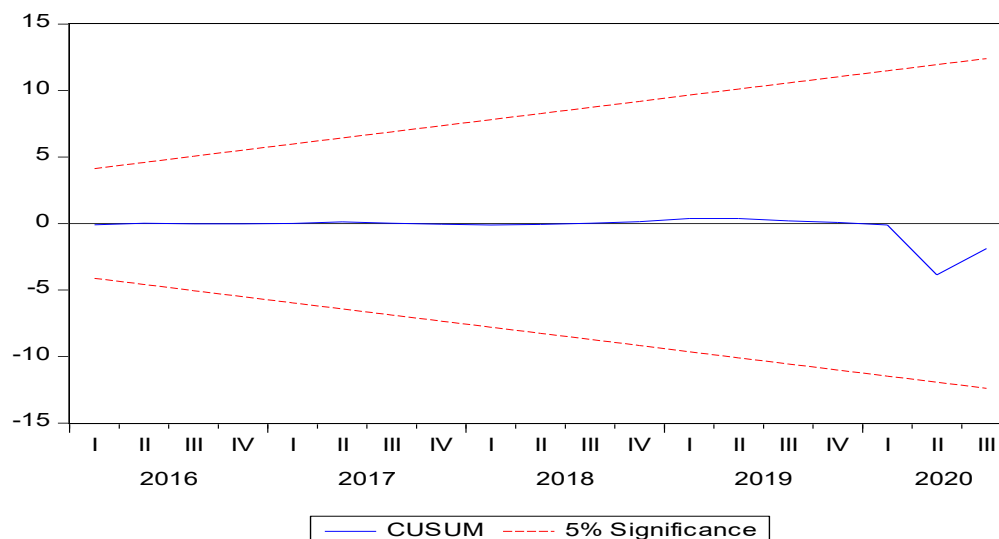
Sample: 2014Q4 2020Q3

Included observations: 24

Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.002627	2.261963	0.001162	0.9991
D(GDPGR(-1))	0.001945	2.216335	0.000878	0.9993
D(EUFAR(-1))	-0.000249	0.487849	-0.000511	0.9996
GDPGR(-1)	-0.002785	2.226383	-0.001251	0.9990
EUFAR(-1)	-0.000422	0.475519	-0.000887	0.9993
RESID(-1)	0.001383	0.423926	0.003263	0.9974
R-squared	0.000001	Mean dependent var		3.84E-16
Adjusted R-squared	-0.277777	S.D. dependent var		1.806692
S.E. of regression	2.042263	Akaike info criterion		4.478312
Sum squared resid	75.07512	Schwarz criterion		4.772826
Log likelihood	-47.73975	Hannan-Quinn criter.		4.556447
F-statistic	2.13E-06	Durbin-Watson stat		1.997697
Prob(F-statistic)	1.000000			

Source: Author's own calculations.



Source: author's own calculations.

Figure 3. Test of the dynamic stability of the ARDL



### **5.6. Interpretation of the results**

The results of the empirical analysis of the relationship between economic growth and the rate of absorption of European funds in Bulgaria throughout the programme period 2014–2020 indicate a short-term positive, but not long-term impact of the absorbed European funds on the rate of growth of the real GDP of our country. This means the Bulgarian macroeconomic management can use the European funds as a means of overcoming the recession caused by the coronavirus.

The existence of a short-term and the absence of a long-term impact on the percentage of absorbed European funds on the economic growth in Bulgaria can be explained by transferring some of the absorbed European funds from investments to consumption. In the author's opinion, this transfer is the result of diverting European funds for the funding of short-term measures for fight against the economic crisis under an approval by the European Commission, as well as embezzlement and corruption with European funds.

## **6. Conclusion**

During the programme period 2014–2020, the EU's cohesion policy (CP) complies with the Europe 2020 Strategy and the European Semester. It is paid more attention in the programme period 2014–2020 due to its specific budget weight (around 32.5% of the EU budget for common policy), its thematic scope, its spatial orientation, and its being underlain in the partnership agreements and the operative programmes, and in the accounting requirements of the EU. The cohesion policy is not individual; rather, it is combined with tools based on the sector policy carried out through the place-based approach. The emphases in using the cohesion policy during the last year of the programme period 2014–2020, and in the new programme period 2021–2027, are placed on overcoming the health and economic consequences of the coronavirus (Kaneva, 2021).

During the period 2014–2020, the rate of absorption of European funds has a negative long-term, but not a short-term influence on the economic growth of the 11 new member states. This result leads to two conclusions; first, we can confirm the character of the European funds as expenses of investment nature and long-term impact; second, the negative long-term effect on growth presupposes inefficiency of public investments as a result of corruption and dislocation of private investments.

During the period 2014–2020, there is empirical evidence of the existence of positive short-term, but not long-term impact on the absorbed European funds on the economic growth in Bulgaria. These results suggest:

first, that European funds can be used for overcoming the consequences of the coronavirus crises in the short-term; second, that part of the European funds allocated for investments have been diverted for fight against the coronavirus.

The author thinks that the significance of the absorbed European funds is considerable for Bulgaria for the following reasons:

- The European funds are an important source of funding of investments in Bulgaria, which directly multiplies the capital reserves in the Bulgarian economy;
- The European funds allow the creation of innovations and increase the technological level of the economy;
- The European social fund funds projects which improve the quantity and quality of human capital;
- European funds fund the building of important social infrastructure sites, which attract foreign investments and stimulate economic growth;
- European funds are an important means for overcoming the health and economic consequences of the COVID-19 pandemic.

The health crisis caused by the coronavirus has turned into an economic one as a result of the restrictive measures adopted for preventing the spread of the pandemic (Minasyan, 2020). In these conditions, the European funds are a valuable tool for overcoming the negative health and economic effects of COVID-19, and the significance of their efficient and expedient absorption constantly increases. The crisis shall be viewed not only as a threat, but also as an opportunity for development and structural transformation of the Bulgarian, European, and world economy towards digitalization and “green economy”. In this respect, the use of European funds in the current crisis conditions is crucial not only for overcoming the crisis, but also for the realization of a revolutionary technological transition to digital green economy on a national and global scale.

### **Works cited**

- Ascani, A., Faggian, A., & Montresor, S. (2021). The geography of COVID-19 and the structure of local economies: The case of Italy. *Journal of Regional Science*, 61(2),407– 441.
- Ganchev, G. and Todorov, I. (2021). Taxation, government spending and economic growth:The case of Bulgaria. *Journal of Tax Reform*, 2021, 7(3), pp. 255–266.
- Camagni, R., Capello, R., Cerisola, S., & Fratesi, U. (2020). Fighting gravity: Institutional changes and regional disparities in the EU. *Economic Geography*. forthcoming. 96(2),108– 136.
- Cerqua, A., & Pellegrini, G. (2018). Are we spending too much to grow? The

- case of structural funds. *Journal of Regional Science*, 58(3), 535– 563.
- Conte, A., Lecca, P., Sakkas, S., & Salotti, S. (2020). The territorial economic impact of COVID-19 in the EU. A RHOMOLO analysis (Vol. JRC121261). Joint Research Centre.
- Crescenzi, R., Giua, M., & Sonzogno, G. V. (2021). Mind the Covid-19 crisis: An evidence-based implementation of Next Generation EU. *Journal of Policy Modeling*, 43(2), 278– 297.
- Dall'Erba, S., & Fang, F. (2017). Meta-analysis of the impact of European Union Structural Funds on regional growth. *Regional Studies*, 51(6), 822– 832.
- Ehrlich, M. V., & Overman, H. G. (2020). Place-based policies and spatial disparities across European cities. *Journal of Economic Perspectives*, 34(3), 128– 149.
- Kaneva, A. (2015). Comparative analysis of the absorption of structural funds in the old EU member states during the programme period 2007-2013. Eleventh International Scientific Conference: Bulgaria's Membership in the EU: Seven Years Later, Department of International Economic Relations and Business, Faculty of International Economy and Politics, UNWE, Sofia, UNWE Publishing, pp. 324-334.
- Kaneva, A. (2021). Measures by the European Institutions for Limiting the Impact of the COVID-19 Pandemics on the Economies of the EU Member States, Proceedings of scientific conference: 45 Years of the Department of International Relations at the UNWE: Continuity and Development in Studying International Relations and the Processes in Europe, UNWE Publishing): Department of International Relations, UNWE, pp. 1-8.
- Minasyan, G. (2020). EU's Financial Support for Bulgaria, *Economic Life*, pp. 1-3.
- Nikolova, I. (2014). Instruments of EU Cohesion Policy for Bulgaria. *Economy & Business Journal of International Scientific Publications* www.scientific-publications.net, Department of Economics, New Bulgarian University, ISSN 1314-7242, Volume 8, 2014.
- Paliova, I. and Lybek, T. (2014). Bulgaria's EU Funds Absorption: Maximizing the Potential! IMF Working Paper, pp. 1-64.
- Stoilova, D. and Todorov, I. (2021). Fiscal policy and economic growth: Evidence from Central and Eastern Europe. *Journal of Tax Reform*, 2021, 7(2), pp. 146–159.
- Todorov, I. (2014). Macroeconomic trends in the new member countries of the European Union before the Euro Area debt crisis. *Analele Stiintifice ale Universitatii Al I Cuzadin Iasi - Sectiunea Stiinte Economice*, 2014, 61(2), pp. 197–217.

Todorov, I. and Durova, K. (2016). Economic growth of Bulgaria and its determinants.

Ikonomicheski Izsledvania, 2016, 25(4), pp. 3–35.

<http://ec.europa.eu/>

<https://cohesiondata.ec.europa.eu>

<https://europa.eu>

<https://www.eufunds.bg/>

<https://eumis2020.government.bg/>

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ISSN 0323-9004

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*In 2022, the journal will be printed using a financial grant from the Scientific Research Fund – Agreement № KP-06-NPZ-69 from Bulgarska Nauchna Periodika – 2022 competition.*

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