A comparative analysis of regional integration potential in the Asia-Pacific Region

Wojciech Ficek, Remigiusz Gawlik

A B S T R A C T
Objective: The objective of the article is to verify whether the EU can be perceived as a benchmark for further integration of Regional Comprehensive Economic Partnership Participating Countries (RCEP PC) of the Asia-Pacific region.
Research Design & Methods: We adopted a quantitative research methodology. It employed cluster analysis through Ward's minimum-variance method to analyze the Euclidean distances of eight GDP-based World Development Indicators and build two synthetic development measures: SMD_{RCEP} and SMD_{EU}. They were used to group countries according to their level of economic advancement. Standard deviation was used to measure the differences in the structure of GDP in both environments (σ_{RCEP} and σ_{EU}). The research sample was composed of all RCEP PC and European Union Member States (EU MS). The data sets came from the World Bank database.
Findings: The integrity level of RCEP PC is lower than that of EU MS; however, the differences are less significant than expected. Nevertheless, the possibility of RCEP reaching the next integration levels in the foreseeable future is limited.
Implications & Recommendations: As RCEP PC do not seem to be able to engage in further integration in the near future, RCEP PC policymakers and business entities should focus on keeping the agreement alive in its current form (FTA). We recommend analyzing whether integration in smaller and more homogeneous groups of countries is possible and desirable. Another factor worth further research is whether the inadequate size of the Chinese economy within the agreement has a pro- or anti-integrational influence on RCEP.
Contribution & Value Added: Our research provides an actual insight into the development possibilities of the 'youngest' regional integration agreement, the RCEP, based on the experiences related to the integration of the most advanced regional integration agreement, the EU.
Article type: research article
Keywords: Regional Comprehensive Economic Partnership; European Union; regional integration; economic integration; economic integration indexes
JEL codes: F13, F15, D81
Received: 25 May 2022 · Revised: 20 July 2022 · Accepted: 15 August 2022

INTRODUCTION

Since the mid-1990s, the World has witnessed a rapidly growing number of regional integration agreements. It is sometimes referred to as the Spaghetti Bowl Effect (Bhagwati, 1995). Until now, the most advanced form of regional integration is the European Union (EU), formed by the Member States of the European Union (EU MS). However, in the last five years, it was the Transatlantic Trade and Investment Partnership (TTIP) that attracted the attention of most experts. It is believed this agreement would create not only 'winners' but also many 'losers' at the same time. Plenty of sectors both in the EU and in the US would be in danger if the deal kicked in. Therefore, we can see controversies in the microeconomic sphere that impact the macroeconomic environment (Huettinger & Zirgulis, 2020). It is also considered that the removal of tariff barriers would de facto make the US a

part of the EU. Little progress in the TTIP negotiations was mainly caused by the success of Brexit and Trump's election (Huettinger & Zirgulis, 2020). That is why it has been the Regional Comprehensive Economic Partnership (RCEP) which in turn gained enough momentum to significantly impact the global economy. This fact became the main motivation for our research.

The RCEP agreement was signed on 15 November 2020 by 15 countries and entered into force on January 1, 2022. It took 8 years of negotiation to create the largest FTA in the world (Francois & Elsig, 2021). Headquarters are in Hanoi (Vietnam). With almost 2.3 billion people (30% of the global population) and GDP reaching 26 trillion USD equal to 30% of the global GDP (World Bank, 2022), RCEP should be considered bigger than the EU. Sometimes RCEP is called ASEAN Plus Five, because it contains ASEAN countries (Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam (Chander & Sunder, 2018)) plus Australia, China, Japan, South Korea, and New Zealand (Gaur, 2021). Chaisse and Pomfret (2019) define RCEP as "A vehicle for Economic Integration and Inclusive Development" (p. 186).

The economic potential of the RCEP is neutralized by some critical remarks. I.e., Francois and Elsig (2021) state that RCEP is a new tool to exercise economic violence for the world's second-largest economy, China. Gaur (2021) sees its weakness in the tremendous economic differences between the RCEP PC. We have found very little literature discussing the possibilities of the RCEP for further integration. Dieter (2021) observes that although the RCEP has shown such potential, its PC are currently far from it. This is the research gap that we intended to fill with the presented research. Park (2017) concludes that "many East Asian countries need to participate in the RCEP in order to solve the noodle bowl effect because their regional bilateral FTAs overlap" (p. 149).

The highest level of regional integration was achieved by a group of countries grouped in the EU. The integration, which started as a common market for two goods, with the formation of the European Coal and Steel Community (Treaty of Paris, 1951), turned into an FTA, the European Economic Community (Treaty of Rome, 1957), converted into its actual form, an economic union, the European Union (Treaty of Maastricht, 1992), with some countries participating also in the European Monetary Union (established by the same Treaty). The integration started with six countries (Belgium, France, Germany, Italy, Luxembourg, and the Netherlands) and was later enlarged 7 times: in 1973 (Denmark, Ireland, the United Kingdom), 1981 (Greece), 1986 (Spain, Portugal), 1995 (Austria, Finland, Sweden), 2004 (the EU-10 enlargement: Czechia, Estonia, Cyprus, Latvia, Lithuania, Hungary, Malta, Poland, Slovenia, Slovakia), 2007 (Bulgaria, Romania) and 2013 (Croatia). After the United Kingdom decided to leave the EU (Brexit), the block counts 27 EU MS. Its headquarters are in Brussels (Belgium), Luxembourg (Luxembourg), and Strasbourg (France). With 448 million inhabitants (5.8% of the global population) and a 15 trillion USD GDP equal to 18% of the global GDP (World Bank, 2020), despite being more advanced in the stage of economic integration, the block is significantly smaller than RCEP. However, European integration exceeds the economic dimension. Foster (2013) describes it as "the 'civilized zone' of the European continent" (p. 375) with Browning (2018) adding a surrounding "buffer zone of a so-called ring of friends" and a "threatening world" outside (p. 127).

Critical votes to the EU are called Euroscepticism, which is defined as "opposition to the process of European integration" or "opposition to European integration and/or the EU" (Treib, 2020, p. 3). Their nature seems to be more political, than economic – most Euroscepticism comes from the far-right-wing parties in the European Parliament (Götz *et al.*, 2018). The recent Russian invasion of Ukraine also shed some new light on the geopolitical interests of autocratic Russia in impeding European integration and destabilizing the EU.

The objective of the article is to verify whether the EU can be perceived as a benchmark for further integration of RCEP Participating Countries (RCEP PC) – above the recently signed Free Trade Area (FTA). The research gap in the existing literature is the lack of analysis of RCEP's potential for further integration. Therefore, the research problem of this study is to explore the possibilities of RCEP's development into higher forms of economic integration in the foreseeable future.

We formulate three research questions:

RQ1: What indicators of the economic conditions have been previously analyzed in the literature and why the issue is still not resolved?

RQ2: Does the GDP structure of the RCEP PC show similarities that provide reasons to consider their further economic integration following the EU MS model?

RQ3: Is the European Union a good benchmark for Asian regional integration agreements?

We applied a quantitative research methodology with cluster analysis using Ward's minimum variance method to analyze the economic integration potential of the RCEP PC. We used quantitative data sets from the 2015-2020 World Development Indicators of the World Bank.

Our article starts with a review of the literature on regional integration, followed by a section on materials and methods, a presentation and discussion of the results of the research, and a conclusion.

LITERATURE REVIEW (AND HYPOTHESES DEVELOPMENT)

Regional Integration

Mlambo (2019) defines regional integration as "a significant initiative with regard to stimulating economic growth amongst member states and enhancing intraregional trade, security initiatives, and bilateral and multilateral agreements"(p.1). It can also be interpreted as the concept of a functional region with strengths and trends in evolving political, economic, and cultural relations compared to relations with external structures (Pacuk *et al.*, 2018). Mlambo and Mlambo (2018) postulate for intergovernmental cooperation within regional integration agreements to benefit from "jointly implementing policies that are aimed at spurring regional development" (p. 258).

From the entrepreneurial perspective, Głodowska (2017) confirms the dependence of regional integration and economic growth on the business environment using quantitative analysis. Startups become creators of the new business model of the 21st century. Their development brings advantages to the entire economy in regional, national, and world dimensions. An increase in the number of microenterprises contributes to the increase in GDP level per capita (Szarek & Piecuch, 2018). Balawi (2021) shows entrepreneurship performance (ecosystem) and its influence on the economy.

Cluster Analysis

Cluster analyses aim to examine convergence (or divergence) within a group (of countries). In the EU we can see a high level of convergence between countries regarding business structure and demography. On the other hand, the EU cannot be seen as a homogeneous group, since there is a significant difference between EU-15 (before Brexit) and EU-13 countries. We can observe the decrease in dissimilarities. Hence, the process of constant convergence is a thing in the EU (Kamińska & Zielenkiewicz, 2019). When it comes to RCEP, also two intra-groups can be distinct in terms of bilateral trade. RCEP-4 (Japan, South Korea, Taiwan, and Australia) and RCEP-11 (other RCEP PC). Taiwan is not widely recognized as a country. In our research, we do not separate Taiwan from the People's Republic of China. RCEP-4 countries seem to be relatively more integrated, based on their intra-trade flows (Chang *et al.*, 2020). The similarity between the EU and the RCEP in the field of cluster analyses is significant. In both environments, we can observe a line between two intra-major groups. With that being said, EU-15 may be seen as a benchmark for RCEP-4 and EU-13 for RCEP-11. It thoroughly fits in the 'two-speed Europe' concept that assumes the divergence between countries within the EU (Kundera, 2019).

We decided to ground our set of indexes on GDP, as the GDP structure is crucial to examine those potential differences between countries, both in the EU and in the RCEP. Therefore, nine indicators were chosen to measure the dissimilarities between the members of both blocks. Our research focuses on differences based on the structure of GDP between RCEP and the EU.

The empirical evidence from prior literature studies allowed us to build the following Main Research Thesis (MRT):

MRT: In the foreseeable future, the RCEP will evolve into a Common Market.

To prove (or reject) the MRT, we assumed the following hypotheses:

H1: It is possible to create a consistent set of socio-economic indicators that assess the potential of countries participating in regional integration agreements for further integration.

H2: The discrepancy in the GDP structure between the RCEP PC is low enough to engage in the next level of economic integration, the Customs Union.

H3: The European Union is a good benchmark for Asian regional integration agreements.

The following section discusses the research methodology and data.

RESEARCH METHODOLOGY

The research design is quantitative. It aimed to identify more homogeneous subgroups within RCEP PC to exclude the countries with the highest divergence. Then, the RCEP's potential for further economic integration was derived from its comparison with the EU.

Data sets on the chosen GDP-based World Development Indicators of RCEP PC and EU MS came from the World Bank database. We used Microsoft Excel (v2203, build 15028.20228) for data analysis and forecasting, ADE-TAX (created by Pisulak & Bauer) for minimum-variance method calculations, and Statistica (v13.3) for graphic presentations. Literature selection is derived from in-depth studies of research articles on regional integration agreements, cluster analysis, and European Treaties.

We used Ward's minimum-variance – a cluster analysis method. Kovacova *et al.* (2019) state that "the use of the cluster analysis focuses on the identification of homogeneous subgroups of explanatory variables to sort the variables into clusters so that the variables within a common cluster are as similar as possible" (p. 744). Our application consisted of the following steps.

First, data were standardized with Maciejewski's (2017) Formula (1):

$$z_{ij} = \frac{x_{ij} - \bar{x}_j}{s_j}$$

(1)

where:

z_{ij} - standardized value of the *j*-th index in the *i*-th country;

x_{ij} - value of the *j*-th index in the *i*-th country;

$\bar{x}_j$ - arithmetic mean of index *j*;

s_j - the standard deviation of index *j*;

i - RCEP PC and EU MS, $i_{RCEP} = [1,2,…,n_{RCEP}], n_{RCEP} = 15; i_{EU} = [1,2,…,n_{EU}], n_{EU} = 27;$

j - number of indicators, $j = [1,2,…,m], m = 8.$

Second, we apply Ward's minimum-variance method for hierarchical clustering to obtain a hierarchical structure of similarities between RCEP PC and EU MS (within each block independently, not between two blocks). The resulting dendrogram illustrates the arrangement of the clusters (Ward, 1963), which can be quantified. The initial cluster distances are the Euclidean distance between the countries, defined after (Kovacova *et al.*, 2019, p. 752) by Formula (2):

$$d_{ij} = \sqrt{\sum_{k=1}^{k} \left(x_{ik} - x_{jk}\right)^2}$$

(2)

where:

x_{ik} - value of variable k for the in the country referred as i;

x_{jk} - value of variable *k* of the *j*-th index (interpreted as a maximum value).

Fallucchi *et al.* (2019) observe that Ward's method, contrary to the k-means method, specifies the number of types (groups). In our research, we split the research samples into four groups (separate for RCEP and EU).

Third, we calculate (3) the Synthetic Measure of Development (SMD). Mazur and Witkowska (2006) point at SMD, providing a more transparent visualization of such aggregated Euclidean distances.

$$SMD = 1 - \frac{d_i}{d_0} \tag{3}$$

where:

SMD - Synthetic Measure of Development (SMD);

d_i - Euclidean distance for $i = \{1,2,\dots,n\}$, where *i* stands for an individual country;

d_0 - Euclidean distance max value.

The maximum value of the Euclidean distance can be calculated using Formula (4).

$$d_0 = \max_i\{d_i\} \tag{4}$$

The SMD values range from 0 to 1, with greater values reflecting a higher level of development. As a result, we obtained a grading of economic development distances between members of researched regional integration agreements, RCEP and EU, separately within each agreement.

Additionally, after obtaining SMDs, we used the standard deviation to measure the divergence between countries within the RCEP and the EU (Formulas 5 & 6).

$$\sigma_{RCEP} = \sqrt{\frac{\sum |x_{RCEP} - \mu_{RCEP}|^2}{N_{RCEP} - 1}} \tag{5}$$

where:

σ_{RCEP} - the standard deviation for RCEP PC;

x_{RCEP} - specific value in a data set;

μ_{RCEP} - arithmetic mean;

N_{RCEP} **-** the number of countries (15).

$$\sigma_{EU} = \sqrt{\frac{\sum |x_{EU} - \mu_{EU}|^2}{N_{EU} - 1}} \tag{6}$$

where:

σ_{EU} - the standard deviation for EU MS;

x_{EU} - specific value in a data set;

μ_{EU} - arithmetic mean;

N_{EU} - the number of countries (27).

As variables, we employed eight GDP-related indicators, presented as GDP %. The initially considered set of socio-cultural-legal-economic indexes proved to be too large and not homogeneous enough. Therefore, after preliminary research, we decided to limit this set to GDP-related indexes, addressing various spheres of economic well-being. Their presentation as GDP % provides greater transparency. GDP-based indicators seem to be the most appropriate and adequate indexes when it comes to empirical analysis. As they do not measure the social sphere itself (Giannakitsidou, 2016), we treated GDP as a benchmark for our indicators. We decided not to employ the most popular economic integration indexes, such as openness to foreign trade or capital flows, because of countries like Singapore. Justification: the openness to the foreign trade of Singapore extends over ten times the same index for China or Japan (World Bank, 2021b). Although it is impossible to carry out an economic analysis with Singapore not suppressing the results, we concluded, that our set of indicators protects extensively the examination from data distortion.

We employed the following indicators, defined by the World Bank (2021a):

− Final Consumption Expenditure (FCE) – expenditure by resident institutional units, including households and enterprises whose main economic center of interest is in that economic territory, on goods or services that are used for the direct satisfaction of individual needs or wants or the collective needs of members of the community;

− Foreign Direct Investments (FDI) – net inflows of investment to acquire a lasting management interest (10% or more of voting stock) in an enterprise operating in an economy other than that of the investor; it is the sum of equity capital, reinvestment of earnings, other long-term capital, and short-term capital as shown in the balance of payments;

- Military Expenditure (ME) – all current and capital expenditures on (i) the armed forces (including peacekeeping forces); (ii) defense ministries, and other government agencies engaged in defense projects; (iii) paramilitary forces, if these are judged to be trained and equipped for military operations; (iv) military space activities (military and civil personnel, including retirement pensions of military personnel and social services for personnel); (v) operation and maintenance; (vi) procurement; (vii) military research and development; (viii) military aid;
- Current Health Expenditure (CHE) – estimates of current health expenditures include healthcare goods and services consumed during each year, excluding capital health expenditures such as buildings, machinery, IT, and stocks of vaccines for emergencies or outbreaks;
- Exports of Goods and Services (EX) – the value of all goods and other market services provided to the rest of the world; they include the value of merchandise, freight, insurance, transport, travel, royalties, license fees, and other services, such as communication, construction, financial, information, business, personal, and government services;
- Services Value-Added (SVA) – includes the value-added (VA) in wholesale and retail trade (with hotels and restaurants), transportation, and government, financial, professional, and personal services such as education, health care, and real estate services;
- Industry Value-Added (IVA) – it comprises VA in mining, manufacturing (also reported as a separate subgroup), construction, electricity, water, and gas;
- Agriculture Value-Added (AVA) – includes VA in forestry, hunting, and fishing, the cultivation of crops, and livestock production.

Five of the above indicators are stimulants (raising the indicator value increases the dependent variable), and three are destimulants (raising the indicator value decreases the dependent variable). The three last indicators (SVA, IVA, AVA) are calculated as value-added, which is the net output of a sector after adding all outputs and subtracting intermediate inputs. It is calculated without making deductions for the depreciation of fabricated assets or the depletion and degradation of natural resources (World Bank, 2021a).

Despite some limitations enumerated in the Conclusions section, we managed to propose and standardize a set of economic development indexes applicable for both integration agreements. This confirms H1.

The third section contains a presentation of our research results and their discussion.

RESULTS AND DISCUSSION

Table 1 presents the calculated Euclidean distances between RCEP PC for each index individually.

Table 2 presents similar calculations for the Euclidean distances between EU MS for the same set of indexes.

The application of the minimum-variance method allowed us to create two Synthetic Measures of Development (SMD_{RCEP} and SMD_{EU}) one for each regional integration agreement. Table 3 presents the SMD for RCEP PC (SMD_{RCEP}).

The SMD_{RCEP} values presented in Table 3 prove a relatively similar economic advancement of RCEP PC, with two exceptions: Singapore and Lao PDR. Singapore's outstanding economic performance is mainly due to the highest scores on FCE, FDI, EX, SVA, and AVA indexes (Table 1). The other extreme is represented by Lao PDR, due to the lowest values of ME and CHE indexes (Table 1). We can therefore state that the differences between GDP structures of RCEP PC are not thwarting further integration. However, tighter integration circles (various integration fields and speeds) could prove necessary because of the two mentioned exceptions. Therefore, H2 can be conditionally confirmed.

Table 4 presents the SMD calculated for EU MS (SMD_{EU}).

Table 1. Economic development indicators for the Regional Comprehensive Economic Partnership Participating Countries

RCEP PC	FCE	FDI	ME	CHE	EX	SVA	IVA	AVA
Australia	75.09	3.21	1.98	9.38[a]	21.76	66.91	24.07	2.34
Brunei Darussalam	46.26	2.52	3.25	2.36[a]	53.10	40.04	60.54	1.10
Cambodia	77.83	12.61	2.11	6.24[a]	61.26	39.06	31.55	23.30
China	54.97	1.59	1.75	5.10[a]	19.44	52.98	39.39	7.62
Indonesia	66.99	1.78	0.82	2.92[a]	19.51	43.77	39.28	13.23
Japan	74.49	0.64	0.95	10.71[a]	17.05	70.00[a]	28.42[a]	1.05[a]
Korea, Rep.	64.01	0.67	2.57	7.28[a]	40.25	55.97	33.75	1.83
Lao PDR	81.59[b]	6.63	0.15[d]	2.44[a]	36.94[b]	42.14	30.41	16.35
Malaysia	69.44	2.80	1.19	3.76[a]	66.91	53.06	37.66	8.05
Myanmar	71.76	4.53	3.22	5.05[a]	26.08	39.99	35.80	24.21
New Zealand	76.33	1.11	1.26	9.30[a]	26.34	65.61[c]	20.27[c]	5.37[c]
Philippines	85.23	2.43	1.02	3.97[a]	27.87	59.96	30.03	10.01
Singapore	45.90	25.55	3.01	4.22[a]	173.90	70.29	24.20	0.03
Thailand	67.03	1.23	1.40	3.77[a]	62.86	56.84	34.71	8.45
Vietnam	74.52	6.14	2.37[c]	4.82[a]	100.53	41.05	33.64	15.36
Variables:	**D**	**S**	**S**	**S**	**S**	**S**	**D**	**D**

[a] data set: 2015-2019 (forecasted for missing data); [b] data set: 2015-2016 (forecasted for missing data); [c] data set: 2015-2018 (forecasted for missing data); [d] data set: 1992-2013 (forecasted for missing data); *variables* – statistical features (stimulants – S or destimulants – D)
Source: own elaboration based on World Bank (2022), indicator codes: NE.CON.TOTL.ZS; BX.KLT.DINV.WD.GD.ZS; MS.MIL.XPND.GD.ZS; SH.XPD.CHEX.GD.ZS; NE.EXP.GNFS.ZS; NV.SRV. TOTL.ZS; NV.IND.TOTL.ZS; NV.AGR.TOTL.ZS (accessed on March 25, 2022).

Table 2. Economic development indicators for the European Union Member States

EU MS	FCE	FDI	ME	CHE	EX	SVA	IVA	AVA
Austria	71.66	-3.27	0.75	10.37[a]	53.64	62.88	25.33	1.13
Belgium	74.62	-2.70	0.93	10.68[a]	80.94	69.43	19.30	0.65
Bulgaria	76.72	3.39	1.69	7.38[a]	63.27	59.57	23.08	3.71
Croatia	78.88	2.03	1.69	6.83[a]	47.39	59.50	20.42	3.00
Cyprus	81.14	67.82	1.64	6.75[a]	73.55	74.07	11.68	1.89
Czechia	66.51	3.63	1.08	7.36[a]	76.76	55.89	32.32	2.01
Denmark	71.24	1.00	1.24	10.09[a]	55.73	65.01	20.76	1.13
Estonia	70.24	5.44	2.07	6.56[a]	74.99	60.85	23.60	2.38
Finland	76.70	2.90	1.41	9.27[a]	37.05	60.16	23.85	2.34
France	77.57	1.64	1.91	11.30[a]	30.49	70.38	17.24	1.56
Germany	72.42	2.56	1.21	11.38[a]	46.25	62.25	27.16	0.74
Greece	89.63	1.64	2.63	8.06[a]	34.93	69.39	14.12	3.81
Hungary	69.68	28.31	1.15	6.70[a]	84.13	55.75	25.24	3.61
Ireland	42.85	24.44	0.31	7.07[a]	124.45	55.22	37.11	0.96
Italy	79.07	0.86	1.36	8.72[a]	30.36	66.55	21.33	1.97
Latvia	77.74	2.53	1.75	6.11[a]	60.51	64.67	18.94	3.65
Lithuania	78.42	4.13	1.74	6.63[a]	72.66	60.97	25.73	3.21
Luxembourg	49.36	24.00	0.59	5.28[a]	197.05	79.52	11.39	0.22
Malta	63.78	28.98	0.51	8.75[a]	146.94	75.73	12.51	0.78
Netherlands	68.74	4.16	1.24	10.18[a]	81.78	70.03	17.78	1.70
Poland	76.19	3.00	2.04	6.45[a]	53.67	56.87	28.70	2.49
Portugal	82.31	3.11	1.87	9.39[a]	41.26	65.47	19.23	2.08
Romania	78.91	2.67	1.76	5.28[a]	40.78	57.41	28.44	4.14
Slovakia	75.41	2.57	1.35	6.87[a]	92.49	58.52	29.14	2.02
Slovenia	71.45	2.91	1.01	8.39[a]	80.76	56.62	28.49	2.04

EU MS	FCE	FDI	ME	CHE	EX	SVA	IVA	AVA
Spain	77.17	2.74	1.25	9.03[a]	33.90	67.87	20.09	2.81
Sweden	71.47	3.10	1.08	10.85[a]	44.71	65.46	21.84	1.41
Variables:	*D*	*S*	*S*	*S*	*S*	*S*	*D*	*D*

[a] data set: 2015-2019 (forecasted for missing data); *variables* – statistical features (stimulants – S or destimulants – D).
Source: own elaboration based on World Bank (2022), indicator codes: NE.CON.TOTL.ZS; BX.KLT.DINV.WD.GD.ZS; MS.MIL.XPND.GD.ZS; SH.XPD.CHEX.GD.ZS; NE.EXP.GNFS.ZS; NV.SRV. TOTL.ZS; NV.IND.TOTL.ZS; NV.AGR.TOTL.ZS (accessed on March 25, 2022).

Table 3. Synthetic Measure of Development for Regional Comprehensive Economic Partnership Participating Countries

RCEP PC	$\sum_{k=1}^{k}\left(x_{ik}-x_{jk}\right)^2$	$\sqrt{\sum_{k=1}^{k}\left(x_{ik}-x_{jk}\right)^2}$	SMD$_{RCEP}$
Australia	33.75	5.81	0.253
Brunei Darussalam	56.37	7.51	0.035
Cambodia	40.42	6.36	0.183
China	42.37	6.51	0.164
Indonesia	57.88	7.61	0.022
Japan	41.50	6.44	0.172
Korea, Rep.	33.19	5.76	0.260
Lao PDR	60.55	7.78	0.000
Malaysia	41.29	6.43	0.174
Myanmar	51.55	7.18	0.077
New Zealand	38.72	6.22	0.200
Philippines	51.76	7.19	0.075
Singapore	6.32	2.51	0.677
Thailand	39.94	6.32	0.188
Vietnam	35.96	6.00	0.229
Max:	–	**7.78**	–

Source: own calculations in Microsoft Excel.

Table 4. Synthetic Measure of Development for European Union Member States

EU MS	$\sum_{k=1}^{k}\left(x_{ik}-x_{jk}\right)^2$	$\sqrt{\sum_{k=1}^{k}\left(x_{ik}-x_{jk}\right)^2}$	SMD$_{EU}$
Austria	71.59	8.46	0.138
Belgium	57.89	7.61	0.225
Bulgaria	75.11	8.67	0.117
Croatia	76.97	8.77	0.106
Cyprus	39.98	6.32	0.356
Czechia	75.19	8.67	0.116
Denmark	58.48	7.65	0.221
Estonia	60.20	7.76	0.209
Finland	72.96	8.54	0.130
France	58.91	7.68	0.218
Germany	65.67	8.10	0.174
Greece	79.49	8.92	0.091
Hungary	66.05	8.13	0.172
Ireland	68.02	8.25	0.160
Italy	71.30	8.44	0.140
Latvia	73.45	8.57	0.127
Lithuania	73.64	8.58	0.125
Luxembourg	34.94	5.91	0.398

EU MS	$\sum_{k=1}^{k} \left(x_{ik} - x_{jk} \right)^2$	$\sqrt{\sum_{k=1}^{k} \left(x_{ik} - x_{jk} \right)^2}$	SMD_{EU}
Malta	32.27	5.68	0.421
Netherlands	47.50	6.89	0.298
Poland	78.15	8.84	0.099
Portugal	65.68	8.10	0.174
Romania	96.29	9.81	0.000
Slovakia	71.64	8.46	0.137
Slovenia	72.19	8.50	0.134
Spain	70.12	8.37	0.147
Sweden	61.60	7.85	0.200
Max:	–	**9.81**	–

Source: own calculations in Microsoft Excel.

The creation of GDP within the EU block seems to be distributed much more equally. Even though Malta, Luxembourg, and Cyprus score the best, and Poland, Greece, and Romania have the lowest SMD_{EU} values, no extremes similar to SMD_{RCEP} can be identified. These findings are supported by standard deviation calculations: $\sigma_{RCEP} = 0.161$ vs. $\sigma_{EU} = 0.095$ proves that the EU MS are more convergent than the RCEP PC. However, we need to acknowledge a calculation bias coming from Singapore being an indisputable leader within the RCEP.

Distances in economic development between the countries are presented in the dendrograms below, for RCEP PC (Figure 1) and EU MS (Figure 2) separately.
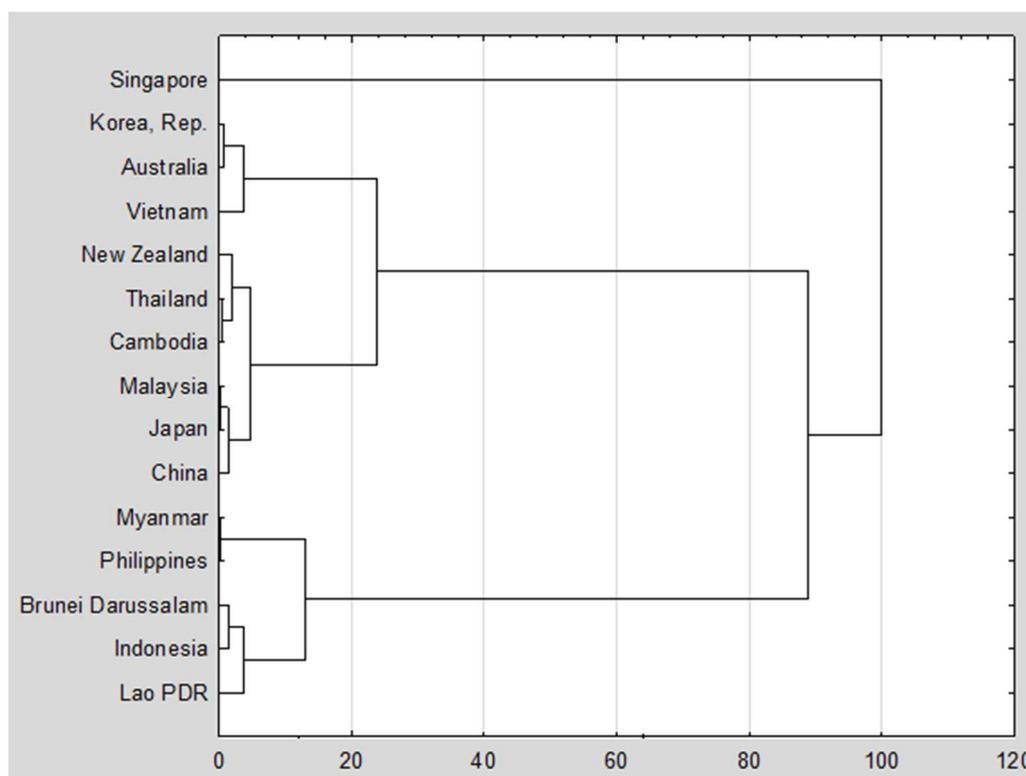

Figure 1. Distances in economic development between RCEP PC (SMD_{RCEP})
Source: own elaboration with the use of Statistica based on calculations in ADE-TAX.

Both in Figures 1 and 2 we use an internal comparative unit for dendrograms imposed by the Statistica software (Formula 7).

$$u_{stat} = 100 \cdot \frac{BD}{MD} \tag{7}$$

where:

u_{stat} - an internal comparative unit for dendrograms imposed by the Statistica software;

BD - binding distance in a dendrogram;

MD - the maximum distance in a dendrogram.

Our analysis shows that around the distance of 15 units we can distinguish four groups of countries based on their SMD_{RCEP} values: (i) Singapore; (ii) South Korea, Australia, Vietnam; (iii) New Zealand, Thailand, Cambodia, Malaysia, Japan, China; (iv) Myanmar, Philippines, Brunei Darussalam, Indonesia, Lao PDR.
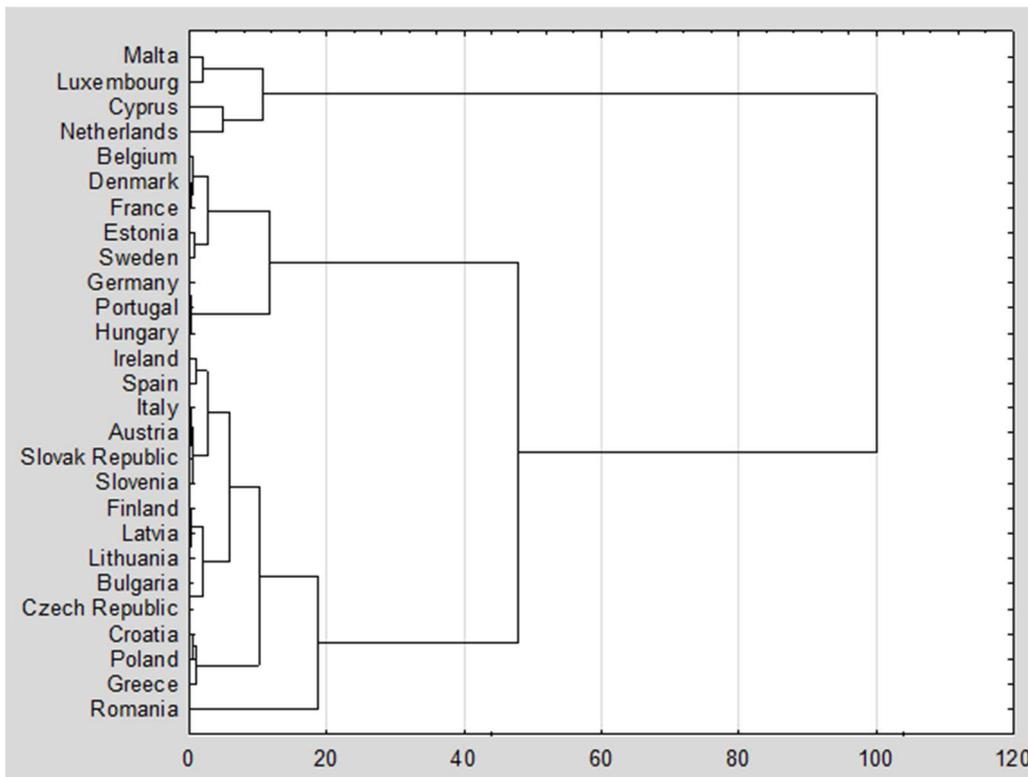
Figure 2. Distances in economic development between EU MS (SMD_{EU})
Source: own elaboration with the use of Statistica based on calculations in ADE-TAX.

Similar reasoning within the EU also identifies four groups, more homogeneous in their level of economic advancement, since the distance of around 12 units is sufficient to obtain the same number of groups. These groups are (i) Malta, Luxembourg, Cyprus, Netherlands; (ii) Belgium, Denmark, France, Estonia, Sweden, Germany, Portugal, Hungary; (iii) Ireland, Spain, Italy, Austria, Slovakia, Slovenia, Finland, Latvia, Lithuania, Bulgaria, Czechia, Croatia, Poland, Greece, and (iv) Romania. It is worth mentioning that group No. 3 seems to be remarkably numerous. We can find 14 countries within; mainly PIIGS countries and new Member States (accession after 2004). The core countries of the EU were placed in groups No. 1 and 2.

The above shows that drawing direct conclusions from EU integration towards RCEP's potential for further economic approach is premature. Dieter (2021) backs our findings by saying that RCEP is a great FTA but the odds that it will become a Customs Union (CU) are rather limited.

Flach *et al.* (2021) claim that the value of trade between the RCEP PC has the potential to increase, because: "(i) trade relations and interdependencies between RCEP countries are more prominent compared to third countries, (ii) the relative importance of intra-RCEP trade has increased over the years, (iii) complex value chains play an important role in the region, and (iv) for giant China,

'Factory RCEP' is the most important partner network"(p. 98). Nevertheless, even with such arguments in favor of the growing importance of RCEP, the mentioned authors do not risk statements about taking RCEP PC at higher integration levels.

Rahman and Ara (2015) quantified the potential economic impact of the elimination of all import tariffs between the current RCEP PC and concluded that it could result in a drop in exports in most of them. Surprisingly, India would gain significantly from the FTA, even though it did not sign the RCEP agreement. A possible explanation comes from the fact that RCEP includes other trade blocks, e.g., ASEAN+6 countries (without India).

In addition to vertical integration, the RCEP can evolve horizontally, by accepting new PC. Chakraborty *et al.* (2019) claim that India would join the agreement if services became part of it. Being beneficial to India, the agricultural and service market of this country (mainly the technological industry) would bring great added value to other RCEP PC. Zhou *et al.* (2021) argue that "RCEP will have huge economic effects on members, such as GDP, welfare, and trade, and India's accession will bring greater benefits to RCEP members"(p. 13). India's accession would start a cycle synergy effect, as it pushes the agreement toward a Common Market – another vertical level of economic integration.

Kurihara (2017) predicts potential conflict areas by saying that developed RCEP PC will benefit from a larger increase in trade than the developing ones. He also predicts tensions between the Trans-Pacific Partnership (TPP) signatories and RCEP PC, as "the members are overlapping each other, and there might occur unexpected and unwanted effects on both and/or one of their economies"(p. 105).

Chaisse and Pomfret (2020) claim that RCEP has the potential to play an important role in the modern globalized economy but are not certain of the level of integration it will finally achieve. Chang *et al.* (2020) prove that the effect created by intra-regional trade is higher within RCEP than within the EU. They also notice the importance and similarity of sub-groups within the integrated environment. Thus, we can see the EU as a benchmark for the RCEP. On the other hand, some countries, i.e., China, Indonesia, Singapore, and Malaysia, can relatively easier (than EU-13) transcend and become part of RCEP-4 because divergence between RCEP's sub-groups (RCEP-4 and RCEP-11) is lower than in the EU (EU-15 and EU-13). Hence, only can we confirm H3 conditionally.

CONCLUSIONS

The objective of the article was to verify whether the EU can be perceived as a benchmark for further integration of RCEP Participating Countries (RCEP PC) in the foreseeable future. With the minimum-variance methods, based on World Bank's data on the GDP-related economic development indexes, we came to the following conclusions:

− RCEP PC are less integrated than the EU MS, however, the differences between the two regional integration agreements are less significant than expected;
− after excluding the extremes (Singapore and Lao PDR) the level of economic integration between RCEP PC seem to be satisfactory for further integration.

We managed to confirm H1, whereas H2 and H3 were confirmed only conditionally. Therefore, our Main Research Thesis, stating that "In the foreseeable future the RCEP will evolve into a Common Market" cannot be confirmed.

Our research bears the following implications and recommendations for policymakers:

− the European model of economic integration can be used as a benchmark for RCEP PC;
− however, the cultural, social, and political similarities in the actual stage of development of EU MS shall be also considered;
− therefore, the indicators employed for analyses and predictions of RCEP's future integration potential shall include also cultural, social, and political factors;
− the scenario of RCEP's integration in smaller, more homogeneous groups of countries is worth being analyzed by the policymakers.

Business entities shall notice that the higher level of integration, the higher volume of trade flows among the integrated countries. This is backed by Savinsky (2020), Ishikawa (2021), Shimizu (2021), and

Drysdale and Garnaut (2022). Therefore, we perceive them as potentially strong pro-integrational motivators. In this way, the microeconomic sphere can influence the macroeconomic environment. The more bilateral trade relations national entities have gotten between countries within FTA, the easier integration at the governmental level will be and this can lead to greater stages of economic integration.

Our article brings value-added to the Science of Economics by providing new information on RCEP's development potential. It also highlights the fact, that although conclusions on EU-RCEP similarities can be drawn from an economic perspective, direct comparisons of these two integration blocks can be misleading.

We observed the following limitations of the presented research: (i) choice of indexes – we used only economic indexes presented as GDP %, whereas adding social, cultural, and political factors would enrich the picture; (ii) some of the indexes can be interdependent, e.g.: lower health expenditure may equalize high military expenditure; (iii) dividing the indexes into stimulants and destimulants can result in some indicators being interpreted as nominants where "normal" (nominal) values of a given factor are desirable, while any deviations from the "normal" level are perceived as a negative phenomenon – e.g.: ME – difficult to be classified strictly as stimulant or destimulant, but treated here as a stimulant; (iv): lack of recent data from some RCEP PC, notably from the Lao Statistics Bureau, e.g. GHDx data – we had to forecast missing data, which can cause data distortion and calculation bias.

Future research on both RCEP and EU should concentrate on: (i) empirical research on up-to-date effects of economic integration; (ii) exploring further integration opportunities (including enlargements) and their limitations; (iii) simulating intra-RCEP trade after an alleged accession of India; (iv) anticipating the geopolitical threats for economic integration, e.g. under the light of Russia-China or China-Taiwan relations; (v) repeating our calculations with a broadened set of indicators, e.g. with focus on FDI structure; (vi) creating integration criteria hierarchies, e.g. with the use of Analytic Hierarchy Process method.

REFERENCES

Balawi, A. (2021). Entrepreneurship ecosystem in the United Arab Emirates: An empirical comparison with Qatar and Saudi Arabia. *International Entrepreneurship Review, 7*(2), 55-66. https://doi.org/10.15678/IER.2021.0702.05

Bhagwati, J.N. (1995). *US trade policy: the infatuation with FTAs.* Columbia University.

Browning, C. (2018). The construction and deconstruction of the EU's neighbourhood. In T. Schumacher, A. Marchetti, & T. Demmelhuber (Eds.), *The Routledge handbook on the European Neighbourhood Policy* (pp. 119-129). Routledge.

Chaisse, J., & Pomfret, R. (2019). The RCEP and the Changing Landscape of World Trade. *Law and Development Review, 12*(1), 159-190. https://doi.org/10.1515/ldr-2018-0058

Chakraborty, D., Chaisse, J., & Xu, Q.I.A.N. (2019). Is it finally time for India's free trade agreements? the ASEAN "Present" and the RCEP "Future". *Asian Journal of International Law, 9*(2), 359-391. https://doi.org/7101.01/S3400009131524402

Chander, A., & Sunder, M. (2018). The Battle to Define Asia's Intellectual Property Law: TPP to RCEP. *UC Irvine Law Review, 8*(3), 330-362.

Chang, S.M., Huang, Y.Y., Shang, K.C., & Chiang, W.T. (2020). Impacts of regional integration and maritime transport on trade: with special reference to RCEP. *Maritime Business Review, 5*(2), 143-158. https://doi.org/10.1108/MABR-03-2020-0013

Drysdale, P., & Garnaut, R. (1993). The Pacific: an application of a general theory of economic integration. In C.F. Bergsten & M. Noland (Eds.), *Regional Institutional Arrangements* (pp. 183-223). Institute for International Economics.

Dieter, H. (2021). RCEP-Countries create Asia-Pacific free trade zone: trade facilitation but no integrated bloc. *SWP Comment 2021/C 03*, 1-4. https://doi.org/10.18449/2021C03

Fallucchi, F., Luccasen, R.A., & Turocy, T.L. (2019). Identifying discrete behavioural types: a re-analysis of public goods game contributions by hierarchical clustering. *Journal of Economic Science Association*, *5*, 238-254. https://doi.org/10.1007/s40881-018-0060-7

Flach, L., Hildenbrand, H.M., & Teti, F. (2021). The Regional Comprehensive Economic Partnership Agreement and Its Expected Effects on World Trade. *Intereconomics, 56*(2), 92-98. https://doi.org/10.1007/s10272-021-0960-2

Foster, R. (2013). Tabula Imperii Europae: A cartographic approach to the current debate on the European Union as Empire. *Geopolitics, 18*(2), 371-402. https://doi.org/10.1080/14650045.2012.716466

Francois, J., & Elsig, M. (2021). *Short overview of the Regional Comprehensive Economic Partnership (RCEP)*. European Parliament, Directorate General for External Policies of the Union, PE 653.625, 1-25. https://doi.org/10.2861/001684

Gaur, P. (2021). Regional Comprehensive Economic Partnership (RCEP): a Trade Agreement among Equals? *Journal of Asia Pacific Studies, 6*(3), 403-416.

Giannakitsidou, O., Tsagkanos, A., & Giannikos, I. (2016). Correlation of municipal solid waste production and treatment with socioeconomic indexes. *International Journal of Environment and Waste Management, 18*(4), 303-316.

Głodowska, A. (2017). Business Environment and Economic Growth in the European Union Countries: What Can be Explained for the Convergence?. *Entrepreneurial Business and Economics Review, 5*(4), 189-204. http://doi.org/10.15678/EBER.2017.050409

Götz, M., Jankowska, B., Matysek-Jędrych, A., & Mroczek-Dąbrowska, K. (2018). Governmental change and FDI inflow to Poland and Hungary in 2010-2016. *Entrepreneurial Business and Economics Review, 6*(1), 153-173. https://doi.org/10.15678/EBER.2018.060109

Huettinger, M., & Zirgulis, A. (2020). Controversies Regrading the TTIP Agreement in the Academic Literature. *Review of Economics and Economic Methodology, 4*(1), 79-103.

Ishikawa, K. (2021). The ASEAN Economic Community and ASEAN economic integration. *Journal of Contemporary East Asia Studies*, *10*(1), 24-41. https://doi.org/10.1080/24761028.2021.1891702

Kamińska, T., & Zielenkiewicz, M. (2019). Changes in the similarity of business structure and demography after European Union accession. *Research Papers of Wrocław University of Economics, 63*(6), 51-63. https://doi.org/10.15611/pn.2019.6.04

Kovacova, M., Kliestik, T., Valaskova, K., Durana, P., & Juhaszova, Z. (2019). Systematic review of variables applied in bankruptcy prediction models of Visegrad group countries. *Oeconomia Copernicana*, *10*(4), 743-772. https://doi.org/10.24136/oc.2019.034

Kundera, J. (2019). The future of EU: Towards a two Speed Europe. *European Research Studies Journal, 22*(3), 261-281. https://doi.org/10.35808/ersj/1469

Kurihara, Y. (2017). Are RCEP and TPP Effective? *American International Journal of Contemporary Research*, *7*(3), 102-108.

Maciejewski, M. (2017). The problems of the economic development of the European Union Member States. *Scientific Journal of the University of Economics in Katowice, 319*, 117-126.

Mazur, A., & Witkowska D. (2006) Application of the taxonomic measures to estimate of the real estate. *Economics and Organization of Agri-Food Sector, 60*, 251-258.

Mlambo, D.N. (2019). Unearthing the challenges and prospects of regional integration in Southern Africa. *Journal of Public Affairs, 19*(1), e1882, 1-7. https://doi.org/10.1002/pa.1882

Mlambo, V.H., & Mlambo, D.N. (2018). Challenges impeding regional integration in Southern Africa. *Journal of Economics and Behavioral Studies, 10*(2(J)), 250-261. https://doi.org/10.22610/jebs.v10i2(J).2234

Pacuk, M., Palmowski, T., & Tarkowski, M. (2018). The emergence of Baltic Europe: An overview of Polish research on regional integration. *Quaestionaes Geographicae, 37*(2), 47-60. https://doi.org/10.2478/quageo-2018-0013

Park, S.C. (2017). RCEP versus TPP with the Trump Administration in the USA and Implications for East Asian Economic Cooperation. *Entrepreneurial Business and Economics Review*, *5*(4), 135-152. http://doi.org/10.15678/EBER.2017.050406

Rahman, M.M., & Ara, L.A. (2015). TPP, TTIP, and RCEP: implications for South Asian economies. *South Asia Economic Journal, 16*(1), 38-43. https://doi.org/10.1177/1391561415575126

Savinsky, A.V. (2020). Economic Integration in ASEAN: trade-related aspects. In W. Szkutnik, A, Sączewska-Piotrowska, M. Hadaś-Dyduch, & J. Acedański (Eds.), *Proceedings of the 14th International Scientific Conference Analysis of International Relations 2020 – Methods and Models of Regional Development, Summer Edition* (pp. 178-188). Publishing House of the University of Economics in Katowice.

Shimizu, K. (2021). The ASEAN Economic Community and the RCEP in the world economy. *Journal of Contemporary East Asia Studies, 10*(1), 1-23. https://doi.org/10.1080/24761028.2021.1907881

Szarek, J., & Piecuch, J. (2018). The importance of startups for construction of innovative economies. *International Entrepreneurship Review, 4*(2), 69-78. https://doi.org/10.15678/PM.2018.0402.05

Treib, O. (2020). Euroscepticism is here to stay: what cleavage theory can teach us about the 2019 European Parliament elections. *Journal of European Public Policy, 28*, 1-16. https://doi.org/10.1080/13501763.2020. 1737881

Ward, J.H. (1963). Hierarchical grouping to optimize an objective function. *Journal of the American Statistical Association, 58*. https://doi.org/10.1080/01621459.1963.10500845

World Bank (2021a). World Bank Metadata Glossary: <https://databank.worldbank.org/metadataglossary/all/series>.

World Bank (2021b). World Bank Open Data database: <https://data.worldbank.org/indicator/NE.TRD.GNFS.ZS>.

World Bank (2022). World Bank Open Data database: <https://data.worldbank.org/>.

Zhou, L., Pan, C., He, J., & Li, S. (2021). The Impact of RCEP on Chinese Regional Economy From Global Value Chains Perspective (tentative results). *Law and Development Review* (Working Paper). Retrieved on March 25, 2022 from https://www.gtap. agecon.purdue.edu/resources/download/10412.pdf.

Authors

The contribution share of authors is equal and amounted to 50% for each of them. WF – literature review, application of the research methodology, calculations, writing. RG – research design and methodology, conceptualization, literature review, discussion, writing.

Wojciech Ficek
Bachelor of International Economics in International Trade, alumnus and master's program student at the Cracow University of Economics (Cracow, Poland). Scientific interests: regional integration, European unification process, financial economics, monetary integration, international trade relations, international economic and political relations. Applied research methods: synthetic measures of development, Ward's method, standardized sum method, correlation analysis, linear arrangement.
Correspondence to: Mr. Wojciech Ficek, Cracow University of Economics, College of Economics, Finance and Law, Institute of Economics, International Trade Department, ul. Rakowicka 27, 31-510 Kraków, Poland, e-mail: wojciech.ficek@pm.me
ORCID http://orcid.org/0000-0002-2816-5830

Remigiusz Gawlik
Associate Professor at Cracow University of Economics (Cracow, Poland) and Extraordinary Associate Professor at the North-West University Business School (Potchefstroom, South Africa). Scientific interests: modelling and enhancing decision-making processes in management, international economic and political relations, social costs of global economic development, the economy of happiness and work-life balance, geopolitics. Applied research methods: Analytic Hierarchy Process, Analytic Network Process, Artificial Neural Networks, Fuzzy Sets.
Correspondence to: Prof. UEK, dr hab. Remigiusz Gawlik, Cracow University of Economics, College of Economics, Finance and Law, Institute of Economics, International Economics Department, ul. Rakowicka 27, 31-510 Kraków, Poland, e-mail: remigiusz.gawlik@uek.krakow.pl
ORCID http://orcid.org/0000-0003-3934-2131

Acknowledgements and Financial Disclosure

Conflict of Interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Copyright and License