Eurasian Research Journal

AUTUMN 2022 VOLUME 4 • NO 4

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A REGIONAL TRADE AGREEMENT FOR CENTRAL ASIA?

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ABSTRACT

Regionalism in Central Asia has attracted much attention but little action. This paper argues that, as the countries accept WTO trade law as the baseline, the time is ripe for agreeing on trade rules that go beyond the WTO, with focus on areas especially relevant to Central Asia. A modern trade agreement should not follow 20th century patterns of aiming for a customs union or free trade area; with low tariffs such preferential tariff arrangements are of little value. More important is to agree on areas where WTO rules are inadequate or non-existent, such as sanitary and phytosanitary measures and digitalization. For the framework for such an agreement, Central Asian countries can benefit from existing best practice, agreements with a chapter structure that permits focus on the most relevant areas while leaving more contentious areas for future negotiations.

Keywords: Central Asia, Trade agreements, Digitalization, SPS.

INTRODUCTION

Regionalism in Central Asia has attracted much attention but limited action. Before 1992 the five Central Asian economies operated in the integrated economic space of the Soviet Union. After the dissolution of the USSR there were many proposals for regional cooperation but, apart from the limitedly effective Commonwealth of Independent States, institutional structure remained undeveloped in the 1990s and 2000s. The main regional institutions involving Central Asian countries had secretariats outside the region.[2] The most serious economic integration arrangement, the customs union established in 2010 that became the Eurasian Economic Union in 2015, includes only two Central Asian countries.[3]

Central Asia Regional Economic Cooperation (CAREC) has provided a forum for regional cooperation among a wider group of countries, including Afghanistan, Azerbaijan, Georgia, Mongolia, Pakistan and two regions of the People's Republic of China. CAREC has provided a useful meeting place for customs officials and has promoted the Corridor Performance Monitoring and Measurement program for collecting data on road and rail travel along major Central Asian corridors. The 2019 *CAREC Integrated Trade Agenda 2030* offered a vision of trade expansion through adoption of more open trade policies, although implementation was disrupted by COVID-19. Post-pandemic is time to take stock, and arguments for a trade agreement apply to either a CAREC agreement or a narrower grouping of the five Central Asian countries.

As the process of WTO accession by Central Asian countries moves closer to completion, countries can negotiate a trade agreement with WTO obligations as a common baseline.[4] WTO membership provides greater certainty about members' tariffs and other policies, while non-membership has been associated with less predictable conditions of market access. A trade agreement can extend the scope of existing WTO commitments (WTO+ topics) and address areas not covered in the WTO (WTO-X topics). Learning from other recent regionalism agreements, the way forward is to adopt a multi-chapter agreement, within which initial negotiations focus on topics where there is ready consensus, while remaining chapters signify a commitment to future negotiations.

This paper examines the background and desirable content for a modern trade agreement among the Central Asian countries. Chapters that could yield an early harvest of specific commitments include: (1) sanitary and phytosanitary measures, because agrifood trade is important for most Central Asian countries, (2) trade in services, focusing on sub-sectors of particular interest to Central Asian countries, and (3) e-commerce and digitalization. The first two are WTO + topics in which there are beyond - WTO aspects, while the last is an area not covered by the WTO because the internet scarcely existed in 1995. Chapters on

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2 The secretariat of the Eurasian Economic Community and its successor the EAEU is in Moscow (as is that of the CIS). The secretariat of the Shanghai Cooperation Organization is in Beijing and that of the Economic Cooperation Organization is in Tehran. The CAREC secretariat is in Manila and the UN Special Programme for Central Asia (SPECA) is based in Bangkok and Geneva.

3 The EAEU members are Armenia, Belarus, Kazakhstan, the Kyrgyz Republic, and Russia.

4 The Kyrgyz Republic joined the WTO in 1996, Tajikistan in 2013, and Kazakhstan in 2015. Uzbekistan, whose application for WTO membership had stalled in the 2000s, showed renewed interest after the change of president in 2016 and negotiations are likely to be concluded soon (Pomfret, 2020). Turkmenistan applied for WTO membership in November 2021, and a Working Party was established in February 2022. In addition, all Central Asian countries are members of the World Customs Organization (WCO).

competition policy, intellectual property rights, investment, public procurement, and other topics can be included, with details to be filled in at future dates.

Consistency in WTO+ and WTO-X areas across trade agreements is important in complementing the universality of WTO trade law. It is important to avoid conflicting rules, because inconsistent rules create noodle bowl effects that increase the complexity and cost of international trade. Besides facilitating regional trade and other economic interaction, a trade-facilitating agreement will promote trade not only within Central Asia but will also, and more importantly, improve the global competitiveness of Central Asian producers.

Finally, a trade agreement should be treaty-based. Although this implies longer negotiations to agree on legally precise wording, it reduces future disagreement over what was really agreed and discourages empty declarations such as in the many Central Asian trade agreements of the 1990s and early 2000s.

THE GLOBAL BACKGROUND

The contents of major trade agreements in the twenty-first century are quite different from the geographically discriminatory tariffs and non-tariff barriers that the WTO charter was designed to regulate (customs unions and free trade areas, or preferential treatment for developing countries' exports) or outlaw (Pomfret, 2021b). Most twenty-first century agreements are aimed at facilitating trade, and measures such as simplified customs procedures or bureaucratic requirements are non-discriminatory. Modern trade agreements focus on international policy coordination to facilitate trade, and no longer emphasize exchange of preferential market access through tariffs or quotas.

The Diminishing Attractiveness of Preferential Market Access

Classical free trade areas or customs unions have either disappeared or been superseded by deep integration because in most trading nations applied tariffs are low.[5] Deep integration agreements go beyond preferential tariff reduction to include other areas. They include the European Union, Closer Economic Relations between Australia and New Zealand, and the North American trade agreements originally known as NAFTA.[6]

Even when preferential treatment is possible, exporters often do not avail themselves because the administrative costs outweigh the preference margin.[7] At the same time, production has been increasingly fragmented along global value chains (GVCs) in which participation depends on time and money costs of international trade that allow access to the most appropriate inputs and minimization of inventories

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5 Absent commitment to deeper integration, arrangements like the East African Community or Central American Common Market were unstable due to trade diversion (Pomfret, 2001).

6 The agreement between Canada, Mexico and the United States in force since July 2020 is called the United States–Mexico–Canada Agreement (USMCA) in the USA, in Canada is officially known as the Canada–United States–Mexico Agreement (CUSMA) in English and the Accord Canada–États-Unis–Mexique (ACEUM) in French, and in Mexico is Tratado entre México, Estados Unidos y Canadá (T-MEC).

7 Estimates of the tariff below which it will not be worth claiming preferential treatment range from 4% (Francois et al., 2005) to 5% (Amiti and Romalis, 2006). Based on analysis of 94 countries from years around 2010, Hayakawa et al. (2018) found that exporters to the ASEAN countries, Australia, China, Japan, Korea, and New Zealand made very little use of preferential tariffs. Studie on Australia (Pomfret et al., 2010), Thailand (Kohpaiboon and Jongwanich, 2015) and ASEAN (Hayakawa et al., 2009) also showed that in the presence of low MFN tariffs preferential treatment has little value.

(Johnson and Noguera, 2017). Regulatory compatibility also facilitates GVC coordination (e.g. rules that simplify cross-border information transfer), and free movement of skilled workers and of capital is complementary to GVC trade. In sum, trade policy increasingly aims to facilitate producers' access to best inputs rather than protecting producers from import competition.

New features of the international trade map since 1995, such as the internet (Freund and Weinhold, 2004) or GVCs, create a need for new trade-related regulations. However, extension of WTO rules is difficult due to the requirement for consensus, which has become more restrictive as WTO membership has become almost universal. A substantial number of WTO members are on the wrong side of the digital divide and many countries do not participate in GVCs; members in these overlapping groups are unconvinced of the need for reform and block change. Thus, although WTO rules are accepted as the foundation for international trade law, the need for new rules is being addressed outside the WTO.

The contents of the major twenty-first century agreements are mostly extensions of WTO rules (WTO+ items) or in areas not covered in the WTO charter (WTO-X). The task of avoiding a noodle bowl of conflicting standards that increase the complexity of international trade would ideally be handled by an agency with global membership. However, updating the WTO rules has been stymied by the consensus requirement, and outside the WTO there is no satisfactory forum for setting common universal standards. Twenty-first century trade agreements are a practical response to the roadblock.

Open Regionalism and Megaregional Agreements

The pioneer of "open regionalism" was Asia Pacific Economic Cooperation (APEC), a forum for like-minded countries to coordinate trade policy reforms. During the early and mid-1990s, members used APEC meetings to announce unilateral tariff reductions or other measures; politically this was attractive in offsetting opposition from import-competing producers by an impression of reciprocal benefits for export producers. A perceived failure of APEC to react to the 1997-8 Asian Crisis and opposition to US pressure to commit to Early Voluntary Sectoral Liberalization led to effective demise of APEC as a force for trade liberalization. Nevertheless, APEC has an important legacy in introducing the concept of open regionalism, i.e. the reduction of barriers to trade and encouragement of cooperation without discrimination against outsiders and openness to any new members who share the ideals.

During the 2002 APEC summit, leaders of New Zealand, Singapore and Chile began negotiations on a forward-looking trade agreement that would set high-quality benchmarks on trade rules. After Brunei joined the talks, they were renamed the Trans-Pacific Strategic Economic Partnership agreement or Pacific-4, and the agreement entered into force in 2006. The P4 agreement was not about tariffs, which were at or close to zero in all four countries. In 2008, Australia, Peru, the USA, and Vietnam opened negotiations to extend the P4 and were joined by Malaysia in 2010, Mexico and Canada in 2012, and Japan in 2013. The twelve countries concluded the Trans-Pacific Partnership (TPP) negotiations in 2016. The negotiations were lengthy because the TPP agreement

was far-reaching. However, the TPP never entered into force because the USA withdrew in January 2017 before ratification.

The eleven remaining TPP countries agreed in May 2017 to renegotiate the agreement and in March 2018 they signed the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP). The CPTPP is the same as the TPP apart from a list of twenty-two "suspended provisions", primarily from chapters on investment, public procurement, and intellectual property rights, that were of primary interest to the USA. After ratification by Australia, Canada, Japan, Mexico, New Zealand, and Singapore, the CPTPP entered into force for those countries on 30 December 2018.[8]

The CPTPP has an accession clause designed to attract new members. In February 2021, the United Kingdom lodged the first formal application to join the CPTPP and on 2 June the CPTPP members agreed that the accession process could begin; the response showed that a country from outside the Asia-Pacific region would not be refused membership for geographical reasons. In September 2021, China applied to join the CPTPP, but may face resistance from CPTPP members doubting market-opening commitments.[9] A week later the Separate Customs Territory of Taiwan Penghu, Kinmen and Matsu lodged an application to join the CPTPP, adding a politically difficult element to evaluation of PRC's application. Ecuador lodged its application to join the CPTPP in December 2021.[10]

The Regional Comprehensive Economic Partnership (RCEP) is a megaregional agreement appealing to like-minded countries agreeing on terms that go beyond WTO commitments. Negotiations began in 2012 between the ten ASEAN member countries and six partners (Australia, China, India, Japan, Korea and New Zealand). The twenty chapters went beyond pre-existing trade agreements between ASEAN and the individual partners, and covered areas such as investment, intellectual property rights, competition, trade remedies, standards, e-commerce, and dispute settlement. In November 2019 India withdrew from the negotiations, facilitating conclusion of agreement among the more like-minded countries.[11] The other fifteen countries signed the agreement on 15 November 2020.

The RCEP agreement was not as deep as the CPTPP. While CPTPP partners eliminated virtually all tariffs, RCEP covered only about 90% of tariffs, and was less comprehensive than CPTPP on agriculture and services.[12] RCEP is weaker than CPTPP in some chapters; RCEP added little to existing intellectual property rules, did not mention the environment or state-owned enterprises, and said little

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8 The CPTPP entered into force for Vietnam on 14 January 2019 and for Peru on 19 September 2021. The CPTPP will enter into force for Brunei Darussalam, Chile, and Malaysia sixty days after they complete their respective ratification processes.

9 The CPTPP has chapters on labour and state-owned enterprises that mandate freedom of association, elimination of all forms of forced labour, and establishing disciplines on the commercial activities of public enterprises.

10 The most widely cited estimates, from computable general equilibrium modelling by Petri and Plummer (2016; 2020), show substantial net benefits to the eleven CPTPP signatories from the deep integration, and to the USA and PRC if they were to join the CPTPP.

11 India's withdrawal made RCEP more geographically defined as an east Asia organization, although that was not a factor in India's withdrawal. The Bangladesh Trade and Tariff Commission has been tasked with conducting an in-depth feasibility study on proposed inclusion of Bangladesh in RCEP (*The Financial Express* (Dhaka), 20 September 2021), but a formal application has not yet been made.

12 Because RCEP countries have higher average tariffs than CPTPP countries (Table 1), market access for goods and rules of origin were of greater importance in RCEP negotiations, but these are still only two of the twenty chapters in the final RCEP agreement (Table 2).

about standards or e-commerce and cross-border data flows. However, ASEAN has a history of slow but gradual liberalization of trade arrangements over time; eight years of negotiating the RCEP was typical of the "ASEAN way" which could presage future gradual convergence towards CPTPP rules.

Deep bilateral agreements negotiated by the EU overlap in coverage with the megaregionals. Since the 1990 Montréal ministerial meeting, the EU has shifted away from trade policy based on protecting key domestic producers and offering varying degrees of preferential treatment to imports (Pomfret, 2021a). The emphasis on competitiveness, including easy access to imported inputs, and participation in GVCs is explicit in the 2015 *Trade for All* strategy document. After tentative negotiation of new era trade agreements with countries such as Chile, Mexico, Korea, Colombia, Peru and Ecuador, the EU concluded deeper agreements with Canada (applied since 2017), Japan (in force since 2019), Singapore (in force since 2019) and Vietnam (in force since 2020).[13] The deeper recent agreements with Singapore, Canada and Japan cover similar areas to the CPTPP. Several EU partners are also CPTPP or RCEP signatories, which implies consistency between the agreements. These three sets of agreements cover all major trading nations except for the USA, Russia, India, and Brazil.

The Structure of Modern Trade Agreements

The TPP was an important blueprint for modern trade agreements in the way that it set out chapters to provide the structure for negotiations. Each chapter could be negotiated in a separate working party, and in the final text the scope of a chapter would be as extensive or as limited as the participants could agree upon. Negotiations were lengthy because they were far-reaching, and the agreement would have treaty status. The chapter structure is replicated in the RCEP agreement, in EU agreements since 2015, and in the December 2021 UK-Australia agreement.

The similarity of the chapter structures of the CPTPP and an EU agreement such as the Comprehensive and Economic Trade Agreement (CETA) with Canada reflects the commitment of the CPTPP countries and of the EU to free trade policies and to moving beyond current WTO obligations. Preferential market access for goods, which dominated twentieth century trade agreements, is no longer a major issue. Average applied tariffs are 1.7% in the EU and below 4% in all CPTPP signatories (Table 1). Producers want access to imported inputs from the best supplier globally and, especially for goods produced along global value chains, importers want minimal trouble at the border.

The CPTPP agreement is itself only nine pages long, describing changes from the already agreed TPP. The TPP/CPTPP structure is like the structure of the RCEP and of deep trade agreements negotiated by the European Union since 2015 (Table 2). RCEP's twenty chapters have similar coverage to most CPTPP chapters, a single chapter for services, and omission of eight TPP chapters. CETA chapters 11 (mutual recognition of professional qualifications) and 14 (international maritime transport services) did not have separate CPTPP chapters but could be included within the existing CPTPP chapter structure.

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13 Negotiations are under way with Australia, Indonesia, New Zealand, and the Philippines among others. The EU agreement with Kazakhstan will be analyzed below.

Table 1. *Average Ad Valorem Applied Tariffs Megaregional Signatories and Central Asian Countries, 2020*

CPTPP						Central Asian Countries	
		RCEP					
Canada	1.5%	Australia	0.7%	Cambodia	6.2%	Kazakhstan	2.0%
Chile	0.4%	Brunei	0.0%	PRC	2.5%	Kyrgyz Republic	2.3%
Mexico	1.2%	Japan	2.2%	Indonesia	2.0%	Tajikistan	3.9%
Peru	0.7%	Malaysia	3.6%	Korea	5.5%	Turkmenistan	2.9%
		New Zealand	0.8%	Lao PDR	1.0%	Uzbekistan	2.1%
		Singapore	0.1%	Myanmar	1.8%		
		Vietnam	1.3%	Philippines	1.7%		
				Thailand	3.5%		

Source: World Bank database

Notes: weighted average based on bilateral trade at HS 6-digit level; Mexico 2018, Myanmar 2019, Thailand 2015.

Table 2. *Chapter Structure of TPP Compared to RCEP and the EU-Canada Agreement*

TPP/CPTPP	RCEP	CETA
1. definitions	1	1
2. market access for goods	2	2
3. rules of origin	3	A
4. textiles & apparel		A
5. custom administration	4	6
6. trade remedies (AD&CVD)	7	3&7
7. SPS	5	5
8. TBTs	6	4
9. investment	10	8
10. services	8	9
11. financial services	8	13
12. temporary migration	9	10
13. telecoms	8	15
14. e-commerce	12	16
15. public procurement	16	19
16. competition policy	13	17
17. SOEs & monopolies		18
18. intellectual property	11	20
19. labor		23
20. environment		24
21. cooperation & capacity building	15	25
22. competitiveness & investment facilitation		
23. development		22
24. SMEs	14	
25. regulatory coherence		12&21
26. transparency & corruption		27
27. administration & institution provision	18	26
28. dispute settlement	19	29
29. exceptions & general provisions	17	28
30. final provisions	20	30

Notes: A = included in annexes. CETA also has three protocols (on rules of origin, on mutual acceptance of the results of conformity assessment, and on good manufacturing practices for pharmaceutical products).

The RCEP agreement illustrates the flexibility of the chapter approach. The twenty RCEP chapters go beyond pre-existing trade agreements between ASEAN and the individual partners, but RCEP was less comprehensive than CPTPP in sensitive areas such as trade in agricultural products and in services, and it added little to existing intellectual property rules. Because RCEP countries have higher average tariffs than CPTPP countries (Table 1), market access for goods and rules of origin were of greater importance in RCEP negotiations than in the CPTPP, but these were still only two of the twenty chapters in the final agreement (Table 2). Some CPTPP chapters - environment, labour, state-owned enterprises, competitiveness, development, regulatory coherence, and transparency and corruption - did not feature in RCEP. In sum, RCEP followed the structure of the CPTPP or CETA agreements, while making weaker commitments and ignoring some more controversial areas.

Even if it is less ambitious, the RCEP final text is consistent with the CPTPP. This should not be surprising, given that seven countries (Australia, Brunei, Japan, Malaysia, New Zealand, Singapore, and Vietnam) are signatories of both agreements. Consistency is important in preventing noodle-bowl effects of conflicting rules or standards that increase the complexity of trade. Consistency in WTO+ and WTO-X areas across trade agreements is also important in complementing the universality of WTO trade law. Furthermore, weaker RCEP chapters can be strengthened; ASEAN has a history of slow but gradual liberalization of trade arrangements over time, which could presage future convergence towards CPTPP rules. The global relevance of CPTPP rules in beyond-WTO areas is underlined by the UK's 2021 application to become a CPTPP member and by the December 2021 Australia-UK trade agreement which has close concordance with CPTPP apart from two new areas "trade and gender equality" and "innovations".

Central Asia, like RCEP, contains a mixture of countries with differing levels of commitment to deeper involvement in the global economy. Countries that are cautious about such entanglements can delay implementation and claim exemptions if they are not in contradiction to the agreed aims of the agreement, while more ambitious signatories can forge ahead. Singapore, an open economy with virtually tariff-free access for imports, has been a leader in pursuing megaregional agreements and has also been keen to proceed further with like-minded countries. In 2020, Singapore signed the Singapore-Chile-New Zealand Digital Economic Partnership Agreement (DEPA) and the Singapore-Australia Digital Economy Agreement (SADEA), both of which extended coverage to provisions not in the CPTPP (last four lines of Table 3).[14] Such efforts can be testing grounds for further measures, as long as they are consistent with the existing obligations. The drawback of country-specific clauses is that they increase the complexity of trade and, if excessive, could nullify an agreement's impact.

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14 In September 2021, Korea announced that it wished to join DEPA. In December 2021, Singapore and the UK signed a Digital Economy Agreement.

Table 3. *Key Digital Trade Provisions in Selected Trade Agreements*

Key issue	CPTPP	DEPA	SADEA
Elimination of customs duties	Y	Y	Y
Non-discriminatory treatment of digital products	Y	Y	Y
Electronic authentication	Y	Y	Y
Paperless trading	Y	Y	Y
Domestic e-transactions	Y	Y	Y
Online consumer protection	Y	Y	Y
Personal information protection	Y	Y	Y
Measures against spam	Y	Y	Y
Cybersecurity	Y	Y	Y
Cross-border transfer of information	Y	Y	Y
Prohibition of data localization	Y	Y	Y
Cross-border transfer & localization for financial services	N	NM	Y
Liability of intermediary service providers	N	NM	NM
Non-disclosure of software source code	P	NM	Y
Open government data	N	Y	Y

Sources: Lovelock (2020, 31-52) and Asian Trade Centre (2020).

Notes: Y = included; P = partially included; N = not included; NM = not mentioned.

THE REGIONAL BACKGROUND

Before the dissolution of the USSR in December 1991, the Soviet republics of Central Asia shared a common economic space. The Commonwealth of Independent States (CIS) envisaged continuation of free internal trade among the non-Baltic successor states, but the patchwork of bilateral free trade agreements often lapsed. The CIS became split politically between the GUAM (Georgia, Ukraine, Azerbaijan, and Moldova) group, neutral Turkmenistan, and the rest.[15] Several attempts to create Central Asian regional trade arrangements were signed but not implemented (Pomfret, 2006, 183-95).[16]

CAREC has been the most durable Central Asian regional trade institution. In 2001 CAREC was established with seven members (Azerbaijan, Kazakhstan, the Kyrgyz Republic, Mongolia, Tajikistan, Uzbekistan, and Xinjiang Autonomous Region of China), and six multilateral institution partners (the ADB, EBRD, IMF, IsDB, UNDP, and World Bank); a secretariat in the ADB provided technical and administrative support. Membership expanded to include Afghanistan in 2005, PRC's Autonomous Region of Inner Mongolia in 2008, Pakistan and Turkmenistan in 2010, and Georgia in 2016.

In its early years, CAREC was primarily about confidence-building and encouraging communication among officials.[17] Adoption of the Comprehensive Action Plan in 2006 marked transition to a results-oriented program with a focus on four areas of cooperation: transport, trade facilitation, trade policy and energy. Trade facilitation became the centrepiece of CAREC activities in the

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15 Uzbekistan joined GUAM in 1998 but left the group in 2005.

16 An important distinction is between regionalism, i.e. top-down policies to promote regional integration, and regionalization that involves bottom-up strengthening of regional ties through trade, investment, etc. The CAREC Regional Integration Index shows a flat trend of regionalization (Holzhacker, 2020).

17 The Customs Cooperation Committee was activated in 2002, the Transport Sector Coordinating Committee and the Trade Policy Coordinating Committee in 2004, and the Energy Sector Coordinating Committee in 2005. In 2009 a Regional Joint Transport and Trade Facilitation Committee was established.

2010s with hands-on cooperation within the Customs Cooperation Committee, infrastructure investment in six CAREC corridors, and consolidation of the Corridor Performance Monitoring and Management (CPMM) data bank.[18] Beyond affirming the desirability of WTO accession for those CAREC countries which were not yet members, CAREC had little to offer in the trade policy area which remained a national competence.

Central Asian countries have accumulated a patchwork of pre-existing agreements, some of which constrain their ability to make new trade-related commitments. The former Soviet republics have signed many agreements within the CIS that aimed to ensure continuation of free trade within the former Soviet space but have generally had little guaranteed foundation. The principal exception is the customs union formed by Belarus, Kazakhstan, and Russia in 2010 which became the Eurasian Economic Union (EAEU) in 2015, with Armenia and the Kyrgyz Republic as new members (Khitakhunov et al., 2017). The EAEU members have a common external trade policy towards non-member countries and cannot negotiate independently on trade measures such as tariffs (Vinokurov, 2018).[19]

The 2016 Enhanced Partnership and Cooperation Agreement (EPCA) between the European Union and Kazakhstan shares some structural characteristics with the RCEP agreement. The trade commitments, which are chapters in the EPCA's Title III *Trade and Business,* are weaker than RCEP and the EPCA places greater emphasis on non-trade matters, especially cooperation in a range of areas. The EPCA contains chapters on the environment, capital movement, transparency and corruption, and state-owned enterprises and monopolies. The EPCA does not affect Kazakhstan's tariffs, which are the EAEU common external tariff. The EU is currently negotiating EPCAs with Uzbekistan and the Kyrgyz Republic; texts are not yet available, but the Kyrgyz agreement, like Kazakhstan's EPCA, cannot change tariff rates which are set by EAEU commitments.

PRIORITY AREAS

The guiding principle for successful trade agreement negotiations is to have target goals for the long term, and to move forward in areas where there is consensus among members on the desired content. Of the twenty chapters of the RCEP agreement, priority chapters for a Central Asian trade agreement might include chapters 2 (trade in goods), 5 (sanitary and phytosanitary measures), 8 (trade in services), and 12 (e-commerce and digitalization). A trade in goods chapter might also include topics from RCEP chapters 7 on trade remedies, 6 on technical barriers to trade and standards, and 4 on customs procedures and trade facilitation. Lower priority could be given to less urgent or more controversial topics such as competition policy (RCEP chapter 13), intellectual property (chapter 11), investment (chapter 10), public procurement (chapter 16), temporary movement of businesspeople (chapter 9), small and medium-sized enterprises (chapter 14),

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18 The CAREC Institute, which had functioned as a virtual institute between 2009 and 2015, gradually built capacity to promote cooperation by providing evidence-based research after moving to a physical base in Urumqi. Among other functions, the Institute has assumed responsibility for the CPMM program.

19 The EAEU has had difficulty reaching binding agreements beyond tariffs (Dragneva and Hartwell, 2021). Troitsky (2020) argues that members use SPS and other administrative barriers to protect domestic producers facing competition in the EAEU internal market and that a promised joint body on sanitary and veterinary controls "remains a distant and unclear goal." The lack of EAEU solidarity is explicit in the WTO negotiations on digital trade, where Russia and Kazakhstan are among the 80+ countries signed up to the e-commerce Joint Statement, but the Kyrgyz Republic and Armenia are not (Belarus is not a WTO member).

and economic and technical cooperation (chapter 15). These and other possible chapters (such as the environment or state-owned enterprises chapters in the CPTPP) can be listed for filling in later. The agreement would conclude with chapters on dispute settlement and institutional support.

Trade in Goods

Trade in goods is generally well covered by WTO trade law. The WTO recognizes the public interest argument for regulations to protect health, safety, the environment, etc. and the need to provide guidelines when countries respond to practices such as dumping or unfair subsidizing of exports by antidumping (AD) or countervailing duties (CVDs). The WTO also has rules for customs administration and trade facilitation. Regional agreement can strengthen the efficiency of trade remedies and reduce harmful consequences for trade from the design or implementation of desirable regulations.

WTO members' obligations with respect to trade in goods provide a benchmark of minimal best practices. The RCEP chapters dealing with trade in goods are exceptionally long as the result of trying to establish preferential tariff treatment for intra-RCEP trade.[20] The Central Asian countries cannot address preferential tariffs as long as Kazakhstan and the Kyrgyz Republic are bound by the EAEU common external tariff, which makes the trade in goods chapter a much simpler exercise in pushing the boundaries of WTO rules. Several features of trade in goods, including trade remedies and technical barriers to trade can be combined into a single chapter, while sanitary and phytosanitary (SPS) measures can be retained as a separate chapter due to the importance of agri-food trade and the opportunities for regional simplification of SPS rules and procedures within Central Asia.

Transparency and non-discrimination are the core principles of the WTO. Although the WTO charter rules out many trade-obstructing practices, protection remains, intentionally or inadvertently, in three areas outside MFN tariffs.

Customs procedures and some behind-the-border factors add to the cost of international trade. The process of reducing trade costs is referred to as trade facilitation and the 2017 Trade Facilitation Agreement set out principles to be followed by WTO members. Bilateral or plurilateral trade agreements have been useful for identifying and implementing targeted trade facilitation measures. Such a function is provided by the CAREC Customs Cooperation Committee, but its decisions have no legal force.

Acceptance of the invoice price of an imported good has been controversial when the importing country perceives cases of unfair competition. The WTO recognizes two such cases and permits members to retaliate through countervailing duties (CVDs) against subsidized imports and through anti-dumping (AD) duties against goods being sold below fair market value, i.e.

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20 The RCEP agreement has over 6,000 pages of text, largely because of the content of Chapter 2, *Trade in Goods*, and Chapter 3 on rules of origin. The length of these two chapters and their annexes is due to inclusion of preferential tariff reductions in the agreement, and the excruciating detail with which signatories carved out exceptions or tailored rules of origin. Chapter 2 is 130KB long, but the schedules of tariff commitments in Annex I take up 720,310 KB. In Chapter 3, the product specific rules of origin in Annex 3A take up roughly ten times more space (1,850 KB) than the text of the chapter (190 KB) Chapters 4-7 on customs procedures, SPS, TBTs and trade remedies, are much shorter.

below cost or below the price in the exporting country. The principles behind utilization and calculation of CVDs and AD duties are clear, but the trade-damaging impact of the permitted remedies can come from non-transparent or drawn-out procedures that discourage imports irrespective of the outcome of the investigation. Trade agreements have been useful in encouraging mutual disarmament, e.g. by clarifying procedures, time limits and the rights of exporting countries.

Thirdly, the WTO recognizes members' right to impose regulations to promote public policies, even if such regulations have a practical consequence of discriminating against imported goods. WTO members commit to imposing technical standards and other regulations in forms that are transparent, evidence-based and with the least impact on trade consistent with achieving the public policy goal. Regional agreements can build on WTO principles to add beneficial measures such as standardizing regulations or mutual recognition of the scientific basis for technical barriers to trade.

The text of the RCEP trade in goods chapters, simplified if the signatories do not seek preferential access to other signatories' markets, provides a useful template for a Central Asian trade agreement. Chapter 4 on customs procedures and trade facilitation covers matters that are already addressed in the CAREC Customs Cooperation Committee. Chapters 5, 6 and 7 essentially restate WTO commitments on SPS, TBTs and trade remedies with some attempts to strengthen transparency or simplify implementation. On antidumping duties, Annex 7A gives the exporter opportunity to remedy or explain deficiency in request for information, requires informing the exporter of a preliminary affirmative finding and providing opportunity for consultation, and sets out obligations to publish the results. However, the chapter on trade remedies is not covered by the dispute settlement process, which weakens any requirements.[21]

Sanitary and Phytosanitary Measures

Although it matters little whether or not trade remedies, SPS or TBTs are in separate chapters because the principles applying on each topic are similar, exception may be made here for SPS because agriculture is an important sector in all Central Asian countries. Moreover, as part of efforts to diversify exports, several Central Asian countries would like to increase the volume and quality of agricultural exports. Key to achieving this goal is ensuring that exports meet SPS standards as governed by three international standard-setting bodies: Codex Alimentarius Commission for food safety, World Organization for Animal Health, and the International Plant Protection Convention. The WTO Agreement on SPS measures is based on the principle that agreeing on and meeting these standards is desirable; countries can restrict imports to protect human, animal or plant life or health, but the justification for application of SPS measures must be based on international standards and SPS measures should be designed to minimize negative effects on trade.

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21 The last article of RCEP Chapter 7 states that "No Party shall have recourse to dispute settlement under Chapter 19 (Dispute Settlement) for any matter arising under this Section or Annex 7A (Practices Relating to Anti-Dumping and Countervailing Duty Proceedings)."

The principal reason for agreements that go beyond the WTO Agreement is to ensure that implementation is transparent and as straightforward as possible. This can include harmonization of rules and mutual recognition of certificates of compliance with international standards or sharing facilities for testing and certifying. It also includes trade facilitation at the border, where delays in accepting and processing SPS certification can be a significant trade cost, especially for perishable agricultural products.

In 2015, CAREC ministers endorsed a Common Agenda for the Modernization of Sanitary and Phytosanitary Measures for Trade. Subsequent actions emphasized information sharing, streamlined procedures and collaboration of agencies at borders. This is consistent with the 2017 WTO *Trade Facilitation Agreement* that provides for use of international standards, Single Windows, and uniform documentation. The 2019 *CAREC Integrated Trade Agenda 2030* included potential mutual recognition of members' SPS certificates. The CAREC SPS Working Group, initiated in Tashkent in June 2019, took up issues including electronic exchange of phytosanitary certificates; a follow-up workshop was organized by the CAREC Institute in February 2021.

The adoption of electronic phytosanitary certificates (e-Phyto) facilitates trade, especially for perishable goods, but runs up against the CAREC countries' varying degrees of digital preparedness. Uzbekistan has been exchanging e-Phytos since October 2020. The benefits to Uzbekistan have been substantial but are constrained because the system has still to be adopted by some of the country's major agricultural trade partners (Russia, Kazakhstan, and China). More generally, implementation of paperless and agriculture-related trade facilitation in Central Asia is poor by global standards (Lazaro et al., 2021, 10, citing a 2021 UN survey on digital and sustainable trade facilitation); the same survey found that testing and laboratory facilities to meet trading partners' SPS requirements were adequate only in the Kyrgyz Republic, and partially available in Kazakhstan, and Uzbekistan. A Central Asian trade agreement could combine these initiatives to clarify what is agreed.

RCEP is a good model for Central Asian countries because it is comprehensive and consistent with other recent agreements, and also recognizes varying degrees of economic development, digital readiness, and willingness to make binding commitments. The objectives of RCEP Chapter 5 are to strengthen implementation of the WTO SPS Agreement, and it specifies agreed best practice in various aspects of SPS administration. Its coverage is consistent with existing CAREC practice in the area, as well as with pre-existing agreements such as the Eurasian Economic Union. Central Asian countries may be willing to push beyond RCEP and make commitments about mutual recognition of certification, addressing equivalence, approval of establishments, certification, import checks and inspection fees. Including such items in a Central Asian agreement, even in annexes, would codify recent Central Asian actions on information sharing, streamlined procedures and collaboration of agencies at borders, and would promote cooperation in sharing scarce resources such as testing laboratories.

Trade in Services

Services represent a large and growing part of modern economies, although their contribution to both GDP and to international trade is poorly measured.[22] Between 2001 and 2020 services value-added grew faster than GDP in all Central Asian countries (ADB 2021, 13). Services are increasingly traded in their own right, sometimes digitally (e.g. back-office services). In trade statistics based on gross values, services represent no more than 25 per cent of global trade, but these estimates ignore some modes of supply, e.g. services supplied through commercial presence in another country, and services also serve as crucial inputs into the production of traded goods - this is especially true of GVCs, for which services often provide the glue that holds the chains together. When trade is assessed in value-added terms rather than by gross value of the final product, services account for about half of world trade.

The General Agreement on Trade in Services (GATS), in force since establishment of the WTO in January 1995, was the major step in extending trade law to include services as well as goods. The GATS adopted similar principles and objectives to those for merchandise trade: creating a credible and reliable system of international trade rules, based on fair and equitable treatment of all participants through guaranteed policy bindings, to promote trade and development and through progressive liberalization. All WTO members are at the same time signatories of the GATS and, to varying degrees, have assumed commitments in individual service sectors.[23]

While recognizing the right of members to regulate the supply of services in pursuit of their own policy objectives, the GATS contains provisions ensuring that services regulations are administered in a reasonable, objective, and impartial manner. These provisions are categorized into two broad groups: general obligations that apply to all members and services sectors, and obligations that apply only to the sectors inscribed in a member's schedule of commitments, whose scope may vary widely between members.

The GATS requires WTO members to extend immediately and unconditionally to services or services suppliers of all other members "treatment no less favourable than that accorded to like services and services suppliers of any other country", which amounts to a prohibition of preferential arrangements among groups of members in individual sectors. Transparency is fundamental; WTO members are required, among other things, to publish all measures of general application and establish national enquiry points mandated to respond to other members' information requests. Other general obligations include the establishment of administrative review and appeals procedures and disciplines on the operation of monopolies and exclusive suppliers.

Each WTO member's Schedule of Specific Commitments identifies the services for which the member guarantees market access and national treatment, and

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22 Services account for over two-thirds of global production and employment. Many services are under-reported because they are in the informal economy or are part of an integrated production process for which only physical inputs and outputs are reported.

23 The GATS applies in principle to all service sectors, with two exceptions. First, the GATS excludes "services supplied in the exercise of governmental authority" that are supplied neither on a commercial basis nor in competition with other suppliers, e.g. health, education or social services that are provided under non-market conditions. Second, the Annex on Air Transport Services exempts from coverage measures affecting air traffic rights and services directly related to the exercise of such rights. The wording of this footnote draws heavily on the WTO website at https://www.wto.org/english/tratop_e/serv_e/gatsqa_e.htm.

any limitations that may be attached. Market access is a negotiated commitment in specified sectors that may be made subject to various types of limitations. Limitations may be imposed, for example, on the number of services suppliers or employees in the sector, on the value of transactions, on the legal form of the service supplier, or on the participation of foreign capital. A commitment to national treatment implies that the member concerned does not operate discriminatory measures benefiting domestic services or service suppliers. All schedules are available on the WTO website.

Members are free to tailor the sector coverage and substantive content of commitments as they see fit. Some WTO members have scheduled less than a handful of services, and others have assumed market access and national treatment disciplines in over 120 out of a total of 160-odd services. Most schedules consist of both horizontal sections that apply across all sectors listed in the schedule and sectoral sections that apply only to a particular service. Members are free to expand existing commitments at any time and to modify specific commitments subject to certain procedures.[24]

Establishing a global trade regime for services that goes beyond basic principles of transparency and non-discrimination has been difficult. Services are heterogenous, with subsectors facing different regulations and obstacles to international exchange. The international tourism trade, for example, is almost totally unregulated with little pressure to standardize domestic rules, regulations, or subsidies, while many professional services are protected by powerful associations that obstruct recognition of foreign credentials.

The GATS only addresses regulations that are trade barriers. There are no obligations on WTO members to remove other non-quantitative, non-discriminatory regulations in services sectors. In December 2021, sixty-six WTO members, including Kazakhstan, adopted a Joint Initiative on Services Domestic Regulation (SDR) disciplines that built upon the GATS by providing additional obligations related to domestic regulation of services. The aim is to reduce red tape by easing licensing and qualification requirements and procedures, as well as technical standards that create unnecessary barriers to trade in services.[25] Because the commitments are domestic and apply without discrimination to all foreign suppliers, the Joint Initiative could be adopted without approval of a WTO Ministerial meeting. The joint initiative is a GATS+ agreement and an important step in extending coverage of services trade within the WTO. At the same time, in the absence of WTO action in the quarter century after 1995 and reflecting the heterogeneity of the services sector, and hence differing national and regional priorities, services have featured in all deep trade agreements (Baiker, et al., 2021). [26]

24 The GATS also permits members in specified circumstances to introduce measures in contravention of their obligations, among other things, for measures necessary to protect public morals or maintain public order, to protect human, animal or plant life or health, or to secure compliance with laws or regulations not inconsistent with the GATS, including measures necessary to prevent deceptive or fraudulent practices. Moreover, the Annex on Financial Services entitles members, regardless of other GATS provisions, to take measures for prudential reasons. Finally, members with serious balance-of-payments difficulties may temporarily restrict trade, on a non-discriminatory basis, despite the existence of specific commitments.

25 The three main areas covered are: (1) increasing transparency, including publication of all laws and regulations before implementation, and providing opportunities for service providers to comment at draft stage, (2) legal certainty and predictability, including a maximum time for processing applications, and the right to resubmit or appeal decisions, (3) regulatory quality and facilitation, including independence of regulators, acceptance of electronic applications, and transparent reasonable fees.

26 Although services chapters have become standard content of deep trade agreements, they are often characterized by soft language (Gari, 2020). Such restraint reflects uncertainty of outcomes and anticipated high implementation costs, particularly for countries with unsophisticated domestic legal systems.

Baiker et al. (2021) document the overlap between the Joint Initiative and deep trade agreements. They specifically compare the Joint Initiative with the services provisions in RCEP. Chapter 8 of RCEP builds on the GATS by accepting the principles of non-discrimination and transparency and by adding further commitments for procedural simplification that in many respects resemble the terms of the Joint Initiative.[27] Thus, WTO members accepting the Joint Initiative could easily accept the services commitments included in the RCEP agreement, and this is notwithstanding the various stages of economic development and variations of internal regulatory frameworks among RCEP countries. RCEP builds on GATS commitments on market access and non-discriminatory treatment, and consolidates and improves on benefits from existing bilateral and other agreements involving the partners, allowing for greater transparency and usability for services stakeholders.[28] At the same time, RCEP countries retain the right to regulate for legitimate public policy purposes.

In general, the heterogeneity of services obstructs progress beyond general principles. This is reflected in the three annexes to the RCEP chapter, on financial services, telecommunication services and professional services, which offer varying amounts of detail and commitment. Annex 8A on financial services spends several paragraphs defining the range of insurance, banking, and other financial services to be covered and on consultation and contact points but contains few commitments beyond transparency and information transfer. Annex 8B makes general statements about regulation, access and use, number portability, competition safeguards, and other telecommunication matters; the most detailed treatment is of interconnection (with focus on access to domestic networks and services), co-location, and international mobile roaming, while other substantive articles address spectrum access, submarine cable systems, bundled services, and poles, ducts, and conduits. Finally, the brief Annex 8C (professional services) "encourages" development of mutually acceptable professional standards that are consistent with international frameworks.

Services trade is potentially the most difficult of the priority areas in which CAREC countries can reach early agreement. The sector is heterogeneous both in modes of delivery and in priority sub-sectors for different countries. A minimal outcome would be to mimic the main text of RCEP Chapter 8 which reaffirms GATS principles but is light on further commitment and on enforcement, while deeper commitments on specific sub-sectors could be included as annexes; the three RCEP annexes - financial services, telecommunications, and professional services – are relevant to CAREC members.[29] Simplifying cross-border financial transactions is an important element of trade facilitation. Telecommunication services should be considered in conjunction with the related area of digitalization

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27 In this respect RCEP is like the CPTPP, USMCA, and recent EU and UK deep agreements, although the degree of commitment is moderated by softer language in RCEP than in the other agreements.

28 For example, RCEP 'Domestic Regulation' provisions are relevant to services suppliers who need to obtain a license and/or registration to deliver services in RCEP markets; the Agreement requires that these processes should be based on objective and transparent criteria. RCEP standards for these processes focus on the ability of services providers to complete examination/assessment, the cost of submitting applications, and the feedback received on these applications. These rules will make registration and qualification processes more navigable for services providers struggling with foreign regulatory environments. Gari (2020) makes a similar point.

29 Chapter 3 of the 2021 ADB report *Developing the Services Sector for Economic Diversification in CAREC Countries* highlighted seven sub-sectors which are critical to economic diversification and sustainable development in CAREC countries: (i) telecommunication and information services, (ii) financial services, (iii) education and research and development services, (iv) tourism-related services including passenger transport, (v) freight transport and storage services, (vi) quality testing and certification services, and (vii) other agriculture-related services. Accompanying data highlighted the large cross-country variance in importance and efficiency of differing sub-sectors.

and e-commerce. Professional services are also related to digitalization, as an increasing number of such services can be provided online. Mutual recognition of qualifications is a potential area for removal of obstacles to services trade, although many professions may obstruct mutual recognition.[30] Service sectors not included in RCEP, e.g. cross-border tourism, could be considered for inclusion in a Central Asian trade agreement.

Digitalization and E-Commerce

With rapidly increasing e-commerce, use of the internet for trade facilitation, cross-border data flows etc., it has become clear that some international standardization of rules and regulations is desirable. Electronic communications reduce transactions costs but are subject to manipulation and deterioration. Information requires computing devices to display, involving risk of error, and altered states may be hard to distinguish from originals. Traditional laws use words that do not readily apply to information in digital form, e.g. "writing", "signature", "original", and such laws are barriers to use of e-communications. In addition to traditional trade-related concerns of openness and market access, transparency, and trade facilitation, digitalization and e-commerce raise issues of privacy and national security whose importance varies from country to country.

The WTO launched a work program in 1998, which included a temporary moratorium on customs duties on electronic transmission (that has been renewed annually) but had little further impact before the 2010s. Members who have poor internet connectivity and skills and do not participate in GVCs oppose rules that they fear may constrain their future policy space. At the December 2017 WTO Ministerial Meeting, 71countries, including all the countries involved in the deeper trade agreements described above, adopted a Joint Statement on E-commerce.[31] However, the process of drafting a plurilateral agreement is opposed by some WTO members who consider it to contravene the universality of WTO law. With decision-making by consensus, progress at the WTO cannot be relied upon and countries have included rules for e-commerce and digitalization in bilateral trade agreements (e.g. the 2012 US-Korea agreement or EU deep agreements) and multilateral trade negotiations (e.g. the TPP/CPTPP, RCEP). In sum, although global rules on trade aspects of digitalization would be desirable, current best practice is embodied in bilateral or regional agreements.

All Central Asian countries have laws relevant to electronic communication and trade. Although the coverage is fairly complete (CAREC, 2021, 58), laws on these issues vary in content and are not always consistent with each other or with international practice. The 2017 Trade Facilitation Agreement imposes certain obligations on WTO members to transact public business such as customs processing electronically. Similar obligations are implicit or explicit in other agreements to which the Central Asian countries are parties, such as the International Road Transport (TIR) convention or UN ESCAP agreements to promote paperless trade (Gregory, 2020). The principles set out in international agreements are a useful starting point but recent international trade agreements

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30 Caution may be justified, e.g. with respect to automatic recognition of medical qualifications, but it can be an excuse for restricting access in order to maintain market power of incumbents.
31 In January 2019, a second Joint Statement was signed by 76 members. In 2021, the number of participating members stood at 86, or just over half of the WTO membership, and included Kazakhstan from Central Asia.

go further, including privacy, cybercrime, and consumer protection.[32]

Most, but not all, Central Asian countries have some form of privacy legislation based on the principle of informed consent, and on setting limits to how long personal data may be kept and to transfer of data across borders. All have laws about criminal activity by traditional means, but in not all countries are laws on fraud, forgery, pornography, and so forth transferable to digital technology. Other illicit activities, such as unauthorized access to a computer or network or infecting computers with malware, are illegal in some, but not all countries. Few Central Asian countries have explicit consumer protection laws with respect to e-commerce that allow for timely information about e-transactions and the ability to remedy error or wrongdoing; such protection is also relevant to SMEs engaging in B2B e-commerce.

The TPP's chapter 14 on Electronic Commerce has become the benchmark for digital rules in international trade agreements. It was unchanged in the CPTPP, and other deep trade agreements coming into force in 2020 (e.g. EU-Japan, or US-Canada-Mexico) followed the structure of the TPP chapter. The RCEP agreement has a similar chapter but with weaker implementation. Agreements like the Singapore-Chile-New Zealand Digital Economic Partnership Agreement and the Singapore-Australia Digital Economy Agreement have been more ambitious. Despite variations in strength of obligations or extent of coverage, all recent agreements are consistent, hence avoiding problems of conflicting rules in different markets.[33]

RCEP Chapter 12 represents a feasible text for agreement between countries at different stages of digital preparedness and with varying degrees of willingness to agree on a regulatory regime for e-commerce and digitalization. The structure of the RCEP and CPTPP chapters on e-commerce is similar.[34] Among other issues, RCEP includes provisions on paperless trading, electronic certification and signature, online consumer protection, online personal information protection, and network security. Some clauses in the RCEP chapter are less ambitious than CPTPP, e.g. on the location of computing facilities and on cross-border transfer of information by electronic means, and RCEP has no commitments related to source code. RCEP generally imposes weaker standards of enforcement; several RCEP articles permit governments latitude in enforcing parts of the agreement, and footnotes illustrate how implementation can be eased for less well-prepared signatories. The biggest difference between the RCEP and CPTPP chapters is the condition that the RCEP dispute resolution mechanism cannot be applied to disputes related to the e-commerce chapter. In sum, although the structure

32 The principal source of international legislation has been the UN Commission on International Trade Law (UNCITRAL), but none of the Central Asian countries has adopted the UNCITRAL Electronic Communications Convention. UNCITRAL texts are built on four principles: functional equivalence (electronic information should be legally effective if it can perform the same policy function as its paper equivalent), technology neutrality (the law should not specify what technology e-communications must use to serve as functionally equivalent to paper-based information), media neutrality/non-discrimination (the law should give equal effect to information on paper and in electronic form), and minimalism (law reform deals only with the impact of new media and does not otherwise affect substantive legal rules).

33 The similarity of the digital rules and e-commerce provisions in recent agreements was highlighted in a report by the Asian Trade Centre (2020) and in Lovelock (2020), both of which analyzed whether trade agreements had a separate article on key digital provisions (Table 3). However, Lovelock warns that this approach hides differences over language, definitions and content and he emphasizes the difficulty of implementation when many domestic jurisdictions are involved.

34 The titles of the clauses in RCEP Chapter 12 and of the clauses in CPTPP chapter 14 are almost identical and in many cases the text is close to identical. RCEP has articles on Transparency and Dialogue on Electronic Commerce that are absent from the CPTPP but much of the content of those two articles is implicit in the CPTPP.

of RCEP chapter 12 closely follows that of other agreements, the language of RCEP's e-commerce chapter allows signatories greater flexibility.

Current regulatory regimes in Central Asia on e-commerce and digitalization consist of a mixture of often inconsistent national rules and partial implementation of multilateral conventions. Commitments on e-commerce and digitalization are essential if the countries intend to facilitate international trade. The need for common rules has been highlighted in 2020 and 2021 by the greater use of paperless communication during the COVID-19 pandemic and will continue to increase. Building on the principles of transparency, non-discrimination, and functional and technology equivalence that are the foundations of the multilateral conventions, the RCEP chapter structure provides a checklist of topics that can be incorporated in a Central Asian agreement. The RCEP text illustrates how the degree of commitment on any topic can be reduced by less committal language and the universality of rules can be limited by footnotes. The trade-off is, of course, that the more loopholes and exemptions an agreement contains the less useful its commitments are to legitimate traders, who prefer clear rules.

CONCLUSION

The history of trade agreements in Central Asia, especially in the 1992-2005 period, was of hundreds of agreements signed by presidents taking a photo-op, but the proposed arrangements broke down at the negotiations stage and were rarely implemented. It is important to change that image of words not being matched by deeds. Emphasizing the treaty nature of an agreement would be a major step, especially if supported by a clear dispute resolution process. A treaty-based agreement implies longer negotiations as the wording must be legally precise to reduce future disagreement over what was really agreed. Some flexibility can be retained by adopting soft language where full commitment is unacceptable to all signatories; wording of a treaty-based agreement can distinguish between degrees of obligation (e.g. "must", "should", "make best effort", "acknowledge", etc) while making clear that the agreement's force is beyond a mere paper agreement. However, overuse of soft language will make a treaty less effective.

A feature of world trade law in the twenty-first century has been the difficulty in extending WTO rules due to the consensus requirement. Deep trade agreements including extensions to WTO rules (WTO+ topics) and areas not covered in the WTO (WTO-X topics) have been a response. This paper emphasizes the high degree of compatibility between the CPTPP, RCEP, EU agreements and the US-Mexico-Canada agreement. Such compatibility is important to forestall trade-hampering increases in complexity. Another feature of 21st century trade agreements is the diminishing use of preferential tariffs as MFN tariffs have fallen.

The timing is ripe for a Central Asia trade agreement, whether between the five countries or within the broader CAREC. All Central Asian countries are now either in the WTO or seriously negotiating accession. A regional trade agreement can build on WTO foundations and focus on either extending WTO rules, as in SPS, or agreeing on rules to cover new areas such as digitalization and e-commerce.

A Central Asian trade agreement need not start from scratch. Detailed negotiation over wording can be simplified by drawing on existing deep agreements, most notably RCEP, for a template. A successful agreement incorporating commitments on changes in trade policy and practice must acknowledge the caution of Central Asian countries in agreeing to such measures. A gradualist approach could start with commitments already made, most notably in the *CAREC Integrated Trade Agenda 2030*, while postponing negotiation in areas where lack of consensus is likely. At the same time, sub-groups of countries can agree to go further on any specific topic, provided that extensions are consistent with the agreement.

REFERENCES

Asian Development Bank (2021). Developing the services sector for economic diversification in CAREC countries. Asian Development Bank, Manila.

Amiti, Mary and John Romalis (2006). Will the Doha Round lead to preference erosion? IMF Working Paper 06/10. International Monetary Fund, Washington DC.

Asian Trade Centre (2020). Comparing digital rules in trade agreements. Asia Business Trade Association, Singapore.

Baiker, Laura, Elena Bertola and Markus Jelitto (2021). Services domestic regulation – locking in good regulatory practices. Staff Working Paper ERSD-2021-14. Economic Research and Statistics Division, World Trade Organization, Geneva.

CAREC (2021). E-commerce in CAREC countries: Laws and policies. Asian Development Bank, Manila.

Dragneva, Rilka and Christopher A. Hartwell (2021). "The Eurasian Economic Union: Integration without liberalisation?" *Post-Communist Economies,* 33(2-3): 1-22.

Fernandes, Ana Margarida, Kevin Lefebvre and Nadia Rocha (2021). Heterogeneous Impacts of Sanitary and Phyto-sanitary and Technical Barriers to Trade Regulations: Firm-level evidence from deep trade agreements, in Ana Margarida Fernandes, Nadia Rocha, and Michele Ruta, eds. *The Economics of Deep Trade Agreements* (Centre for Economic Policy Research, London), pp. 79-87.

Francois, Joseph, Bernard Hoekman and Miriam Manchin (2005). Preference erosion and multilateral trade liberalization. World Bank Policy Research Working Paper WPS3730, World Bank, Washington DC.

Freund, Caroline and Diana Weinhold (2004). "On the effect of the internet on international trade". *Journal of International Economics,* 62(1): 171-189.

Gari, Gabriel (2020). Recent preferential trade agreements' disciplines for tackling regulatory divergence in services: How far beyond GATS? World Trade Review 19, 1–29.

Gregory, John (2020). E-Commerce in the CAREC Region: Laws and Policies, CAREC Trade Webinar.

Hayakawa, Kazunobu, Daisuke Hitarsuka, Kohei Shiino and Seiya Sukegawa (2009). Who uses free trade agreements? ERIA Discussion Paper 2009-22, Economic Research Institute for ASEAN and East Asia, Jakarta.

Hayakawa, Kazunobu, Fukunari Kimura and Nuttawut Laksanapanyakul (2018). "Measuring the usage of preferential tariffs in the world". *Review of World Economics,* 154(4): 705-723.

Hofmann, Claudia, Alberto Osnago and Michele Ruta (2017). Horizontal Depth: A new database on the content of preferential trade agreements, Policy Research Working Paper WPS7981, World Bank, Washington DC.

Holzhacker, Hans (2020). Intra-CAREC Trade: Business as usual or about to

change? CAREC Institute Economic Brief, 29 June, 2020.

Johnson, Robert and Guillermo Noguera (2017). "A portrait of trade in value-added over four decades". *Review of Economics and Statistics,* 99(5): 896–911.

Khitakhunov, Azimzhan, Bulat Mukhamediyev and Richard Pomfret (2017). "Eurasian Economic Union: Present and future perspectives". *Economic Change and Restructuring,* 50(1): 59–77.

Kohpaiboon, Archanun and Juthathip Jongwanich (2015). Use of FTAs from Thai Experience, ERIA Discussion Paper 2015-02, Economic Research Institute for ASEAN and East Asia, Jakarta.

Lazaro, Dorothea, Loreli de Dios, Ghulam Samad and Aiken Rose Tafgar (2021). Expanding agri-trade in Central Asia through the use of electronic certificates. ADB Brief No. 184, Asian Development Bank, Manila.

Lovelock, Peter (2020). The new generation of 'Digital' trade agreements: Fit for purpose? in Eduardo Pedrosa and Christopher Findlay eds. *State of the Region 2020*, Pacific Economic Cooperation Council, Singapore, pp. 31-52.

Petri, Peter and Michael Plummer (2016). The economic effects of the TPP: New estimates, in *Assessing the Trans-Pacific Partnership volume 1: Market Access and Sectoral Issues.* Peterson Institute for International Economics: Washington DC, pp. 6-30.

Petri, Peter and Michael Plummer (2020). "Should China join the New Trans-Pacific Partnership?" *China and World Economy,* 28(2): 18-36.

Pomfret, Richard (2001). *The Economics of Regional Trading Arrangements.* Oxford University Press, Oxford, UK.

Pomfret, Richard (2006). *The Central Asian Economies since Independence.* Princeton University Press, Princeton NJ.

Pomfret, Richard (2019). *The Central Asian Economies in the Twenty-first Century: Paving a New Silk Road.* Princeton University Press, Princeton NJ.

Pomfret, Richard (2020). "Uzbekistan and the World Trade Organization". *Silk Road: A Journal of Eurasian Development*, 2(1): 54–61.

Pomfret, Richard (2021a). *The Economic Integration of Europe.* Harvard University Press, Cambridge MA.

Pomfret, Richard (2021b). "'Regionalism' and the Global Trade System". *The World Economy*, 44(9): 2496-2514.

Pomfret, Richard, Uwe Kaufmann and Christopher Findlay (2010). 'Are preferential tariffs utilized? Evidence from Australian imports, 2000-9', *RIETI Discussion Papers Series 10-E-042,* Research Institute of Economy, Trade and Industry, Tokyo.

Troitsky, Evgeny (2020). The Eurasian Economic Union at Five: Great expectations and hard times, *The Russian File*, Kennan Institute, Woodrow Wilson International Center for Scholars, Washington DC.

Vinokurov, Evgeny (2018). *Introduction to the Eurasian Economic Union.* Palgrave Macmillan.

POLITICAL INSTABILITY, ECONOMIC AND FINANCIAL CHALLENGES IN THE WESTERN BALKANS IN THE POST-PANDEMIC WORLD

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ABSTRACT

In the ever challenging post-pandemic world with emerging threats of revisionist global order and growing regional challenges, the Western Balkans region cannot be immune. From threats of destabilization of Bosnia-Herzegovina, the volatile situation in northern Kosovo, and the ongoing Serbia-Kosovo talks to the internal and external threats vis-à-vis Montenegro, the region is facing unprecedented challenges. The freezing of the European Union integration process, the new ideas of "Associate Members" and the new "clusters" methodology have led to enlargement fatigue not only from Brussels but also from regional capitals as well. On the other hand, the growing threats of Russia's geopolitical ruptures and China's economic penetration through "debt trap" diplomacy and other mechanisms are making governments and observers in the region increasingly skeptical. This paper tends to explore some of the insights and the economic effects both fiscal and monetary impact they have.

Keywords: Political instability, Economic and financial challenges, Western Balkans, European Union.

INTRODUCTION

The COVID-19 pandemic proved to be one of the existential challenges of the 21st Century. Its impact was felt worldwide and it addicted the economies, finances, and politics while sending geopolitics waves across the world. Western Balkans, which has for long been described as the European Union's soft underbelly could not have been the exception to this challenge, which came together with a more lasting one, the economic and financial crises that is looming on the horizon. From growing inflation throughout the world to ongoing wars and conflicts such as the Russian invasion in Ukraine, the world today is not immune from challenges that do not have a simple answer from politicians and policy-makers across the globe. The European Union itself is suffering from an energy crisis, which in turn has inflated the prices of everything, leading to imported inflation with no end in sight.

The Western Balkans is currently between the Scylla of domestic problems such as high poverty, organized crime, and corruption as well as political instability on one hand and the Charybdis of lack of progress toward EU integration on the other. On top of these, are the growing challenges from Russia's disrupting interference in the region and other geopolitical challenges such as China's growing economic penetration. As the result, we are facing growing threats of destabilization in the case of Bosnia-Herzegovina through the separatist tendencies of *Republika Serbska*, the volatile situation in northern Kosovo, while the ongoing Serbia-Kosovo have been going nowhere as well as the internal and external threats vis-à-vis Montenegro.

On the other hand, these geopolitical threats are exacerbated by economic and financial challenges such as growing inflation, a looming economic crisis, and the lack of substantive foreign direct investments in the region. The symptoms of these, as this paper will discuss, are high levels of unemployment among the youth who are emigrating in flocks toward the European Union countries and the UK, rising poverty levels, and political instability. However, the EU nexus is crucial and essential for continued resistance amidst the multiple crises among the Western Balkan countries and the promise to thrive in the near future, especially if all of them become part of the EU eventually.

ECONOMIC AND FINANCIAL CHALLENGES IN THE WESTERN BALKANS AND ITS RELATIONS TO EU

On one hand, the annual growth rates have returned and even surpasses the pre-COVID-19 pandemic in the region. For example, as World Bank recently reports: "[t]he economies of the Western Balkans saw a strong growth rebound in 2021 with a broad-based bounce back in economic activity. In 2021, GDP growth in the Western Balkans reached 7.4% after a contraction of 3.2% in 2020. GDP is now expected to surpass pre-pandemic levels by 2022." (World Bank, 2022). On the other hand, as another report points out: "most Western Balkan countries have been facing continued political instability, local political crises, corruption scandals, shrinking space for civil society, a tendency towards more authoritarian regimes, along with no progress with unresolved bilateral issues (particularly in the Belgrade-Pristina EU facilitated dialogue)" (European Parliament, 2022).

On the other hand, as has been underlined in various reports, the economies of the Western Balkans are deeply entrenched and interconnected with those of the European Union. For example, most foreign direct investment (FDI) in western Balkan countries, except Kosovo, originates from the EU (Dabrowski and Myachenkova, 2018). Also, the banking and financial sectors are strongly linked with the European Union counterparts, with some states such as Germany, Italy, and Austria having the most connections. The same goes for trade levels. As a recent Eurostat report states: "[t]he EU was the main partner of the Western Balkans, for both exports (81%) and imports (58%) in 2021. In 2021, manufactured goods made up 75% of EU exports to and 76% of EU imports from the Western Balkans" (Eurostat, 2022). Strong levels of trade have also largely impacted the general macroeconomic stability of the countries in the region, their stable public policies, and the commitment to reforms that will eventually address corruption and state capture.

Another European Commission report underlines the current trade commodities between the region and the EU. More specifically, regarding the year 2021 "the EU's main imports from the Western Balkans were: machinery and appliances (22.7%), base metals (13.8%), mineral products (10.7%) and chemicals (10.7%). The EU's exports to the Western Balkans were mainly: machinery and appliances (20.3%), mineral products (12.1%), chemicals (10.8%), and base metals (10.1%)" (European Commission, 2022). This in a nutshell gives a full picture of what are the comparative advantages of Western Balkans' exports to the EU and vice-versa. As it looks *prima facie*, it seems that both sides more or less import and export the same things, but if we take a closer look, there are differences, especially in country-by-country relations to what it imports and exports from the EU.

Also is important to note that even countries like Serbia, which has signed a trade deal with Russia's Eurasian Union (Stojanovic, 2019) and has considerable Chinese and Indian FDI invested in the country, still have the EU as the main trading partner. Even at the level of individual states, Germany with 13% leads both import and export main partners to Serbia. As regards the nature of imports and exports from Germany, for example in 2020, "Serbia had a large net trade with Germany in the exports of Machines ($1.19B), Vegetable Products ($234M), and Metals ($210M)" (Observatory of Economic Complexity, 2022). We mention particularly Serbia here since it is the country in the region that has the most geopolitical and cultural influence of the Russian Federation. Irrespective of these traditional and cultural links, however, Serbia conducts most if its trade with the European Union countries and attracts most foreign direct investment from the EU and Brussels has also more influence in political developments within this country. This is also because Serbia is a candidate member country, and has opened already most of the negotiation chapters with the EU. Only Montenegro is more advanced in its pathway toward full EU accession than Serbia among the six countries of the region.

Having the European Union as the main trade partner facilitates the ongoing economic and financial challenges of the entire region that have risen chiefly because of the COVID-19 pandemic but also recently because of the Russia-Ukraine conflict and the growing prices worldwide. It does so, not only because the European Union has continuously funded the Western Balkans through its

various collaboration schemes with funds such as IPAs, and IPARD but also its connectivity agenda and various grants, especially in dire times such as when facing the COVID-19 financial and economic shocks.

Equally important are the investments in the region. For example, during the years 2021-2027, the EU has undertaken to finance the Western Balkans with "10 investment flagships and has allocated a substantial financial package of up to €9 billion in EU funds, with a potential to mobilize up to €20 billion of investments through the Western Balkan Guarantee Facility" (Western Balkans Investment Framework, 2022) through its Economic and Investment Plan. Concretely speaking, this plan "supports investments on sustainable transport, clean energy, environment and climate, digital future, competitiveness of the business sector, human capital development" (Western Balkans Investment Framework, 2022). On the other hand, as it aforementioned, "the new EU connectivity strategy, the Global Gateway, launched in September 2021, builds on the objectives and flagship investments of the Economic & Investment Plan for Western Balkans in the areas of transport, digital and energy, which contribute to strengthened connectivity within the region and with the EU (Western Balkans Investment Framework, 2022)". Taken together, the size and impact of such investments, grants, loans, and trade level, have greatly helped the region to sustain some of its most existential economic and financial challenges to date. It is also a promise that will do so in the near future.

POLITICAL INSTABILITY IN THE WESTERN BALKANS

There are many troubling issues that concern and affect the political instability of the Western Balkans. Some of these are legacies of the past, some are present geopolitical constraints and some are emerging from the inability of political elites in these countries to strive forward. As one report of the European Parliament has noted and is important to quote in length:

Legacies of the 1990s – military conflicts, nationalistic narratives, international sanctions against the Federal Republic of Yugoslavia, the NATO bombing – have left deep scars on Western Balkan societies, political systems, and political culture. The democratization processes have been undermined by: the low level of media freedom; non-transparent policymaking; non-inclusion of the civil society organizations in the consultation process; weak rule of law due to the insufficiently reformed judiciary; inefficient public administration and resulting limited absorptive capacity of EU funds; and ambiguity in politicians' foreign policy stances. Heavy external involvement in the making of states in Bosnia and Herzegovina as well as Kosovo together with periods of instability that have afflicted the EU during the last decade or so, including the Eurozone and the migration crises along with Brexit, have led to growing skepticism about the EU and hence diminished its attractiveness. This, in turn, has led to declining support for the EU in some Western Balkan countries and further reversals in favor of authoritarian regimes (European Parliament, 2022).

As this report clearly underlines, the past has been instrumental to determine the current transition route of these countries, which has still inroads to make toward the consolidation of democracy and rule of law. A major plague of the

past, the wars in former Yugoslavia, led by Milosević's irredentist policies have lasting impact till now. Major efforts and innovative ways are needed for the slow reconciliation process, without which is impossible to break with the past and to see forward (Savić-Bojanić and Kalemaj, 2021). The persistence of ethnic-based politics, divisive policies, and politically sponsored foreign agendas, coupled with populist rhetoric and ego-centric politicians, have created a climate of political mistrust and instability. This, in turn, has made the pace of institutional and structural reforms move very slowly ahead and for the citizens of these countries to be dissatisfied with the lack of progress. The communist legacy also has affected to a large extent the post-communist trajectory and the lack of democratic consolidation, especially in the case of Albania, which has had the most totalitarian and autarchic type of the former regime (Meka and Kalemaj, 2020).

Another challenge that these countries have to overcome is the duality between regionalization and the European integration perspective (Kalemaj, 2016). This is because recently the attempt to create and lead the 'Open Balkan' initiative, which was started by Albanian premier Rama, Serbian president Vucić, and at the time North Macedonia premier Zaev, has not been embraced by the other three countries of the Western Balkans, namely Montenegro, Bosnia-Herzegovina, and Kosovo. This is because they either consider this as a tool of Serbian expansion (Qalliu, 2022) or because it interferes or is in competition with the Berlin Process that seeks to fasten the EU integration process (Exit News, 2022). While, primarily Albanian premier Rama and Serbia's premier Vucic herald this initiative, which they claim will not only rival or block the Berlin Process, but quite, on the contrary, it will speed the integration into the EU by fostering the first regional common market and removing all economic, financial, and political barriers between the countries that are part of the initiative. It was met first with skepticism from the EU and especially Germany, while the Americans have been more supportive of it lately (Ozturk, 2022) Brussels it seems also to cozy up to the idea, which at the very least, reduces the possibility of conflict in the region. Some analysts have even slammed the initiative as a "dubious theory, naive construct, dangerous implications" (Joseph. 2022). Other analysts from the region have echoed these stances. Hamza Karcic has voiced this well when he says: "[i]nstead of Open Balkan, European leaders should press for the start of EU accession talks with Albania and North Macedonia, awarding candidate status to Bosnia and Herzegovina and the visa-liberalization and candidate status to Kosovo" (Karcic, 2022).

On the other hand, support for the EU integration membership is still high in the region, irrespective of many political difficulties and lack of progress from both local politicians as well as the freezing of the enlargement agenda of the EU. For example, "62% of the Western Balkan citizens still support EU membership, but one-third of them believe that they will not join the EU by 2030 and more and more people believe that they will never join the Union" (European Western Balkans, 2021). These are relatively good figures if we consider some of the other former Eastern European countries, which had much lower support for EU membership when they were close to accession, like the case of Croatia for example can testify.

The high support and enthusiasm of the citizens of the region for EU integration is not always supported by the EU member countries. For example, some of the

latest ideas emerging from Élysée Palace are that of the 'clusters methodology' and associate memberships for the countries in the region. In a nutshell, both ideas, with the notable difference that one has become the official policy, while that of associate members is only a proposal, make it difficult for the countries in the region to reach the stage of full accession. Furthermore, even at this stage, as the associate membership suggests, these countries will not have the same political rights as the other twenty-seven states that are already part of the EU. For example, they cannot veto any proposal of the EU Council of Ministers and other EU political institutions. However, this has not diminished the political will of the elites as well as the aspiration of the citizens from the Western Balkans to join the European Union as soon as possible. This in turn will provide for greater political stability, less corruption and organized crime, more democracy, and freedoms and higher economic performance from these countries.

CONCLUSION

The Western Balkans, as this tip of Southeastern Europe is often referred to, is one of the most volatile regions worldwide. It has traditionally produced more history than it consumes as Winston Churchill once said. The present-day global and European challenges, ranging from the COVID-19 pandemic to the Russian invasion of Ukraine and current economic stagnation while waiting for a looming financial crisis, are some of the headaches that have troubled the region recently.

This is coupled with growing geopolitical risks such as the Russian-Ukrainian conflict that has inflated the prices worldwide but also it threatens the region also politically because Western Balkans has been for some time considered as the 'soft underbelly of Europe. Practices of Russian disinformation and the spread of fake news, coupled with overt military assistance to its proxies in the region, have worried most policy-makers among NATO member countries and others who see this as efforts toward destabilization. Chinese investment penetration is also growing, posing a challenge of another nature but still in contradiction with the European Union integration path that all the countries in the region have professed.

More and more we see threats of destabilization in the case of Bosnia-Herzegovina through the separatist tendencies of *Republika Serbska*, while the situation in northern Kosovo is volatile. Furthermore, the ongoing Serbia-Kosovo dialogue has been going nowhere, while the situation in Montenegro is boiling for some time. Russian Federation through its military intelligence agencies such as GRU even made a tentative for a coup d'état there in 2016 and currently, the situation is close to political destabilization, with the current government that is widely believed to be close to Belgrade.

As it was stated and tested with evidence throughout this paper, these geopolitical threats are exacerbated by economic and financial challenges such as growing inflation, looming economic crises, and the lack of substantive foreign direct investments in the region. Some of the economic and financial symptoms, coupled with geopolitical risks and political instability, are indeed some of the main challenges to be addressed by all the countries in the region. They

also are on the way to successful accession of these countries in the European Union. The progress has been very slow and the last country to fully accede the European Union from the region is Croatia in 2013.

REFERENCES

Dabrowski, Marek and Yana Myachenkova (2018). "The (economic) ties that bind: The Western Balkans and the EU". Bruegel. Retrieved from https://www.bruegel.org/blog-post/economic-ties-bind-western-balkans-and-eu. Accessed: 02.09.2022.

European Commission (2022). Western Balkans. EU trade relations with the Western Balkans. Facts, figures and latest developments. Retrieved from https://policy.trade.ec.europa.eu/eu-trade-relationships-country-and-region/countries-and-regions/western-balkans_en. Accessed: 03.09.2022.

European Parliament (2022). The economic and investment plan for the Western Balkans: assessing the possible economic, social and environmental impact of the proposed Flagship projects. 2022. European Parliament. Retrieved from https://www.europarl.europa.eu/RegData/etudes/STUD/2022/702561/EXPO_STU(2022)702561_EN.pdf. Accessed: 01.09.2022.

European Western Balkans (2021). In response to growing skepticism, officials stress that the future of the Balkans is in the EU. 2021. *European Western Balkans*. October 27. Retrieved from: https://europeanwesternbalkans.com/2021/10/27/bsf-amid-growing-scepticism-in-the-balkans-officials-stress-that-the-regions-future-is-in-the-eu/. Accessed: 28.08.2022.

Eurostat (2022). Western Balkans-EU - international trade in goods statistics. Retrieved from https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Western_Balkans-EU_-_international_trade_in_goods_statistics&oldid=526493#:~:text=The%20EU%20was%20the%20main,(58%20%25)%20in%202021.&text=In%202021%2C%20manufactured%20goods%20made,imports%20from%20the%20Western%20Balkans. Accessed: 09.09.2022.

Exit News (2022). Kosovo reiterates opposition to joining the open Balkan. 2022. June 3. Retrieved from: https://exit.al/en/2022/06/03/kosovo-reiterates-opposition-to-joining-open-balkan/. Accessed: 29.08.2022.

Joseph, Eduard P. (2022). "Open Balkan initiative risks aggravating political problems in the region". *Deutsche Welle*. Retrieved from: https://www.dw.com/en/open-balkan-initiative-risks-aggravating-political-problems-in-the-region/a-62834261. Accessed: 04.09.2022.

Kalemaj, Ilir (2016). "Albania between Western Balkans regionalization and European integration". *Mediterranean Journal of Social Sciences,* 7(6): 281-286. Doi: Doi:10.5901/mjss.2016.v7n6p281.

Karcic, Hamza (2022). Analysis - how open Balkans turned out to be a bad idea. *Anadolu Agency (AA).* June 20. Retrieved from: https://www.aa.com.tr/en/analysis/analysis-how-open-balkan-may-turn-out-to-be-a-bad-idea/2617864. Accessed: 31.08.2022.

Meka, Eltion and Ilir Kalemaj (2020). "Critics of democracy: The impact of communist legacy on support for democracy and voting behavior in Albania". *Problems of Post-Communism,* 2020: 1-12.

Observatory of Economic Complexity (2022). Germany-Serbia trade levels. OEC. Retrieved from https://oec.world/en/profile/bilateral-country/deu/partner/srb#:~:text=During%202020%2C%20Serbia%20had%20a,%2C%20and%20 Metals%20(%24210M). Accessed: 03.09.2022.

Ozturk, Talha (2022). US supports open Balkans initiative: Envoy. *Anadolu Agency (AA).* May 23. Retrieved from: https://www.aa.com.tr/en/europe/us-supports-open-balkans-initiative-envoy/2595552. Accessed: 01.09.2022.

Qalliu, Bledar (2022). Kosovo, Montenegro Presidents warn of Open Balkan as threat to the region". *Exit.al.* May 19. Retrieved from: https://exit.al/en/2022/05/19/kosovo-montenegro-presidents-warn-of-open-balkan-as-threat-to-the-region/. Accessed: 25.08.2022.

Savić-Bojanić, Maja and Ilir Kalemaj (2021). "Art and memory as reconciliation tool? Re-thinking reconciliation strategies in the Western Balkans". *Southeastern Europe,* No. 45: 273–290.

Stojanovic, Milica (2019). "Serbia signs trade deal with Russia's Eurasian Union". *BalkanInsight*. October 25. Retrieved from https://balkaninsight.com/2019/10/25/serbia-signs-trade-deal-with-russias-eurasian-union/. Accessed: 27.08.2022.

Western Balkans Investment Framework (2022). European Union and the Western Balkans. Western Balkans Investment Framework (WBIF). Retrieved from https://www.wbif.eu/. Accessed: 04.09.2022.

World Bank (2022). Western Balkans Regular Economic Report: Spring 2022. Retrieved from https://www.worldbank.org/en/region/eca/publication/western-balkans-regular-economic-report. Accessed: 05.09.2022.

EMPIRICAL FINDINGS ON THE RELATIONSHIP BETWEEN RENEWABLE ENERGY PRODUCTION, EXPORT DIVERSIFICATION AND CO$_2$ EMISSIONS IN TRANSFORMATION ECONOMIES

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ABSTRACT

In order to contribute to the ongoing discussions on the environment-economy relationship, the relationship between renewable energy consumption, export diversification, economic growth and CO$_2$ emission in the countries considered as transformation economies was investigated in the period between 1997 and 2014 in the current study. In the study, IPS, LLC unit root tests, Pedroni and Kao cointegration tests, and FMOLS and DOLS coefficient estimation methods, which are frequently used in the literature, were used. As a result of the analyses, it was concluded that renewable energy consumption, economic growth and export diversification have negative effects on CO$_2$ emissions, while trade openness has a positive effect. In the Dumitrescu-Hurlin causality test results, a bidirectional causality relationship was found between renewable energy production and trade openness and CO$_2$ emissions. Within the scope of these results, it is considered important to implement incentive policies for export diversification and renewable energy production in countries of transformation economy. Given the positive effect of trade openness on CO$_2$ emissions, it is considered necessary to reduce the share of sectors polluting the environment in trade and to increase the share of sectors that do not have a negative impact on the environment.

Keywords: CO$_2$ emissions, Renewable energy production, Export diversification, Trade openness, Economic growth.

INTRODUCTION

The rise in living standards causes countries to switch from agricultural production to an industrialized system in order to achieve high economic growth rates, resulting in an increase in environmental pollution. The quality of the environment is affected by both local and international economic factors. In this connection, countries take various measures related to international trade in order to make their systems less sensitive to macroeconomic shocks of open economies and to control economic and environmental sustainability. In this context, they adopt export diversification and trade openness to reduce dependency on various export products and achieve sustainable economic growth. Through these policies implemented, both the scope of the products and services to be exported can be expanded and an increase in economic gains can be accomplished. However, in recent years, the impact of this situation on the environment has also been considered to be important (Li et al., 2021; Can et al., 2021; Shahzad et al., 2021). The development in the industry has increased the demand for energy, which is the most important input of mass production. The resulting energy demand has been tried to be met from fossil fuels such as coal, oil and natural gas. Therefore, there has been a significant increase in greenhouse gas emissions and accordingly environmental degradation has accelerated (Okumus and Bozkurt, 2020; Bilgili et al., 2016). In this regard, it is considered that the pressure on the environment can be reduced as a result of increasing renewable energy production and that environmental degradation can be stopped by meeting the energy need with these resources.

It is argued that the effect of economic factors on environmental pollution differs according to the development level of countries. In this context, there are studies such as the ones conducted by Acaravci and Ozturk (2010) and Bese and Kalayci (2021) pointing out that there is an inverted U-shaped relationship between economic growth and environmental pollution in developed economies. However, in the study by Okumus and Bozkurt (2020), it is stated that economic growth in low-income countries increases environmental degradation and it is argued that the Environmental Kuznets Curve (EKC) is not valid. It has been stated that this may be due to the inability to reach the point where the relationship between environmental pollution and economic growth will begin to improve. In this connection, the relationship between renewable energy production, export diversification, trade openness, economic growth and CO_2 emissions in 12 countries, which are considered as economies of transformation from a planned economy to a free market economy, is examined in this study. These countries' integration into the global economic structure later than other countries and their rapid industrialization within the framework of economic growth targets put pressure on the environment.

The relationship between the environment and economic growth has been examined by many researchers in countries with different income groups. However, in the current study, the relationship between the environment and economic growth in the transformational economies that joined the global economic structure in the 90s is examined. In a significant part of the studies examining the relationship between environmental pollution and economic growth, the effect of energy consumption on environmental pollution has been examined and thus investigating the effect of energy production on environmental pollution in the current study is believed to contribute to the literature. In addition, although there are studies examining the effect of export diversification on economic growth in the literature, the very limited number of studies examining the relationship between export diversification and environmental pollution in terms of transformation economies makes the current study different from other studies.

In the introduction part of the study, brief information about the subject is given. Secondly, recent studies on the variables used within the scope of the model created in the literature section are presented. In the third section, information about the data, model and methodology is given, and in the fourth section, the empirical results obtained from the analyses are presented. In the conclusion part, policy recommendations are made within the context of the results obtained.

LITERATURE

There are many studies with different perspectives on the relationship between environmental pollution and the economy. It is seen that most of these studies have focused on the relationship between environmental pollution and economic growth. In addition, many factors such as financial development, globalization, foreign direct investments, etc., which are considered to be effective on the environment, have been examined. In this section, studies that include the variables in the model created within the scope of the current study will be discussed, and firstly, brief information will be given about the studies that have examined the relationship between export diversification and environmental pollution in recent years.

Gozgor and Can (2016), one of the studies examining the relationship between export diversification and environmental pollution, examined the relationship between economic growth, energy consumption and export diversification and CO$_2$ emissions in the period between 1971 and 2010. The findings of the study revealed that the EKC hypothesis is supported and that energy consumption and export diversification increase CO$_2$ emissions in the long run. Apergis et al. (2018) analyzed the relationship between economic growth and export diversification and CO$_2$ emissions in the period 1962 – 2010 in their study for 19 developed countries with the ARDL bounds test. The results obtained in the analyses showed that the EKC is valid and export diversification has a negative effect on CO$_2$ emissions. Bashir et al. (2020) examined the relationship between energy intensity and carbon intensity and export diversification for the period 1990 – 2015 for 29 OECD member countries. As a result of the study, in which three different indicators of export diversification were used, it was determined that export diversification increased energy efficiency and also had a positive effect on environmental pollution. Dogan et al. (2020) analyzed the relationship between economic growth, trade openness, urbanization, export quality, energy consumption and CO$_2$ emissions between 1971 and 2014 for 63 developed and developing countries with second-generation analysis methods. In the study, it was seen that economic growth and energy consumption have a positive and significant effect on CO$_2$ emissions. In the study, it was also determined that urbanization and export quality negatively affect the environment. Shahzad et al. (2020) conducted a study for the same study period and for the same countries to examine the effect of export diversification, wide and dense margins on CO$_2$ emissions. The empirical findings obtained in the study using the GMM showed that export diversification, wide margin and dense margin indicators reduce CO$_2$ emissions in both developing and developed countries.

When the studies examining the relationship between energy and environmental pollution are reviewed, it is seen that the effect of renewable and non-renewable energy consumption on environmental pollution has generally been examined in the literature. Apergis and Payne (2009), one of the few studies examining the relationship between energy production and environmental pollution, investigated the relationship between CO$_2$ emissions and energy consumption and pro-

duction for 6 Central American countries in the period from 1971 to 2004. In the long-term results obtained, it was determined that energy consumption increases CO_2 emissions, and there is an inverted U-shaped relationship between energy production and CO_2 emissions. Moreover, in the study, it was concluded that there is a bidirectional causality relationship between energy consumption and production and CO_2 emissions. Mahmoodi (2017) examined the relationship between economic growth, renewable energy and CO_2 emissions in the period between 2000 and 2014 for 11 developing countries. In the study, it was concluded that there is a bidirectional causality relationship between renewable energy and CO_2 emissions and between economic growth and CO_2 emissions. In addition, the results showed that economic growth has a positive effect while renewable energy has a negative effect on CO_2 emissions. Bekun et al. (2019), who examined the relationship between renewable and non-renewable energy consumption, economic growth, natural resource rent and CO_2 emissions in 16 European Union member countries for the period 1996-2014, used the PMG-ARDL method in their analysis. In the study, it was revealed that natural resource rent, economic growth and non-renewable energy consumption have an increasing effect on CO_2 emissions. It is stated that the effect of renewable energy consumption on CO_2 emissions is positive and may be beneficial in reducing the environmental pollution. Baye et al. (2021) investigated the main factors driving renewable energy production for 32 Sub-Saharan African countries using panel data from 1990 to 2015. In the study, evidence was presented that CO_2 emissions have a negative effect on renewable energy production, while economic growth, trade liberalization, natural resource rent and urbanization have positive effects on renewable energy consumption.

In studies on the relationship between trade openness and environmental pollution, Al-Mulali (2015) examined the relationship between ecological footprint and energy consumption, urbanization, industrial development, political stability and trade openness for 14 MENA countries in the period 1996-2012 using FMOLS method. In the study, as a result of the analyses conducted with FMOLS method, it was concluded that energy consumption, urbanization, industrial development and trade openness have positive effects on environmental pollution, while political stability has a negative effect. Mahmood et al. (2019) investigated the relationship between trade openness and CO_2 emissions between 1971 and 2014 for Tunisia. In the study, in which the validity of the EKC hypothesis was also tested, the results of the analysis supported the validity of the EKC. In addition, in the study, it was tested whether trade openness has an increasing (positive) effect on CO_2 emissions. Dauda et al. (2020) examined the relationship between innovation and CO_2 emissions for 9 countries in Africa between 1990 and 2016 on both a panel and country basis. In the study, it was stated that the relationship between innovation and CO_2 emissions is in an inverted U shape. Furthermore, it was seen that renewable energy consumption and human capital also reduce CO_2 emissions. Investigating the effect of renewable and non-renewable energy consumption and trade openness on environmental pollution in 24 OECD countries, Destek and Sinha (2020) used annual data from 1980 to 2014. In the study, in which second-generation panel data analysis methods were used, it was concluded that the Environmental Kuznets Curve hypothesis is not valid for the OECD countries and that renewable energy consumption and trade openness have a reducing effect on environmental pollution, and that non-renewable energy consumption has an increasing effect. In the study by Adebayo and Kirikkaleli (2021), the relationship between globalization, economic growth, technological innovation, renewable energy consumption and CO_2 emissions in the period 1990Q1 - 2015Q4 in Japan, which is the third largest economy in the world, was investigated. Empirical results revealed that globalization, economic growth and technological innovation have

an increasing (positive) effect on CO_2 emissions in the short and long term. It was seen that renewable energy consumption reduces CO_2 emissions both in the short and long term.

In the study of Li et al. (2021), which is the study drawn on in the creation of the model used in the current study, the relationship between renewable energy production, economic growth, export diversification, trade openness and CO_2 emissions in China between 1989 and 2019 was examined. The results obtained in the study, in which FMOLS, DOLS and CCR methods were used, showed that export diversification and renewable energy production have negative effects on CO_2 emissions, whereas trade openness and economic growth have positive effects on CO_2 emissions.

DATA, MODEL AND METHODOLOGY

In the current study, the relationship of renewable energy production, economic growth, export diversification and trade openness with CO_2 emissions is examined for Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Georgia, Kazakhstan, Moldova, North Macedonia, Russia, Ukraine, Uzbekistan, which are considered to be transformation economies, for the period between 1997 and 2014. The study of Li et al. (2021) is followed in the determination of the variables used in the study and in the creation of the model. The model constructed in this direction is as follows;

$$lnCO2_{it} = \beta_0 + \beta_1 lnRENO_{it} + \beta_2 lnGDPPC_{it} + \beta_3 \, lnEXD\dot{I}V_{it} + \beta_4 lnOPEN_{it} + \vartheta_t \quad (1)$$

In the model, $lnCO_2$ represents per capita carbon emission, lnRENO, rate of renewable energy production in total electricity production, lnGDPPC, per capita real national income, lnEXDIV, export diversification index, lnOPEN, the rate of trade in GDP, and ϑ_t , error term. All the series used were included in the analysis by taking their natural logarithm. The data for the CO_2 emission, economic growth (lnGDPPC), renewable energy production (lnRENO) and trade openness (lnOPEN) variables used in the study were obtained from the World Bank WDI (World Development Indicators) database, and the data for the export diversification (lnEXDIV) variable were obtained from the International Monetary Fund (IMF) database.

The panel data method, which was obtained by combining time series data and cross-section data, was used as an econometric method in the study. In panel data models, there are N units and T observations corresponding to each unit (Tari, 2010; Bostan et al., 2016). In this direction, economic inferences can be made by using more information. In this way, more information usage and economic inferences can be made, and since it gives cross-section and time series data together, the number of observations and degrees of freedom increase and the possibility of multicollinearity errors between explanatory variables decreases. In addition, panel data analysis models allow for suggesting economic policies for a certain group instead of suggesting an individual economic policy (Hsiao, 2003). Another advantage of analyses made with panel data is that it includes effects other than explanatory variables that cannot be observed throughout the units or time in the model. Panel data models are classified according to whether these effects are fixed or random. If these effects are found in the deterministic part of the model, it is expressed as the fixed effects model, and if they are found in the random part, it is expressed as the random effects model. In this context, models can contain more information and variables, so reliable predictions can be made (Baltagi, 2011). In addition to these advantages, panel data models have some inadequacies. Problems such as model specification errors, measure-

ment errors and especially data collection problems may occur (Gulmez and Yardimcioglu, 2012).

In panel data analysis, first of all, stationarity should be investigated. In this connection, the stationarity of the variables was examined by using the Levin, Lin and Chu (2002), Im, Peseran and Shin (2003) unit root tests. Although individual unit root tests have limited power against alternative hypotheses with extremely persistent deviations from equilibrium, LLC is considered a powerful panel unit root test that allows different unit root tests to be applied for each cross-section. For the LLC unit root test to be applied, the series must form a balanced panel (Baltagi, 2005; Yildirim, 2019). The Im, Peseran and Shin (IPS) panel unit root test, which is another test used to investigate stationarity, allows the coefficients to be heterogeneous by removing the requirement that the autoregressive coefficient of the cross-section units should be homogeneous, which is the basic assumption of the LLC unit root test.

After applying unit root tests, the long-term relationship between the series is examined with cointegration tests. In the current study, the cointegration relationship between the variables was investigated with Pedroni and Kao cointegration tests. The Pedroni cointegration test consists of seven different tests, four pooled in the "within" dimension and three in the "between" dimension. The first three of the tests in the "within" dimension consist of non-parametric tests (Ogul, 2022). The fact that the variables used in the study are stationary at the I(1) level enables the Pedroni and Kao cointegration tests to be applied.

After determining the cointegration relationship between the variables, the direction and coefficient of the cointegration relationship between the variables were analyzed with the coefficient estimators FMOLS (2000) (Fully Modified Ordinary Least Squares) and DOLS (2001) (Dynamic Ordinary Least Squares). The FMOLS and DOLS estimators were first applied for time series by Philips and Hansen (1990). However, this method was adapted to panel data by Pedroni (2000). The FMOLS estimator includes a semi-parametric correction method against the estimation problems that may be caused by the long-term correlation between stochastic shocks and the cointegration equation. The use of this method offers great advantages such as the avoidance of deviations due to endogeneity and autocorrelation correction (Kilinc et al., 2020; Kartal, 2022). The DOLS coefficient estimator, on the other hand, combines the precursors and lags of the first differences of the independent variables. Thus, the endogenous feedback effects from the dependent variable to the independent variables can be eliminated. In this context, the estimates obtained with the DOLS method can give more reliable results than the Panel OLS estimator in terms of eliminating the endogeneity problems between the independent variables and error terms and overcoming the autocorrelation problems in the error terms (Songur and Yalman, 2013).

Finally, the Dumitrescu and Hurlin (2012) panel causality test was used to determine the causality relationship between the variables. The Dumitrescu-Hurlin causality test, which is based on the Granger causality method, can be used in panel data and can reveal the causality relationship between the variables. The Dumitrescu-Hurlin causality test can show that the causality relationship which is valid for any country within the scope of panel data is also valid for different countries and it can give more effective results with the increase in the number of observations. In addition, the Dumitrescu-Hurlin causality test can also provide consistent results when the time (t) dimension is bigger or smaller than the cross-section (n) dimension (Celik and Unsur, 2020).

EMPIRICAL FINDINGS

In this part of the study, there are findings related to the model established to analyze the relationship between CO_2 emissions, renewable energy production, per capita income and trade openness in countries of transition economy. Before the evaluation of the findings obtained, the descriptive statistics for the dependent and independent variables in the model are presented in Table 1.

Table 1. *Descriptive Statistics for the Variables*

Variables	lnCO$_2$	lnRENO	lnGDPPC	lnEXDIV	lnOPEN
Mean	0.151	2.615	8.084	1.135	4.398
Median	0.175	2.810	8.078	1.104	4.374
Maximum	1.629	4.605	9.370	1.800	5.062
Minimum	-1.271	-2.635	6.805	0.533	3.582
Std.Error	0.661	1.578	0.597	0.278	0.301
Skewness	-0.064	-1.518	0.110	0.205	-0.176
Kurtosis	2.450	5.761	2.491	2.874	2.706
Number of observations	216	216	216	216	216

Source: Author's calculations

In order to reach correct results in panel data analysis, the series must be stationary. Thus, the stationarity of the series should be tested in order to establish a meaningful relationship between dependent and independent variables and to reach correct results. Table 2 shows the results of the panel unit root tests of Levin, Lin, Chu (2002), Im, Pesaran, and Shin (2003), which are frequently used unit root methods in studies using panel data analysis.

Table 2. *Panel Unit Root Test Results*

Level	LLC		IPS	
	With Constant and Trend			
	t-statistics	Probability	t-statistics	Probability
lnCO2	2.649	0.996	-0.140	0.442
lnRENO	3.569	0.999	-1.789**	0.036
lnGDPPC	1.236	0.891	0.736	0.769
lnEXDİV	3.209	0.999	0.654	0.743
lnOPEN	2.601	0.995	0.726	0.766
Difference Values				
ΔlnCO2	-7.928***	0.000	-9.189***	0.000
ΔlnRENO	-12.174***	0.000	-3.491***	0.000
ΔlnGDPPC	-6.114***	0.000	-3.379***	0.000
ΔlnEXDİV	-12.293***	0.000	-1.915**	0.027
ΔlnOPEN	-9.846***	0.000	-1.459*	0.072

Note: Δ: Shows the first difference of series. ***Significant at the level of 1%, **Significant at the level of 5%, *Significant at the level of 10%.

Source: Author's calculations

When the results of the unit root tests are examined, it is seen that all the variables except the lnRENO variable in the IPS unit root test results have unit root at the level. However, since all the variables in the model were required to be stationary, unit root tests were applied by taking the difference of all the variables. It was concluded that all the variables applied difference operation are stationary at the first difference.

After the stationarity of the series was determined, the cointegration relationship of the series was examined with the Pedroni and Kao cointegration tests. In the Pedroni cointegration test results shown in Table 3, it is seen that four tests out of seven different tests are significant. Thus, the H$_0$ hypothesis of the Pderoni cointegration method "there is no cointegration between the series" is rejected. In order to support the results of the Pedroni cointegration method, the Kao cointegration test was also applied in the study, and it was seen that there was a cointegration relationship between the variables in the results of this method.

Table 3. *Panel Cointegration Test Results*

Pedroni Panel	With Constant-Without Trend		Weighted	
Cointegration Test	**t-statistics**	**Probability**	**t-statistics**	**Probability**
Panel v-statistics	0.307	0.379	-0.109	0.543
Panel rho- statistics	0.585	0.720	0.772	0.780
Panel PP- statistics	-3.964***	0.000	-4.692***	0.000
Panel ADF- statistics	-3.875***	0.000	-4.228***	0.000
Group rho- statistics	2.091	0.981		
Group PP- statistics	-5.988***	0.000		
Group ADF- statistics	-4.104***	0.000		
Kao Panel Cointegration Test	**t-statistics**	**Probability**		
ADF	-3.134***	0.000		

Note: ***Significant at the level of 1%, **Significant at the level of 5%, *Significant at the level of 10%.

Source: Author's calculations

The coefficient and direction of the cointegration relationship obtained with the Pedroni and Kao Cointegration tests were analyzed by using the FMOLS (Fully Modified Ordinary Least Square) and DOLS (Dynamic Ordinary Least Squares) estimators and the results are presented in Table 4. In the results of both methods applied, it was determined that the renewable energy production (lnRENO), economic growth (lnGDPPC) and export diversification (lnEXDIV) variables have negative effects on CO$_2$ emissions. In the other result obtained, it was seen that trade openness increases CO$_2$ emissions.

Table 4. *Results of FMOLS and DOLS Coefficient Estimators*

Model	$lnCO2_{it} = \beta_0 + \beta_1 lnREN_{it} + \beta_2 lnGDPPC_{it} + \beta_3\ lnEXD\dot{I}V_{it} + \beta_4 lnOPEN_{it} + \vartheta_t$			
Method	FMOLS		DOLS	
Variable	Coefficient	Probability	Coefficient	Probability
lnRENO	-0.319***	0.000	-0.294***	0.000
lnGDPPC	-0.630***	0.000	-0.602***	0.000
lnEXDİV	-0.747***	0.000	-0.570***	0.000
lnOPEN	0.310***	0.003	0.260**	0.011

Note: ***Significant at the level of 1%, **Significant at the level of 5%, *Significant at the level of 10%.

Source: Author's calculations

When the results obtained by FMOLS and DOLS methods are compared with the literature, it is seen that export diversification has a negative effect on CO_2 emissions and this result is consistent with the studies of Apergis et al., (2018), Bashir et al., (2020) and Shahzad et al., (2020). On the other hand, it is seen that this result is not compatible with the study of Gozgor and Can (2016) and it is thought that the reason for this may be due to the use of a single country and time series analysis methods in the study of Gozgor and Can (2016). It is also seen that trade openness has a positive effect on CO_2 emissions and this result concurs with the studies by Al- Mulali (2015), Mahmood et al., (2019), Adebayo and Kirikkaleli (2021).

After examining the long-term cointegration relationship between the variables on a panel and country basis, the causality relationship between the variables was analyzed with the Dumitrescu-Hurlin (2012) causality test.

Table 5. *Dumitrescu-Hurlin Granger Causality Test Results*

Null (H_0) Hypothesis	Wald Statistics	Z-bar Statistics	Probability
$lnRENO \nrightarrow lnCO2$	5.113***	3.016	0.002
$lnCO2 \nrightarrow lnRENO$	5.685***	3.664	0.000
$lnGDPPC \nrightarrow lnCO2$	7.836***	6.096	0.000
$lnCO2 \nrightarrow lnGDPPC$	3.174	0.824	0.409
$lnEXD\dot{I}V \nrightarrow lnCO2$	3.194	0.847	0.396
$lnCO2 \nrightarrow lnEXD\dot{I}V$	4.118*	1.892	0.058
$lnOPEN \nrightarrow lnCO2$	6.668***	4.774	0.000
$lnCO2 \nrightarrow lnOPEN$	8.772***	7.153	0.000

Note: ***Significant at the level of 1%, **Significant at the level of 5%, *Significant at the level of 10%.

Source: Author's calculations

When Table 5 showing the results of Dumitrescu-Hurlin (2012) causality method is examined, it is seen that there is a bidirectional causality relationship between renewable energy production and CO$_2$ emissions. In other results, it is seen that there is a one-way causality relationship between economic growth to CO$_2$ emissions, and a one-way causality relationship between CO$_2$ emissions to export diversification. In addition, a bidirectional causality relationship is seen between trade openness and CO$_2$ emissions.

CONCLUSION

Since the reduction of climate change and environmental pollution is an ongoing debate in current studies, the effect of various factors on CO$_2$ emissions has been investigated. In the international arena, it is accepted that in addition to the accomplishment of economic growth targets, it is necessary to act together and produce solution-oriented policies for the protection of the environment.

In the current study, the relationship between export diversification, renewable energy production and trade openness and CO$_2$ emissions, whose separate effects have been examined in the literature, was investigated. In the study, countries that joined the free market economy later than other countries and rapidly industrialized were selected, and the years 1997-2014 were chosen as the research period in order to conduct balanced panel data analysis. First-generation panel data analysis methods were used in the study. In the analyses made with FMOLS and DOLS methods, it was determined that the renewable energy production (lnRENO), economic growth (lnGDPPC) and export diversification (lnEXDIV) variables have negative effects on CO$_2$ emissions. In the other result obtained, it is seen that trade openness increases CO$_2$ emissions.

In light of the findings, it can be said that it would be beneficial to evaluate renewable energy production and export diversification policies together. Countries need to act together to prevent rising CO$_2$ emissions due to increased trade openness. Developing countries should focus on reducing pollution as well as developing policies to increase environmentally friendly energy production and support technology transfers.

REFERENCES

Acaravci, Ali and Ilhan Ozturk (2010). "On the relationship between energy consumption, CO2 emissions and economic growth in Europe". *Energy*, 35(12): 5412-5420.

Adebayo, Tomiwa S. and Dervis Kirikkaleli (2021). "Impact of renewable energy consumption, globalization, and technological innovation on environmental degradation in Japan: application of wavelet tools". *Environment, Development and Sustainability*, 23(11): 16057-16082.

Al-Mulali, Usama and Ilhan Ozturk (2015). "The effect of energy consumption, urbanization, trade openness, industrial output, and the political stability on the environmental degradation in the MENA (Middle East and North African) region". *Energy*, Vol. 84: 382-389.

Apergis, Nicholas and James E. Payne (2009). "CO2 emissions, energy usage, and output in Central America". *Energy Policy*, 37(8): 3282-3286.

Apergis, Nicholas, Muhlis Can, Giray Gozgor and Chi Keung Marco Lau (2018). "Effects of export concentration on CO2 emissions in developed countries: An empirical analysis". *Environmental Science and Pollution Research*, 25(14): 14106-14116.

Baltagi, Badi H. (2005). *Econometric Analysis of Panel Data*. England: John Wiley & Sons Ltd.

Baltagi, Badi H. (2011). *Econometrics*. Fifth Edition. New York: Springer.

Bashir, Muhammad A., Bin Sheng, Buhari Dogan, Suleman Sarwar and Umer Shahzad (2020). "Export product diversification and energy efficiency: Empirical evidence from OECD countries". *Structural Change and Economic Dynamics*, No. 55: 232-243. Doi: 10.1016/j.strueco.2020.09.002.

Baye, Richmond S., Albert Ahenkan and Samuel Darkwah (2021). "Renewable energy output in sub-Saharan Africa". *Renewable Energy*, Vol. 174: 705-714. Doi: 10.1016/j.renene.2021.01.144.

Bekun, Festus V., Andrew A. Alola and Samuel A. Sarkodie (2019). "Toward a sustainable environment: Nexus between CO2 emissions, resource rent, renewable and nonrenewable energy in 16-EU countries". *Science of the Total Environment*, No. 657: 1023-1029. Doi: 10.1016/j.scitotenv.2018.12.104.

Bese, Emrah and Salih Kalayci (2021). "Environmental Kuznets curve (EKC): empirical relationship between economic growth, energy consumption, and CO2 emissions: evidence from 3 developed countries". *Panoeconomicus*, 68(4): 483-506. Doi: 10.2298/PAN180503004B.

Bilgili, Faik, Ilhan Ozturk, Emrah Kocak, Umit Bulut, Yalcin Pamuk, Erhan Mugaloglu and Hayriye H. Baglitas (2016). "The influence of biomass energy consumption on CO2 emissions: a wavelet coherence approach". *Environmental Science and Pollution Research*, 23(19): 19043-19061. Doi: 10.1007/s11356-016-7094-2.

Bostan, Aziz, Serap U. Kelleci and Alper Yilmaz (2016). "Relationship between foreign direct investment and economic growth: The case of Eurasian economies". *Manas Journal of Social Studies*, 5(5): 23-36.

Celik, Mehmet Y., and Zuleyha Unsur (2020). "Determining the relationship between globalization and growth by Dumitrescu-Hurlin panel causality test". *Izmir Journal of Economics*, 35(1): 201-210. Doi: 10.24988/ije.202035115.

Dauda, Lamini, Xingle Long, Claudia N. Mensah, Muhammad Salman, Kofi B. Boamah, Ampon-Wireko, S., and Dogbe, C. S. K. (2021). "Innovation, trade openness and CO2 emissions in selected countries in Africa". *Journal of Cleaner Production,* No. 281: 125-143. Doi: 10.1016/j.jclepro.2020.125143.

Destek, Mehmet A. and Avik Sinha (2020). "Renewable, non-renewable energy consumption, economic growth, trade openness and ecological footprint: Evidence from organisation for economic Co-operation and development countries". *Journal of Cleaner Production*, No. 242: 1-11. Doi: 10.1016/j.jclepro.2019.118537.

Dogan, Buhari, Mara Madaleno, Aviral K. Tiwari and Shawkat Hammoudeh (2020). "Impacts of export quality on environmental degradation: Does income matter?". *Environmental Science and Pollution Research*, 27(12): 13735-13772. Doi: 10.1007/s11356-019-07371-5.

Dumitrescu, Elena-Ivona and Christophe Hurlin (2012). "Testing for Granger non-causality in heterogeneous panels". *Economic Modelling*, 29(4): 1450-1460. Doi: https://doi.org/10.1016/j.econmod.2012.02.014.

Gozgor, Giray and Muhlic Can (2016). "Export product diversification and the environmental Kuznets curve: Evidence from Türkiye". *Environmental Science and Pollution Research*, 23(21): 21594-21603. Doi: https://doi.org/10.1007/s11356-016-7403-9.

Gulmez, Ahmet and Fatih Yardimcioglu (2012). "The relationship between R&D expenditures and economic growth in OECD countries: Panel cointegration and panel causality analysis (1990-2010)". *Maliye Dergisi*, No. 163: 335–353.

Hsiao, Cheng (2003). *Analysis of Panel Data*. Second Edition, Cambridge University Press.

Kao, Chihwa (1999). "Spurious regression and residual–based tests for cointegration in panel data". *Journal of Econometrics*, 90(1): 1-44. Doi: https://doi.org/10.1016/S0304-4076(98)00023-2.

Kartal, Mustafa (2022). "Health Expenditures and Economic Growth in BRICS-T Countries: Panel Data Analysis". *Gaziantep University Journal of Social Sciences*, 21(1): 59-73. Doi: 10.21547/jss.945360.

Kilinc, Efe. C., Nihat Isik and Serhat Yilmaz (2020). "The effect of private sector loans on innovation: An application for European Union Countries and Türkiye". *Bartin University Journal of the Faculty of Economics and Administrative Sciences*, 11(22): 467-486. Doi: 10.47129/bartiniibf.741287.

Kyung S. Im, Hashem M. Pesaran and Yongcheol Shin (2003). "Testing for unit roots in heterogeneous panels". *Journal of Econometrics*, 115(1): 53-74. Doi: https://doi.org/10.1016/S0304-4076(03)00092-7.

Levin, Andrew, Chien-Fu Lin and Chia-Shang James Chu (2002). "Unit root tests in panel data: Asymptotic and finite-sample properties". *Journal of Econometrics*, 108(1): 1-24. Doi: https://doi.org/10.1016/S0304-4076(01)00098-7.

Li, Menghan, Ahmad Munir, Fareed Zeeshan, Hassan Taimoor and Dervis Kirikkaleli (2021). "Role of trade openness, export diversification, and renewable electricity output in realizing carbon neutrality dream of China". *Journal of Environmental Management*, No. 297: 1-11.

Mahmood, Haider, Naiul Maalel and Olfa Zarrad (2019). "Trade openness and CO2 emissions: Evidence from Tunisia". *Sustainability*, 11(12): 32-95. Doi: 10.3390/su11123295.

Mahmoodi, Majid (2017). "The relationship between economic growth, renewable energy, and CO2 emissions: Evidence from panel data approach". *International Journal of Energy Economics and Policy*, 7(6): 96-102.

Muhlis Can, Munir Ahmad and Zeeshan Khan (2021). "The impact of export composition on environment and energy demand: Evidence from newly industrialized countries". *Environ. Sci. Pollut. Res*. No. 28: 33599–33612. Doi: 10.1007/s11356-021-13084-5.

Ogul, Bahar (2022). "Exchange rate the pass through effect in BRICS-T countries: Panel cointegration test". *Antalya Bilim University International Journal of Social Sciences*, 3(1): 83-92.

Okumus, Ilyas and Cuma Bozkurt (2020). "The effects of economic growth on environment for different income group countries". *Gaziantep University Journal of Social Sciences*, 19(1): 238-255. Doi: 10.21547/jss.593962.

Pedroni, Peter (1999). "Critical values for cointegration tests in heterogeneous panels with multiple regressors". *Oxford Bulletin of Economics and Statistics*, 61(S1): 653-670. doi: https://doi.org/10.1111/1468-0084.0610s1653.

Pedroni, Peter (2000). "Fully modified OLS for heterogeneous cointegrated panels. In B. H. Baltagi, T. B. Fomby, and R. Carter Hill (Eds.), Nonstationary panels, panel cointegration, and dynamic panels. (Advances in Econometrics, 15, pp. 93-130). Emerald Group Publishing Limited. Doi: https://doi.org/10.1016/S0731-9053(00)15004-2.

Pedroni, Peter (2001), "Purchasing power parity tests in cointegrated panels". *Review of Economics and Statistics*, Vol. 83: 727-931. Doi: https://doi.org/10.1162/003465301753237803.

Phillips, Peter C. B. and Bruce E. Hansen (1990). "Statistical inference in instrumental variables regression with I(1) processes". *Review of Economic Studies*, Vol. 57: 99–125.

Shahzad, Umer, Zeeshan Fareed, Farrukh Shahzad and Khurram Shahzad (2021). "Investigating the nexus between economic complexity, energy consumption and ecological footprint for the United States: New insights from quantile methods". *Journal of Cleaner Production*, No. 279. Doi: 10.1016/j.jclepro.2020.123806.

Shahzad, Umer, Diogo Ferraz, Buhari Dogan, Daisy A. do Nascimento Rebelatto (2020). "Export product diversification and CO2 emissions: Contextual evidences from developing and developed economies". *Journal of Cleaner Production*, No. 276: 124-146. Doi: https://doi.org/10.1016/j.jclepro.2020.124146.

Songur, Mehmet and Demet Yaman (2013). The effect of foreign direct investments and foreign trade on gross domestic product in Eurasian countries:

Panel cointegration analysis. International Conference on Eurasian Economies, pp. 532-540. Doi: 10.36880/C04.00740.

Tari, Recep (2010). *Ekonometri*. Kocaeli: Umuttepe Yayınları.

Yildirim, Fatma (2019). *Investigation of Stationarity of Energy Consumption by Panel Unit Root Tests.* Master Thesis, Sakarya University Institute of Social Sciences.

HOW PREPARED ARE WE FOR THE NEW FACE OF TERRORISM? ASSESSMENT ON THE POTENTIAL THREAT OF AGROTERRORISM

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ABSTRACT

This study analyzes agroterrorism, a potential threat. Considered a sub-title of bioterrorism, agroterrorism refers to the attacks that terrorist organizations could carry out by using biological agents and pests on the agriculture and food sector. The existence of biological attacks against opposing parties at various times in history and the execution of special biological weapons programs by states reveal the possibility of terrorist organizations reaching this potential as an element of fear. The possibilities of increasing the possibilities and capacities of terrorist organizations, which constitute one dimension of the new terrorism debate, to the extent that weapons of mass destruction could be used are discussed throughout the study. The study aims to contribute to the field by evaluating the threats that agroterrorism may pose and how prepared societies are for bioterrorist attacks.

Keywords: Agroterrorism, Biological warfare, Terrorism, Bioterrorism.

INTRODUCTION

Terrorism has many faces. As one of the most severe threats encountered today, terrorism puts societies, states, and the international arena at risk and threat in many different ways. The physical and psychological pressure created by terrorism can lead to important human, social, economic and environmental consequences and create irreparable destruction in the structure of the targeted social order. Terrorism strategy, which is traditionally tried to be carried out through physical attacks created by military ways, is experiencing a transformation process with the use of different methods and tactics and diversification of targets in line with what the period brought. In this process, while terrorist organizations continue their armed conflicts, they engage in activities such as perception management activities, cyber-attacks, attempts to discredit the economy, collecting moral support from the international community, and establishing cooperation with other illegal groups. Thus, in order to achieve their goals, they find the opportunity to expand the field of struggle to different areas, increase their opportunities and capabilities, strengthen their strategies based on the intimidation-making concession relationship, and pose a multifaceted risk to the security weaknesses of the other side. Discussions on new terrorism are intensifying in a framework where its definition is becoming increasingly blurred, organizational capabilities are developing, financial resources are diversifying, attack methods and tools are different, the effects of actions are increasing, and emerging organizations with global claims and ideologies.

Today, one of the prominent points in the debates on terrorism is directed attacks of terrorist organizations on cyberspace, critical infrastructure, economic activities, and historical and natural heritage, rather than military fields and elements. In order to force and intimidate the opposing society and the state, terrorist organizations try to make civilian areas unsafe with various attacks, disrupt the functioning of facilities such as energy transportation lines, create chaos in tourism seasons to lead to an economic depression, damage the international reputation with intense social media propaganda, and to damage forest lands by setting fires. In this context, different target dimensions of terrorism need to be evaluated in detail. Agroterrorism, which has social, economic, and environmental dimensions, also constitutes an important topic to be examined.

Although agroterrorism, which is generally defined through attacks against agricultural areas and activities, has not created a serious threat to date and remains a serious potential danger because it is a subset of biological warfare and bioterrorism. In addition, the possibility of terrorist groups using weapons of mass destruction, which is at the top of the general concerns about terrorism, pushes societies to be vigilant. Therefore, there is an aspect of agroterrorism that should be taken into account as it directly concerns the safety of society, the economy, ecology, and food. It is also necessary to draw a framework that agroterrorism can include attacks on livestock, food supply chains, and systems as well as on agriculture. While there are many natural causes that negatively affect agricultural activities, the danger posed by deliberate attacks to harm the other party is remarkable. In this context, agroterrorism can be defined as a biological attack directed against the agricultural and food areas, products, and sectors of the other party by using various pathogens and diseases.

In this study, agroterrorism will be discussed in the new terrorism debate as

a sub-field of biological terrorism. In fact, we are fortunate that, apart from a few cases, attacks by non-state groups using weapons of mass destruction have not been encountered throughout history. But on the other hand, biological agents and disease attacks have been used at various times and have become a frightening threat. As will be discussed in the article, since obtaining and using biological weapons is easier than other weapons of mass destruction for various reasons, the risk factor in this area should be focused more on. As one of the subheadings of bioterrorism, agroterrorism is a threat that should be taken into account, in the theoretical context, since it has the potential to cause irreparable wounds in the food sector, which meets one of the basic needs of society. In this study, the potential threat of agroterrorism and what it may cause will be examined, and then how prepared for this situation will be discussed. It is thought that the study will contribute to the field because it draws a framework on the potential as well as the apparent threats of terrorism. In addition, as a result of the study, an evaluation will be made on whether the interpretation of the potential possibilities and capabilities of terrorist organizations is an attempt at securitization.

DIFFERENT FACES OF TERRORISM: THE NEW TERRORISM DEBATE

Terrorism strategy is based on the weaknesses and vulnerabilities of societies. Traditionally, terrorist organizations seek to create fear through attacks on military and sometimes civilian targets and to obtain their desires from the societies they are trying to drag into chaos. In addition, organizations create a different picture by learning from their experiences and their environment, adapting technological developments, developing opportunities to apply new attack tactics, and prioritizing psychological struggle. A new discussion of terrorism emerged at a time when the structures of terrorist organizations have changed, their capacities and effects have increased, ideologies have diversified and blurred, domestic and regional organizations have been added to those with global claims, terrorist organizations and other illegal groups' activities have been intertwined, attacks have been carried out with different methods and tactics, and media opportunities have made discourses and actions possible to reach large masses.

Terrorism is a strategy put forward by illegal groups seeking concessions by resorting to violence to achieve their political ends. Organizations that incorporate the element of spreading fear into this strategy, while seeking to wear down the society they target within the framework of the ideology they adopt, on the other hand, try to gather as much support as possible (Whittaker, 2009; Schmid, 2011; Richards, 2019). Members of terrorist organizations can adopt a terrorism strategy with many motivations from material gain to the need to belong to a group, from a reaction to victimization they claim to a political goal with the belief that legal remedies are blocked. Thus, personal interests, ideological commitments, or fears of being excluded from the group may cause them to engage in terrorist activities (Gupta, 2005). A long historical framework is drawn in the general literature on terrorism, that is, the search for an asymmetrical structure to realize its political goals by committing acts of violence against a central power and society. The historical spectrum of terrorism emerges in a wide range from Zealots to Thugs, from Assassins to

anarchism, from Cold War era separatist movements to the type defined through radicalization and violent extremism today (Newman, 2006; Semelser, 2007; Chailand and Blin, 2007). As the transformation in the understanding of security can be examined, it would not be wrong to state that terrorism is a renewed phenomenon beyond its traditional lines.

In this process, which is called the new terrorism, terrorist organizations have changed their organizational structures, increased their financial opportunities, improved their technical capacities, redefined their ideologies and goals, have been able to apply perception management tools with expertise, have been using new communication channels to reach their members and sympathizers, have interacted with other terrorist organizations and illegal groups. In addition, political, military, economic, technological, and social developments in the national, regional, and international fields are also determinative of the causes, understanding, and effects of terrorism. Terrorist organizations have new opportunities in organizing, communicating, logistics, acquiring weapons, and recruiting personnel, especially with today's processes called information and technology revolutions (Laqueur, 1999; Tucker, 2001; Gofas; 2012; Ganor, 2009). In this context, a new type of terrorism threat emerges in the face of society. Thus, many aspects of the fight against terrorism such as political, legal, military, economic, educational, psychological, judicial, prison system, intelligence, and support to the victims appeared (Schmid, 2005: 226-237). In the traditional context, the mentality of fighting terrorism, which is based on military defeat, has become more complex by becoming multidimensional due to the increasing capabilities and influence capacities of terrorist organizations. It is crucial to monitor and prevent the illegal or legal-looking activities of terrorist organizations, their search for financial resources, the sources of acquiring weapons of all kinds, the foreign support they receive, the new attack plans they design and their social media behaviors.

One of the most important dimensions of the new terrorism debate is the diversification of attack methods and tools by terrorist organizations whose capacities and capabilities have changed dramatically. In fact, the acquisition and use of advanced weapons or technologies by terrorist groups stand as an alarming potential threat. In addition to the traditional attacks of terrorist groups, which seek weakness in the sensitive points of modern societies, all kinds of potential threats constitute a situation that needs to be taken care of. The potential for terrorist organizations to gain access to nuclear, radioactive, biological, and chemical weapons of mass destruction, and to carry out attacks against critical infrastructure or ecological areas are among the concerns on which this worst scenario is based. For this reason, societies need to be protected due to such dangers and risks posed by terrorist organizations as well as traditional armed attacks. While some of these can be seen as imminent threats, some of them need to be discussed on the possibility of their realization. However, even the possibility of applying in the future makes it necessary for the states to take the necessary steps in this regard. The fight against terrorism is an extremely difficult task with zero margins of error, which must be done before the attack comes, prioritizes the closure of the weaknesses of societies, and requires the prevention of terrorist groups' intentions before they occur.

AGROTERRORISM

As the name suggests, agroterrorism is an abbreviation of the words agriculture and terrorism, and it simply deals with terrorist attacks on agricultural activities. Agroterrorism, which can be realized by various methods and tools, is a serious threat with political, economic and social effects. It should be noted that deliberate attacks on agricultural areas, related systems, or supply chains can have major national and international impacts (Crutchley, 2006). Agroterrorism, which is seen as a sub-branch of the field expressed as biological warfare or bio-attack, is not a new phenomenon. In fact, throughout history, the agricultural activities of the other side, food stocks, and the areas where related activities were carried out were targeted. States have sought intensively to develop biological and chemical pathogens and weapons in order to weaken their enemies. Such struggles have ranged from the burning of agricultural produce to the spread of viruses that can have a broad impact (Suffert et al., 2009). Along with other weapons of mass destruction, biological weapons also remain a threat at the international level, despite their limited use in the process. The fact that there are terrorist organizations that may prefer biological agents due to their relatively easy production, the capacity to cause a large number of deaths, the panic they may cause, and the difficulty of detection increases the anxiety in this area. For example, Seth Carus (2001: 7-8) states that there are twelve cases where biological agents were used for attacking agriculture and food fields that have been recorded so far. Among them, he remarks on five incidents in that groups used biological viruses to cause serious harm to the other side: Rajneeshees (1984), Aum Shinrikyo (1995), Dark Harvest (During WWII), Mau Mau (1952), Polish Resistance (During WWII).

Important biological weapons and agents that may cause general concern today are discussed in Ignatius Fong and Kenneth Alibak's review book (2009) as anthrax, plague, tularemia, melioidosis and glanders, smallpox, hemorrhagic fever viruses, botulism, ricin. Polyak (2004: 31-32) states that various attacks were made against agricultural areas, animals, and food stocks, especially during the First World War and the Second World War, in order to draw the enemy into food shortages. He argues that during the Cold War, states tried to develop many projects for biological attack, including facilitating the spread of foot-and-mouth disease. In this context, the use of biological weapons in the conduct of wars has not been an undefined attempt, but rather an orientation on which various attempts have been made. However, the absence of a large-scale biological attack by state or non-state elements for a long time has led to a low level of concern in this area. Nevertheless, it is possible to say that the threat of biological attack came to the fore again in the atmosphere created by the panic atmosphere that started with the sending of letters containing anthrax to some addresses in the USA right after the September 11, 2001 attacks. The fact that Al-Qaeda could threaten the United States, one of the most protected countries in the world, by organizing plane attacks, and the introduction of anthrax has led to biosecurity debates and thus the fear of biological terrorist attacks on vulnerable points (Cooper, 2006).

In fact, the realization of biological attacks with the use of various viruses or diseases is an experienced situation, but the values on which the concern is gathered have been humans and animals. However, the inclusion of plants and agricultural products in this process revealed a different dimension (Madden

and Wheelis, 2003). Agroterrorism can also be defined simply as a politically motivated non-state group trying to disrupt the agriculture, food, and farm sectors by using various pathogens and pests to harm the opposite society. Roger Breeze (2004: 251) states that agroterrorism refers to the deliberate attack on commercial crops or livestock populations with various viruses, bacteria, and fungi, either as targets in themselves or as means to attack humans in the case of a zoonotic pathogen. Keredemis et al. (2013) define agroterrorism as a subset of bioterrorism, which is defined as the deliberate introduction of animal or plant pests with the aim of creating fear, causing economic damage, and/or undermining social stability. While people's lives are at risk with agroterrorism attacks, problems may arise in the agricultural field on the other hand. Directing attacks with biological and animal pathogens to the most basic needs of people can create a state of panic and fear in society. Thus, a suitable environment for terrorism strategy will be obtained.

Biological attacks and agroterrorism can come from states, political groups, religious radicals, criminal organizations or individuals acting with different motivations. The motives of the groups can vary greatly, but one thing in common is their willingness to use biological weapons to effect changes in society. From their point of view, violence, which can bring death, fear, and social degradation, is an appropriate way to achieve its goals (Keremides, 2013: 19). Thus, the deliberate use of various agents or pathogens directed toward the wild nature, livestock, crops, forests or the whole agriculture/food sector constitutes the general definition of agroterrorism.

Tamara M. Crutchley et al. (2006: 42) highlight key points about the threat of agroterrorism in their listing of key vulnerabilities and their exploitation in the US agricultural system. From this study, it is possible to understand the impact of targeting sensitive points in agriculture. In the article, it is stated that intensive agricultural activities and products accelerate the spread of possible diseases and make it difficult to control, the deficiencies in keeping statistics make it impossible to determine the diseases without a large impact, the rapid spread of products to large geographies also spreads pollutants and prevents the problem from being under control, and the lack of reporting systems make farmers prevent from urgent and sufficient reporting in case of a problem, the lack of necessary training to the people in the sector hinders diagnosis and early detection, and inadequate agricultural and food surveillance systems can quickly turn into a weapon. Thus, it should not be forgotten that terrorist organizations have the potential to benefit from agriculture and food fields by using all kinds of deficiencies, mistakes, or densities. It would not be surprising that a well-calculated bioterrorist attack would reach a very serious level due to intense activities in the relevant sectors, lack of information, communication problems, and commercial speed.

Biological weapons have been used in various ways throughout history. The reasons such as being easily obtainable and applicable, low cost, spreading of their effects over time, indistinguishable from natural problems, causing psychological destruction due to the fear they create as well as physical damage make these weapons a special danger (Ridel, 2004). The use of various products developed by scientists for the benefit of humanity or currently used in agriculture and animal husbandry for the purpose of threatening the seizure of terrorist organizations is also a situation that should be evaluated under risk

(Tucker and Zilinskas, 2006; Bennett, 2009; Tucker, 2011; Dobson, et al., 2013). Especially today, when terrorist organizations redefine themselves in terms of ideology, strategy, and possibilities, it is not very unlikely that they will adopt a type of attack used in various periods of history. Today, it is not difficult to reach biological weapons production methods, materials, equipment, experts, and the necessary financial support, especially with the effect of globalization. In addition, the circulation of agricultural products and animal foods due to international trade may cause a product containing bioagents to have a devastating effect anywhere in the world (Polyak, 2004: 32-33).

Agricultural activities have special importance because they both meet the general food needs of society and are an element of national income. It is quite obvious that any terrorist attack on the agriculture and food sectors will have serious political, economic, and social consequences. While people's lives may be at risk, on the one hand, they will face a problem such as not being able to reach enough food on the other hand. Meanwhile, while plant and animal deaths will indispensably occur, ecosystems may also be negatively affected. Depending on the size of the attack, the long cleaning process will make it difficult to restore agricultural vitality. The long-term effects of some agents will degrade the reputation of the attacked state and its export products before other countries. In addition, the victimization of people who make their living with the income they earn from the relevant sectors will bring along critical problems.

But on the other hand, biological agents are unpredictable because they can get out of control, have great potential to backfire or become completely ineffective under several conditions. The possibility of being affected by temperature, the environment, or other substances that they could react with makes the attacker suspect these agents. In addition, biological agents should be used just after production due to their short life span (Laqueur, 1999:69). This situation may cause terrorist groups to reconsider the point of preferring biological weapons. Nevertheless, the possibility of using weapons of mass destruction by taking all kinds of risks to terrorist organizations, which have put forward a bloody strategy to achieve their goals, seems to be more prominent than their reluctance to use them.

HOW PREPARED ARE WE AND WHAT CAN BE DONE?

It is quite clear that a possible agroterrorism attack will, directly and indirectly, affect human life, fertile lands, livestock, harvested and unharvested products, storage systems, woodlands, wildlife, and any chain of the food industry. Thus, while people and other living things will be lost, many political, economic, and social problems will arise. Post-treatment processes, removal of pathogens, destruction of contaminated products, elimination of damage in supply chains, and reduction of panic in society will be very difficult processes. As humanity, how prepared or ready we are for such a scenario needs to be discussed.

After the attacks of September 11, 2001, which was one of the turning points for the understanding of security, the general awareness about all aspects of terrorism showed itself also in the field of bioterrorism and agroterrorism. After this date, the laws and regulations, researches, reports and preparatory action plans enacted in the USA, which has drawn the direction of the concept of combating terrorism and is the pioneer of implementation in the international

arena, are noteworthy. In this context, in addition to the general problems caused by terrorism, possible risks and weaknesses in agriculture and food were discussed and issues such as the general situation, prevention activities, and budgetary needs were brought to the agenda (Monke, 2004; Cupp, 2004; Crutchley, 2006; Gonzales et al., 2006). Because the concept of combating terrorism needs to be multifaceted and integrated. It is necessary to take into account every aspect of real threats and the probable impact of potential threats. However, it is not possible to state that the attempts made by the USA in this field after the September 11 attacks were handled with the same sensitivity by other countries.

Manish Anand (2018: 8) states that the struggle in this area is hidden in knowledge management. Considering that agroterrorism is not a visible threat and at the same time its potential is considered, it is extremely important to share information in this field, to establish communication channels, to inform the relevant people in case of any risk, to raise awareness about such attacks and to convey developments in the field. In brief, he argues that a strategic and integrated strategy can be developed with appropriate knowledge management. Martensson et al. (2013: 46-48) draw attention to the importance of cooperation between institutions and information sharing in an area such as bioterrorism and agroterrorism, where the risk is high and the available data are limited. Here, it is meant to work together with the police, intelligence, forensics, customs, law enforcement agencies, and environmental, food, animal protection, and agricultural organizations. They propose national and international cooperation, surveillance awareness, joint situational awareness, coordinated decision-making, identification of weak signals, and keeping abreast of advances and trends in the life sciences with such a wide range of partners.

Melinda Cooper (2006) states that the USA's fight against biological weapons in the post-September 11 period is based on full control of the products used in production, counter-proliferation, and pre-emption. Thus, he states that a preventive struggle should be established in the production, dissemination, and use of biological weapons. From this point of view, it is supposed to be stated that the fight against agroterrorism must be based on the purification of agricultural and farm areas, food production, and logistics lines from all kinds of threats. For this reason, it is necessary to keep the materials used for the production of biological weapons under strict control and to determine the new production methods with expert teams.

As a result, it is possible to list several prominent reasons for fueling concerns about agroterrorism: (1) Providing security is difficult because agricultural production and livestock-raising lands are large and rural, (2) obtaining viruses, insects or diseases that can be used for biological attacks is easier than other mass destruction weapons, (3) it is difficult to distinguish between deliberately spreading viruses and natural diseases, (4) the panic atmosphere of any attack using biological weapons is more intense and prolonged, (5) affected plants and animals are likely to carry diseases, and (6) the effects can be felt long-term. For an integrated struggle against agroterrorism; (1) people at all levels of the agricultural sector should be trained about biological agents, (2) security-related institutions should specialize in this field, (3) terrorist organizations' work on biological elements and their relations with other actors should be followed, (4) experts should be employed specialized in all kinds of viruses, on diseases

and pollutants in agricultural areas, (5) the digital environments that enable the operation of the system in the relevant sectors, as well as the physical areas, should be protected, and (6) in addition to the traditional activities of terrorist organizations, all kinds of attempts related to weapons of mass destruction should be followed by intelligence organizations.

CONCLUSION

Today, two increasingly important dangers stand in front of societies. The first is terrorism and the other is food shortages. Terrorist organizations threaten all humanity with attacks that they can do at any time and by any means, with the means and capacity they have reached. As an important aspect of the new terrorism debate, terrorist organizations seek to diversify and develop their strategies, financial resources, attack methods, member and sympathizer acquisition plans, technological opportunities, and target preferences in order to achieve their goals. The most important concern in the field is the ability of these organizations to use weapons of mass destruction, which can create more serious effects and chaos, in addition to their traditional weapons. It is possible to characterize attacks that can be made on military and civilian points and critical infrastructure with the use of chemical, biological, radioactive, and nuclear weapons as a disaster scenario. On the other hand, food security is becoming an increasingly serious security concern due to the increasing population, various viruses and harmful substances, financial crises, environmental problems, and disruptions in the supply chain. In many countries in the world, there is a problem with access to sufficient food due to reasons such as wars, drought, and income inequality. It is clear that food security will stand in front of humanity as a global problem if the necessary precautions are not taken.

Based on these two situations, terrorist organizations' attacks that will disrupt the agriculture and food sectors, which are extremely sensitive areas, constitute an aspect that needs to be addressed due to the increase in the anxiety caused by terrorism and the direct threat to the functioning of daily life. Since it is known that state or non-state elements can carry out biological attacks throughout history or damage agricultural lands and food production-storage areas during conflicts, agroterrorism constitutes one of the headings that should be seriously discussed. Terrorism remains a top threat at the national and international levels. Especially after September 11, 2001, the events experienced in the process, seeing the capacity reached by terrorist organizations, created an increasing fear through the use of different attack methods and the diversification of their weapons. Although there is no serious attack yet, the possible political, social, economic, and public order problems of attacks by terrorist organizations with weapons of mass destruction, which can cause irreparable harm, make it necessary to take all kinds of security measures in this area.

On the other hand, one dimension of the debate in the field is that such a concern about the potential actions of terrorist organizations will serve to securitization. It can be argued that attributing meaning to terrorist organizations through weapons that are uncertain about their possession will create a causeless panic and will legitimize any measure taken by states in the fight against terrorism. In addition, the idea that addressing the threats that terrorist groups may pose at a high level can serve the propaganda of terrorism comes to mind. In addition,

it is an important concern that detailed analyzes of the possible effects of such attacks create a situation that can direct or even attract terrorist organizations. In particular, many analyzes are made on the types of attacks and target diversity that today's terrorist organizations can put into practice through the means and capacity they have reached. Whether these analyzes or the discourse of the magnitude of the terrorist threat is an element of a conscious security policy is a matter of debate.

Of course, all these concerns have their justifications, but the fight against terrorism should be carried out in a preventive way. After the threat becomes real, the struggle can become more arduous. This also reduces the success rate. For this reason, it is necessary to analyze possible attack methods, targets, financial and logistical resources, weapons, and propaganda tools of terrorist groups and implement the necessary interventions. It would not be a surprise if the problems caused by terrorist organizations' possession of weapons of mass destruction and their use in agricultural areas, clean water distribution lines, energy transmission infrastructures, and public buildings providing social services create undesirable disasters. For this reason, it is always safer, cheaper, and more logical to be prepared for even the most improbable scenario of terrorism than to be caught off guard.

REFERENCES

Anand, Manish (2018). "A system approach to agricultural biosecurity". *Health Security*, 16(1): 1-11. Doi: 10.1089/hs.2017.0035.

Bennett, Gaymon, Nils Gilman, Anthony Stavrianakis, Paul Rabinow and Paul Rabinow (2009). "From synthetic biology to biohacking: Are we prepared?" *Nature Biotechnology,* 27(12): 1109-1111. Doi: 10.1038/nbt1209-1109.

Breeze, Roger (2004). "Agroterrorism: Betting far more than farm". *Biosecurity and Bioterrorism: Biodefence Strategy, Practice, and Science*, 2(4): 251-264. Doi: 10.1089/bsp.2004.2.251.

Carus, W. Seth (2001). "Bioterrorism and biocrimes: The illicit use of biological agents since 1900". Center for Counterproliferation Research National Defense University. Washington.

Chailand, Gérard and Arnaud Blin (2007). *The History of Terrorism: From Antiquity to Al Qaeda*, Edward Schndier, Kathryn Pulver ve Jesse Browner (trans.), California: University of California Press.

Cooper, Melinda (2006). "Pre-empting emergency: The biological turn in the war on terror". *Theory, Culture & Society*, 23(4): 113-135. Doi: 10.1177/0263276406065121.

Crutchley, Tamara M., Joel B. Rodgers, Heustis P. Whiteside Jr, Marty Vanier and Thomas E. Terndrup (2006). "Agroterrorism: Where are we in the ongoing war on terrorism". *Journal of Food Protection*, 69(12): 42-54. Doi: 10.4315/0362-028x-70.3.791.

Cupp, O. Shawn, David E. Walker and John Hillison (2004). "Agroterrorism in the U.S.: Key security challenges for the 21st century". *Biosecurity and Bioterrorism: Biodefence Strategy, Practice, and Science*, 2(2): 97-105.

Dobson, Andrew, Kezia Barker and Sarah L. Taylor (2013). *Bioscurity: The Socio-Politics of Invasive Species and Infectious Diseases.* Abingdon: Routledge.

Fong, Ignatius Wellington and Ken Alibek (2009). *Bioterrorism and Infectious Agents: A New Dilemma for the 21st Century*. Berlin: Springer.

Ganor, Boaz (2009). "Trends in international terrorism", David Weisburd et al. (Eds.), *To Protect and To Serve: Policing in an Age of Terrorism*. Berlin: Springer, 11-42.

Gofas, Andreas (2012). "'Old' vs 'New' terrorism: What's in a name?", *Uluslararası İlişkiler*, 8(32): 17-32.

Gonzales, Alberto R., Regina B. Schofield and Glenn R. Schmitt (2006). "Agroterrorism- why we're not ready: A look at the role of law enforcement". *U.S. Department of Justice, Office of Justice Programs*, National Institute of Justice.

Gupta, Dipak K. (2005). "Exploring roots of terrorism", Tore Bjorgo (Ed.), *Root Causes of Terrorism: Myths, Reality and Ways Forward*. London and New York: Routledge, 16-32.

Keremidis, Haralampos, Bernd Appel, Andrea Menrath, Katharina Tomuzia, Magnus Normark, Roger Roffey and Rickard Knutsson (2013). "Historical

perspective on agroterrorism: Lessons learned from 1945 to 2012". *Biosecurity and Bioterrorism: Biodefence Strategy, Practice, and Science*, 11(1): 17-24.

Laqueur, Walter (1999). *The New Terrorism: Fanaticism and the Arms of Mass Destruction*. Oxford: Oxford Univerity Press.

Madden, Laurence V. and Mark L. Wheelis (2003). "The threat of plant pathogens as weapons against U.S. Corps". *Annual Review of Phytopathol*, Vol. 41: 155-176.

Martensson, Per-Ake, Lars Hedstrom, Bengt Sundelius, Jeffrey E. Skiby, Armin Elbers and Rickard Knutsson (2013). "Actionable knowledge and strategic decision making for bio- and agroterrorism threats: Building a collaborative early warning culture". *Biosecurity and Bioterrorism: Biodefence Strategy, Practice, and Science*, 11(1): 46-54. Doi: 10.1089/bsp.2013.0039.

Monke, Jim (2004). "Agroterrorism: Threats and preparedness", CRS Report for Congress.

Newman, Edward (2006). "Exploring the 'Roots Causes' of terrorism". *Studies in Conflict and Terrorism*, 29(8): 749-772.

Polyak, Mark G. (2004). "The threat of agroterrorism: Economics of bioterrorism". *Georgetown Journal of International Affairs*, 5(2): 31-38.

Richards, Anthony (2019). "Defining terrorism", Andrew Silke (Ed), *Routledge Handbook of Terrorism and Counterterrorism*. London: Routledge, 13-22.

Ridel, Stefan (2004). "Biological warfare and bioterrorism: A historical review". *Baylor University Medical Center Proceedings*, 17(4): 400-406.

Schmid, Alex P. (2005). "Prevention of Terrorism: Towards a Multi-pronged Approach", Tore Bjorgo (Ed.), *Root Causes of Terrorism: Myths, Reality and Ways Forward*, London and New York: Routledge, 223-240.

Schmid, Alex P. (2011). "The definition of terrorism", Alex P. Schmid (Ed.), *The Routledge Handbook of Terrorism Research*. Londra and New York, 39-99.

Smelser, Neil J. (2007). *The Faces of Terrorism: Social and Psychological Dimensions*. Princeton: Princeton University Press.

Suffert, Frédéric, Émilie Latxague and Ivan Sache (2009). "Plant pathogens as agroterrorist weapons: Assessment of the threat for European agriculture and forestry". *Food Security*, 1(2): 221-232.

Tucker, David (2001). "What is new about new terrorism and how dangerous is it?" *Terrorism and Political Violence*, 13(3): 1-14.

Tucker, Jonathan (2011). "Could terrorists exploit synthetic biology". *The New Atlantis*, Vol. 31: 69-81.

Tucker, Jonathan and Raymond Zilinskas (2006). "The promise and perils of synthetic biology". *The New Atlantis*, No. 12: 25-45.

Whittaker, David J. (2002). *Terrorism: Understanding the Global Threat*. London: Longman.

TESTING THE LONG-RUN GROWTH EFFECTS OF FOREIGN DIRECT INVESTMENT IN TÜRKIYE: EVIDENCE FROM ARDL & NARDL ANALYSIS

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ABSTRACT

This study examines the linear and nonlinear effects of foreign direct investment on the long-run economic growth in Türkiye for the period of 1970-2020, within the framework of a simple endogenous growth model represented by a production function in the form of Cobb-Douglas, where the assumptions of constant returns to scale and decreasing productivity are valid for all collectible capital inputs. For this purpose, the study investigates whether the changes in fixed capital and foreign direct investment rates affect the GDP per capita growth rate linearly and non-linearly by using the ARDL & NARDL approach. The findings show that there is a linear and a nonlinear cointegration relationship between the foreign direct investment rate and GDP per capita growth rate, but the foreign direct investment rate does not make significant contributions to the growth rate in the long run. According to another finding, positive and negative shocks in the foreign direct investment rate, depending on the contraction and expansion periods of the Turkish economy, do not significantly and asymmetrically affect the growth rate in the long run.

Keywords: Economic growth, Foreign direct investment, ARDL & NARDL approach.

INTRODUCTION

Foreign capital investments (FDI) play an important role in financially integrated world economies. FDI is a long-run investment that requires the acquisition of a substantial 10% stake in a company and participation in company management. FDI reflects a country's international investment position and is the most dynamic element of the balance of payments of a financial account when compared to portfolio investment and other investments as other forms of international investment. Because FDI is not a purely financial investment it differs from other forms of capital inflows (Demir, 2022: 137).

The fact that FDI has developed around a growing trend in the last 40 years on a global scale with financial liberalization, it has been a neoclassical premise that growing FDI affects economic growth and the growing economy attracts FDI. In this context, it has been widely stated that FDI has many benefits, both directly and indirectly, and it has even been described as the engine of economic growth. However, this claim is not generally accepted. The benefits of direct investments are theoretical. Because the empirical evidence for the positive effects of FDI is very weak (Kozul-Wright and Rayment, 2008).

It is generally accepted that FDI benefits a country by influencing its production skills. However, there is also evidence of the negative effects of FDI on economic growth. One of the reasons for this is that the benefits of FDI to the economy in general and their positive effects on economic growth, in particular, are theoretical. Another reason is that global companies with FDI can buy very few goods from local producers and import most inputs. In addition to these reasons, FDI may have entered through global companies to exploit the recipient country's natural resources or cheap labor. In the long run, the most important negative effect of FDI may be that it makes it difficult for the receiving country to increase its production skills (Chang, 2014: 374).

The rest of this study is organized as follows: In the first part, the results of some selected studies in the empirical literature on the linear relationship between FDI rates and economic growth are reported. In the second part, the methodological framework consisting of the theoretical specification, the data description, and the empirical specification of the study is shortly introduced. In the third part, empirical findings obtained from the predicted model are given. In the fourth part, the findings are summarized in their theoretical and empirical dimensions and policy implications.

LITERATURE REVIEW

Empirical evidence for the relationship between FDI and economic growth in the literature gives a complex picture. Some studies find that FDI supports economic growth, but some studies do not.

Soto (2000) reached the following findings in his study with a dynamic panel using annual data for the period 1986-1997 within the scope of a sample of 44 developing countries: First, FDI and portfolio stock flows exhibit a strong positive correlation with economic growth. Second, portfolio bond flows are not significantly linked to economic growth. Third, in countries with under-capitalized banking systems, bank-sourced capital inflows are negatively correlated with the economic growth rate.

Borensztein et al. (1998), using data from 69 developing countries for the period 1970-1989, tested them in a cross-country regression framework. As a result of the analysis, they showed that FDI is an important tool for technology transfer and contribute more to economic growth than domestic investments. However, the higher productivity of FDI only applies if the receiving country has a minimum threshold human capital stock.

Durham (2004), using data from 80 countries for the period 1979-1998, examined the effects of FDI and portfolio stock investments on economic growth with Extreme Bounds Analysis (EBA). The results show that largely lagged FDI and portfolio stock investment do not directly and completely positively affect economic growth.

Choong et al. (2010), using annual data for the period 1988-2002, investigated how FDI, portfolio investment, and external debt affect economic growth in developed and developing countries with GMM. The findings reveal that FDI has a positive effect on growth, while portfolio investments and external debt have a negative effect on economic growth in all countries in the sample.

Aizenman et al. (2011) examined the lagged relationship between capital flows and economic growth in the context of the relationship between FDI, portfolio investments, stock investments, and short-term debt, for the period before and after the global crisis, over a sample of 100 countries, in the 1990-2010 period. As a result of the analysis, a strong relationship was found between FDI inflows and outflows and economic growth.

Adekunle and Sulaimon (2018) analyzed the relationship between capital flow patterns and economic growth in Nigeria using the ARDL method, using annual data for the period 1986-2015. According to the findings, net FDI inflows have a positive short-term effect on economic growth, while net portfolio investment inflows and net foreign remittance inflows have significant short-term negative effects on economic growth.

Adams and Klobodu (2018) examined the effects of capital flows on economic growth in five of the Sub-Saharan African (SSA) countries during the period 1970-2014, with ARDL method. The findings showed that different capital flows have different effects on economic growth in the long run. FDI has a significant positive effect in Burkina Faso, negative effects in Gabon and Niger, and foreign debt has a negative effect in all countries.

Insel and Sungur (2003) examined the effects of capital flows on Türkiye's economic growth performance for the period 1989Q3-1999Q4. As a result of the analysis, they found that there is no causality between capital flows and economic growth other than FDI. In addition, they stated that FDI, which is small and at low rates in total capital flows, greatly impacts economic growth.

Afsar (2007), in his study, using quarterly data covering the period 1992:1 to 2006:3, determined the causality relationship between FDI to economic growth in Türkiye. He stated that there is a one-way relationship between FDI and economic growth and the direction of this relationship is from FDI to economic growth.

Temiz and Gokmen (2013) applied the Johansen cointegration test, Granger causality, and OLS to the quarterly data in order to determine the relationship between FDI inflows and GDP growth in Türkiye for the 1992: Q1-2007: Q3

period. The findings show that there is no significant relationship between FDI inflow and GDP growth in Türkiye in both the short-run and long run.

Berument et al. (2015) investigated the effect of FDI, portfolio investment, and other investments on macroeconomic variables in Türkiye with the VAR method on the basis of monthly data within the period 2000:1-2012:12. The impulse response analysis showed that a positive shock from total gross capital inflows (FDI + portfolio investment + other investment) lowered the interest and inflation rate and increased real GDP, as the domestic currency appreciated. While FDI and portfolio investments have statistically significant effects on macroeconomic variables, other investments do not.

METHODOLOGY

The methodological framework in this study consists of a data description, a theoretical specification, and an empirical specification.

Data Description

In this study, in which the linear and nonlinear relationship between FDI and economic growth is tested, the per capita GDP growth rate variable was obtained from the WB-WDI database, and the data on the FDI rate and fixed capital investment rate variables were obtained from the UNCTAD database. Table 1 summarizes the variables and data sources used in the study.

Table 1. *Variables and Data Sources*

Variable	Description	Unit	Source
$ln\ y$	Logaritmic GDP per capita	2015 US $	WB
$\Delta ln\ y$	GDP per capita growth rate	2015 US $	WB
i_p	Fixed capital investment	GDP (%)	UNCTAD
i_f	Foreign direct investment	GDP (%)	UNCTAD

Source: UNCTAD, World Bank

Table 2 shows the details of the two GDP variables and the two investment variables used in the analysis.

Table 2. *Descriptive Statistics*

Variable	Obs.	Mean	Maximum	Minimum	Std. Dev.
$ln\ y$	50	8.7240	9.3940	8.1426	0.3783
$\Delta ln\ y$	50	0.0256	0.0908	-0.0742	0.0398
i_p	50	22.9052	29.8572	15.1540	4.1265
i_f	50	0.7723	3.6234	0.0136	0.8723

Source: Author's calculations

Table 2 shows descriptive statistics providing a summary of the data. It reveals that Türkiye has grown on average by 0.02, at the highest of 0.09 and the lowest of -0.07 in the 1970-2020 period. It is seen that the growth rate is negative in the crisis periods experienced in the Turkish Economy. The minimum value in the descriptive statistics calculated for the growth rate shows the economic contraction. When compared with the physical capital investment rate as a share in the GDP in Türkiye, it is seen that the foreign direct investment rate is low in this period. In fact, while the physical capital investment rate reached the highest 29.85% in this period, the FDI rate remained at 3.62%.

Figure 1. *Development of Growth and Investment Rates in Türkiye for 1970-2020*
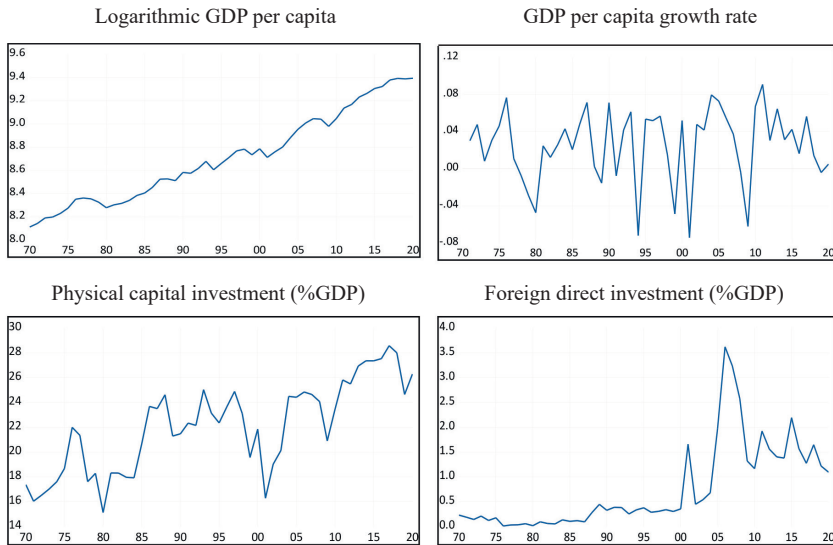
Source: Author's calculations

Figure 1 shows the development of GDP per capita growth, fixed capital investment, and FDI rates over the 1970-2020 period. It is observed that the investment rates of physical capital investment and foreign capital investment tend to increase throughout the period, and it is determined that these investment rates always take positive values.

Theoretical Specification

In this study, in the light of Romer (1986), Lucas (1988), and Rebelo (1991), the relationship between fixed capital investment, foreign direct investment, and economic growth is estimated using an endogenous growth model which is represented by a Cobb-Douglas type production function with the constant return to all accumulated capital inputs and each input depends on decreasing productivity. In this context, the representation of the optimization problem based on Jones (1995) and Ates (2013) is as follows:

Objective function:

$$\max_{i_{p,t},i_{f,t},i_{h,t}} \int_{t=0}^{\infty} u(c_t)\, e^{-rt}\, dt \tag{1}$$

Constraint function:

$$c_t = \left(1 - i_{p,t} - i_{f,t} - i_{h,t}\right)y_t \tag{2}$$

$$y_t = A k_{p,t}^{\alpha} k_{f,t}^{\beta} k_{h,t}^{1-\alpha-\beta}, \quad 0 < \alpha + \beta < 1 \tag{3}$$

$$\dot{k}_{p,t} = i_{p,t} y_t - \delta k_{p,t} \tag{4}$$

$$\dot{k}_{f,t} = i_{f,t} y_t - \delta k_{f,t} \tag{5}$$

$$\dot{k}_{h,t} = i_{h,t} y_t - \delta k_{h,t} \tag{6}$$

In this model, u is the household utility function with multi-period and fixed elasticity of substitution; r is the subjective discount rate; y is GDP per capita; c is the household consumption; k_p is the fixed capital stock per capita; k_f is the foreign capital stock per capita; k_h is the stock of human capital per capita; i_d is the rate of fixed capital investment to GDP; i_f is the rate of foreign direct investment to GDP; i_h is the rate of human capital investment to GDP; δ shows the depreciation rate assumed to be the same for all forms of capital. If Equation (1) is solved and rearranged, Equation (7) is obtained:

$$\Delta \ln y_t = \alpha_0 + \alpha_1 i_{p,t-1} + \alpha_2 i_{f,t-1} \tag{7}$$

In this equation, t is the time; $\Delta \ln y_t$ is the GDP growth rate per worker; i_1 is the ratio of fixed capital investment to GDP; i_2 represents the ratio of foreign direct investment to GDP. Accordingly, ICT and non-ICT capital investment rates can affect the GDP growth rate per worker simultaneously and with a delay.

Empirical Specification

In this study, empirical specification is an econometric representation of the linear and non-linear relationship between FDI and economic growth in the context of short-run and long-run dynamics. In this context, ARDL (Autoregressive distributed lag) bounds test approach which was developed by Pesaran et al. (2001) was used to estimate the long-run and short-run relationship between the FDI rate and GDP per capita growth rate. Based on Equation (7), the ARDL model estimates the effect of fixed capital investment and FDI rate on the GDP per capita growth rate within the framework of short-run and long-run dynamics as follows:

$$y_t = \alpha_0 + \sum_{i=1}^{p} \lambda_i \Delta \ln y_{t-i} + \sum_{i=0}^{q1} \delta_{1i} \Delta i_{p,t-i} + \sum_{i=0}^{q2} \delta_{2i} \Delta i_{f,t-i} + \beta_1 \ln y_{t-1} + \beta_2 i_{p,t-1} + \beta_3 i_{f,t-1} + \varepsilon_t \tag{8}$$

Equation (8) gives the ARDL model that consists of two parts. Here are the long-run coefficients: β_1, β_2, and β_3 and short-term coefficients are expressed with symbols λ_i, δ_1, and δ_2. If a cointegration relationship is established between GDP per capita growth rate and the explanatory variables, the linear model is expressed in ECM form as follows:

$$\Delta \ln y_t = \alpha_0 + \sum_{i=1}^{p} \lambda_i \Delta \ln y_{t-i} + \sum_{i=0}^{q1} \delta_{1i} \Delta i_{p,t-i} + \sum_{i=0}^{q2} \delta_{2i} \Delta i_{f,t-i} + \theta ECT_{t-1} + \varepsilon_t \tag{9}$$

Here, ECT_{t-1} represents the error correction part of the ARDL model and θ

represents the rate of adjustment from short-run dynamics to long-run equilibrium. For a long-term balance between the GDP per capita growth rate and the explanatory variables, θ is expected to be negative and statistically significant.

NARDL (Nonlinear ARDL) method is developed by Shin et al. (2014). The NARDL model is advantageous in terms of capturing short-run and long-term asymmetries. For example, it provides more flexibility in loosening the assumptions that time series should be integrated in the same order (Apergis, 2015: 2). The NARL model estimates the short-run and long-run effects of positive and negative shocks in the FDI rate on the GDP per capita growth rate. The nonlinear relationship between FDI and GDP per capita growth rate can be expressed in NARDL form as:

$$\Delta \ln y_t = \beta_0 + \sum_{i=1}^{p-1} \lambda_i \Delta \ln y_{t-i} + \sum_{i=0}^{q} \delta_i \Delta i_{p,t-i} + \sum_{i=0}^{q_2} \lambda_i^+ \Delta i_{f,t-i}^+ + \sum_{i=0}^{q_3} \lambda_i^- \Delta i_{f,t-i}^- + \rho \ln y_{t-1} + \vartheta_1 i_{p,t-i} + \vartheta_2^+ i_{f,t-i}^+ + \vartheta_3^- i_{f,t-i}^- + v_t \quad (10)$$

Equation (8) represents the NARDL model which consists of two parts short and long term dynamics. Here are the long-run coefficients ρ, ϑ_1, ϑ_2^+ and ϑ_3^-, and short-run coefficients are expressed with symbols λ, δ_i, λ_i^+, and λ_i^-. If a cointegration relationship is established between GDP per capita growth rate and explanatory variables, the nonlinear model is expressed in ECM form as follows:

$$\Delta \ln y_t = \beta_0 + \sum_{i=1}^{p-1} \lambda_i \Delta \ln y_{t-i} + \sum_{i=0}^{q} \delta_i \Delta i_{p,t-i} + \sum_{i=0}^{q_2} \lambda_i^+ \Delta i_{f,t-i}^+ + \sum_{i=0}^{q_3} \lambda_i^- \Delta i_{f,t-i}^- + \vartheta ECT_{t-1} + v_t \quad (11)$$

Here, ECT_{t-1} represents the error correction part of the NARDL model and ϑ represents the rate of adjustment from short-run dynamics to long-run equilibrium. For a nonlinearly long-term balance between GDP per capita growth rate and FDI rate, ϑ is expected to be negative and statistically significant.

FINDINGS

In the first stage of the empirical analysis, VAR analysis is performed. In this context, firstly, with the VAR Lag Order Selection Criteria, the optimum lag length of the model was determined as "2". Secondly, the Residual Serial Correlation LM Test[2] showed that there is no autocorrelation problem in the model. VAR Residual Heteroskedasticity Test[3] determined that the model has no problem of varying variance. Lastly, the VAR AR Roots test showed that the model satisfies the VAR stability condition. In other words, the model is stable.

In the second stage of the empirical analysis, the degree of integration of the variables was tried to be determined by ADF and PP unit root tests.

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2 Lag (1): Rao F-stat (9,87.8): 1.1164, Prob (0.3598). Lag (2): Rao F-stat (9,87.8): 0.4227, Prob (0.9197).
3 Chi-sq (72): 75.88644, Prob (0.3544).

Table 3. *Results of ADF and PP Unit Root Tests*

Variable	Test in	ADF Test			PP Test		
		t-stat.	p-value	Result	t-stat.	p-value	Result
$ln\ y$	Intercept	0.1432	0.9660	I (1)	0.1649	0.9675	I (1)
	Trend, Intercept	-2.1625	0.4993	I (1)	-2.2412	0.4571	I (1)
$\Delta ln\ y$	Intercept	-6.7921	0.0000	I (0)	-6.7915	0.0000	I (0)
	Trend, Intercept	-6.7625	0.0000	I (0)	-6.7573	0.0000	I (0)
i_p	Intercept	-1.8778	0.3399	I (1)	-2.0300	0.2735	I (1)
	Trend, Intercept	-3.5263	0.0473	I (0)	-3.6603	0.0346	I (0)
Δi_p	Intercept	-7.7124	0.0000	I (0)	-9.7483	0.0000	I (0)
	Trend, Intercept	-7.6418	0.0000	I (0)	-9.6059	0.0000	I (0)
i_f	Intercept	-2.0890	0.2499	I (1)	-1.9801	0.2944	I (1)
	Trend, Intercept	-3.0263	0.1356	I (1)	-2.8908	0.1741	I (1)
Δi_f	Intercept	-6.6343	0.0000	I (0)	-12.0167	0.0000	I (0)
	Trend, Intercept	-6.5649	0.0000	I (0)	-11.8155	0.0000	I (0)

Source: Author's calculations

Table 3 shows the results of ADF (Augmented Dickey-Fuller) and PP (Phillips Perron) unit root tests. The tests show that the variables participating in the model are either I(0) or I(1) integrated. Accordingly, the GDP per capita growth rate and foreign direct investment rate variables are stationary in the first order, but the fixed capital investment rate variable is stationary at the level order.

In the third stage of the empirical analysis, the ARDL and the NARDL bounds tests were performed, and then short-run and long-run estimation results of ARDL and NARDL models are included.

Table 4. *Bounds Test Results of ARDL and NARDL models*

Model	F stat.	k	Critical Value Bounds		
			Significance	Lower Bound	Upper Bound
ARDL	8.1748	2	10%	2.63	3.35
			5%	3.1	3.87
			2.50%	3.55	4.38
			1%	4.13	5
NARDL	5.0115	3	10%	2.37	3.2
			5%	2.79	3.67
			2.50%	3.15	4.08
			1%	3.65	4.66

Source: Author's calculations
Note: Null Hypothesis: No levels relationship.

Table 4 shows the bounds test results of the ARDL and NARDL models. In both models, as the calculated F statistical value is greater than the critical upper limit values, a long-run relationship is determined between the GDP per capita growth rate and the explanatory variables.

Table 5. *Long-Run and Short-Run Estimates of the ARDL Model*

	Long-run Estimates			
	Dependent variable: lny			
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
i_p	0.1429	0.0747	1.9135	0.0629
i_f	0.1969	0.1767	1.1141	0.2719
c	6.2343	1.0993	5.6710	0.0000
$EC = \ln y - (0.1429 * i_p + 0.1969 * i_f + 6.2343)$				
	Short-Run Estimates			
	Dependent variable: Δlny			
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
$\Delta \ln y_{(-1)}$	-0.3225	0.1496	-2.1553	0.0372
Δi_p	0.0171	0.0019	9.2193	0.0000
$\Delta i_{p(-1)}$	0.0042	0.0027	1.5682	0.1247
Δi_f	0.0172	0.0081	2.1104	0.0411
$\Delta i_{f(-1)}$	0.0071	0.0076	0.9358	0.3550
ECT (-1)	-0.0355	0.0060	-5.9289	0.0000

Source: Author's calculations
Note: c represents the constant.

Table 5 shows the long-run and short-run estimation results of the ARDL model. The fact that the error correction coefficient obtained is negative and statistically significant means that any deviation in the GDP growth rate per worker in the short run is adjusted to the long-term equilibrium value by 48% per annum. In other words, it returns to the average after 30 periods. This finding shows that the short-term effects of increases in ICT and non-ICT capital investment rates are more dominant. In other words, it shows that the Turkish economy very slowly returned to its long-run growth trend after the increase in investment rates.

According to the estimation results of the linear model, the fixed capital investment rate positively affects the GDP growth rate per capita in the long run at a 90% significance level and at a 99% significance level in the short run. However, while the long-term coefficient of the FDI rate is insignificant, the short-term

coefficient is significant at the level of 95%. In other words, while the FDI rate affects the per capita GDP growth rate in the short run, it does not in the long run.

Table 6. *Long-Run and Short-Run Estimates of the NARDL Model*

Long-Run Estimates				
Dependent variable: lny				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
i_p	0.0714	0.0367	1.9479	0.0583
i_f^+	0.1125	0.1396	0.8054	0.4252
i_f^-	0.0368	0.1673	0.2198	0.8271
c	7.2551	0.6375	11.3803	0.0000

$$EC = \ln y - (0.0714 * i_p + 0.1125 * i_f^+ + 0.0368 * i_f^- + 7.2551)$$

Short-Run Estimates				
Dependent variable: Δlny				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
Δi_p	0.0159	0.0018	8.8561	0.0000
Δi_f^+	0.0171	0.0103	1.6544	0.1057
Δi_f^-	0.0117	0.0137	0.8538	0.3982
ECT (-1)	-0.0668	0.0127	-5.2443	0.0000

Source: Author's calculations
Note: c represents the constant.

Table 6 shows the long-run and short-run estimation results of the NARDL model. The fact that the error correction coefficient obtained is negative and statistically significant means that any deviation in the GDP growth rate per worker in the short run is adjusted to the long-term equilibrium value by 0.66% per annum. In other words, it returns to the average after 15 periods. This finding shows that the short-term effects of increases in ICT and non-ICT capital investment rates are more dominant. In other words, it shows that the Turkish economy slowly returned to its long-run growth trend after the positive and negative shocks in FDI rates.

According to the estimation results of the non-linear model, the fixed capital investment rate positively affects the per capita GDP growth rate in the long and short run at 95% and 99% significance levels, respectively. However, it is seen that the positive and negative shocks in the FDI investment rate do not significantly affect the per capita GDP growth rate in both the long and short run.

In the fourth stage, diagnostic tests were performed to prove the reliability of the estimations.

Table 7. *Diagnostic Tests Results for ARDL*

Tests	ARDL Model		NARDL Model	
	F-stat.	Prob.	F-stat.	Prob.
B-G LM Testi	2.7774	0.0749	3.2143	0.0510
ARCH Testi	0.0049	0.9951	0.8152	0.3713
Jarque-Bera Testi	2.6231	0.2693	2.7894	0.2479
Ramsey Reset Testi	0.2271	0.6363	1.0194	0.3187

Source: Author's calculations

Table 7 shows that the models do not have autocorrelation (Breusch-Godfrey LM Test) and varying variance (ARCH Test) problems, and the error term is normally distributed in the models (Jarque-Bera Normality Test) and there are no problems with incorrect determination (Ramsey Reset Test) in the specification.

Figure 2. *CUSUM and CUSUMQ Test Results of ARDL and NARDL Models*
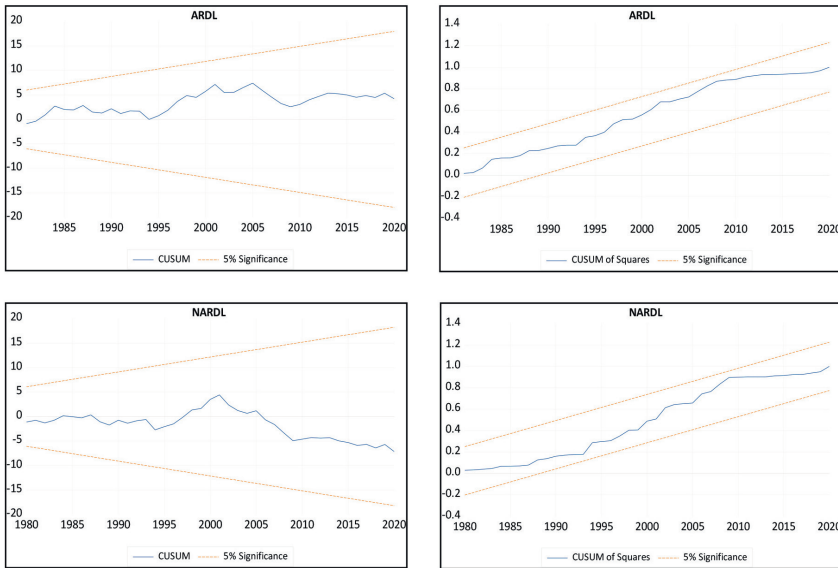
Source: Author's calculations

Figure 2 shows the CUSUM and CUSUMQ statistics of the ARDL and NARDL models. According to these statistics, the models are stable in the 1970-2020 period. In other words, there is no structural break in the coefficients.

In the last stage of the empirical analysis, the Wald Test was applied to detect the long-run asymmetry.

Table 8. *Result of the Wald Test*

Test Statistic	Value	df	Probability
t-statistic	1.0271	43	0.3101
F-statistic	1.0550	(1, 43)	0.3101
Chi-square	1.0550	1	0.3044

Source: Author's calculations

Note: H_0: No long-run asymmetry; H_1: There is long-run asymmetry

Table 8 shows the result of the Wald Test. According to the test, FDI has not an asymmetric effect on the GDP per capita growth rate in the long run.

Figure 3. *NARDL Model Cumulative Dynamic Multipliers*
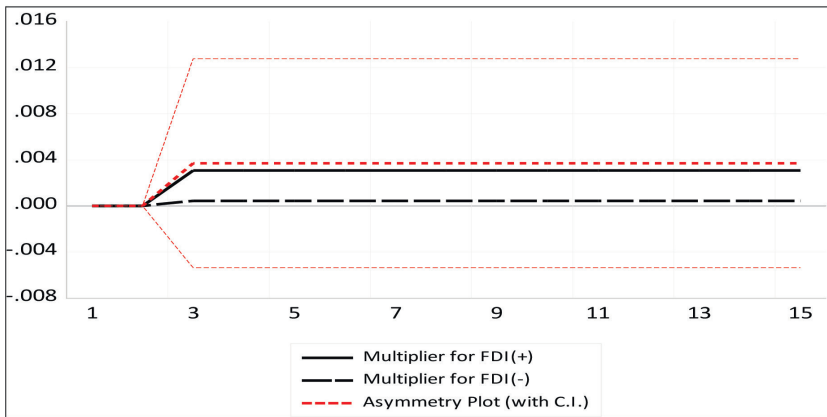
Source: Author's calculations

Figure 2 shows the cumulative dynamic multiplier effect of a unit change in the direct investment rate (positive or negative) on changes in economic growth. These multipliers show the new long-run equilibrium pattern of economic growth following a positive or negative unitary shock in the FDI rate.

CONCLUSION

In this paper, linear and non-linear long-run economic growth effects of foreign direct investment (FDI) in Türkiye for the period 1970-2020, are investigated by using ARDL & NARDL approach. For this purpose, the linear and non-linear relationship between the FDI rate as a net capital inflow and the GDP per capita growth rate is tested in the context of short-run and long-run dynamics. According to the findings obtained from the ARDL & NARDL analysis, there is both a linear and nonlinear cointegration relationship between the GDP per capita growth rate and the FDI rate. Linearly, fixed capital investment and FDI rates positively and significantly affect the GDP per capita growth rate in the long run at 5% and 10% significance levels, respectively. This finding is consistent with

the results of Insel and Sungur (2003), Avsar (2007) and Berument et al. (2015) studies in the literature. In the context of nonlinear relationships, positive shocks in the FDI rate affect the GDP per capita growth rate positively and significantly, while negative shocks have a positive but insignificant effect. The Wald Test proved that the long-run nonlinear relationship between the FDI rate and the GDP per capita growth rate does not exhibit an asymmetrical character. These findings show that increases in FDI rates do not have a permanent effect on the per capita GDP growth rate in the long run, or that increases in FDI rates do not sufficiently reflect on the long-term growth rate. Taking this empirical result into consideration, policy measures to increase FDI efficiency in Türkiye can be taken to make a positive contribution to the long-run growth process.

REFERENCES

Adams, Samuel and Klobodu Edem Kwame Mensah (2018). "Capital flows and economic growth revisited: Evidence from five sub-Saharan African countries". *International Review of Applied Economics,* 32(5): 620-640. Doi: 10.1080/02692171.2017.1355357.

Adekunle, Wasiu and Mubaraq Sulaimon (2018). A re-examination of the relationship between foreign capital flows and economic growth in Nigeria. MPRA Paper.

Afsar, Muharrem (2007). The causality relationship between economic growth and foreign direct investment in Türkiye. Business & Economics Society International (B&ESI) Conference.

Aizenman, Joshua, Yothin Jinjarak and Donghyun Park (2011). Capital flows and economic growth in the era of financial integration and crisis, 1990-2010. *Working Paper.* NBER.

Apergis, Nicholas (2015). "Asymmetric real exchange rate pass-through and poverty in China: Evidence from a nonlinear model". *Applied Economics Letters,* 22(12). Doi: 10.1080/13504851.2014.990615.

Ates, Sanli (2013). "Türkiye'de fiziksel sermaye yatirimlarinin buyume oranina uzun donemli etkileri (Long-term effects of physical capital investments on the growth rate in Türkiye). *Marmara Üniversitesi İ.İ.B. Dergisi,* 34(1): 63-85.

Berument, M. Hakan, Zulal S. Denaux and Furkan Emirmahmutoglu (2015). "The effects of capital inflows on Turkish macroeconomic performance". *Empirica, 42*(4): 813-824. Doi: 10.1007/s10663-015-9278-2.

Borensztein, Eduardo, Jose de Gregorio and Lee, Jong-Wha (1998). "How does foreign direct investment affect economic growth? *Journal of International Economics,* Vol 45: 115–135.

Chang, Ha-Joon (2014). *Ekonomi Rehberi: Ekonomi Hakkinda Size Soylenenler ve Soylenmeyenler (The Economy Guide: What You Have Been Told About The Economy And What You Haven't).* (Translated by Mihriban Dogan) Ankara: Say Yayınları.

Choong, Chee-Keong, Ahmad Zubaidi Baharumshah, Zulkornain Yusop and Muzafar Shah Habibullah (2010). "Private capital flows, stock market and economic growth in developed and developing countries: A comparative analysis. *Japan and the World Economy,* 22(2): 107–117.

Demir, Omer (2022). Ekonomik buyume ve uluslararasi sermaye akımları uzerine ampirik bir inceleme (An empirical study on economic growth and international capital flows). PhD thesis. Adana: Cukuruva University.

Durham, J. Benson (2004). "Absorptive capacity and the effects of foreign direct investment and equity foreign portfolio investment on economic growth". *European Economic Review,* 48(2): 285 – 306. Doi: 10.1016/S0014-2921(02)00264-7.

Insel, Aysu and Nesrin Sungur (2003). Sermaye akımlarının temel makroekonomik gostergeler uzerindeki etkiler: Turkiye ornegi –1989: III-1999: IV (Effects of capital flows on basic macroeconomic indicators: The case of Türkiye -1989: III-1999: IV). Türkiye Ekonomi Kurumu.

Jones, Charles I. (1995). "Time series tests of endogenous growth models". *The*

Quarterly Journal of Economics, 110(2): 495-525.

Kozul-Wright, Richard and Rayment Paul (2008). *The Resistible Rise of Market Fundamentalism: Rethinking Development Policy in an Unbalanced World.* London: Zed Books.

Lucas, Robeert E. (1988). "On the mechanics of economic development". *Journal of Monetary Economics,* 22(1): 3-42. Doi: 10.1016/0304-3932(88)90168-7.

Rebelo, Sergio (1991). "Long-run policy analysis and long-run growth". *Journal of Political Economy,* 99(3): 500–521.

Romer, Paul M. (1986). "Increasing returns and long-run growth". *Journal of Political Economy,* 94(5): 1002–1037.

Soto, Marcelo (2000). Capital flows and growth in developing countries: Recent empirical evidence. OECD Development Centre Working Papers. OECD Publishing.

Temiz, Dilek and Aytac Gokmen (2013). "FDI inflow as an international business operation by MNCs and economic growth: An empirical study on Türkiye". *International Business Review,* 23(1): 145-154. Doi: 10.1016/j.ibusrev.2013.03.003.

BOOK REVIEW

FLYING DEER AND SUN GODS
(PREHISTORIC SOCIETIES IN CENTRAL ASIAN ROCK ART)

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Johannes Reckel, Merle Schatz. Flying Deer and Sun Gods (Prehistoric Societies in Central Asian Rock Art). Nunnerich-Asmus Verlag and Media. 2022. pp. 400.

The scientific study "Flying Deer and Sun Gods (Prehistoric Societies in Central Asian Rock Art)" by Johannes Reckel and Merle Schatz can be considered as the result of the scientific expedition conducted in the territory of Kazakhstan, Kyrgyzstan, and Mongolia. In their book, the authors paid attention to common historical and cultural monuments of these three states. They looked out to the similarities, chronological periods, and typological features of historical monuments. In addition, the authors described common cultural trends in the countries with stone petroglyphs, deer stone, balbal, statue stone, and other monuments.

The first part of the book "The Human in Central Asian Rock Art" is devoted to the structure and purpose of the study. In the chapter "What is Rock Art", a descriptive explanation of stone inscriptions in the territory of Central Asia as art is given. In this section, the authors focused on stone inscriptions in the countries of Central Asia and gave importance to determining the age of petroglyphs and their chronological division. This chapter continues with the next section "Humans on Petroglyphs - Four Concepts" and focuses on the general classification of rock paintings with petroglyphs, dividing it into several groups. For instance, it was considered according to the image of a person in stone paintings and his body parts. In this regard, the first conclusion gave importance to the hand marks on the stone images of the inhabitants of Central Asia in the Bronze Age. It was concluded that the signs of the hand on the stone arose from the belief of the people of that period to protect themselves from various evils. The authors' description of the petroglyphs in stone as a whole is considered to be related to the magical concepts of the time. Similarly, the anthropomorphic image of a human figure in stone is given as an attribute of the Bronze Age culture. The uniqueness of these stone stelae indicates that they belong to a particular ethnic and social group. In general, the authors consider the beginning of the appearance of the full body in stone images as a common culture belonging to the Neolithic and Bronze Age. The appearance of human faces or sun-headed gods in the stone paintings defines the spiritual culture of the Bronze Age in the Khairkhan Mountains of Mongolia, and in some regions of Siberia, Kazakhstan, and Kyrgyzstan is considered as a sign of Shamanism.

The "Rock Arts Images – Animals and Humans" section shows the development of hunting in the early stages of community building, when almost similar rock images of the sun god, camels, birds, horses, and other animals started to appear. The images of sun-headed gods explain the beliefs of early humans. In addition, the beliefs of the human race in this Bronze and early Iron Age can be seen in various petroglyphs and in the horse cult in the mounds in the Mongolian Altai, Arzhan 2, and Tuva. Moreover, BC 3500 years ago, the beginning of horse domestication in the territory of Kazakhstan was also connected with human civilization in Mesopotamia in this book.

The next chapter of the book is called "Rock Art Sites: Mongolia, Kazakhstan, and Kyrgyzstan" and consists of a description of historical monuments in real stone on the territory of Kazakhstan, Mongolia, and Kyrgyzstan. The monuments from the Bronze Age to the Early Iron Age are considered as a territorially and culturally common value. The authors considered climate change as a reason for the common cultural connection in the Eurasian steppe. For instance, the cold and dry weather in the later Paleolithic period affected the fauna of that time. Only in the Bronze Age period BC 2400 years ago, it can be seen that the Eurasian steppe turned into the present-day steppe region, and the animal world acquired a common character. These long-term climatic changes have also had a significant impact on migration trends of people. In general, common climatic changes did not affect the culture of the indigenous people of the Eurasian steppe. For instance, we can see the appearance of "monster style" in artifacts found in historical monuments and archeological excavations.

However, natural climatic changes, humidification of the air, and resulting migration processes adapted the people to a nomadic life, formed their identity as an ethnic group, and the beginning of the use of a common language. In this regard, the authors proved that each region began to form its own culture through stone paintings found in that region. For instance, they wrote that the appearance of the Scythian "animal style" in this period reflected the common cultural traditions of the Central Asian people. The authors also examined the influence of these cultural changes and the beginning of ethnic and linguistic identity of people on other cultural trends. For example, the Scythian "animal style" was found in monuments in Iran and Pakistan. In the same way, the cultural monuments of the Altai Mountains continue with the cultural trends in Siberia and show similarities in the Andronovo and Afanasievo cultures of the Bronze Age. It shows that the Great Silk Road influenced the formation and development of such cultural ties.

The next section of the book "Local Archaeological Cultures and Styles" was devoted to the description of cultural similarities in the Bronze and Early Iron Age in the countries of Central Asia. For example, it was shown that the monuments of the Afanasievo and Andronovo culture were found in the territory of Southern Siberia and Northern Mongolia, and the monuments of the Andronovo culture were found in the Ural and Altai mountains. In addition, the writers considered the deer stones of Western Mongolia as a separate culture. The encounter of deer stones in Siberia, Kazakhstan, and the Altai region shows the common culture of the period of BC 1400-800 years.

In general, the similarity of historical monuments in Kazakhstan, Kyrgyzstan, and Mongolia was described based on common similarities. It included monu-

ments from the Bronze Age to the Early Iron Age culture and monuments from the Turkic period. For example, mounds and petroglyphs in Mongolia, Siberia, Altai, and Kazakhstan during the Bronze Age are described, and deer stones are considered a common cultural value in later periods. The nomadic people's hunting style is interpreted as a culture common to the countries of Central Asia. In the same way, the encounter of balbal stones and symbols in the Turkic period proved the ethnocultural integrity of the period of the Western Turkic Khaganate through stone paintings such as Sholpan Ata, Saymaly Tas in the Kyrgyz territory; Tamgaly Tas, Kuljabasy in Kazakhstan; monuments in Bayan Ulgiy, Kobda (Khovd), Gobi Altai region in Mongolia.

In conclusion, the chronological framework of the given materials covers a very deep and extensive geographical area. Therefore, the book of Schatz and Reckel is unique as an analysis of the common similarities of monuments in mentioned three countries and can be considered as a valuable research for archaeologists, ethno archaeologists, and ethnographers.

Eurasian Research Journal
© Eurasian Research Institute

Eurasian
Research
Journal
Autumn 2022
Vol. 4, No. 4.

Editorial Principles

Eurasian Research Journal focuses on the history and current political, social and economic affairs of the countries of the Eurasian space. The journal also explores the economic, political and social transformation of the countries of Central Asia and the Turkic world.

Eurasian Research Journal publishes original research articles, review articles and book reviews.

An article to be published in ***Eurasian Research Journal*** should not have been previously published or accepted for publication elsewhere. Papers presented at a conference or symposium may be accepted for publication if this is clearly indicated.

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1. Title of the article: The title should suit the content and express it in the best way, and should be written in **bold** letters. The title should consist of no more than 10-12 words.

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3. Abstract: The article should include an abstract in English at the beginning. The abstract should explain the topic clearly and concisely in a minimum of 75 and a maximum of 150 words. The abstract should not include references to

sources, figures and charts. Keywords of 5 to 8 words should be placed at the end of the abstract. There should be a single space between the body of the abstract and the keywords. The keywords should be comprehensive and suitable to the content of the article. The English and Russian versions of the title, abstract and keywords should be placed at the end of the article. In case the Russian abstract is not submitted, it will be added later by the journal.

4. Body Text: The body of the article should be typed on A4 (29/7x21cm) paper on MS Word in Size 12 Times New Roman or a similar font using 1,5 line spacing. Margins of 2,5 cm should be left on all sides and the pages should be numbered. Articles should not exceed 8.000 words excluding the abstract and bibliography. Passages that need to be emphasized in the text should not be bold but italicized. Double emphases like using both italics and quotation marks should be avoided.

5. Section Titles: The article may contain main and sub-titles to enable a smoother flow of information. The main titles (main sections, bibliography and appedices) should be fully capitalized while the sub-titles should have only their first letters capitalized and should be written in bold characters.

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Table 1. *Information Concerning Publications in Eurasian Research Journal*

| Publication type	Number of publication	Number of pages			Number of references		
		N	X	SS	N	X	SS
Article	96	2,042	21.3	7.5	2,646	27.6	15.8
Book review	4	30	7.5	4.4	31	7.8	8.3
Total	100	2,072	20.7	7.9	2,677	26.8	16.1

Source: Statistical Country Profiles

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Below is an example of a picture.

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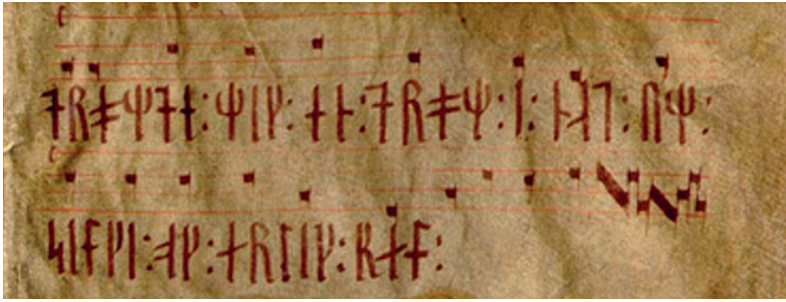
Source: en.wiktionary.org

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(Koprulu 1944: 15)

When sources with several authors are cited, the surname of the first author is given and 'et. al' is added.

(Gokay et al. 2002: 18)

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In this respect, Tanpinar (1976: 131) says …

In sources and manuscripts with no publication date, only the surname of the author should be written; in encyclopedias and other sources without authors, only the name of the source should be written.

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Personal interviews should be cited within the text by giving the surnames and dates; they should also be cited in the bibliography. Internet references should always include date of access and be cited in the bibliography.

www.turkedebiyatiisimlersozlugu.com [Accessed: 15.12.2014]

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Transliteration from the Ukrainian to the Latin alphabet should follow the system officially approved by the Ukrainian Cabinet of Ministers in 2010 (https://unstats.un.org/unsd/geoinfo/ungegn/docs/26th-gegn-docs/WP/WP21_Roma_system_Ukraine%20_engl._.pdf). When transliterating place names, Ukrainian names are preferred to Russian equivalents: for example, Mykolaiv rather than Nikolaev, Kyiv rather than Kiev. However, for historical references to Ukrainian cities, it may be appropriate to use Russian names if they were in wide use at the time.

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Isen, Mustafa (2010). *Tezkireden Biyografiye*. Istanbul: Kapi Yay.

Koprulu, Mehmet Fuat (1961). *Azeri Edebiyatinin Tekamulu*. Istanbul: MEB Yay.

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Example:

Taner, Refika and Asim Bezirci (1981). *Edebiyatimizda Secme Hikayeler*. Basvuru Kitaplari. Istanbul: Gozlem Yay.

If a source has more than three authors, the surname and name of the first author should be written, and the other authors should be indicated by et.al.

Example:

Akyuz, Kenan et al. (1958). *Fuzuli Turkce Divan*. Ankara: Is Bankasi Yay.

The titles of books and journals should be italicized; article titles and book chapters should be placed in quotation marks. Page numbers need not be indicated for books. Shorter works like journals, encyclopedia entries and book chapters, however, require the indication of page numbers.

Example:

Berk, Ilhan (1997). *Poetika*. Istanbul: Yapi Kredi Yay.

Demir, Nurettin (2012). "Turkcede Evidensiyel". *Eurasıan Research Journal*, *Turk Dunyasi Sosyal Bilimler Dergisi* 62(2): 97-117. doi: https://doi.org/10.53277/2519-2442-2021.2-01.

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Example:

Shaw, Stanford (1982). *Osmanli Imparatorlugu*. Trans. Mehmet Harmanci. Istanbul: Sermet Matb.

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_____ (2003). *XVIII. Yuzyil İstanbul Hayatina Dair Risale-i Garibe.* Istanbul: Kitabevi.

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Example:

Develi, Hayati (2002a). *Evliya Celebi Seyahatnamesine Gore 17. Yuzyil Osmanli Turkcesinde Ses Benzesmesi ve Uyumlar.* Ankara: TDK Yay.

Develi, Hayati (2002b). *XVIII. Yuzyil Istanbul Hayatina Dair Risale-i Garibe.* Istanbul: Kitabevi

For **encylopedia entries**, if the author of the encylopedia entry is known, the author's surname and name are written first. These are followed by the date of the entry, the title of the entry in quotation marks, the full name of the encyclopedia, its volume number, place of publication, publisher and page numbers:

Example:

Ipekten, Haluk (1991). "Azmi-zâde Mustafa Haleti". *İslam Ansiklopedisi*. C. 4. Istanbul: Turkiye Diyanet Vakfi Yay. 348-349.

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Karakaya, Burcu (2012). *Garibi'nin Yusuf u Zuleyha'si: Inceleme-Tenkitli Metin-Dizin*. Master's Thesis. Kirsehir: Ahi Evran Universitesi.

Handwritten manuscripts should be cited in the following way: Author. Title of Work. Library. Collection. Catalogue number. sheet.

Example:

Asım. *Zeyl-i Zubdetu'l-Es'ar*. Millet Kutuphanesi. A. Emiri Efendi. No. 1326. vr. 45a.

To cite **a study found on the Internet**, the following order should be followed: Author surname, Author name. "Title of message". Internet address. (Date of Access)

Example:

Turkiye Cumhuriyet Merkez Bankasi. "Gecinme Endeksi (Ucretliler)" Elektronik Veri Dagitim Sistemi. http://evds.tcmb.gov.tr/ (Accessed: 04.02.2009).

An article accepted for publication but not yet published can be cited in the following way:

Example:

Atilim, Murat ve Ekin Tokat (2008). "Forecasting Oil Price Movements with Crack Spread Futures". *Energy Economics*. In print (doi:10.1016/j.eneco.2008.07.008).

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