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**The Impact of the European Economic Integration on
Sustainable Development
in the EU New Member States**

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The impact of the European economic integration on sustainable development in the EU new member states

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Abstract: In the context of a Sustainable Europe by 2030, this paper evaluates the impact of EU membership of new member states on indicators related to sustainable development (GDP growth and unemployment rate). The analysis for the period 1995-2020 – based on the 13 most recent member states of the EU and – suggests that EU membership did not contribute to GDP growth, but reduced unemployment due to labor migration to early member states and other developed countries. Some policy recommendations are made to achieve a sustainable growth in the EU new member states as Europe’s 2030 strategy requires.

Keywords: GDP, unemployment, migration, sustainable development, panel data models

JEL: C51, C53, J64

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1. Introduction

In the case of European economic integration, four freedoms specific to the European Single Market are considered: the free movement of capital, people, goods and services. One of the key benefits of EU enlargement is stimulating sustainable development.

The complexity of the theory of sustainable economic development is given by the connections it establishes between economics, philosophy, sociology, ethics and law, making conceptual delimitations between notions such as growth, progress, development, expansion, on the one hand, and decline, recession, underdevelopment, on the other. This paper addresses a research question related to the practical benefits of European economic integration for the new EU member states to achieve some goals of sustainable development (sustainable growth and jobs).

This study assesses the impact of European economic integration on some dimensions of sustainable development, such as economic and social development. In this context, the impact of the EU membership of the new EU member states on economic growth and unemployment is assessed on the basis of a panel approach.

2. Evolution of the concept of *sustainable development*

The theory of sustainable development is a relatively new theory among economic theories (Todaro and Smith, 2009). To some extent the concept of economic development substitutes the one of economic growth after the 1960s. If in the first half of the twentieth century the concept of "development" was underused, the last decades of this century mark the transition from economic growth to a stable sustainable development, with positive economic global effects. The notion of "sustainable development" emerged as a pressing necessity in the 1980s, when it was found that economic development accompanied by continued and widespread population growth would lead to resource depletion and environmental pollution.

Sustainable development is based on three fundamental, interrelated and complementary components at the same time: the economic, environmental and social component. This involves an interdependent approach to a wide range of issues such as environmental, natural resources,

goals and means of economic development, food, housing, employment, and all aspects of quality of life (Giddings, Hopwood, & O'brien, 2002). The issue of how human activity influences the deterioration of the environment was first discussed in 1972 at the first UN Conference on the Natural and Human Environment, held in Stockholm. During the conference, Ignacy Sachs and Maurice Strong talked about the notion of eco-development, in order to achieve a development model based on efficient management of natural resources, the finality of the model being the compatibility of economic development with environmental protection and social equity. The environment becomes the central element of the system that conditions the survival of humanity (Diemer, 2012), the model proposing the achievement of the three objectives of development (economic growth, social equity, protection of the natural environment) through four directions of action: control of resource consumption; the use of clean technologies and the control of toxic residues, the relocation of economic activities and the adaptation of consumption to social and environmental constraints.

In the same year, 1972, the Meadows Report of the Club of Rome was published by a team of researchers from the Massachusetts Institute of Technology in Boston, led by Professor Dennis Meadows. The report entitled "Growth Limits" is considered the first sustainable development program, which shows the excessive consumption of resources, which became less and less and insufficient to support population growth (Stere and Popa, 2011). The report suggested that the problems of economic growth could not be analyzed independently of those of environmental pollution, explosive population growth, depletion of resources, pointing out for the first time that the economic and social developments of the world's states can no longer be analyzed without considering the consequences of human activity on the natural environment.

The model proposed by Meadows uses five variables and starts from the hypothesis that an exponential growth would accurately describe the existing patterns of economic growth. The variables are: world population, industrial production, pollution, agricultural production and natural resources, the first two being considered positive loops of reverse connection, and the other three variables negative loops (Grădinaru, 2000). For the authors of the report, the limits are seen from an ecological point of view, and economic growth is seen as an increase in output as measured by gross national product (GNP), which implies a similar increase in resource consumption (Meadows et al., 1972). Ecological and economic stability can be achieved and

maintained for a long time if the evolution of the population and industrial production is corrected so as not to reach a sudden and uncontrollable decline.

According to Meadows et al. (1972), the limits of growth will be reached in a century if the rates of population growth, industrialization, pollution, food production, and resource consumption remain unchanged. The authors of the report consider that the growth rates of the analyzed variables can change, so as to achieve a balance between the ecosystem and economic development. In this context, the thesis has been launched that a "deliberate slowdown in growth" or even a "zero rate" of economic growth is needed.

The report was widely criticized, the conclusions being considered alarmist, and the "zero growth" idea was rejected (Florea, 2005) especially by developed countries. However, the report has the merit of drawing attention to the limited nature of resources and the need to change the current mode of production.

The report also shows that economic growth at the same rate is widening the gap between rich and poor nations. The report by Vasilii Leontief in 1977, at the request of the UN, entitled "The Future of the World Economy", proposes two courses of action to reduce the gap between poor and rich countries: broad social, political and institutional changes in developed countries and fundamental changes in the global economic order (Carter, Leontief, & Petri, 1977).

The concept of "sustainable development" was first used in 1987 in the Brundtland Report and was finally established following the United Nations Conference on Environment and Development in Rio de Janeiro in June 1992. On this occasion, the need to integrate economic development and environmental protection into the goal of sustainable development was officially recognized at the international level, while affirming the growing importance of international environmental law as a mechanism for codifying and promoting sustainable development. The outcome of the conference was the adoption of an action plan entitled "Agenda 21" by signing two declarations: the "Rio Declaration on Environment and Development" and the "Declaration on Forests". By adopting Agenda 21, sustainable development becomes the global strategic option for the 21st century (Bran, 2009).

In Rio de Janeiro, at the Earth Summit, it was launched the idea that only a change in global attitudes and behavior could change the current natural-human crisis. The message thus reflects the complexity of the problems facing the world today: poverty, excessive consumption of resources, pollution, massive deforestation, etc. An important achievement of this summit was

the establishment of the Commission for Sustainable Development (December 1992), which was tasked with drawing up reports on how to implement the decisions adopted by Agenda 21. The Commission met annually, starting with 1993, to establish the necessary measures to determine the involvement of civil society in environmental issues and its participation in UN negotiations, in particular through dialogue with key - factors.

The Brundtland report provided the first accepted definition of sustainable development as "development that meets the needs of the current generation without compromising the chances of future generations to meet their own needs" (Hosen, 2021; Hummels and Argyrou 2021). This raises the issue of ensuring equity between generations with an emphasis on environmental issues addressed separately from socio-economic ones. Lester Brown also defines sustainable development as "the ability of a system to maintain a well-defined level of performance over time, and, if required, to raise that level through its links to other systems, without diminishing its own long-term potential" (Brown, 2001).

The Brundtland report sets out seven economic and social goals needed to achieve sustainable development (WCED, 1987). The report's authors believe that the priority of today's society is to meet the basic needs of developing countries. The report calls for reconciliation between the economy and the environment, with the goal of finding "a path of development that will sustain human progress not only in a few places and for a few years, but for the entire planet and the distant future" (WCED, 1987).

Conferences following the Earth Summit (1994 Cairo Conference on Population and Development, 1995 Copenhagen Social Summit, 1995 Beijing Women's Conference and 1996 Habitat II Conference in Istanbul) strengthened the commitment to sustainable development and adopted strategies for the implementation of Agenda 21. At the UN Millennium Summit in September 2000, development goals were agreed upon in terms comparable to those in the Agenda 21.

In 2002, with the Johannesburg Summit (Rio + 10), the definition of sustainable development was reformulated, referring to the need to ensure a better standard of living for all, now and in the future in a fair and equitable manner, taking into account the limits imposed by nature. Twenty years later, also in Rio, the UN Conference on Sustainable Development (Rio + 20) was held, at which the political commitment to sustainable development was renewed with an emphasis on the green economy and shaping the institutional framework for sustainable

development in line with the Millennium Development Goals adopted at the Millennium Summit in September 2000 in New York.

They were designed to set the direction of global development for the period 2015-2030, with the aim of improving the quality of life and well-being of citizens by eradicating extreme poverty, combating inequality and injustice and protecting the planet. Keeping the balance between the three dimensions of sustainable development - economic, social and environmental – the 2030 Agenda reiterates the importance of protecting the environment as part of sustainable development.

3. The impact of European economic integration on economic and social development

In this paper, we explain the GDP in constant prices (2010 = 100) and the BIM unemployment rate in the new EU member states based on European membership and other macroeconomic variables. The chosen indicators (GDP and unemployment rate) express economic and social development as components of sustainable development. The models will consider as explanatory variables the wages at constant prices (prices of 2010) and a dummy variable named EU membership. The period of analysis covers the time from 1995 to 2020. The data for GDP and unemployment rate are provided by Eurostat, while World Bank provided the data for wages and salaries. Romania and Bulgaria joined the EU in 2007. Croatia became member in 2013 while the rest of the countries (Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia, Slovenia) entered the EU in 2004.

In this sample of countries, we identified Poland as the country that registered the highest values for GDP in the period 1995-2020. Actually, Poland is the single country that did not face the recent world economic crisis starting in 2008.

Some panel data models (fixed and random effects models) are estimated. We start from the following models:

$$GDP_{it} = const_{11} + a_{11} \cdot unemployment_rate_{it} + b_{11} \cdot wages_{it} + c_{11} \cdot EU_membership_{it} + \varepsilon_{1it} \quad (1)$$

$$unemployment_rate_{it} = const_{12} + a_{12} \cdot GDP_{it} + b_{12} \cdot wages_{it} + c_{12} \cdot EU_membership_{it} + \varepsilon_{2it} \quad (2)$$

i-index for county, t- index for year, ε_{1it} , ε_{2it} - errors.

First of all, we check the stationarity of the panel data using specific unit root tests. According to Appendix 1, the GDP is stationary in first difference, while unemployment and wages are stationary in level.

More panel data models are estimated and the best models are selected. The variation in GDP is explained based on wages and EU membership. The fixed effects model revealed that an increase in wages by one unit determined, in average, an increase in the variation of GDP by 2.07 units. The EU membership had a negative impact on GDP change in the new member states in the period 1995-2020. This result supports the finding that the integration in the EU of the new member states has not brought improvement in economic development.

Table 1. Fixed effects model to explain the variation in GDP in the EU new member states (1995-2020)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EU membership	-3471.586	961.6844	-3.609902	0.0004
wage	2.075954	0.035760	58.05280	0.0000
constant	30498.81	733.9600	41.55377	0.0000
Fixed Effects (Cross)				
_1--C	-13981.88			
_2--C	37103.93			
_3--C	-23569.40			
_4--C	-19192.01			
_5--C	-23104.67			
_6--C	-23180.67			
_7--C	-18483.60			
8--C	5500.965			
9--C	-26447.07			
10--C	96892.34			
11--C	25817.96			
12--C	-22995.80			
13--C	130.1010			

Source: own calculations.

According to a random effects model, the variation in GDP had a low and negative impact on the unemployment rate. The EU membership had an indirect influence on the unemployment rate. This means that countries that entered later in the EU experienced a higher reduction of the unemployment rate. In the context of the mobility of labour due to EU integration, the pressure on internal labour markets in the new member states is reduced due to migration to more developed countries in the EU that required labor resources.

Table 2. Random effects model to explain the unemployment rate in the EU new member states (1995-2020)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EU membership	-1.036796	0.425123	-2.438815	0.0154
GDP in first difference	-2.78E-05	6.16E-06	-4.509024	0.0000
constant	12.21194	0.921221	13.25625	0.0000
Random Effects (Cross)				
_1--C	0.220530			
_2--C	-1.386474			
_3--C	-1.613033			
_4--C	2.466273			
_5--C	-2.879618			
_6--C	0.789553			
_7--C	0.516737			
8—C	-1.207206			
9—C	-4.720853			
10--C	8.894060			
11--C	-1.541152			
12--C	-3.436116			
13--C	3.897298			

Source: own calculations.

The result is confirmed by previous studies. For example, Zaiceva and Zimmermann (2016) also showed that a significant increase in the unemployment rate was not observed in the

new member states due to migration. However, the 2007-2009 financial crisis was the real cause for unemployment rate during the recession years.

Based on these results, we can make few recommendations. The European economic integration has not enhanced economic growth in the EU new member states, but has reduced the pressures of labour market due to emigration. These findings suggest that these countries should focus on other directions to accelerate economic growth. More efforts should be made to achieve a sustainable growth as Europe's 2030 strategy requires. In this context, the economic growth should be decoupled from the use of resources in order to support low carbon economy, use of renewable energy sources, and modernization of transport sector. The remittances sent by the migrants that chose old member states as host countries should be efficiently used to support economic growth by investment rather than use them for private consumption.

4. Conclusions

This paper assesses the impact of EU membership of new states on indicators that are related to sustainable development (economic development suggested by GDP growth and social development reflected by aspects related to labour market like unemployment). The analyzed sample includes the 13 most recent member states that are studied in the period 1995-2020. The results suggest that EU membership does not contribute to GDP growth, but it reduces unemployment due to migration for work in early member states and other developed countries. In this context, these countries should focus more on achieving a sustainable growth by taking advantage of challenges brought by green and digital economy. The limits of the research are given by the fact that a short period is analyzed (1995-2020), because longer data series are not available. In a future research, some econometric models should be built for each country in order to figure out the differences between new EU member states.

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APPENDIX 1

PANEL UNIT ROOT TESTS

Pool unit root test: Summary

Series: GDP_1, GDP_2, GDP_3, GDP_4, GDP_5, GDP_6, GDP_7, GDP8, GDP9, GDP10, GDP11; GDP12; GDP13

Exogenous variables: Individual effects

Automatic selection of maximum lags

Automatic lag length selection based on SIC: 0 to 1

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*	-7.81625	0.0000	13	279
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-6.29197	0.0000	13	279
ADF - Fisher Chi-square	87.7828	0.0000	13	279
PP - Fisher Chi-square	75.3011	0.0000	13	281

** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.

Pool unit root test: Summary

Series: UNEMPLOYMENT_1, UNEMPLOYMENT_2, UNEMPLOYMENT_3, UNEMPLOYMENT_4, UNEMPLOYMENT_5, UNEMPLOYMENT_6, UNEMPLOYMENT_7, UNEMPLOYMENT8, UNEMPLOYMENT9, UNEMPLOYMENT10, UNEMPLOYMENT11, UNEMPLOYMENT12, UNEMPLOYMENT13

Exogenous variables: Individual effects

Automatic selection of maximum lags

Automatic lag length selection based on SIC: 0 to 2

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*	-3.10725	0.0009	13	246

Null: Unit root (assumes individual unit root process)

Im, Pesaran and Shin W-stat	-2.49432	0.0063	13	246
ADF - Fisher Chi-square	52.7658	0.0014	13	246
PP - Fisher Chi-square	13.4514	0.9795	13	258

** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.

Pool unit root test: Summary

Series: WAGES_1, WAGES_2, WAGES_3, WAGES_4, WAGES_5, WAGES_6, WAGES_7, WAGES8, WAGES9, WAGES10, WAGES11, WAGES12, WAGES13

Exogenous variables: Individual effects

Automatic selection of maximum lags

Automatic lag length selection based on SIC: 0 to 1

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*	-4.96007	0.0000	13	284

Null: Unit root (assumes individual unit root process)

Im, Pesaran and Shin W-stat	-5.39200	0.0000	13	284
ADF - Fisher Chi-square	79.1235	0.0000	13	284
PP - Fisher Chi-square	71.5326	0.0000	13	286

** Probabilities for Fisher tests are computed using an asymptotic Chi

APPENDIX 2

PANEL DATA MODELS

Dependent Variable: D(GDP?,1)
Method: Pooled Least Squares

Variable	Coefficient	Std. Error	t-Statistic	Prob.
MEMBERSHIP_EU				
?	-957.6968	362.9575	-2.638592	0.0088
UNEMPLOYMEN				
T?	-15.56272	40.98075	-0.379757	0.7044
WAGES?	0.118029	0.005971	19.76561	0.0000
C	487.7558	538.4513	0.905849	0.3658
R-squared	0.598615	Mean dependent var		2416.558
Adjusted R-squared	0.594071	S.D. dependent var		4199.808
S.E. of regression	2675.806	Akaike info criterion		18.63665
Sum squared resid	1.90E+09	Schwarz criterion		18.69010
Log likelihood	-2502.629	Hannan-Quinn criter.		18.65811
F-statistic	131.7378	Durbin-Watson stat		1.205530
Prob(F-statistic)	0.000000			

Dependent Variable: D(GDP?,1)
Method: Pooled Least Squares

Variable	Coefficient	Std. Error	t-Statistic	Prob.
MEMBERSHIP_EU?	-968.4622	322.4726	-3.003239	0.0029
WAGES?	0.119274	0.005761	20.70480	0.0000
C	328.6338	255.3660	1.286913	0.1991
R-squared	0.598517	Mean dependent var		2304.155
Adjusted R-squared	0.595758	S.D. dependent var		4101.753
S.E. of regression	2607.896	Akaike info criterion		18.58063
Sum squared resid	1.98E+09	Schwarz criterion		18.61821
Log likelihood	-2728.352	Hannan-Quinn criter.		18.59568
F-statistic	216.9067	Durbin-Watson stat		1.227121
Prob(F-statistic)	0.000000			

Dependent Variable: D(GDP?,1)

Method: Pooled EGLS (Cross-section random effects)

Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
MEMBERSHIP_EU?	-974.1406	317.6571	-3.066642	0.0024
WAGES?	0.117106	0.006251	18.73371	0.0000
C	380.0931	264.2567	1.438348	0.1514
Random Effects				
(Cross)				
_1--C	-40.87783			
_2--C	-147.1994			
_3--C	54.74513			
_4--C	-262.0220			
_5--C	1.008511			
_6--C	37.95291			
_7--C	68.94926			
8--C	-237.3008			
9--C	76.21426			
10--C	352.1247			
11--C	64.20891			
12--C	-120.3461			
13--C	152.5425			

Effects Specification

	S.D.	Rho
Cross-section random	295.6634	0.0135
Idiosyncratic random	2529.431	0.9865

Weighted Statistics

R-squared	0.538974	Mean dependent var	2010.296
Adjusted R-squared	0.535805	S.D. dependent var	3796.467
S.E. of regression	2587.670	Sum squared resid	1.95E+09
F-statistic	170.1003	Durbin-Watson stat	1.246478
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.598303	Mean dependent var	2304.155
Sum squared resid	1.98E+09	Durbin-Watson stat	1.226565

Dependent Variable: UNEMPLOYMENT?
Method: Pooled EGLS (Cross-section random effects)
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
MEMBERSHIP_EU?	-1.036796	0.425123	-2.438815	0.0154
GDP?	-2.78E-05	6.16E-06	-4.509024	0.0000
C	12.21194	0.921221	13.25625	0.0000
Random Effects				
(Cross)				
_1--C	0.220530			
_2--C	-1.386474			
_3--C	-1.613033			
_4--C	2.466273			
_5--C	-2.879618			
_6--C	0.789553			
_7--C	0.516737			
_8--C	-1.207206			
_9--C	-4.720853			
_10--C	8.894060			
_11--C	-1.541152			
_12--C	-3.436116			
_13--C	3.897298			

Effects Specification		S.D.	Rho
Cross-section random		2.875712	0.4906
Idiosyncratic random		2.930060	0.5094

Weighted Statistics			
R-squared	0.129825	Mean dependent var	2.055966
Adjusted R-squared	0.123331	S.D. dependent var	3.216039
S.E. of regression	3.005363	Sum squared resid	2420.631
F-statistic	19.99206	Durbin-Watson stat	0.342226
Prob(F-statistic)	0.000000		

Unweighted Statistics			
R-squared	-0.270680	Mean dependent var	9.409594
Sum squared resid	5806.215	Durbin-Watson stat	0.142675

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