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Current Agenda

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EDITORIAL ARTICLE

Welcome Message for the Inaugural Edition of the “BRICS+: Current Agenda”

Anil Sooklal

Thank you very much for inviting me to contribute to the inaugural edition of the BRICS+: Current Agenda. Firstly, congratulations on the publication of the BRICS+: Current Agenda. I think this is a welcome initiative and long overdue.

So to all involved in the launching of this journal, we are extremely pleased to have this addition to the BRICS family. On the first issue, on the global significance of BRICS, of course BRICS today is a brand name. And when you speak of BRICS, it is not just the five countries anymore.

As you are aware, in 2025 BRICS underwent its expansion with the addition of five new members. So hence we now refer to BRICS as BRICS+. However, when you speak of BRICS, BRICS signifies not only the rise of the Global South and the institutionalization of a formation that champions the key issues as it affects not only the countries of the Global South, but the global community as a whole. We live in a very difficult global environment, perhaps the most challenging in the modern era.

It is a world that is fragmenting, and we are seeing the divide between the Global North and South becoming greater. And in this world, we are seeing that the liberal order that was established by the key players following the Second World War is collapsing.

And it is collapsing precisely because the very champions that were the architects of a new global order following the Second World War are the chief transgressors of the multilateral global architecture.

This year we mark the 80th anniversary of the founding of the United Nations. But what we have seen is that multilateralism is under siege. We have seen the rise of unilateralism, and we have seen a world where those hegemonic powers that have determined what is best for the global community continue to occupy the space and are not making way for new players on the global stage.

The world of 1945 and the world of 2025 are vastly different. You have had major powers from the Global South rising whose economies are far bigger those that of many of the G7. This includes countries like China, India, Brazil and Russia, the key BRICS countries that came together to form BRICS, and South Africa from the African continent.

So, BRICS can be a very positive force based on the fact that it represents in many senses the voice of the Global South and champions the issues of the majority of the global population, understanding that over 85% of the global population lives in the Global South.

Almost 50% of the global population today is made up of member states of BRICS countries, the BRICS+ countries as well as the partner countries of BRICS; it is well above the 50% mark.

So in that sense, BRICS represents the majority of the global community. Secondly, BRICS, apart from its demographic might, also today in terms of its GDP in PPP is larger than that of the G7. BRICS accounts for almost 36% of global GDP as against 29% of the G7. So it is, even in economic terms, a major force to be reckoned with today.

Now, of course, all of this places BRICS in a very strong position in terms of championing global change, in creating a more cohesive global environment that is inclusive, that is just, that is fair. Hence, the three major pillars of BRICS are focused on politics and security, on finance and economics, and on cultural, social and people to people interaction. And on all three fronts, BRICS is a positive force for creating a more equitable world, a world that is characterized by multipolarity as against unipolarity, and an inclusive world.

South Africa was very pleased to be invited to join BRICS because it was not just about South Africa, it was also about the African continent when we attended the first summit in 2011 in Sanya as a full member.

Now, South Africa had the privilege of chairing BRICS for the first time in 2013, and it was South Africa that put forward the idea that BRICS has to be not only about advancing the interests of the five member states, but of the collective Global South. And as the first African country to chair BRICS in 2013, we felt it important that it must be a BRICS about South Africa and the African continent. And therefore, we put out the idea of the outreach, and the first outreach was held during South Africa's presidency in 2013 when we held the Johannesburg summit and invited representatives of the entire African continent. So, for South Africa, championing African issues within BRICS is an integral part of our membership, as we do in terms of championing the issues of the Global South.

But for South Africa, we believe that BRICS is an important platform to champion the global multilateral system, which, as I have mentioned, is under siege, to ensure that there is reform of the United Nations, there is reform of the Security Council of the United Nations to be reflective and representative of the global order as it is today. To ensure that we have the Charter of the United Nations, underpinned by international law, at the center of the evolving multipolar global world order that we within BRICS have already indicated within the BRICS Summit Declaration that we would like to see the world move away from a compartmentalized world dominated by one or two powers, but rather representing the current reality where you have major powers from the Global South today playing important roles in being architects of the new global order, not just the political and security, the financial and economic, as well as equally important the social, cultural dimensions and issues pertaining to sustainable development.

So, for South Africa, all of these are key issues that must be an integral part of the BRICS agenda on an ongoing basis. Equally important, like we championed during our 2018 chairship when we focused on the Fourth Industrial Revolution, is to see how digitization and digital transformation can be a major tool in terms of addressing the development issues, especially as it affects Africa, but more broadly the Global South.

I believe that BRICS members are key to global digital transformation, and this is an integral part of the BRICS agenda on how we can use digital transformation in leapfrogging into the future and addressing our key developmental issues of poverty, underdevelopment, and inequality. Furthermore, we need to ensure that this is a major part of the focus of the journal in terms of addressing the challenges facing Africa in particular and the Global South in general and the global community as a whole in ensuring that the development agenda continues to enjoy center stage within the BRICS agenda, because it has been relegated to the margins in terms of the global agenda, including within the UN system.

Academic knowledge, of course, has been and continues to be an integral part of BRICS since its outset. On the role of academic knowledge and BRICS+ and the current agenda of the journal, it is important to understand that BRICS, as indicated, has three key pillars: political and security; economic and financial; and, thirdly, people-to-people, social and cultural.

Under the third pillar, the academic and think tank dimension of BRICS is critically important, which is why the BRICS Think Tank Council was launched in 2013 under South Africa's chairship, becoming the umbrella for the BRICS think tank community and, equally important, the BRICS Academic Forum. This is a very critical and crucial part of BRICS cooperation.

It is important to understand that BRICS cooperation is not compartmentalized under these three pillars, as there is constant cross pollination between them, and academia has a very important role in addressing the key challenges and opportunities facing not only the BRICS community but the entire global community, covering all the key issues contained in the BRICS Summit declarations. These issues range from global political and security questions, the global multilateral architecture and the Bretton Woods institutions, to key UN institutions, as well as climate change and climate action, pandemics and health infrastructure, and, of course, economic, financial and investment issues.

Academia has an important role in providing policy guidance to BRICS leaders, and this is what is expected of a journal like the BRICS+ Journal, which has a critical role in coordinating among academia from the vast BRICS community, not only in member states and partner countries but globally across the Global South and including academics from the Global North. A number of Global North countries have a key interest in and produce journals and articles focusing on BRICS because today BRICS is not just about the Global South; it is a pan global North–South structure that addresses all key challenges.

This is where the academic community, think tanks and students must engage in addressing key issues pertaining to BRICS, and a journal like the BRICS+ Journal must also reflect on the outcomes of BRICS presidencies and summit declarations to ensure that all key decisions taken are being delivered on. The BRICS+ Journal can become an important barometer of self-reflection within the BRICS community, asking how the very lofty ideals and important decisions taken, not only at ministerial and working group level but also at summit level, are becoming reality and impacting the lives of all, which makes this a very important dimension of BRICS cooperation.

On the issue of the expansion of BRICS and the BRICS+ concept. The presidency of South Africa in 2023 will be remembered for one major outcome in particular

and that is the expansion of BRICS from five members to the current 10. Now, of course, this did not occur in a vacuum.

Over the years, a number of countries have championed to join the BRICS family for various reasons. Because BRICS was seen as a positive force, a unifying force of the global South and the global community. South Africa was the first beneficiary of expansion of BRICS when the original four members invited South Africa to join BRICS in 2010. And between the period 2011 to 2023, a number of countries made overtures to the five BRICS members wanting to become full members. And it was during China's chairship of BRICS in 2022 that the leaders of BRICS at the Beijing Summit decided to task the BRICS Sherpas to look into the question of the expansion of BRICS and to author the guiding principles, standards, criteria and procedures of the BRICS expansion process. Based on the directive received from the leaders at the Beijing Summit in 2022, the BRICS Sherpas held various meetings starting under China's chairship. In 2022 and this continued into South Africa's chairship in 2023. I was very privileged as South Africa's Sherpa to oversee several meetings of the BRICS Sherpas specifically focused on the mandate given to Sherpas to develop the guiding principles, standards, criteria and procedure of BRICS expansion and this was presented to the foreign ministers for their consideration and subsequently the foreign ministers presented this to the leaders at the Johannesburg 2 Summit in South Africa in 2023. And it was at this summit that the leaders of course endorsed the guiding principles, standards, criteria and procedure for the expansion process and invited six countries uh seven countries originally to become full members. Two of those countries unfortunately uh did not respond positively. Argentina uh did not take up the offer and Saudi Arabia has still to decide uh on the invitation. Uh so we have currently 10 full members, five having joined post the 2023 process. Of course, an expanded BRICS sends out several key messages. Firstly, that you have now a more powerful BRICS, a set of very important countries of the global South, countries that are very influential in their own right within their own regions and globally. And of course, it also covers all of the key and major regions of the global uh geography. Some of the key challenges of course facing an expanded BRICS to how are integrate the new members into the culture uh of of the five members that had been developed over the past several years. And I think this is being addressed effectively and we are seeing the new members being integrated and uh you have a more coherent and effective BRICS with the 10 members as well as was demonstrated uh during the outcome of the summit in 2024 under Russia's chairship and under Brazil's chairship in 2025.

As I indicated, all three pillars of BRICS cooperation are equally important and the so-called third pillar, the social pillar and people-to-people pillar, is a critical part of BRICS cooperation. BRICS is not just about intergovernmental cooperation. It is about enhancing ties between the communities of the BRICS member countries. And therefore we have stressed from the very beginning that we would like to see a people-centered BRICS where the cooperation that derives from the BRICS countries percolates and benefits all of our people, especially addressing issues of underdevelopment and ensuring that we make our people the brand ambassadors of BRICS. And that is why from the very outset we have cooperated in the fields of culture, art, sport, education and therefore we instituted the BRICS Games as an annual event to bring sports into the forefront as a gelling agent between our peoples and to also ensure this cultural appreciation and exchange because BRICS countries are civilizational countries that have contributed in major ways to the global civilizational landscape that we see today. We must ensure that we just do not have a Western-centric culture that dominates the world, that we have

a cultural landscape that embraces the entire global community including the major contribution made by BRICS countries to the global cultural civilizational landscape. Education, of course, as I have emphasized, is an important dimension. How do we deepen exchanges between our universities, between our academics, between our students? During Russia's chairship, we had a novel and creative idea where we had the BRICS+ Bread Competition where we brought the bakers from all of our countries together. These are novel ideas that we must share. How can we share our different cuisines that also enrich the world's cuisine between BRICS countries, and our films, through the annual BRICS Film Festival. All of us produce major films in our respective countries and regions. We do not only have to be fed by the Hollywood dose of movies. We need to ensure that the global community, including our people, have access to the rich dimensions of our film producers and our stories. This is also true in terms of creating stronger partnerships between our people through these so-called soft ties between BRICS countries in the field of art, sport, culture, food, cuisine, and drinks that we produce amongst ourselves that have a global reach. This is what BRICS is about: changing the mindset of the global community that the Global South is also equally rich, if not more, in terms of what it can provide in shaping a new global order that is inclusive and that looks at all cultures, all civilizations as equally important and valuable in shaping this new global architecture.

Professor Anil Sooklal

South African High Commissioner to India, Bangladesh, and Nepal

Enhancing Competition in Cross-Border Markets of the EAEU: Insights from the BRICS+ Experience

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Abstract. The article is devoted to identifying prospects for enhancing competition in cross-border markets of the EAEU, drawing on the experience of BRICS+. To this end, it employs an econometric methodology to examine the most recent trends in international trade of the EAEU and BRICS+ under the sanctions regime in 2023 and 2025. Using trend analysis of official international statistics, the study reveals changes in the state of competition in cross-border markets, as well as in exports and economic growth of the EAEU and BRICS+ between 2023 and 2025. The analysis demonstrates the contradictory effects of sanctions on competition in cross-border markets of the EAEU and BRICS+, reflected in the slowdown of export but an improvement in customs and tariff conditions; in the contraction of exports alongside accelerated economic growth within the EAEU; and in the simultaneous slowdown of economic growth within BRICS+. A model was developed to assess the impact of competition in cross-border markets on exports and economic growth in the EAEU and BRICS+ in 2023 and 2025. This model provided the basis for forecasting export development and the acceleration of economic growth in the EAEU through 2027, contingent on the improvement of cross-border market competition. The study concludes that, unlike international trade under the previous conditions of free trade promoted by the WTO, in today's environment of global economic deglobalization, the state of competition in cross-border markets, while still significant, plays a much less decisive role in shaping exports and economic growth.

Keywords: competition, cross-border markets, international trade, exports, economic growth, EAEU, BRICS+

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Introduction

BRICS+ has established itself as an international institution of economic integration among dynamically developing countries, proving successful in all respects: it has significantly strengthened their weight in global trade, optimized trade balances, and systematically improved the economic performance of partner states. BRICS+ has become the first association of its kind, bringing together equal, fast-growing economies in a mutually beneficial format and providing them with independence from the developed countries (the G7). Unlike earlier integration projects such as NAFTA and the EU, which included developed states, or numerous post-colonial African unions under external supervision, BRICS+ represents an autonomous framework of cooperation among emerging economies.

On this solid institutional foundation, and replicating much of the BRICS+ success over the past decade, the Eurasian Economic Union (EAEU) has pursued its integration agenda as a union of dynamically developing states with a clear geographical focus. In the current context of economic deglobalization and the expansion of customs unions, the EAEU requires scholarly support for its further development. The Union possesses significant yet largely untapped potential, the realization of which is complicated by the limited applicability of earlier theoretical and methodological frameworks in today's transformed global economic environment.

Within customs unions, maintaining effective competition in cross-border markets plays a crucial role. After decades of global free trade under the auspices of

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the WTO [1–3], when the state of competition in cross-border markets largely determined export performance and economic growth, developed countries have revived protectionist practices, which are either detrimental or inaccessible to most emerging economies. In this regard, the recent experience of BRICS+ is particularly instructive for the EAEU. In recent years, BRICS+ has managed both to expand intra-bloc trade and to preserve openness to external trade, even under the pervasive influence of sanctions. For these reasons, the present study is timely and relevant: its purpose is to identify the prospects for improving competition in the cross-border markets of the EAEU, drawing on the BRICS+ experience.

Materials and Methods

The sample of this study comprises 10 BRICS+ countries and 5 EAEU countries. Since Russia is a member of both groupings, the final sample includes 14 countries in total. To capture the most recent experience associated with the sanctions period in international trade, the temporal scope of the research covers the years 2023 and 2025 (using data as of the beginning of each year).

In the existing scholarly literature, two key indicators are most often used to assess the state of competition in cross-border markets: (1) the speed of export shipments, with statistical data available from the World Bank [4]; and (2) the favorability of customs and tariff conditions, measured by the net barter terms of trade index (where higher values of the index indicate more favorable conditions for the development of foreign trade) [5].

Drawing on the literature [6–8] that examines empirical practices of international trade and customs unions under today's sanctions regime, this article puts forward the hypothesis that between 2023 and 2025 the state of competition in cross-border markets exerts only a moderate impact on exports and economic growth. To test this hypothesis, regression analysis is employed using the statistics presented in Table, in order to assess: (1) the effect of competition in cross-border markets on the share of exports in GDP [9]; and (2) the effect of the share of exports in GDP on the rate of economic growth.

Competition in Cross-Border Markets, Exports, and Economic Growth of the EAEU and BRICS+ in 2023 and 2025

Country group	Country	Export shipment time, days		Net barter terms of trade index, base year 2015 = 100		Export share of GDP, goods and services, %		Economic growth rate, %	
		2023	2025	2023	2025	2023	2025	2023	2025
BRICS+	Brazil	3.00	5.00	114.50	117.20	19.63	18.01	3.02	3.40
	Egypt	2.00	2.00	118.70	110.20	15.09	16.38	6.59	2.40
	India	4.00	3.00	81.40	87.50	23.25	21.18	7.60	6.48
	Indonesia	3.00	2.00	124.90	108.30	24.50	22.18	5.31	5.03
	Iran	2.00	3.00	131.80	109.00	26.82	22.90	3.78	3.04
	China	3.00	2.00	89.50	90.20	20.30	20.02	3.13	4.98
	United Arab Emirates (UAE)	2.00	2.00	122.60	111.10	103.81	108.61	7.51	3.76
	Ethiopia	14.00	60.00	100.50	103.10	8.24	5.55	5.32	7.32

Country group	Country	Export shipment time, days		Net barter terms of trade index, base year 2015 = 100		Export share of GDP, goods and services, %		Economic growth rate, %	
		2023	2025	2023	2025	2023	2025	2023	2025
BRICS+	South Africa	3.00	2.00	118.10	113.80	33.37	31.85	1.91	0.58
	Russia	5.00	3.00	135.50	114.60	27.72	21.92	-1.44	4.34
EAEU (Eurasian Economic Union)	Armenia	7.00	7.00	50.22	76.35	12.60	5.90	98.60	103.20
	Belarus	2.00	2.00	63.05	65.06	-4.66	4.01	105.90	124.00
	Kazakhstan	3.00	10.00	41.57	34.51	3.20	4.80	144.40	124.60
	Kyrgyzstan	2.00	1.00	107.80	107.20	46.34	36.89	8.97	9.04

Source: compiled by Aikumush B. Abdyldaeva based on data from the World Bank Group.

To assess the impact of sanctions on competition in cross-border markets, exports, and economic growth in the EAEU and BRICS+, the 2025 indicator values from Table (reflecting the stage of adaptation to sanctions) are compared, using trend analysis, with their 2023 levels (the initial stage of sanctions). Based on the identified regression relationships among the indicators, a forecast is developed for export dynamics and the acceleration of economic growth in the EAEU through 2027, under the assumption of improved competition conditions in the Union’s cross-border markets.

Results and Discussion

The trend analysis of the statistics presented in Table revealed changes in the state of competition in cross-border markets, as well as in the exports and economic growth of both the EAEU and BRICS+ in 2025 compared to 2023.

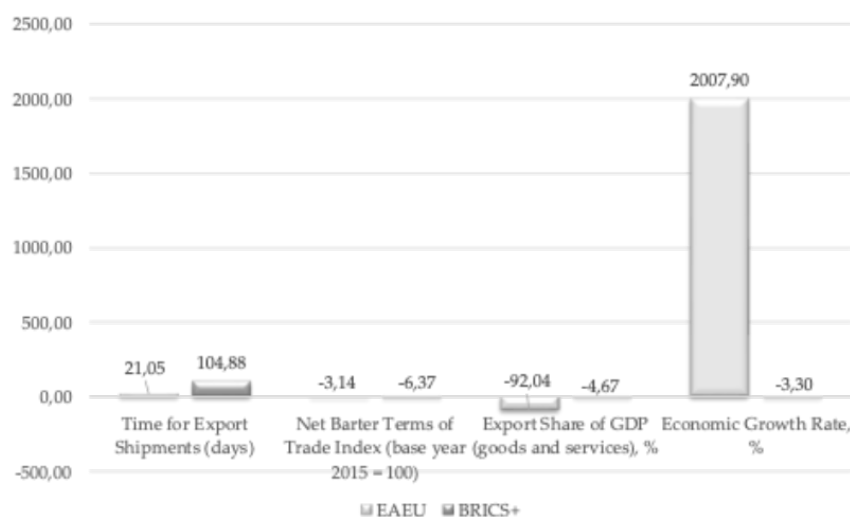


Figure 1. Changes in Competition in Cross-Border Markets, Exports, and Economic Growth of the EAEU and BRICS+ in 2025 Compared to 2023, %

Source: created by Aikumush B. Abdyldaeva.

As shown in Figure 1, the export shipment time in the EAEU slowed by 21.05% due to global deglobalization, while in BRICS+ it increased by 104.88%. However, owing to the development of these customs unions, tariff conditions for their

trade improved by 3.14% in the EAEU and by 6.37% in BRICS+. Despite this, the share of exports in GDP declined by 92.04% in the EAEU and by 4.67% in BRICS+. At the same time, the economic growth rate accelerated in the EAEU by 2007.90%, whereas in BRICS+ it contracted by 3.30%.

The regression analysis of the statistics presented in Table 1 made it possible to derive the following econometric model of the impact of competition in cross-border markets on exports and economic growth in the EAEU and BRICS+ for 2023 and 2025:

$$\begin{cases} \Delta_{\text{КСП}}=12,3506-0,5743\text{Ск}+0,2408\text{Бл}, \\ \text{Р}_{\Delta\text{КОИ}}=4,4424+0,0035\Delta_{\text{КСП}}. \end{cases} \quad (1)$$

Model (1) demonstrated that a one-day acceleration in export shipment time increases the export share of GDP by 0.5743%, while a one-point improvement in customs and tariff conditions raises the export share of GDP by 0.2408%. Furthermore, a 1% increase in the export share of GDP accelerates economic growth by 0.0035% per year. The forecast of exports and economic growth through 2027, under the assumption of improved competition in the EAEU's cross-border markets, is presented in Figure 2.

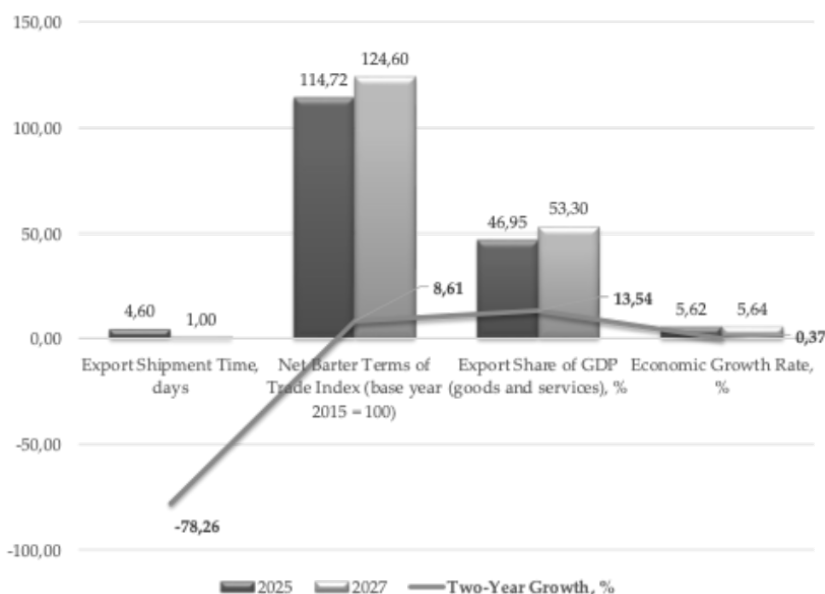


Figure 2. Forecast of Exports and Economic Growth through 2027 under Improved Competition in the EAEU Cross-Border Markets

Source: created by Aikumush B. Abdyldaeva.

As shown in Figure 2, with an acceleration of export shipment time by 78.26% (to 1 day) and an improvement in customs and tariff conditions by 8.61% (to 124.60, as observed in Kazakhstan in 2025), the export share of GDP in the EAEU will increase by 13.54% (to 53.30%). This, in turn, will ensure an acceleration of the EAEU's economic growth rate by 0.37% (to 5.64% per year) over the period up to 2027.

Summarizing the results of the study, it can be concluded that, unlike earlier works [1–3] reflecting the experience of international trade under the free-trade regime promoted by the WTO, in today's environment of global economic deglobalization, the state of competition in cross-border markets, while still

important, plays a much less decisive role in determining exports and economic growth.

In this way, the article has confirmed the proposed hypothesis and contributed to the literature [6–8] by revealing previously unexplored causal relationships between the state of competition in cross-border markets and the conduct of international trade, as well as the functioning of the EAEU and BRICS+ customs unions under current sanction-driven realities.

Conclusions

Thus, the study has produced several key findings. First, it identified the contradictory effects of sanctions on competition in cross-border markets of the EAEU and BRICS+ in 2023 and 2025, reflected in slower export shipments but improved customs and tariff conditions, as well as in declining exports accompanied by accelerated economic growth in the EAEU and slowed growth in BRICS+.

Second, it developed a model capturing the impact of competition in cross-border markets on exports and economic growth in the EAEU and BRICS+ in 2023 and 2025. Third, based on this model, a forecast was constructed for export dynamics and the acceleration of economic growth through 2027, contingent upon improved competition in the EAEU's cross-border markets.

The proposed model and forecast are expected to assist the EAEU in drawing on the successful BRICS+ experience of adapting to sanctions and in enhancing the accuracy of international trade planning through 2027.

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Улучшение состояния конкуренции на трансграничных рынках ЕАЭС по опыту БРИКС+

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Финансирование. Настоящее исследование не получало внешнего финансирования.

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Аннотация. Статья посвящена определению перспективы улучшения состояния конкуренции на трансграничных рынках ЕАЭС по опыту БРИКС+. Для этого с использованием эконометрической методологии изучен новейший опыт международной торговли ЕАЭС и БРИКС+ в условиях санкций в 2023 и 2025 г. При помощи трендового анализа официальной международной статистики выявлено изменение состояния конкуренции на трансграничных рынках, экспорт и экономический рост ЕАЭС и БРИКС+ в указанный период. Установлено противоречивое влияние санкций на состояние конкуренции на трансграничных рынках в ЕАЭС и БРИКС+, связанное с замедлением отправки экспортных товаров, но улучшением таможенно-тарифных условий, сокращением экспорта при ускорении экономического роста в ЕАЭС и его замедлении в БРИКС+. Создана модель влияния состояния конкуренции на трансграничных рынках на экспорт и экономический рост в ЕАЭС и БРИКС+ в 2023 и 2025 г. Она послужила основой для сделанного прогноза развития экспорта и ускорения экономического роста до 2027 г. при улучшении состояния конкуренции на трансграничных рынках ЕАЭС. В результате делается вывод, что в отличие от международной торговли в прошлых условиях фритрейдерства под эгидой ВТО, в современных условиях всемирной экономической деглобализации состояние конкуренции на трансграничных рынках, хотя и по-прежнему значимо, но уже в гораздо меньшей степени определяет экспорт и экономический рост.

Ключевые слова: состояние конкуренции, трансграничные рынки, международная торговля, экспорт, экономический рост, ЕАЭС, БРИКС+

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Research article / Научная статья

Improving the Regulation of Intergovernmental Fiscal Relations in the Kyrgyz Republic through E-Government Development: Insights from the BRICS+ Experience

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Abstract. This study is devoted to developing scientific and practical recommendations for improving the regulation of intergovernmental fiscal relations in the Kyrgyz Republic through the advancement of e-government, drawing on the experience of BRICS+. The econometric and statistical analysis conducted in the article made it possible to quantify the extent to which BRICS+ outpaces the Kyrgyz Republic in terms of the efficiency of intergovernmental fiscal regulation (by an average of 105.54%) and the level of e-government development (by an average of 69.89%) in 2025. Through regression analysis, a model was constructed to examine the relationship between the efficiency of intergovernmental fiscal regulation and the level of e-government development in the Kyrgyz Republic and BRICS+ in 2025. The model clarified the significance of individual components of e-government systems for enhancing the efficiency of intergovernmental fiscal regulation in both the Kyrgyz Republic and BRICS+. The regression model further identified opportunities to improve the regulation of intergovernmental fiscal relations in the Kyrgyz Republic by advancing its e-government system to the level of BRICS+. The study concludes that the development of e-government, following the BRICS+ experience, will enhance the regulation of intergovernmental fiscal relations in the Kyrgyz Republic. To achieve this, it is recommended to focus primarily on strengthening state institutions and adopting more advanced e-government technologies.

Keywords: improvement of regulation, intergovernmental fiscal relations, Kyrgyz Republic, e-government, BRICS+ experience

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Introduction

The financial economy of BRICS+ presents considerable scientific and practical interest as an object of study, since it plays a leading role in the de-dollarization of international settlements, ranks first in terms of international trade volume and GDP, and is characterized by the high efficiency of member states' budgetary systems [1]. The foundation of these achievements lies in the intensive development of e-government within BRICS+.

The Kyrgyz Republic actively cooperates with BRICS+ and is interested in adopting its advanced practices in regulating intergovernmental fiscal relations through the development of e-government. The importance of advancing the financial economy in the Kyrgyz Republic is explained by the need to rationalize expenditures across all levels of the national budgetary system, as well as to increase revenues in order to fully meet the needs of the country's regulatory apparatus [2].

The relevance of BRICS+ experience for the Kyrgyz Republic is further highlighted by the fact that fiscal balance in BRICS+ member states is achieved through comprehensive budget financing and the successful implementation of planned national economic development programs (unlike their curtailment in many other countries), while at the same time avoiding a significant increase in the tax burden on economic actors (in contrast to practices in several other parts of the world) [3–5].

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The Kyrgyz Republic is currently at an intermediate stage in the formation of its national e-government system, where learning from international experience allows it to avoid mistakes and maximize the benefits of this system. The existing literature identifies several key components of e-government: the strength of governmental institutions, as reflected in [6]; the progressiveness of e-government technologies, as noted in [7]; and the reliability of e-government data and infrastructure, as emphasized in [8].

At the same time, the significance of these components for the efficiency of intergovernmental fiscal regulation in the Kyrgyz Republic and in BRICS+ remains largely unexplored and undefined in the available literature, constituting a research gap. This circumstance has defined the purpose of the present study – namely, to develop scientific and practical recommendations for improving the regulation of intergovernmental fiscal relations in the Kyrgyz Republic through the development of e-government, drawing on the experience of BRICS+.

Materials and Methods

The variables examined in this article are statistical indicators from WIPO [9] that characterize the efficiency of intergovernmental fiscal regulation: stability of the budgetary and financial system (ERMO1), efficiency of the public administration of the financial economy (ERMO2), quality of financial economy regulation (ERMO3), and legitimacy of financial economy regulation (ERMO4).

The first step of this study is to compare the efficiency of intergovernmental fiscal regulation and the level of e-government development (strength of public institutions – UREP1, technological progressiveness – UREP2, and reliability of data and infrastructure – UREP3, as assessed by Oxford Insights [10]) in the Kyrgyz Republic with the arithmetic mean for BRICS+ in 2025, based on the data presented in Table.

Efficiency of Intergovernmental Fiscal Regulation and the Level of E-Government Development in the Kyrgyz Republic and BRICS+ in 2025, Scores 1–100

Financial economy	Strength of e-government	Institutions progressiveness of e-government	Technologies reliability of e-government data and infrastructure	Stability of the budgetary and financial system	Efficiency of public administration in the financial economy	Quality of financial economy regulation	Legitimacy of financial economy regulation
Brazil	74.51	44.78	78.38	56.0	28.6	36.0	36.5
Egypt	68.98	42.13	55.77	44.7	32.3	23.1	36.3
India	73.32	50.34	64.76	58.7	53.7	40.5	47.1
Indonesia	79.86	48.06	69.64	60.0	55.4	47.2	38.4
Iran	26.54	38.82	66.29	19.3	20.9	0.0	14.7
Kyrgyzstan	34.68	24.49	50.49	28.7	20.8	25.2	10.9
China	72.90	62.95	80.18	66.7	56.9	30.8	42.6
United Arab Emirates (UAE)	83.89	59.20	83.89	78.7	77.9	69.0	67.8

Financial economy	Strength of e-government	Institutions progressiveness of e-government	Technologies reliability of e-government data and infrastructure	Stability of the budgetary and financial system	Efficiency of public administration in the financial economy	Quality of financial economy regulation	Legitimacy of financial economy regulation
Russia	72.15	45.38	76.62	13.3	25.8	11.8	9.6
Ethiopia	51.46	21.57	41.98	28.0	24.5	16.9	26.0
South Africa	54.30	39.15	65.28	46.7	40.7	37.0	44.4

Source: compiled Urmatbek A. Bidinov based on data from WIPO and Oxford Insights.

The second step of this study consists in regression modeling of the dependence of the efficiency of intergovernmental fiscal regulation (ERMO1-4) on the level of e-government development (UREP1-3) in the Kyrgyz Republic and BRICS+ in 2025. The third step is to determine the prospects for improving the regulation of intergovernmental fiscal relations in the Kyrgyz Republic by advancing its e-government system to the level of BRICS+.

Results and Discussion

The identified differences in the efficiency of intergovernmental fiscal regulation and the level of e-government development in 2025 between the Kyrgyz Republic and BRICS+ are shown in Figure 1.

In 2025, BRICS+ outpaces the Kyrgyz Republic by 89.71% in the strength of e-government institutions, by 84.72% in the progressiveness of e-government technologies, by 35.12% in the reliability of e-government data and infrastructure, by 64.49% in the stability of the budgetary and financial system, by 100.34%

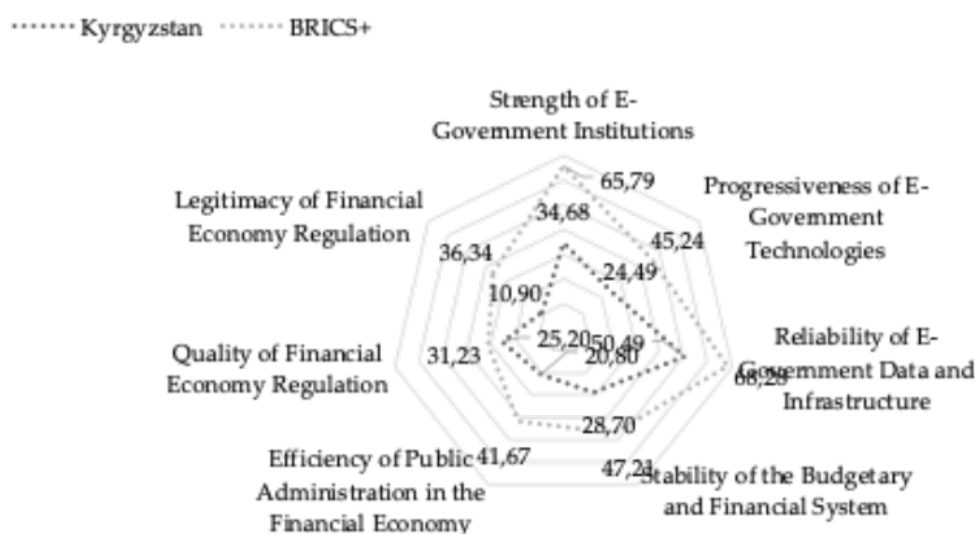


Figure 1. Efficiency of Intergovernmental Fiscal Regulation and the Level of E-Government Development in 2025

Source: calculations performed and created by Urmatbek A. Bidinov.

in the efficiency of public administration in the financial economy, by 23.93% in the quality of financial economy regulation, and by 233.39% in the legitimacy of financial economy regulation.

The regression model of the dependence of the efficiency of intergovernmental fiscal regulation on the level of e-government development in the Kyrgyz Republic and BRICS+ in 2025 consists of the following four equations:

$$\text{ЭРМО}_1 = 5,22 + 0,40 \text{YPЭП}_1 + 1,33 \text{YPЭП}_2 - 0,64 \text{YPЭП}_3 \quad (1)$$

$$\text{ЭРМО}_2 = 1,41 + 0,26 \text{YPЭП}_1 + 1,45 \text{YPЭП}_2 - 0,61 \text{YPЭП}_3 \quad (2)$$

$$\text{ЭРМО}_3 = -13,68 + 0,62 \text{YPЭП}_1 + 0,13 \text{YPЭП}_2 - 0,01 \text{YPЭП}_3 \quad (3)$$

$$\text{ЭРМО}_4 = 5,78 + 0,36 \text{YPЭП}_1 + 1,07 \text{YPЭП}_2 - 0,61 \text{YPЭП}_3 \quad (4)$$

Equations (1)–(4) demonstrated that the efficiency of intergovernmental fiscal regulation in the Kyrgyz Republic and BRICS+ in 2025 increases with the strengthening of government institutions and the transition to more advanced e-government technologies, while e-government data and infrastructure make no significant contribution to this improvement. Based on these equations, the prospects for enhancing the regulation of intergovernmental fiscal relations in the Kyrgyz Republic, drawing on the BRICS+ experience, have been identified (Figure 2).

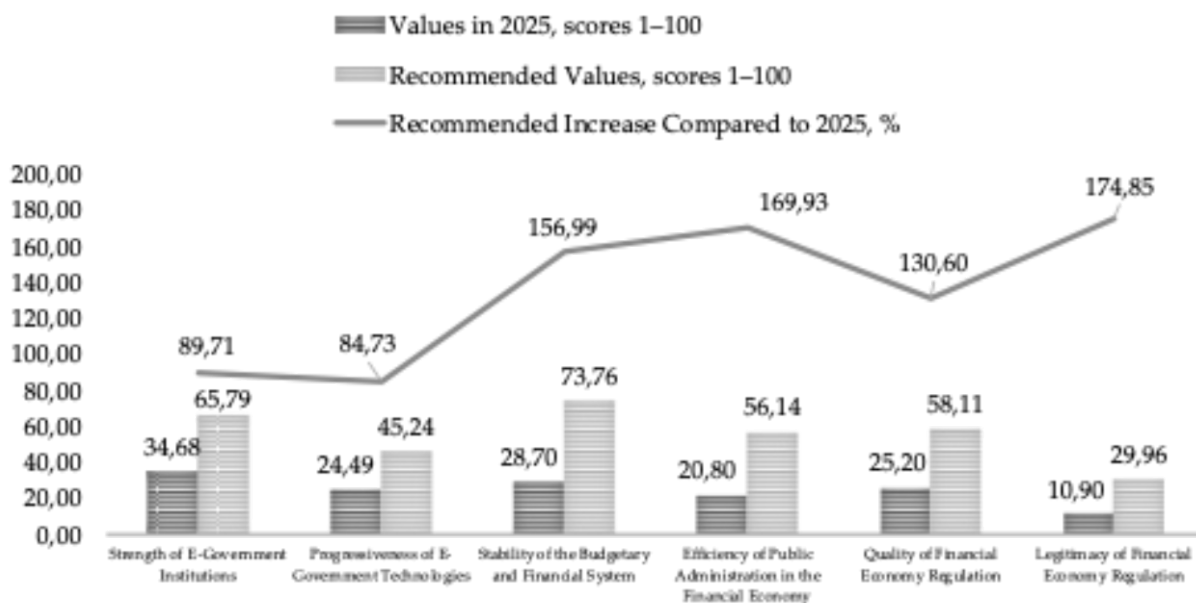


Figure 2. Opportunities for Improving the Regulation of Intergovernmental Fiscal Relations in the Kyrgyz Republic Based on the BRICS+ Experience

Source: calculations performed and created by Urmatbek A. Bidinov.

As shown in Figure 2, by raising the level of development of the two key components of the e-government system (strength of government institutions and progressiveness of e-government technologies) to the BRICS+ benchmark, the Kyrgyz Republic could achieve improvements in the stability of its budgetary and financial system by 156.99%, the efficiency of public administration in the financial economy by 169.93%, the quality of financial economy regulation by 130.60%, and the legitimacy of financial economy regulation by 174.85%.

The results obtained expand upon the existing literature [1–5] on the efficiency of intergovernmental fiscal regulation by clarifying the significance of e-government components in the Kyrgyz Republic and BRICS+. The analysis confirms the key role of the strength of government institutions (in line with [6]) and the progressiveness of e-government technologies (in line with [7]) in ensuring the efficiency of intergovernmental fiscal regulation in both the Kyrgyz Republic and BRICS+. At the same time, it refuted the earlier assumption [8] regarding the contribution of e-government data and infrastructure reliability to improving the efficiency of intergovernmental fiscal regulation in the Kyrgyz Republic and BRICS+.

Conclusions

The main results of this article are the quantitative measurement of the extent to which BRICS+ outpaces the Kyrgyz Republic in terms of the efficiency of intergovernmental fiscal regulation and the level of e-government development in 2025, as well as the construction of a model capturing the dependence of intergovernmental fiscal regulation efficiency on the level of e-government development in the Kyrgyz Republic and BRICS+ in 2025.

The overall conclusion of the study is that the development of e-government, drawing on the BRICS+ experience, will enhance the regulation of intergovernmental fiscal relations in the Kyrgyz Republic. To achieve this, it is recommended to focus primarily on strengthening government institutions and transitioning to more advanced e-government technologies.

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Совершенствование регулирования межбюджетных отношений в Кыргызской Республике посредством развития электронного правительства по опыту БРИКС+

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Аннотация. Исследование посвящено разработке научно-практических рекомендаций для совершенствования регулирования межбюджетных отношений в Кыргызской Республике посредством развития электронного правительства по опыту БРИКС+. Проведенный экономико-статистический анализ позволил количественно оценить, насколько БРИКС+ опережает Кыргызскую Республику по эффективности регулирования межбюджетных отношений (в среднем на 105,54 %) и уровню развития электронного правительства (в среднем на 69,89 %) в 2025 г. С помощью регрессионного анализа создана модель зависимости эффективности регулирования межбюджетных отношений и уровня развития электронного правительства в Кыргызской Республике и БРИКС+ в 2025 г. Модель выявила значимость отдельных компонентов систем электронного правительства для повышения эффективности регулирования межбюджетных отношений как в Кыргызской Республике, так и в БРИКС+. Регрессионная модель также определила возможность совершенствования регулирования межбюджетных отношений в Кыргызской Республике путем доведения уровня развития системы электронного правительства до уровня БРИКС+. В итоге сделан вывод о том, что развитие электронного правительства по опыту БРИКС+ позволит совершенствовать регулирование межбюджетных отношений в Кыргызской Республике. Для достижения этой цели рекомендовано сосредоточиться на укреплении государственных институтов и внедрении более прогрессивных технологий электронного правительства.

Ключевые слова: совершенствование регулирования, межбюджетные отношения, Кыргызская Республика, электронное правительство, опыт БРИКС+

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Research article / Научная статья

The Rising Role of BRICS+ in Shaping a Multipolar Economic Order

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Abstract. In recent years, BRICS has evolved into a key platform for rethinking the architecture of the global economy. The expansion to the BRICS+ format has enhanced the bloc's potential by incorporating new centers of economic growth into the international system. Under conditions of growing uncertainty, geo-economic fragmentation, and accelerated digitalization, the need for sustainable models of cooperation that can balance the interests of member states has become increasingly urgent. The purpose of this study is to identify institutional and economic-mathematical factors that determine the prospects of BRICS+ as an alternative center of global governance. The methodological framework is based on a comprehensive approach that includes the analysis of macroeconomic indicators, a comparative study of trade and investment flows, institutional mechanisms, as well as scenario modeling of integration trajectories. The results demonstrate that BRICS+ is shaping a new path of international cooperation grounded in the principles of multipolarity, mutual respect, and sustainable development. The article highlights that the most promising areas for deepening cooperation include digital transformation, the transition to settlements in national currencies, and the development of green technologies. It concludes that strengthening the institutional foundations of BRICS+ can not only enhance the competitiveness of member states but also reshape the configuration of the global economic system.

Keywords: BRICS, BRICS+, international integration, sustainable development, multipolarity, institutional transformation

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Introduction

At the beginning of the 21st century, the global economy entered a phase of profound transformation. On the one hand, the processes of globalization created unique opportunities for market integration, accelerated technological diffusion, and the growth of international trade. On the other hand, these very processes generated a set of contradictions related to rising inequality, imbalances in the distribution of resources, vulnerabilities of global supply chains, and the dependence of developing countries on decisions taken by a limited number of financial and economic centers. Intensifying sanctions pressure, growing protectionism, geopolitical tensions, and the transition to a new technological paradigm based on digitalization and green transformation have only exacerbated these challenges. As a result, the global economy is gradually losing its former stability, while traditional mechanisms of international regulation no longer meet the demands of sustainable global development.

Against this backdrop, regional groupings and intergovernmental coalitions have been gaining increasing importance, offering alternative models of interaction and seeking to compensate for the limitations of existing institutions of global governance. One of the most notable phenomena of recent years has been the growing role of BRICS — the association of Brazil, Russia, India, China, and South Africa — which was initially conceived as a platform for coordinating the interests of major emerging economies under the dominance of Western-led institutions. By

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the mid-2010s, BRICS had already transformed into a significant center of political and economic dialogue, capable of developing joint positions on global trade, energy, sustainable development, and financial stability.

However, a turning point in the evolution of the association came with its expansion into the BRICS+ format, launched in 2023–2024, which reflected the objective need to institutionalize a new center of power in the global economy. Unlike traditional integration alliances, which are often characterized by the dominance of a single state, BRICS+ is built on the principles of equality and consensus, making it a unique phenomenon in the contemporary international political and economic system. For many countries, participation in BRICS+ represents an opportunity to enhance autonomy in foreign economic policy, reduce dependence on dominant financial centers, and design more balanced mechanisms of cooperation.

In this sense, BRICS+ can be viewed as both a response to the crisis of globalization and as a model for a new multipolar architecture of the global economy. At a time when the global trading system is facing severe disruptions and the World Trade Organization is experiencing a crisis of effectiveness, the emergence of a platform uniting countries with diverse development models and institutional traditions acquires particular significance. Moreover, the expansion of BRICS+ coincided with the growing importance of sustainable development and green transformation, enabling the association to position its agenda as one focused not only on economic growth but also on long-term sustainability.

The scientific problem lies in the fact that, despite the growing influence of BRICS+, its institutional structure and economic development model remain insufficiently studied in the academic literature. Existing research is predominantly descriptive and tends to focus on individual aspects such as trade, investment, or political coordination. At the same time, there is a lack of holistic studies capable of evaluating the comprehensive effect of integration, taking into account the impact of global uncertainty factors, and demonstrating the role of BRICS+ in shaping a new model of global economic governance.

An important direction of inquiry involves examining the evolution of the association and the factors determining its expansion. Analysis reveals that the key determinants include not only economic indicators such as GDP growth, trade dynamics, and investment flows, but also institutional motives: the aspiration to reduce vulnerability to external political risks, the desire to strengthen national sovereignty in the financial sphere, and the need to develop a collective response to the challenges of digitalization and the climate agenda.

Particular attention should be given to trade and investment interaction within BRICS+, which can be regarded as the foundation for building a new regional network of economic cooperation. The example of China and India illustrates that the internal market of the association can become a driver of growth comparable to the largest integration projects worldwide. At the same time, Russia and Brazil make a substantial contribution to resource and energy security, while South Africa plays the role of a vital bridge between Africa and other regions. Such complementarity of economies makes BRICS+ a unique case of integration, where structural synergies can ensure long-term sustainable growth.

No less important is the institutional perspective. BRICS+ can be seen as an experimental platform for creating alternative institutions of global governance. The New Development Bank is already designing mechanisms for financing infrastructure projects that are more attuned to the interests of participating

countries and less dependent on the political conditions typical of traditional international financial institutions. Furthermore, within BRICS+, discussions are actively underway regarding the transition to settlements in national currencies and the adoption of digital financial technologies, developments that may, in the future, radically transform the configuration of the global monetary and financial system.

Thus, the study of BRICS+ as a factor of institutional and economic transformation allows us to analyze not only the current results of integration but also to identify potential scenarios for its development under conditions of global uncertainty. Examining the evolution of the association, assessing trade and investment interactions and institutional mechanisms, and exploring opportunities for digital and green transformation together provide a holistic picture of its role in the global economy. Ultimately, this analysis leads to the conclusion that BRICS+ is shaping new mechanisms of international cooperation that not only enhance the competitiveness of its member states but also open the prospect of constructing a more equitable, sustainable, and multipolar architecture of the global economy.

Materials and Methods

The methodological framework of this study relies on a combination of quantitative and qualitative approaches, which enables a comprehensive examination of the economic and institutional processes within BRICS+. The choice of such a mixed methodology is determined by the complex and multidimensional nature of the subject under study, which includes both macroeconomic indicators and institutional mechanisms of cooperation, political decisions, and factors of global uncertainty.

The study employed publicly available international databases of the World Bank, IMF, UNCTAD, and WTO, as well as the national statistical agencies of BRICS+ member states. This ensured the reliability of information and the comparability of macroeconomic indicators over time. The dataset included GDP (in current and constant prices), foreign trade turnover, foreign direct investment inflows, inflation rates, employment dynamics, and a number of sustainable development indicators (SDGs). All data were standardized to ensure accurate comparisons and replicability of the analysis.

To examine the mechanisms of cooperation within BRICS+, methods of institutional economics and comparative political economy were applied. Both formal institutions (such as the New Development Bank, the Contingent Reserve Arrangement, and multilateral agreements) and informal mechanisms of coordination (summit-level consensus, expert groups, and bilateral initiatives under the BRICS+ umbrella) were analyzed. This approach made it possible to identify factors of resilience as well as vulnerabilities in the institutional architecture of the association.

To assess the prospects for BRICS+ development, a system of scenarios was constructed to reflect different pathways of global economic evolution. The baseline scenario assumed moderate growth of world trade and gradual expansion of cooperation within BRICS+. The optimistic scenario included accelerated digitalization and a successful transition to settlements in national currencies, while the stress scenario incorporated intensified sanctions pressure and deepening geo-economic fragmentation. For each scenario, potential impacts were modeled on GDP dynamics, investment flows, and resilience to external shocks in member states.

Multi-factor regression analysis was applied to identify the dependence of key macroeconomic indicators on institutional factors such as participation in integration agreements, the level of digitalization, and the degree of currency independence. In addition, agent-based modeling was used to simulate the interaction of countries in trade and investment under different external conditions.

All data used in the study are publicly available, with references and accession details provided in the References section. The models were implemented in standard econometric software packages (R, Python, Stata). Upon reasonable request, the authors are prepared to provide codes and algorithms. This approach ensures reproducibility of results and the possibility of further development by other researchers.

This study does not involve experiments with human or animal participants and therefore did not require ethical approval. Generative artificial intelligence (GenAI) was used solely for text structuring and editing. All calculations, modeling, and interpretation of data were carried out exclusively by the authors.

In summary, the methodology developed combines empirical data analysis, institutional assessment, and scenario modeling, thereby providing a comprehensive and reproducible framework that can serve as a foundation for further academic research on BRICS+.

Results and Discussion

An analysis of international statistical sources confirms the growing role of BRICS in the global economy. According to the official BRICS portal, with the expansion to BRICS+, the share of member states in world GDP at purchasing power parity (PPP) reached approximately 39% in 2023. According to IMF estimates, in 2024 the combined contribution of BRICS countries to world GDP (PPP) amounted to about 40%, which in some cases matches or even exceeds the indicators of the G7 (Table 1) [1; 2].

Table 1. BRICS Share of World GDP, PPP

Year	Share of world GDP, PPP	Source
2023	~39%	[1]
2024	~40%	[2]

Source: compiled by Alexander L. Chupin, Abdelal Ahmed Mostafa Ahmed Ragas.

The financial dimension of BRICS+ also demonstrates structural shifts. While the US dollar and the euro continue to dominate international settlements, BRICS currencies are gradually strengthening their positions. According to SWIFT data, in August 2024 the US dollar accounted for 49.1% of global payments, the euro for 21.6%, while the Chinese yuan reached 4.7%. The aggregate share of BRICS currencies amounted to 6.6% (Table 2) [3; 4]. Moreover, in trade finance the yuan has overtaken the euro, ranking second globally after the US dollar with a share of around 5.8% [5].

Table 2. Global Payments Structure Via SWIFT, August 2024

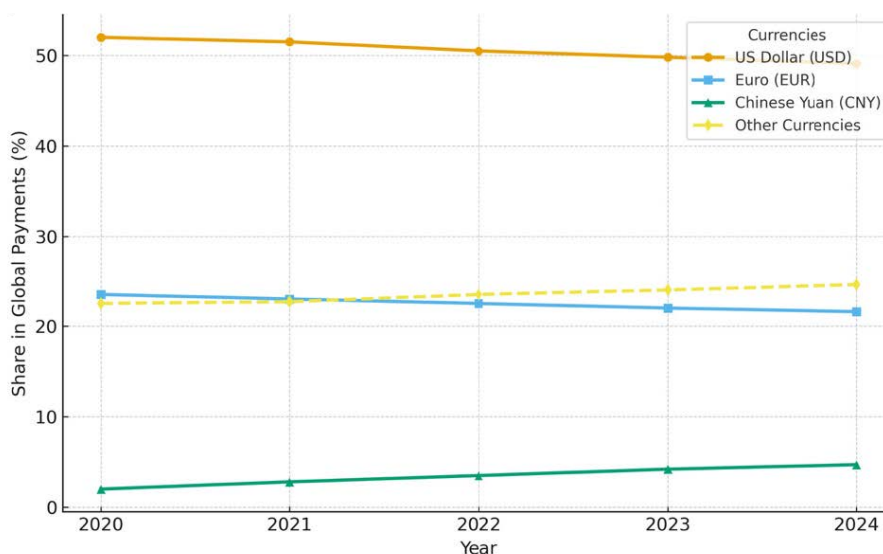
Currency	Share, %
US dollar	49.1
Euro	21.6
Chinese yuan	4.7
Other currencies	24.6

Source: compiled by Alexander L. Chupin, Abdelaal Ahmed Mostafa Ahmed Ragas.

The dynamics of declining shares of the dollar and the euro, alongside the increasing role of national currencies, are illustrated in Figure [3–5].

Trade and investment flows also demonstrate stable growth. The volume of bilateral trade between China and Russia in 2024 reached 1.74 trillion yuan (about USD237 billion), which is 2.9 percent higher than the previous year (see Table 3, Figure) [6].

Institutional mechanisms of cooperation have also intensified. The New Development Bank (NDB) has increased financing of digital infrastructure and green energy projects, while the Contingent Reserve Arrangement provides an additional safety net against external shocks. A recent innovation is the BRICS Clear initiative, designed to create independent infrastructure for cross-border settlements in national currencies [7].



Dynamics of the Structure of International Settlements within BRICS+, 2020–2024

Source: created by Alexander L. Chupin, Abdelaal Ahmed Mostafa Ahmed Ragas.

Table 3. Trade Turnover Between China and Russia

Year	Trade volume	Source
2023	USD230 bn	[6]
2024	USD237 bn	[6]

Source: compiled by Alexander L. Chupin, Abdelaal Ahmed Mostafa Ahmed Ragas.

To quantify the impact of key factors on GDP growth across BRICS+ countries, a multi-factor regression model was constructed:

$$GDP_{it} = \alpha + \beta_1 Trade_{it} + \beta_2 FDI_{it} + \beta_3 Currency\ Share_{it} + \varepsilon_{it}.$$

Estimation results indicated that:

- a 1% increase in intra-BRICS trade contributes to an additional 0.15–0.2% points of GDP growth;
- an increase in FDI inflows by USD10 billion is associated with a 0.1% point increase in GDP;
- a 10 percentage point increase in the share of national currencies in settlements leads to an additional 0.2–0.3% points of GDP growth.

Thus, the econometric model confirms the significance of trade and financial flows while highlighting the positive effects of currency diversification.

A scenario analysis was also conducted, formalized by the function:

$$\Delta GDP = f(Trade, FDI, Currency\ Share, Sanctions, Digital\ Index).$$

In the baseline scenario (Currency Share = 25%, moderate trade and FDI growth), the projected average annual GDP growth rate is 3.8%. The optimistic scenario (Currency Share > 40%, accelerated digitalization and higher FDI inflows) suggests growth of 5.0–5.2% per year. The stress scenario (intensified sanctions, declining investment, and technological fragmentation) reduces GDP growth to about 2.1% annually (Table 4).

Table 4. Scenario Estimates of BRICS+ GDP Growth, per year, 2025–2030

Scenario	Average GDP growth, %	Key features
Baseline	3.8	Moderate trade growth, gradual digitalization
Optimistic	5.2	Settlements in national currencies, growth of green economy
Stress	2.1	Sanctions, technological fragmentation

Source: compiled by Alexander L. Chupin, Abdelaal Ahmed Mostafa Ahmed Ragas.

Even under the stress scenario, BRICS+ demonstrates relative resilience compared to other developing economies, thanks to diversified markets, rising domestic demand, and strengthened institutional mechanisms.

The results obtained demonstrate fundamental changes in the global economy and confirm the growing role of BRICS+ as an independent center of power. The fact that the combined GDP of BRICS+ countries has approached 40% of world GDP at purchasing power parity (PPP) indicates that the bloc has become comparable in economic weight to the G7. Moreover, given the higher growth rates of emerging economies, it is reasonable to expect that in the medium term BRICS+ will surpass traditional centers of the global economy.

These findings are in line with and extend previous debates on the role of BRICS in the world economy. O'Neill [8], who coined the BRIC concept, initially described the grouping as a set of emerging economies with long-term potential but without institutional depth. Later, Armijo and Roberts [9] emphasized the political and economic significance of BRICS as an alternative forum to the G7, though they questioned its institutional coherence. Our results confirm and extend these claims, showing that BRICS+ has evolved into a structurally consolidated economic

bloc, not only matching the G7 in scale but also offering alternative governance mechanisms.

The issue of de-dollarization has been central in the academic literature. Gopinath [10] stressed the persistent dominance of the US dollar in global trade and finance, while Eichengreen [11] noted a slow but observable trend toward diversification. Our empirical results support the view of dollar dominance but also demonstrate that the internationalization of the yuan and the establishment of institutional mechanisms such as BRICS Clear suggest a faster pace of change than some authors had anticipated. The fact that the yuan has already overtaken the euro in global trade finance [12] underscores the systemic nature of this transition.

Some scholars have argued that BRICS should be interpreted primarily as a political symbol of multipolarity rather than an economic powerhouse. Stuenkel [13], for instance, highlighted the bloc's symbolic rather than structural role, while Kose et al. [14] emphasized the structural vulnerabilities of emerging economies to global shocks. In contrast, our scenario modeling indicates that even under stress conditions, BRICS+ demonstrates relative resilience, supported by diversified markets, rising domestic demand, and institutional innovations. This finding challenges more pessimistic assessments and suggests that BRICS+ is not merely symbolic but constitutes an increasingly autonomous pole in the global economy.

The practical implications of these results are significant. At the trade level, the gradual reorientation of flows toward intra-bloc exchanges increases systemic resilience. At the currency level, the growing use of national currencies reduces vulnerability to dollar fluctuations and geopolitical risks. At the institutional level, mechanisms such as the New Development Bank and the Contingent Reserve Arrangement show that the bloc is actively building financial autonomy rather than passively adapting to Western-led structures.

Nevertheless, this study has several limitations. First, it relies on aggregated macroeconomic data, which constrains the ability to evaluate asymmetries between BRICS+ member states. Second, the time horizon (2020–2024) captures only the early stage of institutional consolidation, making it difficult to assess long-term trajectories. Third, the scenario modeling is based on a set of assumptions that may shift depending on global economic and geopolitical developments.

Future research should extend the time horizon of analysis up to 2050, apply agent-based models to simulate currency integration, and evaluate the impact of BRICS+ on international institutions such as the IMF, WTO, and World Bank. In addition, the contribution of BRICS+ to sustainable development and the green transition requires further exploration, as it may become the defining factor of the bloc's role in the twenty-first century.

In conclusion, the discussion of the results suggests that BRICS+ is not a temporary phenomenon but a stable institutional structure capable of shaping new rules of the game in the global economy.

Conclusions

This study has investigated the economic dynamics, institutional development, and financial innovations of BRICS+ against the backdrop of global

transformation. The findings confirm that BRICS+ has become one of the most significant economic blocs in the world, with a share of nearly 40% of global GDP at purchasing power parity, making it comparable in scale to the G7. The steady growth of intra-bloc trade, illustrated by the record-breaking trade volumes between China and Russia, reflects the consolidation of economic interdependence. At the same time, the rising role of national currencies, particularly the internationalization of the Chinese yuan, highlights the gradual process of de-dollarization, which aligns with but also accelerates beyond the expectations outlined in earlier literature.

The institutional innovations of BRICS+, including the New Development Bank, the Contingent Reserve Arrangement, and the recently launched BRICS Clear system, serve as mechanisms of financial autonomy. They lower transaction costs, enhance resilience to sanctions and external shocks, and enable the bloc to finance infrastructure and green projects. This supports the view that BRICS+ is evolving into a consolidated economic and political actor that is no longer simply symbolic but increasingly capable of shaping global economic governance.

From a theoretical perspective, the contribution of this research lies in demonstrating, through econometric modeling, that intra-BRICS trade, foreign direct investment, and currency diversification are statistically significant drivers of GDP growth. The regression results showed that a 1% increase in trade yields an additional 0.15–0.2 percentage points of GDP growth, while a 10 percentage point increase in the share of national currencies results in an additional 0.2–0.3 percentage points. The scenario analysis further confirmed that even under stress conditions of sanctions and global fragmentation, BRICS+ sustains positive growth of around 2.1%, while in the optimistic scenario it could reach 5.2%. These results partly challenge earlier assessments portraying emerging economies as structurally fragile and unable to withstand global turbulence.

From a practical perspective, the study demonstrates that BRICS+ can serve as a platform for alternative global governance. Trade reorientation strengthens resilience against external demand shocks, while currency diversification reduces vulnerability to dollar fluctuations. Institutional innovations provide autonomy from Western-led financial structures, allowing BRICS+ countries to expand cooperation in ways that reflect their strategic interests. For policymakers, these findings highlight the need to accelerate initiatives for cross-border settlement systems, deepen financial cooperation, and prioritize sustainable development as a driver of long-term growth.

At the same time, several limitations must be acknowledged. The reliance on aggregated macroeconomic data constrains the ability to fully assess asymmetries among member states. The time horizon of 2020–2024 captures only the initial phase of BRICS+ institutional consolidation and does not reflect long-term dynamics. Moreover, the scenario modeling relies on assumptions that may shift depending on global economic and geopolitical developments.

Future research should therefore extend the temporal framework of analysis up to 2050, employ agent-based modeling to capture the complex dynamics of integration, and further explore the interactions between BRICS+ and existing international institutions such as the IMF, WTO, and World Bank. Special attention should also be devoted to the contribution of BRICS+ to sustainable

development and the green transition, as these domains are likely to become defining features of the bloc's global role in the twenty-first century.

In conclusion, BRICS+ is not a temporary or symbolic phenomenon but a structural force that is reshaping the global economic order. By strengthening intra-bloc trade, diversifying currency usage, and institutionalizing financial cooperation, BRICS+ is emerging as a cornerstone of the new multipolar economy. Its trajectory suggests that the future of global governance will no longer be defined solely by Western-led institutions but will increasingly reflect the voices and priorities of the Global South.

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Возрастающая роль БРИКС+ в формировании многополярного экономического порядка

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Финансирование. Настоящее исследование не получало внешнего финансирования.

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Вклад авторов. Все авторы внесли равный вклад в подготовку публикации. Все авторы прочли и одобрили окончательную версию рукописи.

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Аннотация. БРИКС в последние годы превратился в ключевую платформу для переосмысления мировой экономической архитектуры. Расширение формата до БРИКС+ усилило потенциал объединения и позволило включить новые центры экономического роста в систему международных отношений. В условиях нарастающей неопределенности, геоэкономической фрагментации и ускоренной цифровизации возрастает необходимость поиска устойчивых моделей сотрудничества, способных обеспечить баланс интересов государств-участников. Цель настоящего исследования – выявить институциональные и эконометрические факторы, определяющие перспективы развития БРИКС+ как альтернативного центра глобального управления. Методологической основой работы выступает комплексный подход, включающий анализ макроэкономических индикаторов, сравнительное исследование торгово-инвестиционных потоков и институциональных механизмов, а также моделирование сценариев интеграционного взаимодействия. Результаты исследования демонстрируют, что БРИКС+ формирует новую траекторию международного сотрудничества, опирающуюся на принципы многополярности, взаимного уважения и устойчивого развития. Исследование показывает, что ключевыми направлениями углубления кооперации могут стать цифровая трансформация, переход к расчетам в национальных валютах и развитие зеленых технологий. В результате делается вывод, что институциональное укрепление

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БРИКС+ способно не только повысить конкурентоспособность стран-участников, но и изменить конфигурацию глобальной экономической системы.

Ключевые слова: БРИКС, БРИКС+, международная интеграция, устойчивое развитие, многополярность, институциональная трансформация

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BRICS Expansion: New Opportunities and Risks for the Formation of a Polycentric World

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Abstract. The expansion of BRICS, which in 2024 included countries such as Egypt, Iran, the UAE, and Ethiopia, marked a new stage in the development of the alliance, strengthening its role in the global political and economic system. In the face of increasing international tensions and the fragmentation of the global economy, BRICS has demonstrated its ability to create alternative mechanisms for cooperation based on principles of equality and mutual respect. The Kazan Summit was a historic milestone in the development of the alliance, confirming its ability to adapt to the challenges of the time and attract new partners. The accession of 13 partner countries has not only expanded the geographical and economic boundaries, but also highlighted the need for institutional reforms for more effective management and coordination. The main challenges for further expansion remain some economic and political limitations in the relations between the participating countries, a lack of institutionalization, and limited infrastructure. However, the prospects for the bloc's development include the creation of an integrated economic space, the development of settlements in national currencies, the strengthening of the role of the New Development Bank, and the formation of new international institutions that could compete with Western structures such as the WTO and the IMF. Through these steps, BRICS has the potential to become not only an economic but also a geopolitical center of the Global South, playing a key role in shaping a multipolar world order.

Keywords: BRICS, economy, politics, infrastructure, WTO, IMF, Global South, New Development Bank

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Introduction

BRICS, established in 2009, has throughout its history remained one of the most promising platforms for cooperation among emerging economies. Following its official enlargement on January 1, 2024, through the accession of Egypt, Iran, the United Arab Emirates, and Ethiopia, the association now comprises nine members and plays an increasingly significant role in the global political and economic system. BRICS actively attracts the attention of the Global South and other developing states, positioning itself as a center of an alternative vision of the world order, which is based on several key dimensions [1].

First, BRICS pursues the course of building a polycentric world, a goal that has become particularly relevant against the backdrop of growing tensions between major geopolitical blocs.

Second, the association fosters intergovernmental cooperation in the context of a fragmenting global economy, providing a platform for developing collective strategies.

Third, BRICS offers its member states a unique opportunity not only to strengthen their economic and political positions but also to become part of a large international

association that is gradually transforming into a kind of headquarters for the Global South.

The economic potential of BRICS was impressive from the outset: the bloc accounted for 35.7% of global GDP and over 40% of the world's population. However, following its enlargement in 2024, the attractiveness of the grouping has grown substantially. Statistics indicate that the combined GDP of BRICS now exceeds USD60 trillion, encompassing 37.4% of global GDP – significantly higher than the corresponding figure for the G7 (29.3%) [2]. The population of BRICS member states has increased to 45% of the world's total. Such figures render the association a powerful center of gravity for states seeking alternative formats of international engagement. It is therefore not surprising that around 30 countries have already expressed interest in joining the bloc or establishing closer ties with its members.

These developments, which coincided with the 2024 Kazan Summit, underscore the urgency of analyzing the political dimension of BRICS activities. The enlargement of the association raises critical questions regarding how its internal structure and decision-making mechanisms may evolve, the extent to which the new format of cooperation will prove effective, and how these changes may reshape the global balance of power.

Materials and Methods

The Political Dimension of BRICS: Challenges and Prospects

The political dimension of BRICS, which represents one of the key growth areas of the association, encompasses two directions: internal politics, related to the organizational structure and mechanisms of interaction within the group, and external politics, aimed at shaping a common position on major international issues. These two dimensions are not only interconnected but also define the success of the association under conditions of global instability.

One of the main challenges for BRICS remains the absence of clearly defined institutional foundations. The “soft” nature of the association, which distinguishes it from other international platforms, has thus far attracted new participants due to its flexibility and the absence of strict membership criteria. However, the 2024 Kazan Summit marked a new stage in the formation of BRICS' political identity. At the summit in Kazan, Russian President Vladimir Putin outlined the fundamental principles uniting the member states:

- All BRICS member states advocate equality, good-neighborly relations, and mutual respect.
- The participants of the association demonstrate a responsible attitude toward the destiny of world civilization and contribute positively to the creation of a stable and secure global environment.
- BRICS countries make a significant contribution to addressing pressing regional challenges.

These principles serve as an ideological foundation for future waves of enlargement and the consolidation of the political platform. At the same time, the lack of institutionalization leads to challenges in coordination and governance within the group. BRICS member states differ not only geographically but also in terms of their historical and cultural experience, which complicates the achievement of consensus on key issues. For instance, the stance of former Brazilian President Jair Bolsonaro, who obstructed the development of cross-border settlements within

BRICS, illustrates the dependence of certain members on external factors, such as their integration into Western-centered systems like SWIFT. Such disagreements hinder the implementation of initiatives, yet they also preserve the flexibility of the association, preventing its participants from being constrained by rigid frameworks, as is the case in the European Union with its Copenhagen criteria [3].

Nevertheless, further enlargement necessitates a more centralized model of governance. The creation of a BRICS Council, envisioned as a representative structure including all member states, could become a key element of institutionalization. Such a body could oversee specialized agencies responsible for economic cooperation, the integration of new members, and joint projects within the framework of the New Development Bank (NDB). These agencies could remain narrowly specialized and functionally flexible so as not to overburden the association with bureaucratic mechanisms.

In July 2024, during the 10th BRICS Parliamentary Forum, the President of Russia also noted that BRICS could in the future acquire a parliamentary structure, which undoubtedly represents one of the prospects for the association's institutional development.

Another important aspect is the need to adapt to the diverse expectations of new members. For many states, accession to BRICS is associated with access to the resources of the New Development Bank (NDB), support for infrastructure projects, and the strengthening of economic ties with regional leaders. The document adopted in Kazan, "Modalities for the BRICS Partner Country Category," establishes a formalized mechanism of expansion, enabling countries to engage with BRICS on flexible terms without becoming full members. This approach reduces the risks of overburdening the association while simultaneously reinforcing its influence in the international arena.

Thus, BRICS faces the task of striking a balance between preserving its flexibility and advancing institutional reforms. In this context, an important step could be the creation of a governing structure that would facilitate the effective integration of new members, consolidate positions, and enhance BRICS' role as both a political and economic center of the Global South.

The Trade and Economic Dimension of BRICS: From Trade to Economic Integration

From the very outset, BRICS was positioned as an economic association, and its current transformation confirms that the bloc's key role remains largely centered on trade and economic cooperation. Today, BRICS functions not only as a political platform but also as a stable trading partner that develops internal supply chains, thereby reducing dependence on volatile international markets and the pressures of traditional economic centers. The 2024 enlargement has further strengthened these positions, introducing both new opportunities and challenges.

The criteria for selecting new members demonstrate a resource-oriented approach, which is currently viewed as one of the promising avenues for the organization's expansion. The inclusion of countries with unique natural, demographic, or geopolitical resources enables BRICS to consolidate its position in global markets, diversify its economic base, and enhance its resilience to external shocks. The accession of states such as the United Arab Emirates, Iran, and Saudi Arabia is justified by their status as major oil exporters, which allows the bloc to secure strong positions in the global energy market. Egypt, controlling the Suez Canal, plays a pivotal role in facilitating trade between Asia and Europe. Even the accession

of Ethiopia, which at first glance does not fully align with this approach, reflects a long-term strategy: its demographic potential and lack of a colonial legacy make the country attractive for international investment and for strengthening the bloc's presence in Africa.

The new members not only broaden the overall market but also intensify cooperation across various sectors, including agriculture, mineral extraction, technology, and logistics. According to forecasts, trade volume between current members and partners could increase by 30–40% within the next five years. Such growth is expected to stimulate the creation of new value chains, the exchange of technologies, and investments in key sectors of the economy.

Another prospect for inviting new members to BRICS lies in the potential to create new global institutions capable of competing with existing structures such as the WTO and OPEC. For example, within the bloc a counterpart to the WTO could be established to ensure fair trade conditions for member states, or a new system for managing carbon credits could be developed.

Particular attention is devoted to the creation of a unified system of cross-border settlements, an exchange-based currency infrastructure, and the use of digital financial assets. The transition to settlements in national currencies or digital assets not only reduces dependence on the U.S. dollar but also fosters the emergence of a parallel financial ecosystem capable of sustaining annual trade growth at the level of 5–7% [4]. At the same time, efforts are being intensified to ensure information security and safeguard the financial sector, which has become a crucial prerequisite for implementing the bloc's ambitious economic projects.

Thus, the enlargement of BRICS also opens up opportunities for integrating new regions. While the first wave focused on the Middle East and North Africa, the next steps may involve the accession of Southeast Asian states, as already demonstrated by the list of countries invited to join BRICS in a partner capacity. Such diversification of participants and sectors enhances the economic resilience of the association, transforming it into a powerful center of global economic activity.

Moreover, the joint efforts of BRICS member states to coordinate the supply of oil, gas, and industrial metals ensure both price stability and the necessary volume of resources for external markets. Internal trade routes not only reduce costs but also strengthen the energy security of the bloc's members. For instance, India and China – the largest consumers of oil – can establish stable supply channels within the alliance, thereby minimizing their dependence on external providers.

Thus, the trade and economic dimension of BRICS is becoming the cornerstone of its long-term strategy. From a framework of simple trade partnership, the bloc is moving toward the creation of a comprehensive economic system capable of competing with traditional centers of power on the global stage.

Results and Discussion

The Role of the 2024 Kazan Summit

The 2024 BRICS Summit in Kazan marked a historic milestone in the development of the association, signifying not only quantitative growth but also a qualitative deepening of cooperation among its member states. A key outcome of the summit was the granting of partner-country status to 13 states, including Turkey, Kazakhstan, Uzbekistan, Algeria, Belarus, Bolivia, Cuba, Indonesia, Malaysia, Nigeria, Thailand,

Uganda, and Vietnam. This step significantly expands the geographic and economic boundaries of the bloc, transforming it into one of the largest international platforms oriented toward the development of the Global South.

The admission of new partners raises questions about the accession mechanism and its implications for the future limits of the bloc's expansion. As an entity that combines the features of an integration alliance and a discussion platform, BRICS now faces the necessity of transitioning from general principles to concrete, institutionally anchored measures. The more structured the decision-making processes become, the more effectively the association will be able to operate under new global conditions.

To ensure sustainable enlargement, it will be essential to develop a clear mechanism for integrating partner countries, including the coordination of economic, political, and trade strategies. The Kazan Summit confirmed the necessity of such transformations, outlining steps toward the creation of more formalized institutions capable of regulating both internal and external interactions. For instance, the institutionalization of free trade agreements among BRICS states could reduce tariff barriers, facilitate mutual trade, and strengthen economic ties.

Among the key outcomes of the Kazan Summit were plans for large-scale investments in transport and logistics infrastructure, which is regarded as the foundation for economic integration. The total volume of investments in this sector could exceed USD 1.5 trillion by 2035, opening opportunities for the creation of new trade corridors and strengthening connectivity among member states.

The New Development Bank (NDB) reaffirmed its role as the bloc's key financial instrument by financing projects that contribute to infrastructure development and social integration. During the summit, measures were discussed to increase the NDB's contribution to supporting projects in partner countries, which will enhance their engagement and consolidate the economic position of BRICS.

Thus, the Kazan Summit confirmed that BRICS is moving from a discussion platform toward a fully-fledged integration association, capable of shaping the global economic and political agenda.

Conclusions: Challenges and Obstacles

Economic Challenges:

- One of the key challenges of BRICS enlargement lies in the significant economic disparities among its member states. Such imbalances may complicate the balanced development of trade and cooperation. Less developed economies face limited access to resources and technologies, which necessitates the establishment of redistribution and support mechanisms. Instruments such as subsidies, technical assistance programs, and targeted investments could help mitigate this gap.
- The problem of national currency volatility also poses risks to the stability of trade relations. The introduction of settlements in national currencies and the development of risk-hedging mechanisms may reduce dependence on fluctuations in currency markets. Preventive financial instruments, such as the Contingent Reserve Arrangement, represent an important avenue for ensuring financial stability within the bloc.

Political and Regulatory Barriers:

- The political diversity of BRICS countries complicates the alignment of foreign policy priorities and the coordination of joint actions. For instance,

differences in trade and customs regulations hinder the free movement of goods and increase business costs. Overcoming these barriers requires the harmonization of trade and customs rules, the development of unified standards, and the simplification of bureaucratic procedures.

- The creation of a unified regulatory space, including multilateral free trade agreements, would help reduce tariff barriers. This would open new opportunities for businesses and accelerate integration processes. An illustrative example is the initiative to establish a BRICS analogue of the WTO, aimed at protecting the interests of member states within the global trading system.

Infrastructure Constraints:

- Underdeveloped transport and logistics infrastructure remains one of the main obstacles to effective integration. The development of roads, ports, and railway networks — particularly in less developed member states — constitutes a priority task. Investments in infrastructure would not only facilitate logistics but also stimulate economic growth in various regions, representing an important step toward the creation of an integrated economic space.
- At the same time, attention must be paid to digital integration. The varying levels of technological development among member states complicate cooperation in areas such as financial technologies, e-commerce, and data protection. Joint investments in digital infrastructure and workforce training could help bridge this gap.

Prospects for Development:

- Creation of a unified economic space: The long-term goal of BRICS is the formation of an integrated market with the free movement of goods, services, capital, and labor. The gradual reduction of tariff and non-tariff barriers within the bloc could lower average tariffs from 5–10% to 0–3%, thereby strengthening intra-bloc trade.
- Settlements in national currencies and new financial instruments: The expansion of national currency use in settlements will reduce dependence on the U.S. dollar, thereby enhancing financial stability. An important step will be the development of an alternative to SWIFT and other global payment systems, as well as the consolidation of the New Development Bank as a key instrument for financing joint projects.
- Investments in strategic projects: Plans to invest more than USD 1.5 trillion in infrastructure by 2035 provide a solid foundation for transport and logistics corridors. This will enhance connectivity among member states and increase the volume of mutual trade. Such projects are of strategic importance for economic integration and for strengthening BRICS' position in the global economy.
- Formation of global alternatives: BRICS aspires to create alternatives to dominant Western institutions such as the WTO, IMF, and World Bank. New multilateral structures focused on the interests of developing countries would allow BRICS states to reinforce their global influence.
- Partnership and coordination in resource sectors: The establishment of a coordination platform for managing solid minerals (coal, shale, peat, metal ores, and non-metallic minerals) is a promising direction. BRICS' control over substantial shares of global reserves of oil, gas, coal, and rare earth elements enables the bloc to shape a new model of resource governance, taking into account shifts in the technological paradigm and the transition toward green energy.
- Joint development of fintech and macroeconomic coordination: Cooperation among central banks, including the development of the Contingent Reserve Arrangement and the organization of cyber exercises, contributes to strengthening financial stability. Innovative approaches, such as a multi-currency

basket and fintech solutions, demonstrate the bloc's commitment to risk diversification and adaptation to emerging challenges.

- Development of BRICS Grain Exchange initiatives: This project is intended to contribute to the formation of fair and predictable price indicators for food products and raw materials.
- Expansion of cooperation in subsoil use: Russia has proposed broadening collaboration in the field of mineral resources, with the establishment of a BRICS platform on precious metals as a practical step in this direction.

BRICS remains a unique international association distinguished by the absence of a hegemon in its structure and governance. Unlike many traditional alliances, BRICS operates on the principles of equality and mutual respect, granting all participants equal rights and opportunities. This characteristic allows the bloc to attract the attention of an increasing number of states seeking to avoid domination by major powers and to find new formats for advancing their economic and political interests. The 2024 Kazan Summit vividly demonstrated the effectiveness of this approach, emphasizing the expansion of membership and reaffirming the commitment to the principles of multipolarity.

The political outcome of the Kazan Summit lies in the complete failure of the isolation policy toward Russia pursued by Western states. The participation of representatives from 35 countries, including 24 delegations headed by national leaders, showed that the notion of Russia's global isolation is more of a Western myth than a reality. In this context, BRICS has proven its capacity to serve as a platform for shaping an alternative agenda, enabling the Global South and other developing states to engage on equal terms in discussing and resolving global issues.

The summit also demonstrated that a multipolar world has ceased to be a mere concept and has become a reality. The expansion of BRICS to include 13 partner countries, along with interest in membership from dozens of other states, indicates that the association is becoming a center of attraction for countries that share the ideals of equality and sovereignty. This growth illustrates that the economic and political platform of BRICS is successfully adapting to new challenges and can offer a competitive alternative to Western formats, which increasingly extract a kind of geopolitical rent from their control over the system.

In the long term, BRICS will continue not only to expand its membership but also to deepen cooperation within the association, including the development of cross-border trade, investment mechanisms, and institutional structures. This will enable the bloc not only to strengthen its position in the global economy but also to play a pivotal role in shaping a new architecture of international relations based on the principles of multipolarity, mutual respect, and equality. The Kazan Summit has become a symbol of this transformation and has set the strategic course for the association's future development.

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Расширение БРИКС: новые возможности и риски для формирования полицентричного мира

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Аннотация. Расширение БРИКС, которое в 2024 г. охватило такие страны, как Египет, Иран, ОАЭ и Эфиопию, ознаменовало новый этап развития объединения, укрепив его роль в глобальной политической и экономической системе. В условиях растущей международной напряженности и фрагментации мировой экономики БРИКС демонстрирует способность формировать альтернативные механизмы взаимодействия, основанные на принципах равенства и взаимного уважения. Казанский саммит стал исторической вехой в развитии блока, подтвердив его способность адаптироваться к вызовам времени и привлекать новых партнеров. Присоединение 13 стран-партнеров не только расширило географические и экономические границы, но и обозначило необходимость институциональных реформ для более эффективного управления и координации.

Основными вызовами для дальнейшего расширения остаются некоторые экономические и политические ограничения в отношениях между странами-участницами, недостаток институционализации и ограниченная инфраструктура. Однако перспективы развития блока включают создание интегрированного экономического пространства, развитие расчетов в национальных валютах, укрепление роли Нового банка развития и формирование новых международных институтов, которые могли бы конкурировать с западными структурами, такими как ВТО и МВФ. Благодаря этим шагам БРИКС имеет потенциал стать не только экономическим, но и геополитическим центром Глобального Юга, играя ключевую роль в формировании многополярного мирового порядка.

Ключевые слова: БРИКС, экономика, политика, инфраструктура, ВТО, МВФ, Глобальный Юг, Новый банк развития

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Research article / Научная статья

BRICS+ Agenda for Sustainable Nuclear Development: Current Status and Emerging Trends

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Abstract. Nuclear energy is becoming a strategically significant component of the energy balance of the BRICS+ countries, reflecting both the growing demand for energy resources and the pursuit of technological sovereignty. This study analyzes the distribution of nuclear power plant capacities, uranium reserves, and ongoing projects among the BRICS+ states, allowing their efforts to be considered within the broader context of global energy diversification and security. The analysis is based on data regarding operational nuclear power plants, reactors under construction, and uranium resources, collected from international energy databases and official reports. The results indicate that Russia, China, and India constitute the technological and production core of BRICS+, concentrating the majority of operational reactors and new construction projects, while Brazil and South Africa maintain stable but more modest programs, relying on domestic uranium production. Egypt, Ethiopia, Iran, Indonesia and the United Arab Emirates emerge as new participants advancing ambitious nuclear energy projects. These trends suggest the formation of BRICS+'s collective influence on the global nuclear energy and fuel market, as well as the strengthening of their role in ensuring global energy stability.

Keywords: BRICS+, nuclear energy, peaceful atom, uranium reserves, energy security, global energy, diversification

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Introduction

In the 21st century, nuclear energy has once again come to the forefront of international discussions, combining scientific and technological development, environmental challenges, and issues of global security. Whereas during the Cold War the “peaceful atom” was primarily regarded as an element of national prestige and a tool for demonstrating technological superiority, today it has acquired a new dimension — as a factor of geopolitical stability, energy independence, and diversification of economic growth.

In this context, the BRICS+ association emerges as a unique platform for rethinking the role of nuclear energy in the changing world order. The BRICS+ countries, possessing diverse levels of technological development and different models of energy sector regulation, demonstrate their aspiration to form alternative centers of power, including in the field of nuclear technologies. Here, nuclear energy becomes not only an instrument of internal modernization but also a tool of foreign policy positioning, influencing the balance of forces within the global energy architecture. The relevance of studying the “peaceful atom” within the BRICS+ framework is determined by several factors. First, there is the growing role of nuclear energy in addressing energy security and decarbonization challenges. Second, the deepening technological cooperation and exchange of expertise within BRICS+ are shaping new models of interaction that can compete with Western institutions and corporations. Third, nuclear energy is becoming part of a broader BRICS+ strategy aimed at

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strengthening sovereignty and reducing dependence on Western markets and infrastructures.

Thus, the study of the geopolitical dimension of nuclear energy within BRICS+ makes it possible to identify how the “peaceful atom” is transforming from a sphere of purely technological progress into one of the key factors in the redistribution of influence in global politics.

Materials and Methods

This study employs a comparative and interdisciplinary approach to analyze the nuclear complexes of BRICS+ countries, their strategic documents, and relevant industry statistics. The primary objective is to identify patterns in the development of nuclear energy and to assess the role of this sector in shaping alternative centers of power within the global energy landscape.

The research draws on the following materials: Official strategic documents of BRICS+ — including declarations, joint statements, roadmaps, and forum reports (Fortaleza Declaration 2014; Joint Statement of BRICS Foreign Ministers 2024; BRICS Energy Cooperation Roadmap 2025–2030; Kazan Declaration 2024). Statistical data on nuclear energy in BRICS+ countries — covering operational and under-construction nuclear power plants (NPPs), information on project companies, investments, and scientific-technical initiatives, sourced from international databases and national energy agencies. Scientific publications and analytical reports — peer-reviewed articles, industry reviews, and reports from specialized organizations, addressing nuclear technologies, energy security, and international cooperation in the nuclear sector.

The study applies the following methodological approaches: comparative analysis — evaluating technical characteristics of nuclear complexes, project scales, technological development levels, and models of industry regulation across different countries; content analysis of BRICS+ strategic documents — identifying key priorities, objectives, and principles of cooperation in nuclear energy; quantitative analysis of statistical data — processing information on NPP capacities, energy generation volumes, investments, and industry growth rates using descriptive statistics and graphical visualization techniques; interdisciplinary integration — combining geopolitical, economic, and technological perspectives to assess the role of nuclear energy as a tool for domestic modernization and foreign policy positioning.

This study does not involve human or animal subjects; therefore, formal ethics approval was not required. All secondary data are utilized in compliance with copyright regulations and open-access policies.

GenAI tools were employed solely for data organization and concise summarization of extensive literature.

Results and Discussion

To provide a clearer overview of BRICS+ nuclear capabilities, key quantitative indicators — including reactor numbers, installed capacity, and major projects — are summarized in Table 1.

1. A high concentration of nuclear technologies is observed in Russia, China, and India, which together constitute the core of BRICS+ competencies and production capacities.

2. Significant uranium reserves are concentrated in Russia, South Africa, China, and Brazil, providing the group with relative fuel autonomy. The Middle East and Africa (Egypt, Ethiopia, UAE) demonstrate a strategic shift toward the “peaceful atom,” although domestic uranium resources in these regions remain limited.
3. The accelerated construction of new reactors (China – 24 units under construction; Egypt – El-Dabaa; UAE – Barakah) strengthens BRICS+ role in the global energy balance.
4. Energy diversification is manifested through varying levels of national engagement: from advanced nuclear programs (Russia, China) to the early stages of infrastructure development (Ethiopia, Saudi Arabia). This creates the potential for BRICS+ to exert collective influence on the global nuclear energy and fuel market, including the export of technologies, services, and safety standards.

The main indicators of nuclear energy in BRICS+ are summarized in the Table below.

Nuclear Energy Profiles of BRICS+ Member States, 2024

Country	Number of operating reactors	Installed capacity, MW	Key projects / notes
Brazil	2	1,884	Angra 1 & 2; enrichment program underway; focus on peaceful nuclear development
Russia	37	27,727	11 NPPs; floating NPP (Akademik Lomonosov); export projects in India, China, Bangladesh, Egypt, Brazil, Argentina, Hungary, Turkey
India	24	8,055	Koodankulam NPP (4,000 MW), 12 reactors planned; focus on thorium and innovative nuclear technologies
China	56	53,152	24 reactors under construction; 6–8 reactors planned annually; multiple state-owned corporations (CGN, CNNC, SNPTC)
South Africa	1	1,880	Koeberg NPP; no new plants planned until 2030; strong coal dominance
Egypt	0 (research reactors)	N/A	El-Dabaa NPP under construction (4,8 GW, 4 units) with Rosatom
Indonesia	0	N/A	MoU with Rosatom; plans for floating and land-based small reactors; high seismic risk considerations
Iran	1	915	Bushehr NPP; strategic focus on peaceful nuclear program; past international restrictions and sanctions
UAE	4	4,011	Barakah NPP (first Arab NPP); KEPCO-built; two additional units under negotiation
Ethiopia	0	N/A	Planning phase for nuclear development; cooperation with Rosatom and China; part of broader energy diversification strategy

Source: compiled by Vahe Davtyan.

Nuclear Energy in the BRICS+ Strategic Documents

A review of key BRICS+ declarations and roadmaps reveals a steadily increasing emphasis on energy issues, with particular attention to nuclear power. The Fortaleza Declaration (2014) underscores the importance of strengthening multilateral economic mechanisms, advancing sustainable development, and transitioning to cleaner energy sources, while highlighting the role of international cooperation in renewable and “clean” technologies [1].

The Joint Statement of BRICS Foreign Ministers (Nizhny Novgorod, 2024) explicitly calls for “fair and balanced energy transitions” that make use of the entire spectrum of available resources — renewables, biofuels, hydropower, fossil fuels, hydrogen, and nuclear energy — in order to secure sustainable energy systems, supply stability, and economic growth among member states [2].

Particular attention is devoted to the institutionalization of nuclear cooperation. The establishment of the BRICS Nuclear Energy Platform aims to facilitate knowledge exchange and support the development of nuclear technologies. According to the BRICS+ Forum, nearly all member countries are engaged in large-scale nuclear energy projects, with the combined capacity of operational NPPs exceeding 390 GW. The platform is envisioned as a voluntary consortium of companies, professional communities, and non-governmental organizations dedicated to advancing cutting-edge technologies — including non-power applications such as medicine and scientific research — while coordinating efforts to have nuclear power formally recognized as a “clean” energy source [3].

The BRICS Energy Cooperation Roadmap 2025–2030 defines priority directions such as enhanced coordination on the international energy agenda, infrastructure development, expansion of energy trade, and joint investment initiatives. It explicitly reaffirms the principle of technological neutrality, positioning nuclear energy — alongside renewables and carbon capture technologies — as a central pillar of decarbonization strategies and energy security [4].

The Kazan Declaration of BRICS+ (2024) further consolidates nuclear energy’s status as an integral component of the “clean” energy mix. It stresses the necessity of deepening cooperation on the peaceful uses of nuclear technology, exchanging best practices, and jointly pursuing innovative solutions. The document also endorses efforts to expand the BRICS Nuclear Platform and to reinforce the technological sovereignty of participating states [5].

In summary, BRICS+ strategic documents articulate a coherent framework that positions nuclear energy as a catalyst for low-carbon development, industrial modernization, and technological exchange across the Global South. The creation of a dedicated nuclear platform and the formal inclusion of nuclear power in the clean energy portfolio underscore BRICS+’s determination to consolidate nuclear technology as an instrument of energy sovereignty and sustainable growth.

Cross-Country Analysis

The study of nuclear energy development prospects across the BRICS+ space necessitates an assessment of both potential and the identification of risks and threats to the growth of nuclear complexes in member states of the platform. To this end, the following analysis examines the development of nuclear energy within BRICS+ countries, enabling the identification of parallels and opportunities for cooperation in advancing the “peaceful atom” across the BRICS+ framework. In this context, nuclear energy development is regarded by BRICS+ countries as a key and most rational model of energy transition. Accordingly, the formulation of comprehensive measures to implement policies for the transition to low-carbon energy within BRICS+ constitutes an important integrative challenge, aligning with the concept of sustainable development and contemporary climate agendas.

Energy transition is traditionally understood as the process of shifting from carbon-intensive fossil fuels to low-carbon energy sources. Throughout human civilization,

there have been four major energy transitions: (1) from biomass to coal, (2) from coal to oil, (3) from oil to natural gas, and (4) the adoption of renewable energy sources, energy efficiency measures, and carbon capture.

Within the latest stage of the energy transition, nuclear energy is gaining increasing significance as a clean energy source. Notably, NPPs exhibit the lowest lifecycle emissions among all forms of “clean” energy, amounting to approximately 5.5 g CO₂-equivalent per kWh. Existing NPPs worldwide prevent CO₂ emissions in volumes comparable to the carbon sequestration capacity of all forests on the planet [6].

In Brazil, the development of nuclear energy was initially driven largely by the military, particularly Vice Admiral Álvaro Alberto, often referred to as the “father of the Brazilian nuclear project”. He successfully lobbied for the creation of the National Nuclear Energy Commission (CNEN) in 1956. In the early stages, nuclear research in Brazil was oriented toward the development of nuclear weapons; however, following the 1973–1974 oil crisis, the country recognized the need to diversify its energy system. The “Second National Development Plan (1973–1979)” for the first time envisaged a comprehensive development of nuclear energy. In accordance with this plan, a program was developed to construct several NPPs, with a total capacity projected to reach 10,000 MW by 1990. Germany (FRG) became Brazil’s key partner in the development of the “peaceful atom”, which generated significant concern both in other Latin American countries and in Washington. In particular, President Jimmy Carter described the Brazilian–West German collaboration in the field of nuclear energy as “nuclear madness”, imposing restrictions on the supply of nuclear fuel and technologies for the production and use of atomic energy to Brazil [7]. By the 1980s, however, Brazil had begun domestic uranium production, quickly becoming the undisputed leader in Latin America. According to World Population Review data for 2022, Brazil ranks 13th in the world in uranium production [8]. In terms of the volume of the cheapest uranium (production cost approximately USD40 per kilogram), Brazil is second only to Canada. The country’s only operational uranium deposit is Lagoa Real/Caetité. Currently, Brazil also imports uranium from Russia; in 2023, imports amounted to USD 72 million [9].

It is noteworthy that under these conditions — characterized by the dominance of hydroelectric power in Brazil’s energy sector and the need to develop nuclear capacities to meet domestic demand — militaristic attitudes and objectives continued to prevail in Brazilian nuclear energy. Only with the advent of civilian rule in 1985 did the country adopt a policy of exclusively peaceful use of nuclear energy. Brazil formally joined the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) only in 1998, despite the fact that the Treaty of Tlatelolco, which prohibited nuclear weapons in Latin America and the Caribbean, had been opened for signature as early as 1967 [7].

As of 2022, nuclear energy accounted for approximately 3% of Brazil’s energy balance, whereas hydrocarbons and hydroelectric power together represented 63%. By 2024, the country operates only one NPP, Angra, which houses two operational reactors, Angra-1 and Angra-2. Their combined electric capacity is 1,884 MW, and electricity generation in 2023 reached 14.5 TWh [10].

Currently, Brazil is actively developing a uranium enrichment program to enhance national energy security, with a sufficiently advanced domestic industrial base, as evidenced by the country’s centrifuge projects. Simultaneously, Brazil is targeting

the exploitation of its domestic uranium deposits, which would allow it not only to achieve self-sufficiency in nuclear energy but also to strengthen its position as a uranium exporter in the future.

Russia ranks fourth in the world in nuclear energy generation. NPPs account for approximately 20% of the country's electricity production. Currently, Russia operates 11 NPPs with 37 reactors in total, possessing a combined installed capacity of 27,727 MW and generating around 217 TWh of electricity in 2023 [10].

In 2021, the Government of the Russian Federation approved the Strategy for Socio-Economic Development with Low Greenhouse Gas Emissions up to 2050. The strategy outlines two development scenarios: inertial and intensive. The first, inertial scenario anticipates a reduction in state budget revenues due to decreased hydrocarbon exports, followed by a transition to new "green" energy technologies. The second, intensive scenario envisages a 9.4% reduction in the share of traditional sectors in GDP by 2050, with the proportion of high-tech sectors, including nuclear energy, expected to increase by 11.8 percentage points [6].

The development of the Soviet, and subsequently Russian, nuclear industry has been underpinned by abundant uranium deposits. According to Porter's theory of competitive advantage (the "Porter diamond"), this factor can be regarded as a foundational condition shaping Russia's nuclear energy strategy [11].

Official data indicate that Russian uranium reserves account for approximately 7.9% of global reserves, totaling 705,000 tons [12]. According to the World Nuclear Association, Russia ranks sixth globally in uranium production [13]. Most operational Russian NPPs are located in proximity to uranium deposits. In this context, E. Ivkova and A. Kataev highlight significant nuclear development potential in regions such as Zabaykalsky Krai, the Republic of Buryatia, Krasnoyarsk Krai, and Tomsk Oblast (including the BREST-OD-300 site) [6].

One of the key nuclear projects currently underway in Russia is the modernization of the floating NPP (FNPP) "Akademik Lomonosov" [14]. This modernization addresses the need to develop energy supply in Chukotka, a region with limited fuel resources. Following the FNPP expansion, Chukotka will achieve full electricity self-sufficiency, which is also promising given the presence of potential uranium deposits in the area. The state corporation Rosatom serves as the leading company in Russia's nuclear sector and one of the global leaders in constructing nuclear reactors abroad. Within the BRICS+ framework, Rosatom plays a crucial role in strengthening a multipolar energy architecture and promoting Russian technologies in the global market. In Asia, strategic partners include India, where Rosatom is engaged in the construction and outfitting of the Kudankulam NPP units with comprehensive collaboration on the fuel cycle and service operations, as well as China, where the corporation participates in the expansion of Tianwan and Xudapu NPPs, transferring critical technologies and training specialists. Significant Asian projects also include the Ruppur NPP in Bangladesh, reinforcing Rosatom's presence in South Asia. In Africa, the construction of Egypt's El-Dabaa NPP represents the largest Russian–Egyptian initiative on the Mediterranean coast, alongside developing contacts with South Africa on small modular reactors and advanced fuel solutions. In Latin America, Brazil and Argentina are involved in joint research and consultations regarding the fuel cycle and modernization of existing capacities. In Europe, Hungary is a key focus, with the Paks-2 project demonstrating the competitiveness of Russian technologies even within the

EU market. Beyond BRICS+, notable examples include Turkey's Akkuyu NPP and several countries in the Middle East and Southeast Asia, strengthening the diversification of Russia's export portfolio.

Thus, Russia serves not only as a technology provider but also as a linking node among Global South states, forming alternative centers of technological leadership and contributing to the balancing of the global nuclear architecture.

Coal and oil have traditionally dominated India's energy balance, accounting for approximately 60% of total energy production. However, this composition is not fully aligned with the country's long-term economic development strategy. The current decade has been designated as a period of active energy diversification, with plans to increase the share of renewable energy to 24.2% of total production by 2026–2027.

Nuclear energy accounts for 3% of India's energy balance. At present, India operates 24 nuclear reactors with a combined installed capacity of 8,055 MW. Over the next 25 years, electricity consumption is projected to quadruple due to population growth, industrialization, and urbanization. In response, Indian authorities have developed a long-term nuclear energy development program: by 2032, installed nuclear capacity is expected to reach 63,000 MW, and by 2050, approximately 25% of electricity will be generated by NPPs [15]. By mid-century, it is planned that about 30% of the country's energy needs will be met by thorium reactors. A key aspect of this program is the implementation of projects in collaboration with Russia: over the next two decades, 12 nuclear reactors are planned, six of which are currently under various stages of construction with a total capacity of 5,200 MW, including four Kudankulam NPP units totaling 4,000 MW [16].

India is also actively developing innovative nuclear technologies with applications in adjacent economic sectors, such as medicine, agriculture, and water desalination and purification. In nuclear medicine, these technologies are used for cancer diagnosis and therapy, sterilization of medical equipment, and the development of lasers applied in surgical procedures. In agriculture, nuclear methods enhance crop yields through genetic modification of seeds. Moreover, nuclear desalination and water purification technologies have become widely adopted in arid regions, providing access to quality water and supporting the resilience of agricultural and domestic sectors. India has traditionally faced restrictions in the trade of nuclear technologies.

The country has not ratified the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) due to its own military nuclear program. Following India's first nuclear test in 1974, the Nuclear Suppliers Group (NSG) was established in 1975, imposing a 34-year restriction on the export of nuclear equipment and technologies to India. These restrictions significantly hindered the development of civilian nuclear energy in the country. In 2008, India was granted exemptions, lifting NSG restrictions and substantially expanding its nuclear energy capabilities while mitigating energy resource deficits. The decision to provide these exemptions was largely driven by U.S. strategic interests, seeking to strengthen geopolitical influence in Asia and create a counterbalance to China's rising influence [17].

Currently, India's nuclear energy development is heavily influenced by competition among major foreign technology suppliers. The country maintains strategic partnerships with leading global players in the nuclear fuel cycle, including Russia, France, and the United States. The most successful and effective collaboration remains with Russia: two Kudankulam NPP units in Tamil Nadu have already been

commissioned, demonstrating Russia's sustained leadership in India's nuclear market. In contrast, cooperation with the U.S. and France has progressed less dynamically. The United States initially received two sites for NPP construction — Kovvada in Andhra Pradesh and Mithivirdi in Gujarat — but these projects were suspended due to legal restrictions. France planned to build the Jaitapur NPP, but project timelines have been repeatedly postponed. Simultaneously, India is expanding its international nuclear cooperation: in 2015, a civil nuclear agreement was concluded with the United Kingdom, and in 2016, a similar agreement was signed with Japan. In 2025, India and France signed a letter of intent to collaborate on advanced small modular reactors, and in the same month, the parties reached an agreement with the United States to fully implement the U.S.–India 123 Agreement, advancing plans for U.S.-designed reactor construction in India. It should be noted that India possesses uranium deposits, providing certain conditions for industry development; in 2022, the country produced 600 tons of uranium [18].

Energy development in China occupies a central position in discussions concerning the country's socio-economic dynamics and its growing influence on the global stage. Issues such as the transition to carbon neutrality, improvements in energy efficiency, and the promotion of “green” energy sectors were reflected in the new Five-Year Plan presented on 5 March 2021 [19]. Previously, in September 2020, Xi Jinping announced the goal of achieving carbon neutrality by 2060 [20].

The majority of electricity in China is generated from coal-fired power plants, which contributes to air pollution. The environmental situation necessitates a transition to low-carbon, renewable, and particularly nuclear power capacities. The Five-Year Plan mentions coal production extensively, emphasizing its “clean and efficient use.” Notably, the plan sets a normative target for total energy production capacity at over 4.6 billion tons of standard coal equivalent. For comparison, China's energy consumption in 2019 reached 4.86 billion tons, and according to CNPC projections, primary energy demand may rise to 5.6 billion tons by 2035.

According to the National Energy Administration, China aims to occupy a leading position globally in nuclear energy technologies, considering the sector as a foundation for its future energy system. Both the 12th and 13th Five-Year Plans included provisions for nuclear energy development. Under the objectives of the 13th Five-Year Plan, China aimed to reach an installed nuclear capacity of 58 GW by the end of 2020 and to construct new NPPs and reactors. Most planned construction projects were implemented; however, the target was not fully achieved, with installed nuclear capacity reaching 52 GW by 2020. Nevertheless, during the 13th Five-Year Plan period, nuclear capacity nearly doubled.

The new Five-Year Plan emphasizes the national transition to “green” energy and the active use of alternative energy sources. Nuclear energy receives less attention in the document, though key information is provided. The plan envisages an increase in the share of non-renewable energy sources, including nuclear power. The target share was set at 15% in 2020, with an expected increase to approximately 20% by 2025. The plan also sets specific nuclear capacity development goals: by 2025, installed capacity is projected to reach 70 GW [21]. However, current data indicate that this target may not be fully achieved within the planned timeframe. Presently, China operates 56 reactors (excluding Taiwan) with a combined installed capacity of 53,152 MW. In 2023, Chinese NPPs generated 433 TWh of electricity [10]. Nuclear energy currently accounts for approximately 5% of China's energy balance. Beijing plans to commission 6–8 reactors annually, with 24 reactors currently under

construction [22]. It is noteworthy that China's under-construction reactor capacity accounts for more than 40% of the global total [23].

The main directions of Chinese nuclear energy development were initially linked to Sino-Soviet relations and later to Sino-Russian collaboration. For instance, in 1958, an experimental heavy-water reactor was installed in China in cooperation with Soviet scientists [20].

In China, as in Russia, nuclear energy is a state monopoly. However, unlike Russia, where the nuclear sector is dominated by a single company, Rosatom, China's market is divided among three state-owned corporations: China General Nuclear Power Group (CGN), China National Nuclear Corporation (CNNC), and State Nuclear Power Technology Corporation (SNPTC). China also possesses fundamental factor conditions for nuclear development, including some of the world's largest uranium reserves. As of 2023, the country held 270,500 tons of uranium, representing approximately 5% of global reserves [24].

The energy transition is considered one of the priority directions for South Africa's energy development. This is largely due to the dominance of high-carbon sources in the national energy mix: approximately 70% of electricity production in South Africa comes from coal-fired power plants. The share of nuclear power is barely 4%, and according to national economic and energy development programs, long-term nuclear energy development is not treated as a priority. As noted by A. Mastepanov, A. Sumin, and B. Chigarev, South Africa has a powerful "green" lobby, which has enabled the country to participate in a number of international climate organizations. At the same time, South Africa traditionally maintains significant support for coal energy, including within political circles, which creates obstacles to the transition toward low-carbon energy [25]. Evidence of this is the 2010 "Integrated Resource Plan," which simultaneously prioritized coal and nuclear generation. In subsequent revisions of the Plan, natural gas use became the predominant energy priority [25]. Nevertheless, South Africa has committed to reducing greenhouse gas emissions to 350–420 million tons of CO₂-equivalent by 2030 [26].

Under current energy development conditions, achieving this target appears highly challenging: according to available estimates, approximately 13% of South Africans lack access to electricity. This situation presents significant socio-political risks, which are realistically assessed by the country's political leadership. As South African Minister of Energy G. Mantashe noted, "If we do not solve the problem of energy poverty, and focus only on climate change mitigation plans, there will be an uprising in the country" [27]. In these circumstances, coal-fired generation appears to be the most practical means to overcome energy poverty in South Africa.

In the mining sector, uranium production plays an important role. In 2022, the country produced 200 tons of uranium. South Africa's uranium reserves are estimated at 320,900 tons, representing approximately 5% of global reserves [28]. Despite these substantial reserves, South Africa operates only one NPP — Koeberg (1880 MWt)—commissioned in 1984. The plant is expected to reach the end of its operational life by the mid-2040s, although authorities do not rule out extending its service life by an additional 20 years. Despite the challenges of sustainable development and the energy transition, South Africa's strategic documents indicate that no new NPPs are planned before 2030.

The fifteenth BRICS summit, convened in Johannesburg in August 2023, marked a watershed moment in the bloc's evolution, distinguished as the most broadly

representative gathering in its history. Invitations were extended to 67 states, underscoring BRICS's aspiration to project itself as a central platform of the Global South. Ultimately, six nations — Argentina, Egypt, Ethiopia, Indonesia, Iran, Saudi Arabia, and the United Arab Emirates — were formally admitted, reflecting a calculated strategy to amplify the group's geopolitical and economic weight.

Viewed through the prism of global energy dynamics, this enlargement is poised to exert transformative effects on patterns of investment, trade, and strategic coordination. The new configuration consolidates within BRICS a unique constellation of actors: preeminent oil producers and exporters, holders of critical mineral resources, and rapidly developing energy consumers. Such a composition not only diversifies the bloc's internal energy landscape but also enhances its collective bargaining capacity in shaping future energy governance frameworks [29].

However, the formal process of admission has not proceeded uniformly. Argentina, though initially among the six invited states and scheduled to become a full member on 1 January 2024, formally rejected the invitation. Argentina's new government under President Javier Milei declared that the timing was "not opportune" for full membership, thereby withdrawing from the integration process. Similarly, Saudi Arabia has not yet committed to full membership. While invited to join alongside the other five, Riyadh has been publicly assessing the implications and has not finalized acceptance. As of early 2025, Saudi officials stated that the country is still evaluating the costs, benefits, and geopolitical ramifications of joining the bloc.

The nuclear potential of the new BRICS+ members requires separate consideration and assessment. For most of these countries, "peaceful nuclear energy" is either already a priority in their energy development or is viewed as such in the long-term perspective. In the following, we provide a brief overview of each of the new members individually.

The economy of the Arab Republic of Egypt is one of the largest in Africa. In recent years, however, the country has experienced high inflation rates, which has generally affected social and political stability. The public debt-to-GDP ratio exceeds 87%, and it is evident that these adverse economic conditions impact the country's energy sector [30]. Egypt's primary energy consumption is structured as follows: 57% natural gas, 36% oil, 6% renewable energy, and 1% coal [30]. Notably, the current energy balance does not include a nuclear component, which does not imply that Egypt lacks ambitions in this sector.

At present, Egypt operates a research nuclear program with two reactors: one of Soviet origin (commissioned in 1961) and another of Argentine design. To integrate nuclear energy into the national energy balance, in 2015 the Egyptian government signed an agreement with Rosatom for the construction and operation of the El Dabaa NPP, with a planned capacity of 4.8 GW (four reactors). The plant is located approximately 300 km from Cairo on the Mediterranean coast. Construction of the reactors began in 2022 and continues intensively. As noted by A. Filonik, "The nuclear power plant gives Egypt additional political weight within the Arab world and places it alongside the UAE, where the Barakah NPP is under construction in Abu Dhabi. These developments clearly demonstrate the determination of Arab countries, each on its trajectory toward the future, to develop modern industrial and power sectors, organize their territories, raise the welfare of their populations, and demonstrate the capacity for sustainable development, naturally, according to available resources" [31].

The development of nuclear energy aligns with Egypt's climate objectives: projections indicate that by 2100, Egypt will experience higher levels of warming than the global average, which will sharply increase electricity demand [30].

Indonesia's energy balance is structured as follows: coal — 42.7%, oil — 30.7%, natural gas — 16.2%, renewables — 8.2%, and hydropower — 2.2% [32]. Consequently, the country currently lacks nuclear capacity. Indicators of electricity production per capita and per unit of GDP are already significantly below global averages. Energy demand is projected to increase more than fivefold, reaching 731.058 million tonnes of oil equivalent by 2050.

In 2015, Rosatom and the National Nuclear Energy Agency of Indonesia signed a memorandum of understanding on “peaceful nuclear energy.” Currently, active dialogue is ongoing to establish a baseline scenario for the development of nuclear power in Indonesia. Given the country's location along the Pacific “Ring of Fire,” characterized by high tectonic activity, approximately 6–7 thousand earthquakes of magnitude above 4.0 are recorded annually. Accordingly, Rosatom's proposals primarily focus on the design of floating NPPs for offshore deployment.

In 2021, negotiations were held regarding the construction of an NPP on the island of Kalimantan, which exhibits relatively low seismic activity and possesses significant uranium resources, enabling autonomous fuel supply for the plant. Concurrently, the Indonesian government has planned the deployment of light-water reactors on the most densely populated islands — Bali, Java, Madura, and Sumatra — beginning in 2027. Additionally, compact floating nuclear stations of up to 100 MW are planned for Kalimantan, Sulawesi, and several other islands to provide electricity and heat to industrial facilities. In October 2022, Moscow proposed the construction of a NPP in Indonesia's new capital, Nusantara [33].

Indonesia's high seismic activity contributes, in part, to a generally negative public discourse regarding “peaceful nuclear energy,” which is common across much of the region. For example, public opposition prevented the commissioning of a completed NPP in the Philippines. Therefore, extensive public outreach and educational efforts are necessary for the full implementation of a peaceful nuclear energy policy in Indonesia.

For the past 20 years, Iran's nuclear program has been at the center of international attention. In 2002, Tehran announced its priorities for the development of nuclear energy and the initiation of work across various areas of nuclear technology. Due to concerns raised by the International Atomic Energy Agency (IAEA), the UN Security Council adopted several resolutions requiring Iran to halt uranium enrichment as well as activities related to the design of the IR-40 research reactor.

In 2013, Germany, the United Kingdom, France, China, Russia, and the United States (E3+3) adopted a Joint Plan of Action (JPA) with Iran, aimed at ensuring the exclusively peaceful nature of Iran's nuclear program [Dyakov]. In 2015, the E3+3 and Iran agreed on the Joint Comprehensive Plan of Action (JCPOA), which further guaranteed the peaceful character of Iran's nuclear activities. The JCPOA facilitated the easing of anti-Iranian economic sanctions, leading to some reactivation of Western investment in Iran. However, in 2018, U.S. President Donald Trump announced the withdrawal of the United States from the JCPOA and the reinstatement of economic sanctions on Iran, citing concerns that Tehran was pursuing nuclear weapons. Following the Iran–Israel escalation in the summer of 2025, a crisis emerged in Iran–IAEA relations, marked by restricted

access to certain strategic sites. By September 2025, however, both parties signed an agreement to resume cooperation; nevertheless, the process once again reached a deadlock [34].

According to the 2024 Statistical Review of World Energy by the Energy Institute, Iran's total primary energy consumption amounted to 12.71 exajoules, of which approximately 70% came from natural gas, 27% from oil, 1.6% from hydropower, 0.7% from coal, 0.5% from nuclear energy, and 0.2% from renewable sources [35]. Despite the relatively small share of nuclear energy in the national energy balance, it is traditionally considered by Iran as a strategically important sector. The country's first NPP, Bushehr, with a capacity of 915 MW, was commissioned in 2011 with support from Moscow. Construction commenced on a second unit with a capacity of 1057 MW at the Bushehr NPP site in 2019; a third unit and the Karun 300 MW NPP are planned.

Like several other BRICS+ members, Iran possesses uranium reserves. In 2022, domestic production amounted to 20 tonnes. Overall, according to various sources, Iran's uranium reserves are estimated at 4–5 thousand tonnes [36].

According to the 2024 Statistical Review of World Energy, the total primary energy consumption in the United Arab Emirates (UAE) amounted to 5.13 exajoules, of which approximately 47% came from natural gas, 42.9% from oil, 5.7% from nuclear energy, 1.9% from coal, and 2.5% from renewable sources [37].

The UAE's nuclear program is relatively recent. In 2006, six member states of the Gulf Cooperation Council (GCC)—Kuwait, Saudi Arabia, Bahrain, the UAE, Qatar, and Oman — agreed on a research program for the peaceful use of nuclear energy. This initiative led to the construction of the Barakah NPP, commissioned in 2020 as the first nuclear power station in the Arab world. The plant has a total capacity of 4,011 MW. The project was executed by the South Korean consortium KEPCO, which in 2023 began negotiations with the UAE regarding the construction of two additional units at the Barakah site.

Given the UAE's ambitious goal of achieving net-zero emissions by 2050, the development of the nuclear energy sector is considered a strategic necessity.

Ethiopia. The energy balance of Ethiopia is characterized by a pronounced dominance of renewable sources, accounting for 98.44% of the total, including biomass-fired thermal power plants (4.81%), hydropower plants (88.18%), wind power (5.03%), solar photovoltaic (0.34%), and geothermal power plants (0.11%). Non-renewable sources constitute only 1.54%, entirely represented by thermal power plants using organic fuel. Hydropower, therefore, occupies a central role in Ethiopia's energy system. Notably, in September 2025, Ethiopia commissioned Africa's largest hydropower facility, the Grand Renaissance Dam, with an installed capacity of 5,150 MW.

At the same time, Ethiopia is pursuing energy diversification, including plans for nuclear power development. The key partner within the BRICS+ framework is Rosatom, with additional cooperation being established with China. In September 2025, Prime Minister Abiy Ahmed announced that Ethiopia intends to invest USD30 billion in infrastructure development, including nuclear power. He emphasized that the future NPP would be comparable in scale and significance to the recently commissioned Grand Renaissance hydropower plant.

Conclusions

Thus, the “peaceful atom” constitutes one of the key megatrends of sustainable energy development within the BRICS+ space, serving as a fundamental tool for the transition to a low-carbon energy system. Comparative cross-country analysis demonstrates that the BRICS+ countries possess unevenly developed nuclear infrastructures, shaped by both geographical features and the resource endowments of each state. In this context, the presence of domestic uranium reserves is considered a basic precondition for sustainable development of the nuclear sector.

Equally important are international cooperation, the establishment of national scientific schools and human capital in nuclear energy, as well as adherence to non-proliferation regimes and the assurance of exclusively peaceful use of nuclear technology. These measures ensure sector stability and mitigate geopolitical and technological risks.

The analysis indicates that the BRICS+ space holds substantial potential for the expansion of the “peaceful atom”. Key players — Russia, China, and India — act as locomotives of this development, capable of providing technology transfers within the limits of national security, as well as facilitating the exchange of scientific and managerial expertise. Simultaneously, the uranium resources possessed by many BRICS+ countries create conditions for significant growth of nuclear energy, aimed at enhancing the energy sustainability of the Global South.

The development of a dedicated BRICS+ ecological and energy agenda, including low-carbon transition and sustainable infrastructure issues, appears strategically expedient. Such an agenda would allow for systematic determination of priorities for financing and developing “sustainable infrastructure” within the framework of the New Development Bank of BRICS, ensuring long-term synergy between the economic, environmental, and technological objectives of member states.

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Повестка БРИКС+ в области устойчивого развития ядерной энергетики: современное состояние и новые тенденции

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Аннотация. Ядерная энергетика становится стратегически значимым компонентом энергетического баланса стран БРИКС+, отражая как растущий спрос на энергоресурсы, так и стремление к технологическому суверенитету. В данном исследовании анализируется распределение мощностей атомных электростанций, запасов урана и реализуемых проектов среди государств БРИКС+, что позволяет рассматривать их усилия в более широком контексте глобальной диверсификации и безопасности энергосистем. Анализ основан на данных о действующих атомных электростанциях, реакторах, находящихся в стадии строительства, и ресурсах урана, собранных из международных энергетических баз данных и официальных отчетов. Результаты показывают, что Россия, Китай и Индия формируют технологическое и производственное ядро БРИКС+, концентрируя большинство действующих реакторов и новых проектов строительства, в то время как Бразилия и Южная Африка поддерживают стабильные, но более скромные программы, опираясь на собственную добычу урана. Египет, Эфиопия, Иран, Индонезия и Объединенные Арабские Эмираты становятся новыми участниками, продвигающими амбициозные проекты в области ядерной энергетики. Эти тенденции свидетельствуют о формировании коллективного влияния БРИКС+ на глобальный рынок ядерной энергии и ядерного топлива, а также об усилении их роли в обеспечении глобальной энергетической стабильности.

Ключевые слова: БРИКС+, ядерная энергетика, мирный атом, запасы урана, энергетическая безопасность, глобальная энергетика, диверсификация

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BRICS as an Emerging Model of Non-Western Multilateralism in the Age of Geopolitical Realignment: Conceptualizing the Pluralistic Partnership Forum

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Abstract. Amidst a rapidly changing global order, BRICS (Brazil, Russia, India, China, and South Africa) has emerged as a distinctive form of international cooperation. Unlike traditional international or regional organizations, or even mini-lateral groupings, BRICS functions as a heterogeneous, consensus-driven platform that emphasizes pluralism, sovereignty, and flexible cooperation without binding treaties or supranational authority. In the context of shifting power dynamics, it represents a new league model of cooperation among emerging powers. Acknowledging this distinctiveness, the article introduces the concept of a 'Pluralistic Partnership Forum' to explain the actual working of this organizational form. BRICS uniqueness lies in its diversity across continents, political systems, and economic models, which is further reinforced through 'BRICS+'. It seeks to offer an alternative to Western-dominated multilateralism by promoting South-South cooperation, advancing development finance through the New Development Bank, and advocating reforms in the global financial architecture. Importantly, BRICS challenges Western monetary dominance, global payment system asymmetries, and the weaponization of the U.S. dollar, while working within the existing order to expand emerging economies' agency. Understanding BRICS as a 'Pluralistic Partnership Forum' provides new analytical insights into the evolution of non-Western multilateralism and underscores its potential as a model for post-Western global cooperation and order-building.

Keywords: Pluralistic Partnership Forum, Positive Soft Power, De-Dollarization, Liberal International Economic Order, Consensus Driven Diplomacy

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Introduction

The existing Liberal International Economic Order (LIEO), which is built around institutions such as the International Monetary Fund (IMF), the World Bank, and the World Trade Organization (WTO), are largely driven and dominated by the Western powers, particularly the United States of America and Europe, and has increasingly come under strain. This is not only because of its inherent bias towards the West, which has got the Global South vigorously seeking reforms and an alternative, but also due to the rise of populism in Western democracies, Liberal International Economic Order (LIEO) is losing ground even on its own home turf [1–5]. Moreover, the emerging economies that have grown in power and influence, continue to remain underrepresented and constrained within this current economic framework [6]. Considering this reality of the current global economic order, calls for a more inclusive, equitable, and pluralistic international system has become the order of the day.

It is within this context that BRICS, a grouping of Brazil, Russia, India, China, and South Africa, has emerged as a distinctive form of international cooperation, having a distinctive novel purpose of providing an alternative to the failings of the LIEO. BRICS, which was established initially as a loose grouping in the mid-2000s, has grown to become BRICS+, encompassing a new vision of multilateralism that departs fundamentally from traditional international organizations or regional

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alliances [7]. The grouping functions more as a heterogeneous, consensus-driven platform that emphasizes pluralism, sovereignty, and flexible cooperation without binding treaties or supranational authority. Thus, in the context of shifting global power dynamics and geopolitical realignment, BRICS represents a new model of cooperation among emerging powers.

This unique organizational form offers a fresh perspective on how emerging powers engage collectively to navigate an increasingly multipolar and contested global order. BRICS' uniqueness lies in its membership diversity spanning multiple continents, political systems, and economic models, a diversity that is further enhanced through the 'BRICS+' expansion. Equally significant is its ambition to provide an alternative to Western-dominated multilateralism. The grouping actively seeks to contribute to global governance by promoting South-South cooperation, advancing development finance through institutions like the New Development Bank, and advocating reforms in the global financial architecture. Importantly, BRICS strives to reform and adapt the LIEO by challenging aspects such as Western monetary dominance, the global payment system asymmetries, the weaponization of the U.S. dollar, and exclusionary governance structures, while simultaneously working within the existing order to increase the voice and agency of emerging economies. In fact, BRICS faces the challenge of addressing "the elephant in the room", which is the intrinsic problems of the liberal global order, that many acknowledge, but few openly confront.

Acknowledging BRICS distinctiveness, this article introduces the concept of Pluralistic Partnership Forum (PPF) to better describe and analyse the actual working of this unique organizational form. The PPF framework highlights BRICS pluralistic nature, grounded in respect for diversity and sovereignty, and its strategic flexibility in navigating complex international environments without the constraints of formal treaty obligations. This conceptualization not only deepens the understanding of BRICS' internal mechanisms but also situates it within broader debates about the future of global governance and multilateralism.

Along these lines, understanding BRICS as a Pluralistic Partnership Forum provides new analytical insights into the evolution of non-Western multilateralism and underscores its potential as a model for post-Western global cooperation and order-building. Additionally, the article contributes to the growing scholarship on alternative multilateralism and the restructuring of the global order, particularly within the framework of ongoing geopolitical realignment and global economic governance reform.

Materials and Methods

Conceptualizing BRICS as a Pluralistic Partnership Forum

BRICS' distinctiveness defies easy categorization within the established typologies of international cooperation. It does not fit into the definition of a regional organization, because its membership spans multiple continents; it can neither be considered a formal international organization, because there is no treaty, secretariat, or binding legal structure of the grouping; nor does it resemble a traditional minilateral grouping, because it lacks homogeneity or thematic focus, which is typical of such groups. So, BRICS can be called a Pluralistic Partnership Forum (PPF) as the term, 'Pluralistic', captures the diversity in geography, political

systems, and economic models; the term ‘Partnership’, which is softer than “alliance”, avoids military overtones, and reflects voluntary, consensus-based engagement; and lastly the word, ‘Forum’, accurately describes its operational mode: structured meetings, dialogue, and joint initiatives, rather than formal integration or treaty-based commitments.

Thus, the concept of PPF perfectly defines BRICS, which can be defined as a coalition of sovereign states with diverse political systems and economic structures, engaged in structured, recurring dialogue and cooperative initiatives across multiple domains without binding treaties or supranational authority. PPF emphasizes on voluntary participation, respect for sovereignty, and thematic flexibility, serving as a platform for coordination, agenda-setting, and norm-shaping in global governance.

The PPF framework is particularly significant as it portrays BRICS as both less institutionalized than formal organizations such as the United Nations, and yet more structured than *ad hoc* coalitions like the G20. This unique quality allows BRICS to remain flexible while exerting collective influence. Equally significant are the resilient characteristics of BRICS, despite serious bilateral differences among its members, particularly the border disputes between some of the member states, divergent economic models, or geopolitical alignments. Under such circumstances, instead of fragmenting, BRICS has been able to project a unified image, primarily because of its collective goal, that is to reform a global order, which is perceived to be structurally unfair and exclusionary. Moreover, external pressures from the West, such as the weaponization of the U.S. dollar, the dominance of Western-led institutions, and the use of sanctions as geopolitical tools, have served as a unifying factor that overrides internal frictions. This gives the BRICS members not only a defensive rationale, to shield members from systemic vulnerabilities, but also an offensive agenda, to construct alternative institutions and frameworks in global governance.

Taken together, conceptualizing BRICS as a Pluralistic Partnership Forum provides clarity not only about its structure but also about its resilience and strategic purpose. This cohesion underlines the uniqueness of BRICS, enabling it to challenge the entrenched economic hegemony of the West, and provide emerging powers with a collective voice. The following section elaborately analyses this significance in greater detail.

BRICS’ Strategic Significance and Institutional Distinctiveness

Having established BRICS as a PPF, it is essential to examine the substantive areas where this distinctiveness actually exists. The significance of BRICS lies not just in its structural form, but also in its ability to exercise political influence, build alternative economic pathways, and project positive soft power as a tool for minimizing the inherent bilateral differences. Together, these dimensions underscore BRICS’ potential to act as both a counterweight to Western-dominated institutions and a forum for alternate models of global cooperation.

Political Pluralism as a Foundation of BRICS

A Pluralistic forum allows and rather encourages the development of diversity of ideas, priorities and needs to coexist in a cooperative manner. BRICS as evident from its stainless track record is a perfect example of a pluralistic forum. So far there have been 17 leaders’ summits and all of them have ended with a joint leaders’ declaration (BRICS 2025 Leader’s declarations), with no public record available of any contention or conflict in the final declaration. This suggests that the prescribed

consensus-driven model of BRICS is operating as intended in contrast to bodies like G7 which could not reach a joint communiqué in its 2025 summit held in Kananaskis, Canada [8].

The BRICS grouping since its inception had been criticized for being an incoherent, non-aligned and disputed body ridden with internal rivalries and contradictions. The very fact that not a single leader's summit was missed neither any joint declaration was skipped shows that genuine interest in cooperation can trump short-term bilateral contentions whereas institutions of the liberal order like the WTO for example.

C.P. Chandrasekhar argues that WTO has become a tool for advancing the interests of developed nations at the cost of weaker developing nations. When things don't fall in their favor, the west heeds all efforts to block the very functioning of the designated mechanism, the dispute settlement mechanism of WTO for example whose functioning has broken down as US is reluctant to appoint members to the appellate body [9]. In the era of changing world order when the world is becoming multipolar, when the power centers are shifting, BRICS nations have started to stand together when crisis affects any of its members. When Donald Trump slapped tariffs on trade from India, the BRICS nations united and developed a joint front to counter such unilateral and ill-advised moves which have far reaching implications on global trade [10]. BRICS is positioning itself as a pluralistic forum where diversity is celebrated, difference in ideas is encouraged and equality is nourished.

This pluralistic partnership is also reflected in economic co-operation among member countries of BRICS as discussed further.

BRICS and Economic Pluralism

As far as global co-operation is concerned it is mostly centered around the economic front. Ever since the inception of BRICS it was described as an acronym for emerging economies of the time. In 2001, Goldman Sachs' Global Investment Research Division published the report, "Build Better Global Economic BRICS", coining the acronym for the four countries that would reshape the world economy—Brazil, Russia, India and China. Today the acronym has transformed to BRICS + with 11 member nations and 40+ interested in becoming one. To get an idea of how BRICS is performing in the economic front it is crucial to look at the metrics. BRICS has accounted for 39.9% of Global GDP (PPP) in 2025, and 54.5% of global GDP growth in the past 10 years ranging from 2015 to 2025. It has overtaken the G7 which accounts for 25.1%(PPP) of Global GDP in 2025, and 13.7% of global GDP growth in the past 10 years [11].

In terms of global trade, BRICS countries answer for 24% of total global exchanges. In 2022, intra-BRICS merchandise trade totaled U.S. \$718 billion. With 48.5% of planet's population (brics.br 2025) and an annual average growth tendency above the world average for the next decade, BRICS is a force to reckon with. In the present scenario, three of the most significant challenges that face the global economy and BRICS more so is de-dollarization, reforming the Global financial institutions and coming up with an alternative payment system.

BRICS and the Challenge of De-Dollarization

The dollar since the end of World War II has been the world's dominant reserve currency, it accounts for 58% of foreign reserves holdings, 54% of trade invoicing and 88% share of forex transactions [12]. Even the idea of replacing it outright is

formidable. This position of US dollar has historical roots. After the Second World War the US leveraging its position as a superpower rejected the idea of a global common currency which would have been used for global trade. The use of dollar has also been strengthened by the relative stability of US economy and the inherent trust in its performance. This as the former French Finance Minister Valéry Giscard d'Estaing stated is an "exorbitant privilege."

But the dollar is not any neutral currency, it is a sovereign currency regulated by the Federal Bank of U.S. It serves the interest of USA and not the world. Though governed by the rules of demand and supply, decisions of the U.S. federal bank, U.S. government and Parliament have effects on its value, the implications of which are far reaching for the countries trading in dollars. The U.S. can control foreign sovereign financial assets, including the ability to freeze or seize them within the existing regulatory and technical systems. It also has the unilateral power to impose sanctions. The dollar's dominance in international trade and finance subjects these nations to currency risk, trade imbalances, and policy decisions made in Washington, D.C., which may not align with their economic interests or stability requirements. The dollar's hegemony imposes several constraints on BRICS economies, including increased transaction costs, exchange rate volatility, and susceptibility to external economic policies. Such dependency curtails the financial sovereignty of these nations, limiting their ability to implement independent economic policies tailored to their development goals [13].

To counter the dominance of dollar BRICS nations are exploring the conception of a common currency and trading in local currencies. The idea of a common currency is fascinating but remains out of reach. It is evident from the fact that when Brazilian President mooted the idea of evolving a common BRICS currency to counter the volatility and vagaries of dollar, U.S. President Trump threatened the grouping (BRICS) with 100% tariffs [14]. The usage of local currencies in Inter BRICS trade is not living up to expectations and has huge upside potential. Only Russia due to the ongoing war is a prominent user of local currency in trade with 90% of its trade taking place in local currency mostly in return for Chinese Yuan [15].

It is also inefficient for two countries trading bilaterally to use dollar as the cost of exchanging currency adds up to the cost of trade. For example, when Brazil and India trade, for converting Brazilian reais to U.S. dollars and then to Indian rupees adds approximately 3–5% in transaction costs and introduces exchange rate risks at both conversion points. A direct currency exchange mechanism between BRICS nations could potentially save billions annually. For example, China and Russia have already seen transaction costs decrease by an estimated 2–3% through direct yuan-ruble exchanges, representing significant savings given their annual bilateral trade volume of approximately \$190 billion [16]. The global exports in 2023–2024 accounted for almost \$20 trillion dollars, BRICS accounts for 20% of this i.e., exports valued at \$4 trillion, which if settled in local currencies saving even 2% would amount to \$80 billion in just currency exchange. The Global Financial and Monetary framework also exhibits similar tendencies of western dominance.

Reforming the Global Financial and Monetary Framework

The global financial landscape has historically been dominated by the Bretton Woods Twins, IMF and the World Bank. While their mandate in global development finance, crisis management and economic stability has been a mixed bag, lately they have started to feel redundant. Criticisms have stemmed from across the spectrum for their undemocratic structure and process, insufficient corpus to meet

exigencies and the dominance of west in decision-making. The U.S. has virtual veto in IMF's decision-making process.

Western dominance can be corroborated with an interesting fact. The head of IMF has always been a European. Every Managing Director since 1946 has been a European national. All Managing Directors shows each with their nationality for example, Kristalina Georgieva – Bulgaria; Christine Lagarde – France; Dominique Strauss-Kahn – France; Horst Köhler – Germany; Rodrigo Rato – Spain; Michel Camdessus – France; Jacques de Larosière – France; H. Johannes Witteveen – Netherlands; Pierre-Paul Schweitzer – France; Per Jacobsson – Sweden; Ivar Rooth – Sweden; Camille Gutt – Belgium [17] Similarly, the Head of World Bank has invariably been from the U.S. [18]. This agreement between the Europeans and USA has been described as the “Gentlemen’s agreement” [19].

The IMF though instrumental in handing bailout packages to economies in distress has imposed the ideas of liberal order disguised as Structural Adjustment Programs, forcing the distressed economies to make adjustments that suit the liberal agenda. This poses threat to autonomy of a sovereign nation. The one-size-fits-all approach of the IMF dictating the terms of the Washington Consensus has done more damage than good [20]. It has been accused of discrimination by the emerging and developing economies that despite their increasing size and capacity they are deprived of their fair share.

BRICS in its 6th summit held in Brazil 2016 took the initiative of launching two alternative arrangements under the BRICS bank headquartered in Shanghai, China the New Development Bank (NDB) and the Contingency Reserve Arrangement (CRA). With a \$50 billion and \$100 billion corpus for each respectively, they mirror the World Bank and IMF [21]. The structures and processes are democratic, based on equal treatment. The two institutions adopt an equal weight system with each member country having equal share and equal voting weight regardless of differences in their contribution or size of economy and uses consensus instead of majority voting system. Equality and Equity of a system are negatively co-related. The BRICS institution provide equal treatment but are not necessarily equitable [22]. While it has its fair share of problems, it is a significant improvement to the lopsided and unfair mechanism of other financial bodies. The World Bank, IMF, Asian Infrastructure Investment Bank and Asian Development Bank, all come under the weighted voting system. In the era of multipolarization and decentralization of power in global politics the new arrangement is lucrative, especially to those who feel left out in the present global financial system.

While BRICS did come up with alternatives to the Bretton Wood Twins, In the joint declaration of 2025 leader’s summit, it has been made clear that BRICS still supports the existing arrangement Global monetary and Financial System and the agenda of BRICS is reforming these institutions to be more inclusive and equitable. BRICS Rio De Janeiro Vision for IMF Quota and Governance Reform 2025 calls for increased basic voting share of low-income countries and for readjustment of quota to reflect the relative positions of members in the global economy [23].

BRICS thus does not outrightly disregard the current global economic and financial landscape but calls for a more pluralistic and inclusive structure, reducing the West’s undue influence and absolute control over these institutions by having fair share for the countries of Global South both in benefits accruing from them and also in control and decision-making processes.

Results and Discussion

BRICS' Response to the Global Payment Position

The International Payment mechanism is centered primarily around SWIFT or the Society for Worldwide Interbank Financial Telecommunication. SWIFT is a network that banks, financial institutions, and large corporate organizations use to communicate with each other securely about cross-border financial transactions. It is a cooperative body, owned by its shareholders. It is subject to EU law and operates under supervision of G10 National Banks with the European Central Bank and National Bank of Belgium being the lead overseers. It is legally obliged to comply with legitimate sanctions under EU law, which it did by removing sanctioned institutions from the network in response to sanctions, Russia and Iran being the major examples [24].

When such crucial international mechanisms become subject to the whims of sovereign laws, complications are bound to arise. Russia, a BRICS member country, has assets worth around \$300 billion frozen across institutions of West. As it was ousted from the very mechanism that could transfer these assets back, Russia could only wait and watch. Some of the interest earned from these assets was transferred to Ukraine. There was also talks about seizing these assets and helping Ukraine in the war. This is a cause for concern among other countries like India, China, and Saudi Arabia which perceive this as a risk to the future of their assets [25].

BRICS leaders, at their July 2025 summit in Rio de Janeiro, reaffirmed commitment to developing an alternative cross-border payments system. The inception as such a system has existed for a while. BRICS has set up Cross-Border Payments Task Force.

BRICS as a Forum for Exercising Positive Soft Power

“Positive soft power” is a concept in International Relations that relates to fostering an understanding of oneself (in nation-state terms) to the other. It promotes comprehension and helps in doing away with any misunderstanding that exists between nations and the people living within them. Better understanding fosters harmony and helps policymakers to predict what the other side is thinking or the way the other side would react in a certain situation. And thus, better decisions can be taken keeping in view all sensitivities and intentions. Positive soft power is not about seeking to influence others' behavior and getting them to do what you want them to do. Positive soft power generates awareness and perception of the self to the other. This becomes important, as it primarily helps in doing away with misperceptions [26].

This concept is highly relevant in the context of BRICS which as a forum demonstrates the ability of fostering a pluralistic partnership among member countries. Specifically, when there exists significant bilateral issues, mistrust and skepticism among members. For example, India and China are not just the most populous countries of the world, they are historical civilizations with vast, diverse and rich history, culture, and traditions. At the same time, both have global aspirations of projecting themselves as a superpower. These aspirations may reflect conflicting tendencies as discussed later in this article but by using positive soft power approach it can be transformed as cooperation. Because BRICS provides that platform for generating an understanding among members, which otherwise is difficult through the Western-dominated media. By unlocking this potential, BRICS nations can resolve bilateral mistrust, work together on issues that concern them and create an atmosphere of genuine cooperation in challenges that require all hands on deck.

Oliver Stuenkel in the introduction of his book, "The BRICS and the Future of Global Order" has described how the BRICS was declared as an incoherent body, deemed to disintegrate due to diversity of views, issues and challenges among the member countries. Some had even questioned whether anything substantial could be achieved by the grouping. Even though the BRICS as a forum sustained the criticisms and proved to be more pluralistic than the existing order, bilateral and national interest issues do exist between the member countries which hinders the BRICS to realize its full potential.

Sovereignty, integrity of nation and sanctity of international borders are areas which can trump and derail any form of co-operation between two countries. The most significant of such bilateral challenges in BRICS persists between India and China. Both India and China have global aspirations which at present seem to be contradictory. Tensions in LAC, standoff in Doklam, different perceptions of international boundary have all been persistent as a bilateral issue between India and China. Ever since the Standoff in Galwan Valley in 2020, relations have not been normal.

China which is a permanent member of UNSC has never been in favor of India joining the elite grouping. It has also opposed India's induction into the Nuclear Suppliers Group. India on the other hand had reservations regarding the China's relation with Pakistan whether it be the China Pakistan Economic Corridor, which led to India not joining and rather opposing the BRI. India was also disappointed by China's decision of blocking Indian attempt to designate and sanction Pakistan based terrorists in UN [27]. With this persistent trust deficit, a joint front for reforming or providing alternative arrangements to existing order seems difficult. It was only by mid-2025 when both sides agreed on returning to normalcy, which was strengthened by the visit of Chinese foreign minister Wang Yi to India in August 2025 [28].

Similarly, the newly inducted members of BRICS, Egypt and Ethiopia which joined the grouping in 2024 also have an ongoing dispute related to the Great Ethiopian Renaissance Dam built on Nile River in Ethiopia which Egypt fears will put its share of freshwater flow at risk. Nile accounts for 90% of freshwater in Egypt. The Dam has become a prestige issue between both the countries. Egyptian President Abdel-Fattah El-Sissi has termed the dam an existential threat to Egypt's water security. ("Existential threat': Sisi warns on Nile water as Ethiopia completes dam", 2025) [29].

Meanwhile Iran which also joined the grouping in 2024 and Saudi Arabia which can be a potential member which has not yet accepted invitation by BRICS to join the grouping are engaged in multifaceted conflicts. Both are ideologically distinctive, both claiming to be the leaders of Muslim world but heading different sects. Iran follows Shia sect while Saudi Arabia follows Wahhabism which is a strict interpretation of the Sunni Islam. Both are members of the OPEC but follow competing strategies. Above all both are engaged in proxy wars throughout the Middle East may it be Yemen, Syria, Iraq or Lebanon. While Saudi Arabia is a trusted U.S. partner, Iran is the most severe adversary of U.S. in Middle East. Efforts in direction of normalizing ties between Iran and Saudi Arabia were made by China which brokered a deal in 2023 which led to resumption of bilateral ties and reopening of embassies [30].

There also exists a difference of opinion, strategy and response when it comes to concerted efforts on direction of future action. While the agenda of de-dollarization is gaining momentum, BRICS members have difference of opinion regarding its

intent and extent. While Brazilian President Luiz Inácio Lula da Silva openly calls for development of a common BRICS currency and de-dollarization, India on the other hand released a statement that it is not a part of their financial agenda rather it seeks to promote trade in local currency [31]. India fears that a common currency with the likes of China may backfire. India is also skeptical of the idea due to limited economic integration between the BRICS countries. The Foreign ministers' summit of 2025 which preceded the leader's summit failed to issue a joint statement mainly due to different positions on UNSC reform. Historically, the document has recognized claims of India, Brazil and South Africa for playing a greater role in UNSC, it fell short of describing their aspirations of becoming a permanent member. Another aspect is that not all members share the strong "anti-west" idea held by some [32].

Plagued by these differences and disputes the agenda of genuine cooperation seems difficult idea. Forums like BRICS serve either purpose. It may become a platform for these countries to spread propaganda on bilateral issues with a narrow perception of national interest. Alternatively it may provide a forum for these countries to come together for the larger good in their national interest, use positive soft power and understand each other better and resolve bilateral issues in a free & fair manner and cooperate for the achievement of very goals for achievement of which they joined the grouping i.e., reforming the institutions of present world order and demonstrating an alternative arrangement that reflects a pluralistic partnership among free and equal countries of the world with more emphasis on the countries of the Global South.

Conclusions

After addressing the challenges, it becomes evident that the threats confronting BRICS members are largely common, particularly those brimming within the Liberal International Economic Order. This shared vulnerability has allowed BRICS to stand out as an alternative and strong collective voice for reforming global governance. Its resilience and ability to project unity, despite internal differences, underline the importance of conceptualizing it as a Pluralistic Partnership Forum, a framework that captures its pluralism, voluntarism, and flexibility. Seen through this lens, BRICS is not just another coalition but a distinct organizational form that provides emerging powers with both the platform and legitimacy to push for a more inclusive, equitable, and multipolar world order.

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БРИКС как формирующаяся модель незападного многостороннего сотрудничества в эпоху геополитической перестройки: концептуализация плюралистического партнерского форума

А.К. Гупта , С. Бхарти 

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Аннотация. На фоне стремительно меняющегося мирового порядка БРИКС (Бразилия, Россия, Индия, Китай и Южная Африка) выступает как особая форма международного сотрудничества. В отличие от традиционных международных или региональных организаций, а также минилатеральных группировок БРИКС функционирует как гетерогенная, основанная на консенсусе платформа, подчеркивающая плюрализм, суверенитет и гибкое сотрудничество без обязательных договоров и наднациональных полномочий. В условиях изменения глобального баланса сил объединение представляет собой новую лигу взаимодействия между государствами с формирующейся мощью. Признавая эту специфику, в статье вводится концепция плюралистического партнерского форума для объяснения реального механизма функционирования данной организационной формы. Уникальность БРИКС заключается в его многообразии, охватывающем разные континенты, политические системы и экономические модели, что дополнительно усиливается форматом БРИКС+. Объединение стремится предложить альтернативу западно ориентированному многостороннему порядку, продвигая сотрудничество Юг–Юг, развивая финансовую архитектуру через Новый банк развития и выступая за реформы глобальной финансовой системы. Особое значение имеет вызов, который БРИКС бросает западному монетарному доминированию, асимметриям глобальной платежной системы и «оружейнизации» доллара США, одновременно работая внутри существующего порядка для расширения возможностей развивающихся экономик. Понимание БРИКС как плюралистического партнерского форума дает новые аналитические перспективы для изучения эволюции незападного многостороннего взаимодействия и подчеркивает потенциал объединения как модели постзападного глобального сотрудничества и формирования нового мирового порядка.

Ключевые слова: плюралистический партнерский форум, позитивная мягкая сила, дедолларизация, либеральный международный экономический порядок, дипломатия, основанная на консенсусе

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HISTORY OF INTERNATIONAL RELATIONS AND FOREIGN POLICY

Review / Обзорная статья

Artificial Intelligence: The Chinese Experience and Its Implications for the BRICS+ Countries

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Abstract. Learning about China's approach to AI development and implementation is crucial for BRICS+ due to its significant advancements and strategic focus on becoming a global leader in the field. Understanding China's AI landscape provides valuable insights for international collaboration, competition, and the broader global impact of AI. The importance of the topic is predetermined by the following: 1) the geopolitical context; 2) economic component; 3) technological and digital sovereignty; 4) defense and cybersecurity; 5) training of personnel; 6) forming alternative AI norms. The methodology was based on documentary analysis. China's strategy is assessed along four structuring axes, which can be adopted by BRICS+: 1) computational infrastructure; 2) data; 3) specialized workforce; and 4) research and development (R&D). The findings indicate that China distinguishes itself through its pursuit of global AI leadership through massive investments. Beijing is willing to work with BRICS partners to deepen pragmatic cooperation, China open to win-win AI cooperation through Belt & Road. International cooperation of China in the field of AI with the BRICS+ countries in the field of creating a common infrastructure, developing uniform standards and legislation, data exchange, and educational programs will serve as an impetus for the development of AI in the countries of the association.

Keywords: China, BRICS, artificial intelligence, international agreements

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Introduction

The development of artificial intelligence has become a key factor in global competitiveness, economic growth, and technological sovereignty. AI opens up new opportunities, new areas of cooperation, and also creates challenges and complexities that require a joint response. The development of AI is becoming especially relevant during the fourth technical revolution and is becoming the driving force of technological progress. The ability to produce new technologies is becoming a critical condition for economic development. Based on McKinsey estimates, the automation of individual work activities enabled by AI technologies could provide the global economy with an annual productivity boost of 0.5 to 3.4 % from 2023 to 2040 depending on the rate of automation adoption – with generative AI contributing to 0.1 to 0.6 percentage points of that growth [1].

According to the Global AI Index 2024 [2], which includes 83 countries investing in AI, only one BRICS country, China, entered the top 3, ranking second after the United States: U.S. (scores 100), China (scores 53.88), Singapore (scores 32.33). The following BRICS countries are also represented in the index: India – 10th place (scores 23.82), UAE – 20th place (scores 16.99), Brazil – 30th place (scores 12.4), Russia – 31st place (scores 12.07), Indonesia – 49th place (scores 8.61), Egypt – 52nd place (scores 8.25), Iran – 60th place (scores 6.61), South Africa – 69th place (scores 5.41), and Ethiopia – 83rd place (scores 1.82). However, it is worth noting that the indicators for Russia and China are not reflected entirely reliably, do not reflect the real role of our countries in the development of AI, since some of the data in Russia is closed, including in the context of the Special military operation, and China, due to the cooling of relations with the West, selectively publishes information.

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AI has a significant impact on people's production and lifestyle, as well as on global governance reform. However, the benefits of AI development inevitably come with new challenges and threats. Information globalization has not only simplified communication between people, but has also provoked an increase in cybercrime, cyberattacks, the spread of terrorist and extremist ideas, and data leaks, including confidential data. BRICS+ countries, which represent emerging economies, are increasingly paying attention to AI cooperation and building a unique model for AI co-development. The author believes that deepening AI cooperation will become a new growth point for the BRICS cooperation mechanism, inject new impetus into South-South cooperation, and propose a "BRICS vision" for global AI governance.

In recent years, more and more studies have been published on the topic of AI development in China. There is a whole pool of scientific studies by Russian experts on this topic [3–6], by Chinese experts [7–10] by other experts [11–13]. In addition, recently there have been more and more works devoted to the development of AI in the BRICS countries + [14–17].

Materials and Methods

The study is written within the framework of the world-systems analysis developed by the American historian I. Wallerstein. The study considers China as a key example of a country that is gradually moving from a peripheral or semi-peripheral position towards the core. The rapid development of AI in China, as well as the country's leading positions in a number of AI areas, indicate such a transition. The theory helps explain why China actively cooperates with the BRICS countries, including in the field of AI. According to the world-systems analysis, the Global South corresponds to the periphery or semi-periphery, which advocates alternative paths of global development, where the voice of the South will be heard.

Results and Discussion

AI Development in China: State Strategy and Policy

In 2015, Chinese President Xi Jinping set the goal of turning China into a great power. This is according to the national strategy "Made in China – 2025" [18], a new round of scientific and technological revolution and industrial modernization requires a transformation of China's economic growth model. According to the "four comprehensive plans" (四个全面), which include: 1) achieving a moderately prosperous society (小康社会); 2) comprehensively deepening reforms; 3) comprehensively governing the country in accordance with the law; 4) comprehensively strict governance of the Party; China will be able to implement the strategy of creating a manufacturing power (制造强国), realizing the "Chinese dream" (中国梦). China sees the development of R & D as the key to its further prosperity. According to the above strategy, the penetration rate of digital R & D design tools in 2025 should be 84%.

Important for the development of the AI industry was the adoption of the "Outline of Operations to Stimulate the Development of Big Data" [19] (2015), which indicate the direction of AI development in China.

In 2016, the DeepMind-trained AI system AlphaGo defeated the world's best Go player Lee Sedol in Seoul [20]. The AI's victory in the game of Go convinced the Chinese side of the prospects of AI, and became a turning point in the development

of AI in China thanks to the determination of Xi Jinping. In July 2017, the State Council of China published the “Development Plan for the Next Generation of Artificial Intelligence” (新一代人工智能发展规划). According to the document, the artificial intelligence industry has entered the high end of the global value chain. The new generation of AI is widely used in smart manufacturing, smart healthcare, smart cities, smart agriculture, national defense, and other fields. The core AI industry has surpassed 400 billion yuan in scale (approximately \$55.2 billion), driving the growth of related industries to exceed 5 trillion yuan (approximately \$690 billion). China should become the world leader in the field of AI by 2030, monetize AI into an industry with a turnover of one trillion yuan (approximately \$150 billion), and also play a decisive role in the formation of ethical norms and standards for AI [21]. “The Big Data White Paper 2019” [22] was an important step for the future of AI regulation.

According to the UN Technology and Innovation Report Inclusive AI for Development 2025, in 2022, 40 percent of business-funded R&D globally was carried out by 100 companies, of which about half were U.S.-based, and about 13 percent of companies, led by Huawei and Tencent, were headquartered in China, up from 2 percent in 2012, allowing China to overtake traditional R&D leaders such as Germany, Japan, the Republic of Korea, Switzerland and the United Kingdom [23].

The Second Belt and Road Forum launched the AI Global Governance Initiative [24], which is based on 3 principles: “joint discussion, joint construction and joint use”.

In October 2023, China established the State Data Administration to promote the planning and construction of digital China, digital economy and digital society. Later, the China Digital Commerce Action Plan (2024–2026) was published [25], which aims to accelerate the development of digital commerce infrastructure, covering areas such as e-commerce, digital payments and digital logistics.

In March 2024, China became the first country to issue the “Basic Requirements for the Security of Artificial Intelligence Generative Services” [26] created a system for regulating AI technologies by categories and classifications.

In September 2024, the Framework Document on Artificial Intelligence Security Governance was developed to implement China’s “Global Initiative on AI Governance” [27] in order to promote safe AI, the development direction is “people-centered and good-serving intelligence” (以人为本, 智能向善). In September 2024, during the first high-level meeting on strengthening international cooperation in building AI capacity at the UN, Chinese Foreign Minister Wang Yi emphasized that China, as an important player in global AI development, is developing AI for people and for the good of people, and the goal is to improve people’s well-being, promote economic and social development, and prevent misuse or abuse of AI technologies [28].

To overcome the digital and intellectual divide, the Chinese side proposed the “Inclusive AI Capacity Building Program” [29], which focuses on cooperation with developing countries in the areas of infrastructure, value chain development, open source communities, and AI training. China’s DeepSeek neural network not only provides open source code, but also focuses on high performance with low power consumption. The network does not solve all linguistic problems, but it has seriously damaged the U.S. position in AI.

On August 14, the 2025 World Humanoid Robot Games, the world’s first comprehensive sports event featuring humanoid robots, officially opened.

280 participating teams from 16 countries gathered in Beijing. The opening ceremony of the 2025 World Humanoid Robot Games, themed “Intelligent Competition for the Future,” showcased the intersection of artificial intelligence and sportsmanship through the integration of technology and humanity. Moreover, the hosting of the games demonstrated China’s interest in developing cooperation in the field of AI. Research published by Morgan Stanley predicts that China is likely to have the highest number of humanoid robots in use by 2050, at 302.3 million, trailed by the U.S. at 77.7 million [30].

Infrastructure and Data Management

China is a global leader in terms of AI infrastructure. A key element of this leadership is the development of state-of-the-art data centers, machine learning applications and big data processing. China’s most advanced AI data centers are:

Alibaba Cloud’s Zhangbei data center is one of the most technologically advanced facilities and plays very important role in supporting Alibaba’s AI-driven services, is one of the most sustainable, because using cooling systems to reduce energy consumption and improve efficiency. According to Alibaba Cloud plan to achieving carbon neutrality by 2030, integrates renewable energy sources to minimize its environment.

China Mobile’s AI data center in Inner Mongolia focus on supporting the telecommunications AI, big data and cloud computing operations, is one of the largest AI data centers in China, using cooling systems to reduce energy consumption and improve efficiency (using the cold climate of Inner Mongolia to reduce power consumption). It is AI-driven 5G integration center.

In order to lay a solid foundation for the growth of the digital economy and promote the construction of a “digital China,” China’s leadership plans to complete the construction of a national data infrastructure by 2029. According Data infrastructure blueprint [31], China will optimize and upgrade traditional network facilities, push ahead with 5G-A deployments from 5G, as well as speed up the research and development of 6G technology.

GDS Beijing Data Center Campus is one of leading data center which support AI-intensive applications, offering high-density computing power and low-latency network connections. This center characterized by high-density AI workloads, use cooling mechanisms to optimize energy usage.

Tencent’s AI data center in Tianjin is designed to support Tencent’s cloud services, AI-driven gaming and research in machine learning. This center characterized by massive AI computing power.

China pay attention on developing supercomputing, because is a key technology that can broader value in terms of socioeconomic progress and open the door to humanity’s next stage of technological evolution. China’s biggest national-level supercomputing centers in major cities, including Tianjin, Shenzhen, Guangzhou, and Xi’an.

The National Supercomputing Center in Shenzhen (NSCS) is one of China’s most powerful AI-focused supercomputing facilities.

Shanghai Supercomputer Center (SSC) is the first public service platform for high performance computing in China, dedicated to providing high-end computing service for national science and technology progress and industrial innovation.

In May 2025, China has launched twelve satellites to start building the world's first supercomputer in orbit.

Regulation of AI technologies (2022 to present). AI governance in China is based on the following documents:

"Provisions on the Management of Algorithmic Recommendations in Internet Information Services 2021" [32] (entered into force on March 1, 2022). The document aims to prevent monopolistic behavior of AI platforms, cyber threats, deepfakes and other AI challenges.

"Provisions on the Administration of Deep Synthesis Internet Information Services" [33] 2022 (entered into force on January 10, 2023) sets requirements for the provision of deep synthesis services for the creation of images, video, audio and text. That is, the publication of content created by artificial intelligence is prohibited without special marking.

"Measures for the Management of Generative Artificial Intelligence Services (Draft for Comment)" [34] came into effect on August 15, 2023, and aims to ensure that providers of AI services ensure safety, comply with moral and ethical standards, and prevent malicious use of AI.

On August 15, 2023 came into force the Interim Measures for the Management of Generative Artificial Intelligence Services [35], which is the first administrative regulation on the management of Generative AI services.

From September 1, 2025, new 'Labeling Rules' [36] will come into effect, making it mandatory for AI-generated content to be implicitly labeled, and explicitly labeled where applicable.

From November 1, 2025, three standards [37] aimed at enhancing the security and governance of generative AI will come into effect (the State Administration for Market Regulation and the Standardization Administration of China jointly released) The three standards are: 1) security requirements for data labeling processes used in training generative AI models; 2) criteria for ensuring the security of datasets used in the pre-training and fine-tuning phases of generative AI development; 3) security requirements for generative AI services, encompassing user data security assessments, data protection measures, and the safeguarding of training models and datasets.

Some Practical Industry Cases

China is focusing on smart city development for a number of reasons. First, urbanization in the country, like the rest of the world, is accelerating. According to the UN, 55% of the world's population lives in urban areas, and this proportion is expected to increase to 68% by 2050, with Asia and Africa accounting for almost 90% of this growth. Together, India, China, and Nigeria will account for 35% of the world's projected urban population growth between 2018 and 2050 [38]. In China, urbanization has increased to 65% by 2024, up from 16% in 1960 [39]. Second, urban migration contributes to economic growth, but also poses environmental challenges (air and water pollution, waste disposal issues, etc.). Third, smart city development is in line with sustainable development goals and is an important factor in improving socio-economic conditions.

In 2012, China launched a pilot program called "Smart City". The program aims to promote the integration of new technologies into urban planning and

management processes. The pilot cities were: Shenzhen, Hangzhou and Beijing. Shenzhen, or as it is often called the “Silicon Valley of China”, has implemented a comprehensive intelligent transportation system, including intelligent traffic management, real-time public transport information and charging stations for electric vehicles. In particular, thanks to the integration of AI and big data analytics based on the “City Digital Twin” (UDT) and “City Information Modeling” (CIM) technologies, it is possible to solve optimal traffic management options in order to prevent traffic jams. In addition, in response to the demands of green development, the city actively uses electric buses and taxis. Hangzhou actively uses the digital urban management platform “City Brain” (城市大脑), developed by Alibaba Group. The platform’s goal is to optimize urban processes, including through traffic light control, navigators, etc. Beijing has been betting on new technologies to ensure environmental sustainability. A comprehensive air quality monitoring system has been created to provide residents with real-time data. Beijing has also been focusing on reforestation and the transition to renewable energy. The success of these pilot projects demonstrates China’s interest in developing “smart” cities.

In addition, China’s megacities are focusing on developing an extensive public transportation network to reduce dependence on private cars and thereby reduce greenhouse gas emissions. Chinese authorities are rapidly building new subway lines, introducing electric buses and taxis, and promoting bike-sharing programs.

China is actively implementing AI developments in healthcare. Artificial intelligence and its developments have had a revolutionary impact on society, and healthcare is no exception. China has made huge strides in integrated healthcare using AI and continues to do so by introducing AI tools to hospitals across the country. In 2024, Tsinghua University opened the world’s first AI hospital, Agent Hospital, which integrates clinical care and AI virtual agents. These AI doctors can treat nearly 10,000 virtual patients – an endeavor that would take human doctors approximately two years – the virtual doctor surpassed the best existing methods on the MedQA dataset’s respiratory disease subset, achieving an accuracy of 93.06% [40].

China is focusing on the convergence of AI and agriculture to ensure food security. AI-powered intelligence is opening up new possibilities in crop breeding and engineering. As per Market Research Future Report analysis, the China Applied AI in Agriculture Market Size was estimated at 237.65 (USD Million) in 2023. The China Applied AI in Agriculture Market is expected to grow from 307.48(USD Million) in 2024 to 5,142.5 (USD Million) by 2035 [41].

Training and Educational Initiatives

China has placed great emphasis on the use of AI in education. A guideline on accelerating the digitalization of education jointly issued by the Ministry of Education and eight other departments emphasizes the construction of an AI-based education system that integrates intelligent technologies into teaching, learning, assessment and scientific research [42]. From September 2025, schools in Beijing, China, will introduce AI courses. Each student will receive at least eight hours of AI training per year. The initiative is in line with China’s goal of becoming a world leader in AI. China has now built the world’s largest intelligent education platform. China aims to build a world-class education system by 2035.

The author believes that expanding global education cooperation will contribute to this goal.

In addition, the Chinese side pays great attention to the development of R&D, as well as cooperation with other countries in this area. According to a McKinsey analysis, the potential annual economic benefit that could be gained from using AI to accelerate R&D innovation ranges from \$360 billion to \$560 billion [43].

A Framework for BRICS AI Cooperation

Since Russia's 2015 BRICS presidency, the AI development agenda has been formalized as an independent area of cooperation. During this summit Memorandum of Understanding and Cooperation in Science, Technology and Innovation has been signed. In addition, other important documents were also signed at subsequent BRICS summits: in 2020 — BRICS Economic Partnership Strategy until 2025, in 2022 — Beijing Declaration of the XIV BRICS Summit. The 14th BRICS Summit in 2022 resulted in the Beijing Declaration, which expressed concern about the risks and ethical dilemmas associated with AI. The declaration calls on BRICS countries to work together to address these concerns, share best practices, conduct comparative studies on this issue to develop a common governance approach that will guide BRICS countries on the ethical and responsible use of AI, promoting the development of AI technologies. In 2024 Kazan Declaration of the XVI BRICS Summit has been signed, which mentioned key areas of cooperation in the field of AI on the BRICS platform: 1) ethical standards of AI, key risks and measures to mitigate them; 2) practical cases of using big data and AI in public administration; 3) Expanding cooperation in the field of evaluating AI solutions. In 2023, the BRICS countries agreed to create an AI Study Group. In July 2024, the China-BRICS Center for Artificial Intelligence Development and Cooperation was launched. The 17th BRICS Summit 2025 in Rio de Janeiro highlighted AI as one of the six priority themes, with a special focus on global AI governance solutions. Among other things, BRICS members are actively cooperating in the field of AI as part of China's Digital Silk Road.

China's AI Cooperation Proposals with BRICS+

Intelligence is becoming a catalyst for a new stage of global scientific and technological revolution and industrial transformation. New technologies provide new opportunities for development, new business models, applications, and expanding areas of joint cooperation. Open source has become an important aspect of AI development. The Chinese side is ready to cooperate to promote the inclusive development of AI for the benefit of people, and opposes technofascism.

On July 26, 2025, the opening ceremony of the 2025 World Artificial Intelligence Conference and High-Level Meeting on Global Governance of Artificial Intelligence was successfully held in Shanghai. The Ministry of Industry and Information Technology and the China-BRICS Artificial Intelligence Development and Cooperation Center jointly proposed the "International Open Source AI Cooperation Initiative". The initiative is based on five pillars: 1) leading Innovation and Driving Technological Breakthroughs; 2) cultivate an ecosystem and explore new paths for co-governance; 3) empower transformation and accelerate new application processes; 4) protecting Rights and Interests and Respecting Innovation and New Value; 5) openness and Sharing: a New Global Future of Inclusive Benefit [44]. The initiative aims to deepen cooperation in open source AI, with the goal of building a China-led open source AI ecosystem coordinated by BRICS countries that has a global impact.

Conclusions

The author concludes that studying the experience of AI development in China is extremely useful for all BRICS+ countries, since China has made significant progress in this area and continues to increase the pace. The author believes that China's experience will be particularly useful for the BRICS+ countries in the following ways: 1) adapting the Chinese strategic planning model; 2) investing in digital infrastructure and data centers; 3) creating national ecosystems (clusters, hubs); 4) developing human resources through joint programs and grants; 5) creating a single market space and standards. In the context of growing contradictions around the world, against the background of the fact that some countries continue to play with zero sum in the field of AI, the countries of the global south, including BRICS, face obstacles due to limited computing power, infrastructure, financial resources, data, and human resources. The author believes that BRICS+ countries have great potential for AI cooperation to lead the global south in strengthening cooperation on AI governance.

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Искусственный интеллект: опыт Китая и его значение для стран БРИКС+

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Аннотация. Изучение подхода Китая к развитию и внедрению искусственного интеллекта (ИИ) имеет crucial importance для стран БРИКС+ в свете его значительных достижений и стратегической цели стать мировым лидером в данной области. Понимание экосистемы ИИ в Китае предоставляет ценную информацию для международного сотрудничества, конкуренции и оценки более широкого глобального влияния технологий ИИ. Важность данной темы предопределена следующими факторами: 1) геополитическим контекстом; 2) экономической составляющей; 3) технологическим и цифровым суверенитетом; 4) вопросами обороны и кибербезопасности; 5) подготовкой кадров; 6) формированием альтернативных норм в сфере ИИ. Методология исследования основывалась на анализе документов. Стратегия Китая оценивается по четырем структурообразующим направлениям, которые могут быть одобрены странами БРИКС+: 1) вычислительная инфраструктура; 2) данные; 3) специализированные трудовые ресурсы; 4) научные исследования и опытно-конструкторские разработки (НИОКР). Результаты исследования показывают, что Китай выделяется стремлением к глобальному лидерству в сфере ИИ за счет масштабных инвестиций. Пекин готов углублять прагматичное сотрудничество с партнерами по БРИКС и открыт к взаимовыгодному взаимодействию в области ИИ в рамках инициативы «Пояс и путь». Международное сотрудничество Китая в сфере ИИ со странами БРИКС+ в области создания общей инфраструктуры, разработки единых стандартов и законодательства, обмена данными и реализации образовательных программ послужит импульсом для развития ИИ в странах объединения.

Ключевые слова: Китай, БРИКС, искусственный интеллект, международные соглашения

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Research article / Научная статья

BRICS+ as a Platform for China's Cooperation with the Global South

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Abstract. This article provides an in-depth analysis of BRICS' role as a key platform for China's strategic cooperation with the countries of the Global South amidst radical changes in the global political and economic system. The core idea is that the world is transitioning from a unipolar order, where the US dominated, to a new bipolar or multipolar one. The author, drawing on Yang Xue-tung's theory of moral realism, argues that China seeks not only to build economic and military power but also to gain strategic authority, positioning itself as a responsible leader and partner. This explains China's interest in developing BRICS. This study examines the primary aspects of economic cooperation within BRICS, such as the reform of global governance, de-dollarization, trade growth, and technological partnerships. The author argues that despite its internal challenges and external pressures, BRICS continues to be a viable and attractive framework for developing nations, providing them with new avenues for economic development and strengthening their position on the world stage.

Keywords: BRICS, China, Global South, multipolarity, economic cooperation, global governance, economic development

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Introduction

The world system is currently in a state of change, which is generating turbulence and conflicts. The unipolar world order, established after the end of the Cold War, is now undergoing major shifts caused by the rise of China, Russia and the countries of the Global South, as well as rapid technological progress and the weakening positions of Western countries. Many experts and politicians see an analogy in the current situation with the period of confrontation between the United States and the USSR during the Cold War. And just like in the second half of the 20th century, the world is once again divided into two opposing blocs. The difference is that if back then it was the socialist and capitalist blocs, now it is, as then-US President Joe Biden stated in 2022, “a battle between democracy and autocracy, between liberty and repression, between a rules-based order and one governed by brute force” [1]. In the 20th century, this difficult situation for many developing countries led to opposition sentiments among them, which was reflected in the 1955 Bandung Conference and resulted in the formation of the Non-Aligned Movement. These countries openly opposed joining any blocs and jointly sought to defend their interests in the context of superpower confrontation.

Following the start of the Special military operation in Ukraine, just as during the Cold War, countries of the Global South once again found themselves in a strategic dilemma. Supporting Russia could lead to Western sanctions, while siding with the West could mean the loss of crucial economic ties with Moscow and missed financial opportunities. Regardless of which side they supported, their economic interests would inevitably suffer. It is therefore unsurprising that countries of the Global South are once again seeking formats similar to the Non-Aligned Movement to defend their interests in this new phase of great power confrontation.

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The aspirations of the Global South coincide with China's desire to reform the post-WWII system of global governance, which no longer aligns with new geopolitical realities. These two trends converge and are reflected in BRICS, which today aims to be a "mouthpiece" through which the Global South can voice its interests, while China can strengthen its position in the new, emerging international relations' system.

The goal of this work is to examine BRICS as a promising platform for cooperation between China and the countries of the Global South and to analyze the main areas of economic activity. In writing this paper, the author relied primarily on the research of Chinese scholars whose work is dedicated to the development of BRICS and its sectoral areas of cooperation.

Materials and Methods

The research is based on Yang Xuetong's theory of moral realism, whose central idea is that for a rising power like China, it is not enough to simply build economic strength. To become a world leader and gain the trust of its allies, it must also acquire strategic authority, that is, to take on greater responsibility as a guarantor of security and prosperity. The abandonment of Deng Xiaoping's "hide your capabilities" strategy, which was relevant during the early period of the Reform and Opening-Up policy, is a correct step. The "strive for progress" strategy promoted by Xi Jinping, which replaced it, puts political dignity and "friendship" above economic gain and is based on the principles of morality, justice, and righteousness [2, pp. 32–35]. As part of this strategy, China is actively taking on international obligations, which helps to improve its image and strengthen its relations with other countries. Thus, China needs not only to develop economically but also to actively create a favorable international environment, demonstrating responsibility and a willingness to take on more obligations toward its partners.

When it comes to China's activities within BRICS, Western academic circles often view the organization — along with initiatives like the Belt and Road Initiative and the Asian Infrastructure Investment Bank — as a means for China to undermine the existing Western-centric order and advance its own model of governance. However, from the perspective of moral realism, the rivalry between China and the U.S. is not simply a struggle for power and resources; it's also a contest for moral leadership. China aims to show that its development model is more equitable and appealing to countries in the Global South. It's an effort to create an alternative to Western financial institutions by offering a more inclusive approach to global governance. Therefore, the future of the world order may hinge on whether China can successfully emerge as a "moral leader" and present a more just alternative to the current system [3, p. 246].

In addition, according to this theory, BRICS is also important because countries around the world are "tired" of the unilateral decision-making style. Such decisions undermine a state's strategic reputation and increase mutual suspicion between states [4, p. 140]. Therefore, BRICS is important to China as a platform for consultation and joint decision-making, which enhances its image as a responsible global power.

In writing this paper, the author applied general scientific and specific methods of historical and political research, including narrative analysis, comparative analysis, and case studies. To analyze the positions and goals of BRICS, the author studied declarations and speeches of BRICS leaders.

Results and Discussion

The International Context

After the Cold War, the United States maintained its leading position on the world stage for nearly two decades. During this time, an international system emerged with the U.S. as its hegemon, gathering a pool of great and middle powers that benefited from this system and supported American hegemony. A unipolar consensus was reached, and with it, the liberal values proclaimed by the United States became truly universal [5, p. 1].

However, in the 2000s, China gradually gained strength, and by 2006, it held the world's largest foreign exchange reserves, including gold [6]. In 2010, it surpassed Japan in GDP to become the world's second-largest economy, and in 2012, it overtook the U.S. to rank first globally in goods production. By 2014, China became the largest economy in terms of GDP by purchasing power parity [7, p. 115]. Following the 2008–2009 global financial crisis, China's position in the Global South was further strengthened through the expansion of its investment activities.

The consolidation of the China's position coincided with growing discontent among developing countries regarding the Washington Consensus. The financing model based on "neoliberal restructuring" led to chronic underfunding of infrastructure, which hindered the development of the Global South [8, pp. 1095–1096]. Consequently, Chinese President Xi Jinping's 2013 "Belt and Road Initiative" was met with enthusiasm, despite skepticism from the U.S. China subsequently began to more actively develop investment cooperation within multilateral institutions such as BRICS and the Shanghai Cooperation Organisation, earning it political points in the Global South.

The subsequent increase in tensions in U.S.-China relations, driven by Washington's fears of a threat to its hegemony from China, led to a trade war that negatively impacted the global economy. In recent years, the antagonism between Western countries, on one side, and China and Russia, who advocate for a multipolar world, on the other, has taken on threatening forms. Furthermore, the development gap between the core and the periphery, which emerged in the 1840s, is narrowing, and the influence of Western countries is declining. It is clear that the Global South no longer wants to be a "silent majority" on the international political stage but aspires to be a driving force and a new variable in the international balance of power [9, p. 17].

Thus, the global shift in power is a much larger event than just a confrontation between the U.S. and China [10, p. 247], which is why BRICS is becoming a platform through which countries of the Global South can assert their interests.

BRICS Development

BRICS is currently attracting attention from all over the world, from experts and politicians in the West and in the countries of the Global South, especially due to its recent expansion. Overall, the accession of Indonesia, Iran, Egypt, the United Arab Emirates, and Ethiopia in 2024 is not a new phenomenon for BRICS, as the format has been evolving continuously since it was first conceived as a Russia-India-China triangle and after its official formation in 2009. For example, in 2011, South Africa joined BRICS, after which discussions began about further expansion. In September 2017, China chaired the BRICS leaders' summit in Xiamen and proposed the following measures for the further development of the organization:

first, to strengthen global governance and deepen practical cooperation; second, to broaden the scope of cooperation; and third, to form a broader partnership and create a more comprehensive dialogue platform [11, p. 3]. Thus, the BRICS+ model was proposed. Leaders from Egypt, Guinea, Mexico, Tajikistan, and Thailand were also invited to this summit [12].

However, due to a lack of consensus on further expansion, BRICS countries decided to expand gradually, first launching the New Development Bank expansion project. In 2021, the New Development Bank began its first expansion process, accepting such developing economies as Bangladesh, Egypt, the UAE, and Uruguay as new members [13, p. 113], which strengthened partnerships in areas such as infrastructure development and sustainable development. In 2022, China, as the chairing country, officially raised the issue of expansion and organized the first BRICS+ foreign ministers' dialogue [14]. At the BRICS summit in Johannesburg in August 2023, a decision was made to admit six new members: Saudi Arabia, the UAE, Egypt, Ethiopia, Iran, and Argentina [15]. On November 21 of the same year, BRICS leaders held a special video summit on the Israeli-Palestinian issue. This was the first meeting of BRICS leaders after the second round of expansion, marking the official start of a new stage of "Great BRICS Cooperation". Starting in January 2024, Egypt, the UAE, Indonesia, Iran, and Ethiopia completed internal procedures for joining BRICS and became official members of the organization [16, p. 12]. Argentina withdrew its agreement, and Saudi Arabia postponed its accession to BRICS [17, p. 7]. Nevertheless, interest in BRICS is growing among the countries of the Global South, and currently, about 30 countries have submitted official applications to join BRICS+ [18, p. 43].

At the 16th BRICS summit in Kazan in 2024, a meeting was held in the "outreach/BRICS plus" format on the topic "BRICS and the Global South – Jointly Building a Better World", which was attended by representatives of emerging market and developing countries from Africa, Asia, Europe, Latin America, and the Middle East. At the same time, the BRICS countries officially introduced a new concept of "BRICS Partner Countries": before obtaining full membership, a country can become a "BRICS Partner Country" and participate in cooperation within BRICS [19]. At the 17th BRICS summit in July 2025, partners such as Belarus, Bolivia, Kazakhstan, Cuba, Nigeria, Malaysia, Thailand, Vietnam, Uganda, and Uzbekistan already participated [20].

Thus, BRICS is a dynamically developing association that is constantly expanding its membership and, along with it, its influence on the international stage. China has played a special role in this process, paving the way for a broader partnership with other developing countries.

BRICS as the Voice of the Global South

One of the most important goals of BRICS is to create a more open and equitable international system that takes into account the interests of the countries of the Global South. To this end, BRICS leaders are putting forward various initiatives that demonstrate their commitment to cooperation with developing nations. For instance, in his speech at the closing ceremony of the BRICS Business Forum 2023, Xi Jinping emphasized that, "As a developing country and a member of the 'Global South', we have always shared a common destiny with other developing countries, firmly upholding their common interests and promoting a greater representation and voice for emerging markets and developing countries in global affairs. China has no desire for hegemony or to engage in great power games. We stand firmly on

the right side of history and adhere to the principle that 'a great path is common to all' [21]. Thus, BRICS is striving to associate itself with the countries of the Global South, advancing their interests on the international agenda. The Johannesburg Declaration stated that BRICS adheres to a "balanced approach, continuing to strengthen and further integrate the role of the Global South into the G20 agenda" [22]. In the 2025 Rio de Janeiro Declaration, the phrase "Global South" appears 13 times. The document specifically highlights the role of developing countries in global politics: "We emphasize the importance of the Global South as a driving force for positive change, especially in the face of serious international challenges, including deepening geopolitical tensions, rapid economic downturns and technological changes, protectionist measures, and migration issues. We believe that BRICS countries continue to play a key role in voicing the concerns and priorities of the Global South and in promoting a more just, sustainable, inclusive, representative, and stable international order based on international law" [20].

The inclusion of new partners from the Global South in BRICS provides significant advantages in this regard, legitimizing their actions. For example, the parties have reached a level of discussion and consolidation of positions on global issues, such as the Israeli-Palestinian conflict. The Ukrainian conflict is also important. The majority of middle-tier countries, including South Africa, Pakistan, Saudi Arabia, Iran, Argentina, Mexico, Indonesia, Egypt, Turkey, and Nigeria, have taken a relatively moderate and neutral stance, disagreeing with the excessive measures applied by some Western powers to resolve the conflict. Some countries, such as Turkey and Indonesia, have even actively played the role of mediators [9, p. 21]. Additionally, in May 2024, China and Brazil held a meeting in Beijing to discuss ways to politically resolve the Ukrainian crisis. Following the talks, they reached a consensus on six key points, calling on the international community to promote conflict de-escalation, create conditions for launching negotiations, unite efforts to provide humanitarian aid, adhere to international norms to avoid nuclear escalation, and reject the division of the world into blocs [23].

Thus, BRICS is becoming not just an economic bloc but an important tool for forming a unified position and achieving consensus among its members and the countries of the Global South on key issues of the international agenda.

BRICS and the Global South: A New Chapter in China's Economic Engagement

The economic sphere remains a key area of cooperation among BRICS countries. This issue is also relevant to the association's efforts to collaborate with countries in the Global South, which need assistance and investment for their development. Today, amid a pandemic and international conflicts that disrupt global supply chains for key goods, the countries of the Global South are particularly vulnerable. The great power confrontation, which forces developing nations to choose a side, further exacerbates this situation. In these circumstances, BRICS has great potential for cooperation, and China and its economic initiatives can contribute to the development of the Global South.

As the largest economy in BRICS, China has significant advantages and seems to have a strong influence on shaping the organization's economic agenda. Let's consider the key areas of economic cooperation.

First, a crucial vector of BRICS' activity is the reform of global economic governance. The modern system of global economic governance was formed at the end of World War II, but with the beginning of the new millennium, the global economic situation has undergone significant changes, presenting countries

with new dilemmas. It is clear that it is now in crisis and requires a transition to a more advanced level — so-called “global good governance,” which implies joint participation, the rule of law, transparency, timely response, consensus, equality and inclusivity, effectiveness and efficiency, as well as accountability [24]. Chinese scholars note the following four necessary features of an international economic system. First, justice, which means the system should be free from the dominance of major powers that control a large portion of public goods. Second, the system should be one that benefits everyone. Third, it should be coordinated, meaning the internal institutions of each sovereign state must constantly coordinate their actions with the global governance system. Global economic governance is both the management of global economic issues and the distribution of global power. Consequently, the global economic governance system also reflects the significant influence of national power on the distribution of global economic power. Thus, the coordination process must be mutual: on one hand, countries should orient their internal governance toward the global economic governance system; on the other hand, they should strive to externalize successful internal governance systems into the global economic governance system. Fourth, global economic governance should contribute to sustainable development worldwide [25, pp. 109–110]. Therefore, universal prosperity should be the main goal of the system.

Regarding the issue of fairness, another Chinese scholar writes that within the framework of international economic system reform, the Chinese government should identify, expose, and reform unjust and unreasonable governance rules. In this context, the “Community with a Shared Future for Mankind” concept and the “Belt and Road Initiative” are precisely China’s steps toward reforming the international system [26, p. 52]. China positions both projects as inclusive formats in which all participants have free, equal, unlimited, and non-discriminatory access to participation, decision-making, and obligations. Thanks to the BRI, China is strengthening existing partnerships and forging new ties, thereby reinforcing its credibility among the countries of the Global South.

It is these efforts to reform the global economic system that have become a key area of BRICS’ activity. The Rio de Janeiro Declaration points to the ineffectiveness of modern international financial institutions. The BRICS countries call for a swift reform of the IMF, especially in reallocating quotas so that developing countries gain more influence commensurate with their role in the global economy. They also advocate for increased representation of developing countries in the World Bank and for a change in its priorities to favor the fight against poverty and inequality. As for the WTO, the declaration expresses concern about the rise of protectionism and trade barriers that threaten global trade. Therefore, the BRICS countries are calling for urgent WTO reform and the restoration of its dispute settlement system, emphasizing that developing countries should benefit from special provisions [20].

Second, a key area of cooperation within BRICS is the promotion of a move away from the dollar in international settlements and the use of local currencies. During his visit to China in April 2023, Brazilian President Lula da Silva visited the headquarters of the New Development Bank and asked the world three questions: Why should international trade be conducted in US dollars? Why not use the yuan and BRICS currencies? Why is the world so polarized, where the rich get richer and the poor get poorer? [27]

In Chinese academic circles, there is a discussion about the reform and future development of the international monetary system. The current system, which is dominated by the United States and other developed countries (specifically, the

United States is the only country with veto power in the World Bank), is unable to adapt to the changes caused by the growing influence of the Global South. Therefore, China needs to either actively promote greater transparency in the decision-making mechanisms of the IMF and the World Bank or adopt the EU's approach: first coordinate its position with the countries of the Global South, and then, relying on their combined power, compete with the developed countries [28, p. 50]. It appears that China is currently pursuing the second path.

The internationalization of the yuan is one of China's important economic development strategies. It is aimed at raising the yuan's status in the international financial market and strengthening the global influence of the Chinese economy. One of the measures to achieve this goal is China's ambition for the yuan to take a central place in the BRICS payment system. South Africa, Russia, Brazil, and the UAE already have agreements for yuan clearing [29; 30].

The launch of a single BRICS currency does not contradict the goal of the yuan's internationalization. Modern monetary systems and technologies are already capable of supporting a multi-currency basket system. The weighting of various currencies reflects the relative significance of each economy in the global economy. Facilitating the yuan's internationalization will help increase its weight in the BRICS currency basket, improve national payment systems and those of BRICS countries, and enhance the stability and security of BRICS currencies. The creation of a single BRICS regional currency will have a positive impact on the internationalization of the yuan. Given the yuan's key role in the BRICS monetary system, establishing a single regional currency will undoubtedly elevate its status in the international monetary system. This will contribute to accelerating the yuan's internationalization and expanding its use in international trade, financial transactions, and as a reserve currency [31, p. 39].

Third, a key area of China's activity within BRICS is the development of trade and economic cooperation. From 2001 to 2022, the total volume of imports and exports between China and its BRICS partners increased from \$30.1 billion to \$803.988 billion, with trade continuing to expand and maintain positive momentum [32, p. 66]. In 2024, according to a report, five BRICS countries were among China's top 20 trading partners: Russia (7th place), Brazil (11th), Indonesia (12th), India (13th), and the UAE (19th) [33]. China's imports from most of its BRICS partners are predominantly raw materials. As a major manufacturing country, China exports mainly industrial goods to all BRICS partners, with the largest share being high-value-added products [32, p. 67], which aligns with China's goal of escaping the middle-income trap. Thus, trade between China and other BRICS countries is largely complementary and has significant potential for expansion, especially in areas like energy, agriculture, mining, and more.

Another important area of China's cooperation with BRICS countries is ensuring energy security. BRICS includes some of the world's largest energy consumers – China and India, ranking 1st and 3rd, respectively [34]. It also includes the world's largest energy suppliers – Russia, the UAE, and Iran for oil [35], and Russia, Indonesia, and Egypt for gas [36]. The share of BRICS+ in oil production is expected to increase to 43% after new members are included, with almost half of the world's oil production coming from BRICS countries. In addition, BRICS countries hold 72% of the world's rare earth metal reserves, 75% of manganese, 50% of graphite, 28% of nickel, and over 10% of copper, further strengthening their position in the international mineral resources market [37, p. 73].

The Rio de Janeiro Declaration emphasizes that BRICS countries will contribute to achieving Sustainable Development Goal 7, which involves the transition to clean energy and ensuring universal access to energy [20]. In May 2025, the BRICS countries approved an energy cooperation roadmap for 2025–2030, which highlighted the following priorities: renewable energy and bioenergy; hydrogen and its derivatives obtained using zero- and low-emission technologies; new advanced technologies, including e-fuels, emission reduction technologies, advanced energy efficiency technologies, etc.; as well as technologies in transport, fossil fuels, and sustainable construction [38]. In addition, the New Development Bank aims to mobilize resources for infrastructure construction and sustainable development projects in BRICS and other Global South countries. Since its inception, the NDB has actively supported energy cooperation projects. For example, in the area of energy project financing, the NDB provides financial support for the implementation of various projects, including renewable energy sources, coal, oil, and natural gas. A promising direction in the energy sector could be the creation of unified energy security standards for BRICS+ and enhanced exchanges of information, technologies, and experience in energy to overcome common energy risks [39, p. 30].

Overall, cooperation in the field of new technologies is an area where China has a major advantage. Amid the accelerated transformation of the global industrial chain toward smart and green processes, digital infrastructure provides a technological foundation for increasing the efficiency of traditional industries. In this regard, the digitalization of the economy is an important area of cooperation between China and the countries of the Global South within BRICS.

There are several tracks of interaction. First, it's about simplifying trade in goods and helping BRICS countries' products enter the international market. For example, AliExpress not only sells products directly from Chinese manufacturers to BRICS countries but also partners with them to help local companies export their products to the global market [40, p. 81].

Second, Chinese companies are building digital infrastructure in BRICS countries, such as 5G and cloud computing, using a full-cycle production model of "technology+finance+localization." For instance, Huawei is mitigating sanctions risks by integrating into the local ecosystem through technology licensing, co-building local data centers, and jointly developing digital governance rules. In Russia, a local data center was built based on Kunpeng processors. In Brazil, Huawei partnered with the government to develop an AI system for monitoring rainforests and creating an intelligent transportation network. Thanks to the ICT backbone network built by Chinese companies, Ethiopia increased its fiber optic coverage and became a digital hub in East Africa. The UAE, using the Huawei Ascend chip cluster, developed a large-scale Arabic language model and deployed a private 5G network at the Port of Dubai to support unmanned operations [40, p. 82].

Third, China and BRICS countries are engaging in technological cooperation through production localization, which allows them to integrate into local markets by establishing joint ventures, licensing technologies, and training personnel to achieve mutual benefit. For example, Chinese car manufacturers like Great Wall Motors, BYD, Chery, and NIO are actively entering global markets. They are investing in local production, setting up plants in Russia, Brazil, and the Middle East. These projects not only contribute to the modernization of the automotive industry in these countries but also accelerate the global restructuring of the sector, especially in electric vehicles [40, p. 82]. These case studies demonstrate

not only the adaptability and cost advantages of Chinese technologies but also create a new paradigm for digital cooperation with the countries of the Global South.

Conclusion

Thus, while the United States practices unilateral actions and trade protectionism, China provides the countries of the Global South with new room for trade cooperation and economic development within BRICS, and also opens up opportunities for countries facing challenges in their economic development. Currently, despite the fact that some countries, like Argentina and Saudi Arabia, have not yet completed the accession process, BRICS remains an extremely attractive format for the countries of the Global South. This is confirmed by the large number of official applications for membership and the new “BRICS Partner Countries” concept, which creates additional opportunities for cooperation. As such, BRICS is actively strengthening its position as a key platform for dialogue and interaction between emerging market and developing countries worldwide.

However, despite all its advantages, BRICS also faces challenges. For example, scholars Gabriel E. Merino and Jiang Tianjiao note the following challenges. First, there is the heterogeneity (and therefore different goals) and increasing membership of the BRICS countries, which can lead to difficulties in coordinating actions. Second, there are existing contradictions between member countries, such as between India and China, Iran and Saudi Arabia (as a potential member), and between Ethiopia and Egypt. Third, there is external pressure from the United States and its allies, who fear the strengthening of BRICS. Similar risks are noted in the article by Yang Chuqiao and other Chinese authors. Studying these challenges and developing measures to overcome them could be a promising direction for further research.

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БРИКС+ как платформа сотрудничества Китая с Глобальным Югом

Е.Ю. Каткова 

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Аннотация. Проводится всесторонний анализ роли БРИКС как ключевой платформы стратегического сотрудничества Китая со странами Глобального Юга в условиях радикальных изменений мировой политической и экономической системы. Основная идея заключается в том, что мир переходит от однополярного порядка, в котором доминировали США, к новому биполярному или мультиполярному устройству. Автор, опираясь на теорию морального реализма Ян Сюэтуна, утверждает, что Китай стремится не только наращивать экономическую и военную мощь, но и приобретать стратегический авторитет, позиционируя себя как ответственного лидера и партнера. Это объясняет интерес Китая к развитию БРИКС. В исследовании рассматриваются ключевые аспекты экономического сотрудничества в рамках БРИКС, включая реформирование глобального управления, дедолларизацию, рост торговли и технологическое партнерство. Автор утверждает, что, несмотря на внутренние проблемы и внешнее давление, БРИКС продолжает оставаться жизнеспособной и привлекательной платформой для развивающихся стран, предоставляя им новые возможности для экономического развития и укрепления позиций на мировой арене.

Ключевые слова: БРИКС, Китай, Глобальный Юг, многополярность, экономическое сотрудничество, глобальное управление, экономическое развитие

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Research article / Научная статья

The Role of BRICS in Global Energy Transition

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Abstract. This article examines the evolving role of BRICS nations in the global energy transition within the context of their expanded membership and growing geopolitical influence. As BRICS has expanded to include Egypt, Ethiopia, Iran, UAE, and Indonesia, the bloc now represents approximately 45% of the global population, 28% of global GDP, and 42% of global oil production, making it a significant player in shaping energy policies. The research employs statistical data analysis of energy indicators from 2017–2023 alongside SWOT analysis to assess the current energy landscape and transition trajectories across member states. Findings reveal diverse national energy profiles: China leads in renewable capacity but remains heavily coal-dependent; India shows rapid solar growth targeting 50% non-fossil electricity by 2030; Brazil relies on hydropower while expanding other renewables; and Russia and South Africa demonstrate slower transitions toward cleaner energy sources. Collectively, BRICS nations have nearly doubled their renewable energy capacity since 2017, with increasing emphasis on wind and solar, though fossil fuels still dominate their energy mix. The research concludes that despite challenges including economic disparities, political tensions, and infrastructure deficits, BRICS possesses significant potential to drive global energy transition through enhanced cooperation, technology sharing, and leveraging their collective economic weight to secure necessary financing, provided they balance national circumstances with shared climate commitments.

Keywords: BRICS, energy transition, renewable energy, sustainable development, energy security, climate policy

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Introduction

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The emergence of new leaders in the global political and economic arena, the change in the economic power ratios of individual countries and the beginning of the transformation of the unipolar world order into a multipolar world led to significant changes in both the political situation and the entire system of international relations. BRICS has turned into a multidisciplinary strategic partnership based on three key “pillars”: politics and security, economics and finance, culture and humanitarian ties [1]. Initially formed as a loose coalition of emerging economies to enhance cooperation and challenge Western dominance in global affairs, BRICS has expanded its membership and nowadays it includes: Brazil, Russia, India, China, South Africa, Egypt, Ethiopia, Iran, UAE; this expansion is set to take effect in January 2024 and in January 2025 Indonesia joined in, further solidifying BRICS’ role in the global energy landscape.

With the new members, BRICS represents approximately 45% of the global population; 30% of the world’s land area; 28% of global GDP; 42% of global oil production [2]. The combined economies of BRICS members are projected to exceed \$28 trillion. This demographic and economic weight positions BRICS as a significant player on the world stage, particularly in challenging the existing order dominated by Western powers [3].

The BRICS energy cooperation framework has evolved significantly from the 2022 Beijing Declaration, which established the fundamental role of energy security in achieving Sustainable Development Goals while recognizing that “energy transformations are unique in each country due to national circumstances” [4]. “The Kazan Summit further strengthened this commitment by emphasizing the need for” enhanced cooperation among BRICS countries as major producers and consumers of energy products and

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calling for balancing energy security, access and energy transitions with the full and effective implementation of the UNFCCC and its Paris Agreement” [5]. This progression culminated in the 2025 Rio Declaration, which acknowledged BRICS nations’ shared responsibility as both major producers and consumers of energy while committing to just and inclusive energy transitions” aligned with national circumstances and universal access to affordable, reliable, sustainable energy (SDG7).

The Rio Declaration represents the most comprehensive BRICS energy framework to date, recognizing that fossil fuels will still play an important role in the world’s energy mix, particularly for emerging markets and developing economies, while calling for just, orderly, equitable and inclusive energy transitions that reduce GHG emissions in line with climate goals. It specifically addresses critical implementation gaps by demanding adequate, predictable and accessible low-cost and concessional finance from developed to developing countries and recognizing the key role of critical minerals for the development of zero- and low-emission energy technologies. The declaration also advances sector-specific solutions, endorsing Sustainable Aviation Fuels (SAF), Lower Carbon Aviation Fuels (LCAF), and other Aviation Cleaner Energies as pathways for reducing emissions, while welcoming the updated Roadmap for BRICS Energy Cooperation 2025–2030 that operationalizes these commitments through concrete mechanisms rather than merely stating principles [6].

The summit reiterated the fundamental role of energy access in achieving SDGs, particularly in developing countries. It acknowledged the risks to energy security that could impede progress towards these goals, stressing that access to energy is not just a commodity issue but a critical component of social and economic development. The final declaration emphasized the necessity for BRICS nations, as major producers and consumers of energy, to work together towards fair, inclusive, and sustainable energy transitions. This cooperation is framed within the context of ensuring that energy security, access, and transitions are balanced, considering national circumstances such as climate conditions and economic structures. The summit highlighted the importance of considering the specific challenges faced by developing countries that heavily rely on fossil fuels. It called for a just transition that recognizes these nations’ economic dependencies while moving towards more sustainable energy sources.

Through various summits and declarations, BRICS countries have articulated their commitment to sustainable energy practices and their alignment with the United Nations Sustainable Development Goals (SDGs). Through collaborative efforts at various summits, these nations are not only addressing their domestic energy needs but also contributing to global sustainability initiatives. As they continue to navigate the complexities of energy transitions, the alignment with the SDGs will be crucial for achieving long-term sustainability and resilience in the face of climate change.

Materials and Methods

This study builds upon six key scholarly works that collectively establish the theoretical and empirical foundation for analyzing energy transitions within the BRICS framework. The examination by A. Vylegzhannin, D. Ivanov, and M. Milyukova [7] of renewable energy from a Russian legal perspective provides critical insight into institutional mechanisms like the BRICS Energy Research Platform while revealing Russia’s cautious approach to international renewable energy regulations due to energy security concerns. This directly informs authors analysis of national policy variations within BRICS, particularly regarding how different legal frameworks shape

collective energy transition efforts. Research by V. Yurtaev and A. Rogov research on BRICS and SCO participation in Eurasian integration [8] offers essential geopolitical context, demonstrating how BRICS functions as both an economic and political entity that establishes alternative energy corridors while complementing other regional integration structures – this framework is indispensable for understanding the broader strategic positioning of BRICS energy cooperation in my research.

M. Ryazanova’s analysis of multilateral energy cooperation [9] identifies key institutional structures including the Memorandum of Understanding on energy conservation and efficiency, providing the operational context necessary for evaluating current cooperation mechanisms in my study. M. Sasu’s study, *Energy Revolution under the BRICS Nations* [10], establishes the historical significance of energy cooperation for addressing social, economic, and environmental challenges while documenting existing collaboration frameworks with international bodies like the International Energy Agency – this historical perspective anchors author’s analysis of evolving energy transition strategies.

The research on BRICS’ legal infrastructure for oil trading [11] reveals crucial developments in creating independent payment systems and contract standardization outside Western-dominated financial structures, directly supporting my examination of trade resilience mechanisms. Finally, the work on renewable energy mainstreaming in BRICS countries [12] provides comparative data on generation sources and adoption trends across member states, establishing the baseline metrics that enable authors mixed-methods approach to systematically analyze both quantitative trends in renewable energy adoption and qualitative factors influencing policy implementation across diverse national contexts within the BRICS framework. This methodology includes statistical data analysis, and SWOT analysis to assess the current future trends in energy environment.

Results and Discussion

The energy transition in BRICS countries is a complex and multifaceted issue, particularly in the context of rising primary energy consumption. These countries, while diverse in terms of their energy profiles and economic structures, are all grappling with the challenge of balancing economic growth, energy demand, and sustainability.

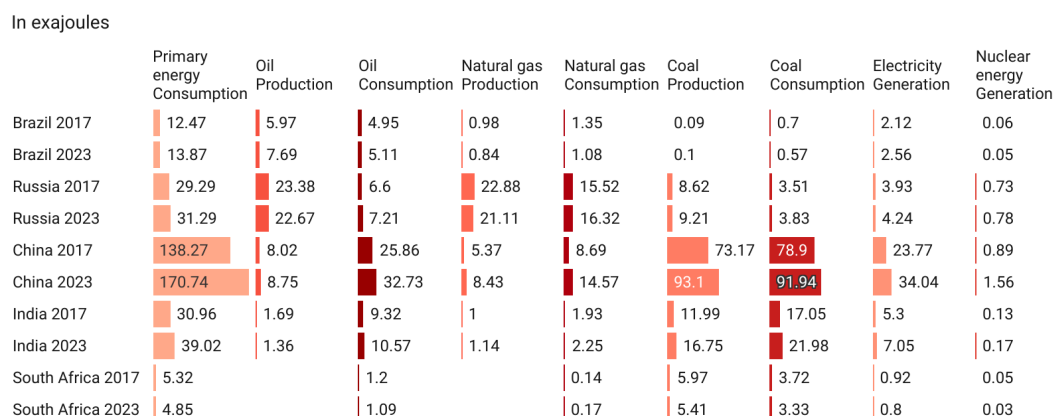


Figure 1. The Main Indicators of Economic and Energy Development of the BRICS Countries in 2017 and 2023

Source: created by Daniyal Ranjbar Meshkin, Elizaveta E. Mogileva based on data from K. Zhai [13].

According to the Figure 1 and Figure 2 as the world's largest energy consumer, China's primary energy consumption has been steadily increasing. This is driven by rapid industrialization, urbanization, and a growing middle class. This trend is likely driven by the expansion of infrastructure, heavy manufacturing industries, and the demand for electricity to power its growing population and urban centers. Moreover, China's energy mix continues to rely heavily on coal, although there is increasing investment in renewable and nuclear energy to offset the environmental impact of coal consumption [14]. Since 2013, China has significantly increased its investment in renewable energy sources, focusing on clean energy research, development, and deployment (RD&D). As a result, China has become the second-largest public sector investor in renewable energy, following the United States (though the European Union collectively invests more). In line with its ambitious dual carbon goals – to peak CO₂ emissions before 2030 and reach net-zero emissions by 2060 – China is moving toward phasing out coal. This transition is supported by structural changes in the economy and the rapid expansion of renewable energy sources, which will be crucial for the shift away from fossil fuels. However, while China is committed to the energy transition, the path to net-zero emissions remains complex. It is still uncertain how quickly coal consumption will decline and whether carbon capture, utilization, and storage technologies will be scaled up in time to meet the country's targets [15].

Russia's energy consumption has not grown dramatically, suggesting a stable, mature economy with relatively less growth in domestic demand. On the production side, Russia's oil and natural gas output remains high, reinforcing its position as one of the world's largest exporters of energy resources. The slight decrease in oil production from 23.38 exajoules in 2017 to 22.67 exajoules in 2023 may indicate a shift in production priorities, potentially related to geopolitical factors regarding western sanctions or an emphasis on maintaining natural gas production [16].

India's population and economic growth are major drivers behind its increasing energy demand. The country has been expanding its energy infrastructure to meet the needs of its growing industrial base and urban centers. Coal, despite being the most polluting energy source, still plays a dominant role in India's energy mix, but there are growing efforts to diversify into renewable energy sources. India's renewable energy potential, green hydrogen strategy, and climate action plan position it as a key player in the global energy transition. The country is targeting net-zero emissions by 2070, with plans to achieve 50% non-fossil fuel electricity by 2030. It currently ranks fourth in the world for renewable energy capacity, bolstered by a 36.5% compound annual growth rate (CAGR) in solar energy over the past 11 years [17]. The relatively slow growth in oil production (compared to other countries like Russia and China) indicates India's continued dependence on imports to meet its oil needs.

Brazil's growth in energy consumption reflects a developing economy, although at a slower pace compared to the large BRICS nations like China and India. The increase in oil consumption and production indicates Brazil's reliance on oil for both domestic use and exports. However, Brazil's emphasis on renewable energy sources, particularly hydropower, likely contributes to the relatively low increase in coal production and the small increases in electricity generation. For many decades, hydropower has been the dominant source of electricity generation in Brazil, thanks to its cost-effectiveness and significant potential within the country. Brazil has heavily depended on hydroelectric power as the foundation of its energy system, utilizing the nation's plentiful rivers and natural resources to produce clean, renewable energy [18].

South Africa's economy has faced challenges in recent years, with slow economic growth and energy infrastructure issues. Despite being a major coal producer, the country's overall energy production has stagnated. South Africa's continued reliance on coal as its primary energy source is a key challenge, especially in terms of sustainability and environmental concerns [19]. The minimal growth in electricity generation and nuclear energy suggests that the country has not been able to expand its clean energy capacity as rapidly as other BRICS nations. The low levels of nuclear energy production point to possible underinvestment in this sector, which is vital for diversifying South Africa's energy mix.

While countries like China and India are still focused on coal and oil, there is a gradual shift in some BRICS nations toward cleaner sources of energy. Russia's increase in nuclear energy generation suggests a deliberate move toward diversifying its energy mix and reducing reliance on fossil fuels. However, Brazil and South Africa show little to no growth in nuclear energy generation, signaling a slower transition toward renewables and low-carbon sources of energy. China has been making strides in renewable energy, but coal's dominance persists.

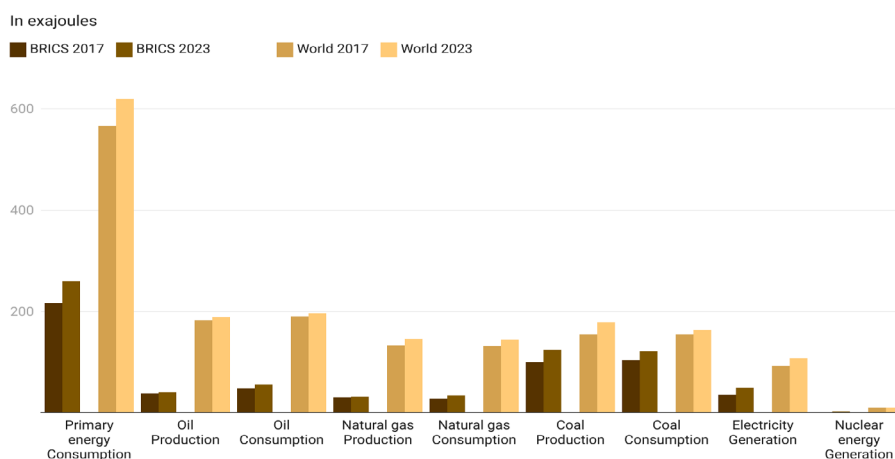


Figure 2. The Main Indicators of Economic and Energy Development of the BRICS Countries and the World in 2017 and 2023

Source: created by Daniyal Ranjbar Meshkin, Elizaveta E. Mogileva based on data from K. Zhai [13].

The dominance of coal in the BRICS nations reflects both the historical energy infrastructure and the ongoing economic reliance on coal as a cost-effective energy source for heavy industry. China's dramatic increase in coal production (from 73.17 to 91.94 exajoules) and consumption (from 78.9 to 91.94 exajoules) highlights its continued reliance on coal, despite the growing adoption of renewable energy technologies. Other countries like India and South Africa are also heavily dependent on coal, which creates a challenge for future environmental sustainability.

There is a clear correlation between economic development and energy growth in these countries, with China and India showing the largest increases in energy consumption and production. Economic expansion directly fuels energy demand, and the countries experiencing the most rapid growth (like China and India) are also seeing large increases in energy metrics. As these countries continue to industrialize and urbanize, their energy needs will likely continue to rise, placing pressure on both the environment and their energy infrastructure to keep up with demand.

According to the Energy Institute Statistical Review of World Energy 2024, primary energy comprises commercially traded fuels, including modern renewables used to generate electricity. Energy from all sources of non-fossil power generation is accounted for on an input-equivalent basis [13].

Overall, BRICS countries are significantly influencing global energy trends, driven by the large-scale consumption of coal, oil, and natural gas. While the world is slowly transitioning towards cleaner energy sources, BRICS countries still heavily depend on fossil fuels for their energy needs. The differences in energy consumption and production between BRICS and the World underline the challenges and opportunities of global energy development, especially as developing nations grow, and their energy demands continue to rise.

Clean energy is being integrated into the global energy system at an unparalleled pace, with over 560 gigawatts (GW) of new renewable capacity added in 2023 alone. However, the deployment of these technologies is not evenly distributed across different countries and sectors. Investment in clean energy projects is approaching USD2 trillion annually, nearly double the combined spending on new oil, gas, and coal projects. Additionally, the costs of most clean technologies are once again decreasing after an initial rise following the COVID-19 pandemic. This trend is driving the growth of renewable energy capacity from 4.250 GW today to nearly 10,000 GW by 2030, falling short of the COP28 target to triple capacity, but still more than sufficient to meet the increase in global electricity demand and reduce coal-fired generation. Alongside nuclear power, which is seeing renewed interest in many countries, low-emission energy sources are expected to generate over half of the world's electricity by 2030 [20].

The demand for electricity in the world will double under any scenario of the energy and climate policy of the countries. The shift to renewable energy sources is one of the most significant global trends of the 21st century, driven by a combination of environmental concerns, technological advances, economic factors, and policy shifts. As nations and companies alike strive to reduce carbon emissions and mitigate the impacts of climate change, renewable energy is becoming the centerpiece of this transition. The movement away from fossil fuels and toward cleaner energy sources has multifaceted implications, with varying progress depending on the region, technology, and market forces.

The shift to renewable energy is not just a trend but a necessary evolution in how the world generates and consumes energy. While renewable energy sources are growing rapidly, they face challenges in integration, financing, and political will. Nonetheless, the progress made in solar, wind, and energy storage, alongside favorable policy frameworks, makes the shift toward a cleaner, more sustainable energy system inevitable. As the cost of renewables continues to decline, and new technologies emerge, the energy landscape is likely to become even more decentralized, resilient, and greener in the coming decades.

The data indicates a clear trend toward the expansion of renewable energy in the BRICS countries, particularly in China and India. While China remains dominant in terms of absolute renewable energy capacity, Brazil and India are making substantial progress. Russia and South Africa, though growing, are not yet at the same scale as the other nations. The BRICS nations, as a group, are contributing significantly to global renewable energy capacity growth (Figure 3). The total renewable energy capacity for BRICS nations has almost doubled, signifying a strong collective shift towards renewable energy solutions within the group.

While countries like China and India are still focused on coal and oil, there is a gradual shift in some BRICS nations toward cleaner sources of energy. Russia's increase in nuclear energy generation suggests a deliberate move toward diversifying its energy mix and reducing reliance on fossil fuels. However, Brazil and South Africa show little to no growth in nuclear energy generation, signaling a slower transition toward renewables and low-carbon sources of energy. China has been making strides in renewable energy, but coal's dominance persists.

The capacity data, megawatts (MW)

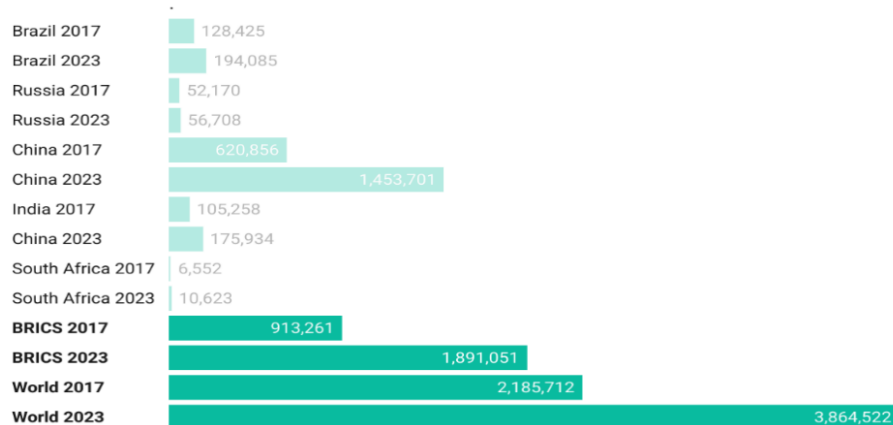


Figure 3. Total Renewable Energy

Source: created by Daniyal Ranjbar Meshkin, Elizaveta E. Mogileva based on data from International Renewable Energy Agency [21].

The BRICS nations form a formidable alliance on the global stage, largely due to their significant economic influence and diverse natural resources. Delving into renewable energy partnerships among these countries presents a promising opportunity to drive sustainable innovation and tackle the pressing energy challenges faced worldwide. By leveraging their combined resources, technological expertise, and policy initiatives, BRICS countries have the potential to play a central role in shaping a cleaner and more sustainable global energy future. Each nation brings unique strengths that can complement the others, fostering a rich environment for collaboration.

The BRICS countries collectively play a crucial role in the global push towards sustainable energy, given their economic strength and resource diversity. Their collaboration has led to significant strides in renewable energy, especially through large-scale projects and joint research initiatives. China's dominance in solar and wind energy production stands out, driven by its manufacturing strength and cost-cutting strategies. India's efforts in solar energy expansion highlight its commitment to clean energy, supported by national initiatives like the National Solar Mission. Brazil's extensive use of biofuels and hydropower aligns with its sustainability goals, while Russia's focus on nuclear energy provides a key low-carbon energy alternative. South Africa's focus on wind and solar energy projects further contributes to this collective effort.

However, the journey towards fully sustainable energy systems within BRICS faces various hurdles. A key issue is the disparity in economic development, with wealthier nations like China able to allocate significant resources to advanced technologies, while developing countries like South Africa struggle with limited budgets. Additionally, differences in regulatory frameworks among BRICS countries pose challenges for collaboration, especially regarding standards and private sector incentives. Geopolitical tensions also create obstacles, as diplomatic conflicts or trade issues can disrupt technology transfers and hinder the successful

implementation of joint initiatives. These challenges require tailored strategies and close cooperation to maintain the momentum of renewable energy development within BRICS [22].

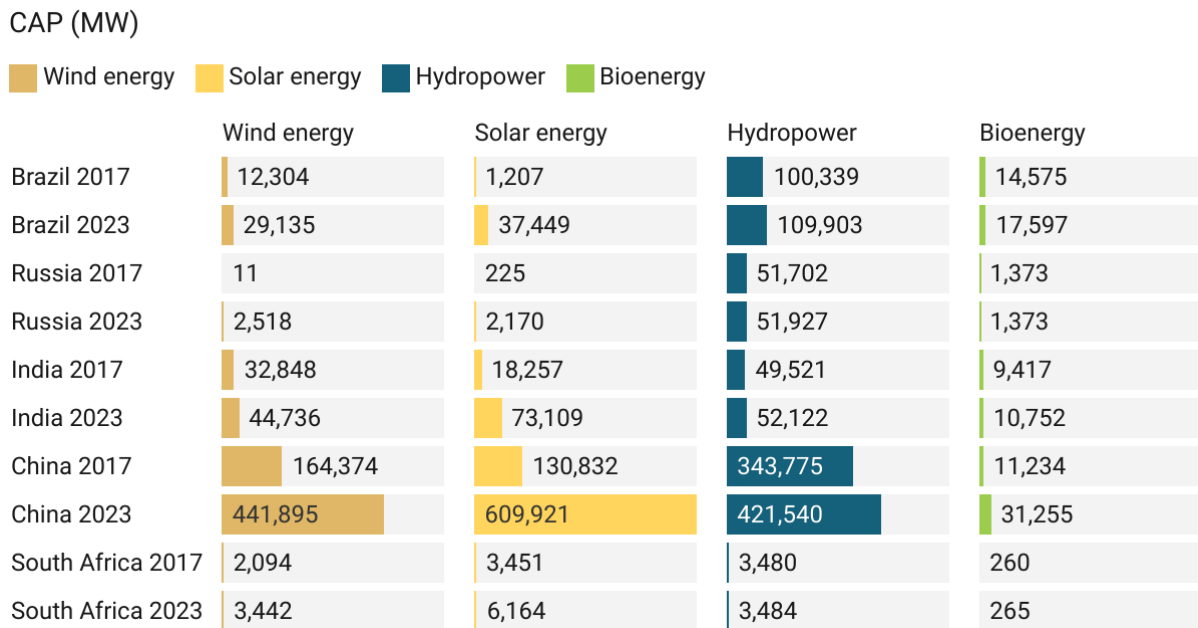


Figure 4. Renewable Energy by Sources

Source: created by Daniyal Ranjbar Meshkin, Elizaveta E. Mogileva based on data from International Renewable Energy Agency [21].

According to the Figure 4 and Figure 5, overall, the BRICS countries are increasing their share of wind and solar energy, with both sectors seeing an increase in 2023 compared to 2017. Hydropower remains a consistent source of renewable energy in the BRICS countries, slightly increasing, while globally, hydropower remains the dominant source. Bioenergy is growing in the BRICS nations, but the gap between BRICS and the global average is narrowing at a slower rate compared to wind and solar.

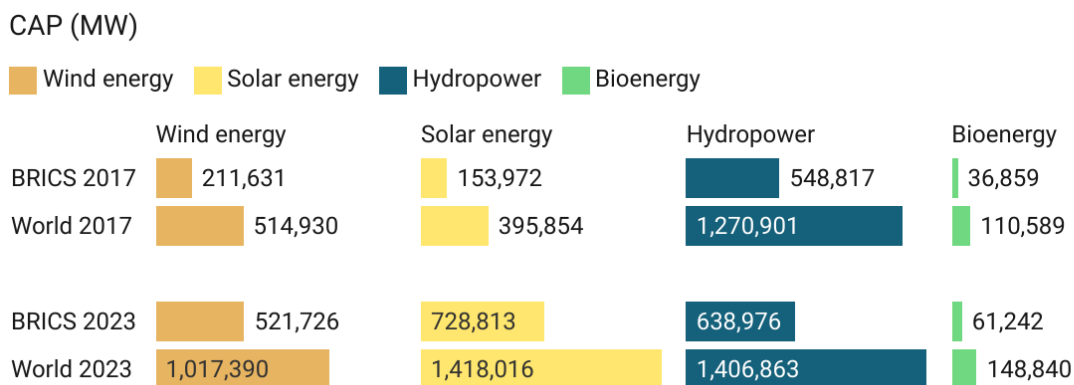


Figure 5. Comparison of the BRICS and the World Renewable Energy by Sources

Source: created by Daniyal Ranjbar Meshkin, Elizaveta E. Mogileva based on data from International Renewable Energy Agency [21].

In essence, the BRICS countries are making notable strides in diversifying their renewable energy. However, they are still heavily reliant on bioenergy and hydropower, and the global trend continues to focus more on wind and solar power in recent years.

As illustrated in Figure 6, is focused on the four primary renewable energy sources: wind energy, solar energy, hydropower, and bioenergy. The data reveal notable shifts in the renewable energy landscape within the BRICS countries between 2017 and 2023. While wind energy remains the dominant source of renewable energy within the BRICS nations, solar energy has experienced significant growth, aligning the BRICS share with the global proportion by 2023. Hydropower remains a crucial source of renewable energy for the BRICS countries, though its share has seen a slight decrease relative to global increases. Bioenergy has maintained a stable share in both BRICS and global renewable energy mixes. The overall trend indicates a gradual diversification and balancing of renewable energy sources in the BRICS countries, reflecting broader global efforts to transition towards more sustainable energy systems.

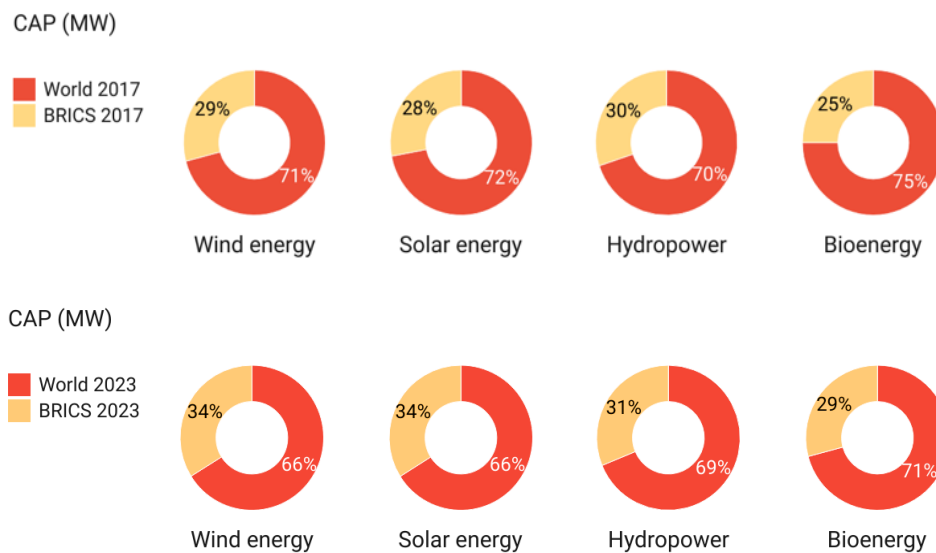


Figure 6. Comparison of the BRICS and the World Renewable Energy by Sources

Source: created by Daniyal Ranjbar Meshkin, Elizaveta E. Mogileva based on data from International Renewable Energy Agency [21].

Additionally, it is important to don't forget about new members of BRICS. The BRICS group, originally composed of Brazil, Russia, India, China, and South Africa, has evolved to include additional nations, often referred to as BRICS+. On January 1, 2024, four countries Iran, United Arab Emirates, Egypt and Ethiopia joined the alliance. Indonesia joined in January 2025. The BRICS Plus countries also generate 26.83% of all global gross domestic products [23]. This expansion reflects a growing recognition of the need for a more inclusive approach to global governance and cooperation, particularly in addressing pressing issues such as energy transition and sustainable development.

By sharing technology, investing in renewable resources, and advancing sustainable practices, these nations can ensure a more secure and environmentally friendly energy landscape. Particularly, there is a burgeoning interest in expanding renewable energy projects, enhancing energy efficiency,

and advancing nuclear energy – a sector where BRICS nations like Russia and China are already leaders.

As the world grapples with the intertwined challenges of energy security and climate change, collaborations such as those forged within BRICS offer a beacon of hope for the future. By fostering cooperative initiatives, promoting shared innovations, and prioritizing sustainable development, BRICS nations are uniquely positioned to play a transformative role in enhancing global energy security and advancing sustainability on a broader scale.

SWOT-Analysis

Strengths. Together, BRICS nations represent a significant portion of the global population and economy, providing a large market for renewable energy products and technologies. China has already established itself as a global leader in renewable energy investment, with companies like Longi Green Energy and Trina Solar leading the charge in solar technology [24]. India is actively seeking foreign investment in its renewable sector, offering incentives and regulatory support to attract international players [25]. Brazil is expanding its wind and solar markets, creating opportunities for investment in infrastructure development [26].

The collective political weight of BRICS can facilitate negotiations on international energy policies and climate agreements. Emphasizing the need for developed countries to take greater responsibility for historical emissions while supporting developing nations in their transition to sustainable energy. Creating platforms for exchanging knowledge and experiences related to climate adaptation and mitigation strategies.

There is a growing renewable energy capacity according to the Figures 1–3. Many BRICS countries are investing heavily in renewable energy infrastructure, contributing to global sustainability goals. By sharing best practices and technologies among themselves, BRICS countries can develop innovative solutions to common energy challenges and promote sustainable development.

Weaknesses. Economic differences among BRICS nations can lead to varying priorities and capabilities in energy investment and sustainability initiatives. China has the largest economy among BRICS nations, with a rapid growth rate that allows for substantial investments in renewable energy technologies. In contrast, Brazil and South Africa face economic challenges that can limit their financial capacity for large-scale energy projects. India, while experiencing robust growth, still grapples with poverty and energy access issues, necessitating a balanced approach to energy investment. The industrial composition of each BRICS nation shapes its energy needs and sustainability priorities. China's heavy industrial base drives demand for energy-intensive production, prompting aggressive investments in both renewable energy and energy efficiency technologies. India's economy is more diversified but still heavily reliant on coal, which complicates its transition to cleaner energy sources.

Political tensions between member states (e.g., India-China relations) may hinder collaboration on energy projects. The longstanding border disputes and geopolitical rivalry between India and China create an atmosphere of distrust that can hinder joint energy initiatives. For instance, both countries are competing for influence in the Asia-Pacific region, and this competition can spill over into energy

collaboration, where each nation may prioritize its own strategic interests over cooperative projects [27].

Some BRICS countries face significant infrastructure deficits that can impede the development of sustainable energy solutions. Countries like India and South Africa have made strides in renewable energy generation, but they still face challenges in scaling up capacity. Insufficient solar farms, wind turbines, and hydroelectric plants can limit the ability to meet growing energy demands sustainably [28]. The vast geographic areas of countries like Brazil and Russia can complicate the establishment of a cohesive energy distribution network. Remote regions may lack access to the grid, making it difficult to harness local renewable resources effectively.

There is still dependence on fossil fuels. Several BRICS nations still rely heavily on fossil fuels, which can slow the transition to sustainable energy sources. Many BRICS countries, such as Russia and Brazil, have economies that are heavily reliant on fossil fuel exports. For instance, Russia is one of the world's largest producers of oil and natural gas, and its economy is significantly influenced by these resources. This reliance creates a reluctance to transition away from fossil fuels, as it could jeopardize national revenue and economic stability.

Opportunities. Technological collaboration that provides joint research and development initiatives can lead to breakthroughs in energy efficiency, renewable technologies, and smart grid solutions. By collaborating on renewable energy projects, BRICS nations can diversify their energy portfolios. For example, countries with abundant sunlight (like India) can work with those with strong wind resources (like South Africa) to develop hybrid systems that optimize energy generation. Establishing platforms for knowledge exchange can facilitate the sharing of research findings, technological advancements, and operational experiences.

Finances opportunities on the base of Development Bank. Increased investment in renewable energy projects can create jobs, stimulate economic growth, and improve energy security. By providing initial funding and guarantees, development banks can attract private investors to renewable energy projects. This leverage effect amplifies the total investment in the sector. For example, when a development bank commits funds to a project, it often encourages private equity firms and commercial banks to invest alongside them due to reduced perceived risk.

By taking proactive steps toward sustainability, BRICS nations can position themselves as leaders in global climate initiatives. By actively participating in global climate discussions, such as COP meetings and G20 summits, BRICS nations can advocate for equitable climate policies that consider the needs of developing countries. Their collective voice can push for greater financial support for climate adaptation and mitigation efforts in vulnerable regions.

Strengthening energy trade among BRICS countries can enhance energy security and reduce reliance on external markets. Strengthening energy trade allows BRICS nations to optimize their energy mix by importing the most suitable resources for their specific needs. For example, India could import solar technology from China while exporting its renewable energy expertise to Brazil. This mutual exchange can lead to a more balanced and resilient energy landscape across the bloc.

Threats. The development of renewable energy depends on climate change impacts. Extreme weather events and climate-related challenges can disrupt energy production and supply chains across member countries. Climate change alters

the availability of natural resources essential for renewable energy production. For instance, shifting rainfall patterns can impact hydropower generation, while increased temperatures may reduce the efficiency of solar panels. These changes necessitate a reevaluation of resource management strategies and energy planning.

Economic downturns or fluctuations in global energy prices can affect investments in sustainable energy projects. For instance, if oil and gas prices drop significantly, fossil fuels may become more economically attractive, leading to a slowdown in investments in renewable technologies. This is particularly relevant in countries where fossil fuel subsidies exist, as they can distort market dynamics and hinder the growth of sustainable energy.

Other regions or countries may advance their own energy security and sustainability initiatives, potentially overshadowing BRICS efforts. Competitor nations often implement strong policy frameworks that promote renewable energy development through incentives, subsidies, and regulatory support. For example, the European Union's Green Deal aims to make Europe the first climate-neutral continent by 2050, which includes substantial investments in green technologies [29]. If BRICS countries do not adopt similarly ambitious policies, they risk lagging behind.

Conclusion

Varying regulatory environments and standards among BRICS countries can complicate collaboration on energy projects. Each BRICS country has its own set of regulations governing energy production, distribution, and consumption. These differences can complicate the design and deployment of cross-border projects, as equipment may need to be modified or certified to meet varying requirements.

The BRICS nations have a unique opportunity to leverage their collective strengths and address their weaknesses in the pursuit of enhanced global energy security and sustainability. By capitalizing on opportunities for collaboration and innovation while remaining vigilant against potential threats, they can make significant strides toward a more sustainable future.

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Роль БРИКС в глобальном энергетическом переходе

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Аннотация. В статье анализируется эволюция роли стран БРИКС в глобальном энергетическом переходе в условиях расширения состава объединения и роста его геополитического влияния. После присоединения Египта, Эфиопии, Ирана, ОАЭ и Индонезии группа БРИКС охватывает около 45 % мирового населения, 28 % мирового ВВП и 42 % мировой добычи нефти, что делает ее значимым актором в формировании глобальной энергетической политики. В исследовании используются методы статистического анализа энергетических показателей за 2017–2023 гг., а также

Финансирование. Настоящее исследование не получало внешнего финансирования.

Заявление об информированном согласии: информированное согласие было получено от всех участников исследования.

Вклад авторов. Все авторы внесли равный вклад в подготовку публикации. Все авторы прочли и одобрили окончательную версию рукописи.

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SWOT-анализ для оценки текущего энергетического ландшафта и траекторий перехода стран-участниц. Результаты показывают значительное разнообразие национальных энергетических профилей: Китай лидирует по установленным мощностям возобновляемой энергетики, но остается существенно зависимым от угля; Индия демонстрирует быстрое развитие солнечной энергетики с целевым показателем безуглеродной генерации 50 % возобновляемых источников энергии к 2030 г.; Бразилия опирается на гидроэнергетику, одновременно расширяя другие виды возобновляемых источников энергии; Россия и Южная Африка показывают более медленные темпы перехода к чистой энергетике. В совокупности страны БРИКС почти удвоили свои мощности возобновляемой энергетики с 2017 г., уделяя все больше внимания ветровой и солнечной генерации, хотя ископаемое топливо по-прежнему доминирует в их энергобалансе. В результате можно заключить, что, несмотря на существующие вызовы — экономические диспропорции, политические напряженности и дефицит инфраструктуры, — БРИКС обладает значительным потенциалом для ускорения глобального энергетического перехода за счет углубления сотрудничества, обмена технологиями и использования коллективного экономического веса для привлечения необходимого финансирования, при условии соблюдения баланса между национальными особенностями и общими климатическими обязательствами.

Ключевые слова: БРИКС, энергетический переход, возобновляемая энергетика, устойчивое развитие, энергетическая безопасность, климатическая политика

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SOCIAL AND POLITICAL PHILOSOPHY

Research article / Научная статья

The Phenomenon of the Indonesian Gamelan Orchestra in World Music Culture

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Abstract. In complex and multi-layered musical cultures from different regions of the world, it is not easy to identify phenomena that have represented the most complete repository of their characteristic features over a long period of time. The tradition of orchestral music-making, known as gamelan, can be attributed to such phenomena. It is one of the key, defining phenomena not only of Indonesia and the Southeast Asian region, but also of world musical culture as a whole. In this article, we sought to identify the main essence of Javanese music by analyzing the terminological array that has developed within the gamelan tradition, considered in a systematic-typological comparison both within Indonesian musical culture and in relation to other regions. Let us begin by considering the most important and general concept for any musical culture, “music” (at least in the sense in which it is used within Western civilization), which includes all phenomena related to the field of sound, tone, and sound creation in general. Neither Indonesian nor Javanese languages have developed such a general term. The term musik (from the Dutch musiek), which appeared at the turn of the 19th and 20th centuries, is used exclusively in relation to Western music, and only for academic music, while the term pop is used to refer to popular forms. This emphasized, on the one hand, the influence of contemporary Western pop culture on popular forms of music-making prevalent in Indonesian cities (particularly noticeable since the early 1960s) and, on the other hand, the features of their distinct identity, which make it easy to distinguish this music from Western music.

Keywords: orchestra, gamelan, gong, gendang, viruma, karavitan, slendro, pelog

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Introduction

Our many years of studying various musical cultures confirm the special significance of instrumental sound production in the musical practices of peoples around the world. Musical instruments firmly connect sound with the material world (since their design and sound are largely determined by the natural and ecological environment) and therefore, to a greater extent than the singing voice, carry all the symbolic burdens of civilization. Thus, the legends and myths of ancient India constantly show us cultural heroes or representatives of the divine pantheon playing various musical instruments, which testifies to the depth of the “instrumental code” in musical culture. Brahma’s wife, Saraswati, the goddess of knowledge and art, is traditionally depicted on many temple bas-reliefs with a stringed musical instrument called a vina. According to myth, Ganesha, the son of the god Shiva, was the first performer on a double-membrane cylindrical drum. In Indian iconography of the Middle Ages, the image of Krishna (one of the incarnations of the god Vishnu) playing the flute became widespread.

In the Far East region, the attitude towards musical instruments has been closely linked since ancient times to the belief in nature spirits and ancestors, who often chose them as their dwelling places. At an early stage of its development, the musical instrument was chosen in China as a special sacred object, even introduced into traditional cosmogonic myths, since its sound was regarded as a means of contact with other worlds. The sound and musical practices of China’s cultural heroes (the legendary rulers and first ancestors Shun, Yan Di, Fuxi, the goddess Nüwa, and others) is also associated with

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sound instruments (bells, gongs, drums, zithers, bamboo flutes), which were believed to have the ability to maintain harmony and order in the universe.

In Southeast Asia (SEA), the divine Batara Guru, hero of the Javanese myth about the origin of music, made three gongs — tetabuhans — which he used to send signals to all the gods and bring order to the universe [1]. The gong in Southeast Asia (SEA) is not only an important sound symbol, but also a special sacred object (pusaka). It is not surprising that the process of making gongs and kris (famous Javanese daggers) was associated with many taboos and accompanied by sacrifices to protect blacksmiths from the malice of evil spirits (*To this end, blacksmiths even temporarily changed their secular names, replacing them with names from stories about Panji*). A gong made for a ruler was the main sacred object in the state and was kept in a specially designated room, hidden from the eyes of outsiders [2].

Materials and Methods

In complex and multi-layered musical cultures of different regions of the world, it is not easy to identify phenomena that, over a long period of time, would represent the most complete repository of their characteristic features. The sound and musical sphere of regional civilizations around the world provides us with a few such examples: music played on the qin in China, pansori storytelling in Korea, the drawn-out singing of urtyn-duu in Mongolia, Buddhist shomyo chants in Japan, the North Indian vocal genres of dhrupad and khaial, the Arabic muwashshah, the traditions of African drum ensembles, etc. The tradition of orchestral music-making, known as gamelan, can be attributed to this type of phenomenon. This is one of the key, defining phenomena not only of Indonesia and the entire Southeast Asia, but also of world musical culture as a whole.

Gamelan, known to representatives of Western civilization as early as the 16th–18th centuries (judging by the notes of European travelers, such as the famous navigators Francis Drake, Fernão Mendes Pinto, and others), and possibly even earlier, impressed them with its vivid and original embodiment of the orchestral polyphonic idea, which, moreover, was realized “without notes and without a conductor.” English naturalist A. Wallace, who visited the Malay Archipelago in 1855–1862, does not hide his admiration for the gamelan, noting, “the pieces performed were very long and complex; many of the musicians were children and therefore played with great care... the overall impression was very pleasant...” [3]. In our opinion, a very accurate description of the sound of the gamelan was left by the Russian consul in Batavia (late 19th century) M.M. Bakunin: “A concert performed by a full gamelan ensemble, such as at the palace in Solo, makes a pleasant and sympathetic impression: there is nothing sharp, no tones that shock the ear, the sounds seem to steal from afar, muffled by a mute, but there is no melody in these motifs, all built on the same mode, and on only one mode at that. At least, that is how it seems. The ensemble is harmonious and gentle, like the character of this people, but nothing remains in the mind and memory after the performance of a Javanese musical piece” [4].

The degree of study of the problem. With the beginning of the study of foreign musical traditions by Western researchers, as well as Indonesian scholars, the phenomenon of gamelan came into focus. The complexity of understanding this issue lay primarily in the absence in Javanese culture of a tradition of scholarly treatises on music, which would explain the most important concepts, classifications of modal systems, principles of temperament, etc. in the process of historical evolution. The situation seemed quite paradoxical, especially considering the complexity and sophistication of gamelan musical texts, which contain perhaps

even more elements than is the case in the leading genres of Indian or Chinese musical cultures. The first attempts to describe the gamelan tradition by the Javanese themselves (such as *K.R.T. Wiraguka*, *K.R.T. Kertanegara* (19th century), and *R.T. Warsodiningrat* (20th century)) were made only in the late 18th and early 19th centuries. They were something between a court chronicle and a poetic legend, a practical guide to playing instruments, and memoirs of outstanding musicians who, in creating these texts, drew on their personal experience without claiming to generalize even at the level of gamelan playing within the area adjacent to the kraton.

Source base. Dutch ethnomusicologist J. Kunst was the author of the first major works [2] on Javanese music, which remain informative to this day and are striking in their scope of generalization. Drawing on the experience of the acoustic school and its achievements, he did a tremendous job of measuring the sound ranges of hundreds of gamelans, vainly trying to capture systemic patterns, a kind of “ideal” model. And despite the fact that practical fieldwork confronted him with the uniqueness of each specific gamelan’s tuning, he still could not resist the temptation to “adapt” the material at his disposal to a certain abstract theoretical idea of a paired pelog-slendro scale system.

The publications of the prominent American ethnomusicologist Mantle Hood, which appeared almost twenty years after the publication of Kunst’s seminal work and contained criticism of many of its propositions, did not significantly influence the established system of ideas about gamelan at that time. This is despite the fact that one of his works examines such an important issue as *patet*, which the scholar defined as “the idea of tonality applied to two unevenly tempered systems of scales – slendro and pelog” [5].

The subsequent stage of studying the gamelan tradition, relating to the 1970s and 1980s, can be characterized as one distinguished by considerable pluralism in approaches and research methods. Among the works that appeared during this period, those that use computer analysis methods to compare modal modulations within gamelan compositions (works by F. Lieberman, J. and A. Baker, and others) are particularly noteworthy.

Cultural contacts between civilizations always take place through many channels and, of course, are not limited to the realm of purely scientific interest. Parallel to this, we can trace the path of compositional interpretation of the gamelan tradition, begun in its time by Claude Debussy and continued by American composers, mainly those whose work took place on the west coast of the United States – K. McPhee, A. Hovhaness, X. Cowell, X. Parche, J. Cage, Lou Harrison, and others. The gamelan principle of thinking largely determined a new direction in music that began to develop in the United States in the late 1960s and early 1970s and was called minimalism. Composers L. Young, S. Reich, and J. Adam have repeatedly noted the influence that gamelan music has had on their work.

It is also worth noting another way of understanding the principle of gamelan playing – a purely empirical and practical one, when, from the late 1950s, representatives of Western civilization (not only the U.S., but also a number of European countries), both professional musicians and people without special musical education, began to organize gamelan ensembles, most often at universities, which allocated funds to purchase instruments and invite musicians from Indonesia to teach how to play them. By the end of the 1980s, it was already possible to speak of the establishment of a unique cultural “niche” for gamelan music in Western countries; this phenomenon thus went beyond its original “habitat”. What is the

magic of gamelan music? Can this phenomenon be understood scientifically? What approach should be taken when analyzing music related to gamelan music?

Purpose of the study. In this article, we sought to identify the main features of Javanese music by analyzing the terminology developed within the gamelan tradition, which was examined in a systematic and typological comparison both within Indonesian musical culture and in relation to other regions.

Basic Concepts of Gamelan Music. Characteristics of the Terminological Array

Let us begin by examining the most important and comprehensive concept for any musical culture, “music” (at least in the sense in which it is used within Western civilization), which includes all phenomena related to the field of sound, tone, and sound creation in general.

Neither Indonesian nor Javanese languages have developed such a general term. The term musik (from the Dutch musiek), which appeared at the turn of the 19th and 20th centuries, is used exclusively in relation to Western music, and only for academic music, while the term pop is used to refer to popular forms (The terms pop and pop music were introduced to distinguish them from the field of popular music, which refers to later styles associated with rock culture). This emphasized, on the one hand, the influence of contemporary Western pop culture on popular forms of music prevalent in Indonesian cities (particularly noticeable since the early 1960s) and, on the other hand, their distinct characteristics (especially kroncong, a popular style of urban song from the mid-20th century that emerged as a result of the mixing of elements of Portuguese, Chinese, Dutch, and Javanese music), which made it easy to distinguish this music from Western music.

As for musical phenomena related to traditional culture, there is no unifying concept for them in the terminological system, as a result of which they exist under separate independent headings denoting the sphere of sound creation: karawitan – the tradition of gamelan playing, tembang – singing, wayang – theatrical performance, etc.

Over the past fifty to sixty years, karawitan has become a fairly broad and general concept, associated, according to Javanese musicians, with “an area where sounds are organized according to certain temporal and spatial parameters” [6]. In other words, karawitan can be seen as the sphere of action of sounds organized in terms of pitch and meter, which generally brings this term closer to the concept of “music” that we are familiar with. The etymology of the term “karawitan” and its historical evolution testify to the existence of a whole range of meanings that can be arranged on three main levels:

- 1) something refined, perfect;
- 2) a method of organizing sounds in terms of pitch and meter;
- 3) the sound of the musical instruments that make up the gamelan.

The formation of the second level of meaning is connected in part with the deep mythological layers of Javanese musical culture and, in particular, with the attitude toward gamelan as a symbol of orderly sound, contributing to the unity of all three levels of the world – Heaven, Earth, and the Underworld. In this function as the most important sacred object, gamelan already played a role in the Mataram era (8th–20th centuries), being the magical property of the ruler – the god’s representative on earth.

The Javanese people's attitude toward gamelan as a sacred object is confirmed by its inclusion in traditional cosmogonic myths. For example, the mythological work *Serat Manik Maya* (The Book of Manik and Maya, written in Kartasura in 1725) states: "The original creator of the universe, Sang Hyang Wisesa, indulges in deep meditation, wishing to obtain from the supreme being, Sang Murben Pest, the ability to create the world. He hears a sound like the ringing of a bell, and at that moment an egg descends from above, from which he creates Heaven and Earth, the Sun and the Moon, as well as two anthropomorphic beings — Manik and Maya. Manik, also known as Batara Guru, is endowed with a beautiful, radiant appearance. Maya, also known as Semar, is dark-skinned and ugly. Manik remains in heaven, while Maya descends to Earth or into the bowels of the Earth [7].

The divine Batara Guru is the hero of the Javanese myth about the origin of music, the orderly sound that helps him rule the universe. The symbol of this orderly sound is a set of three gongs made by Manik, called *tetabuhan*, which was named *Lokananta*. This was the first "divine" gamelan, later known as the *Munggang gamelan* (the meaning and etymology of the term are unclear). Its appearance is attributed to 269 AD (317 AD). The term *tetabuhan* comes from *tabuh* — a stick, a beater, *tabuh-tabuhan* — to strike; but the point here is not only to reflect the technique of playing the gong in the term. Batara Guru, using the metrically and tonally organized sounds of the gong, thus sends signals to all the gods of the world (the gods also danced to the sounds of the gamelan, gathering in a special pavilion called "*lingotaa*"). In this sense, *tabuh-tabuhan* means "sound produced by a strike," i.e., the creation of the desired sound by a strike of a certain type, as opposed to the continuous ringing of a bell, symbolizing the original chaos, the disordered elements of the Universe. It is significant that this term, which goes back to the mythical "progenitor" of gamelan, is used today by *nyaga* musicians as a criterion of special aesthetic and professional intuition when they say about one of their colleagues: "He has *tabuh-tabuh*!" (In other words, "a special feeling for gending" — gamelan composition) — a moment that cannot be explained purely in scientific terms or performance technique, but rather belongs to the realm of sound "magic." In this respect, one aspect of *tabuh-tabuh* correlates with the concept of *chochog* (*so-cog*) — the feeling of a harmonious connection between human actions and the cosmic and social order. In traditional Javanese society, the symbol of this "unity of worlds" has long been the gamelan (the three gongs of the *Munggang gamelan* represent the three levels of the world: Heaven, Earth, and the Underworld). Subsequently, in a number of local gamelan traditions (this is especially characteristic of Bali), "*tabuh*" came to denote pre-composed *ostinato*-type melodic patterns (compare with section '*ghat*' in the classical North Indian instrumental tradition), which are "linked" to specific compositions or, for example, to stage situations and the emotional state of the characters in a *wayang* theater performance. The above shows that this concept is one of the key elements in the structure of gamelan compositions. The reliance on *tabuh*, for example, makes Balinese *gendings* much more clearly modeled than Javanese ones [8]. In this regard, *tabuh* in Bali has recently acquired the stylistic features of virtuoso, dynamic playing, which most often refers to the *kebyar* genre (*kebyar* — literally, sudden flash) (a composition accompanying the dance of the same name, characterized by constant mood changes).

Being the foundation of any gamelan ensemble, the gong carries a complex sacred and mystical significance. On the one hand, this is linked to the magical properties of its sound — which is believed to help concentrate cosmic energy (*sekti*); on the other hand, to the material process of its creation. Since ancient times, the extraction of copper and tin ores necessary for smelting bronze has been preceded by

special meditations and prayers, intended to appease the subterranean spirits and disturb them as delicately as possible when “invading” the body of the Earth — the mountain.

The word gong (or gung) derives from the same root as mountain — gunung. As previously noted, the cult of stone and the sacred mountain is one of the most distinctive features of the Southeast Asian region [9]. In this context, “ore symbolizes the productive wealth of the Earth, and its molten state — the hot ‘blood’ of the volcano-mountain, gunung api.” Hence, in the Javanese language, the gong (in ngoko, the low register) is referred to in the krama (high register) as gangsa — meaning “the alloy used to make the gong”.

The transformation of raw material extracted from the Earth into a special alloy and ultimately into a gong is a mystical process that involves two other sacred creative forces — fire and water. According to belief, these elements reside in the depths of the world mountain, within the trunk and roots of the cosmic tree. Profound connections exist between gongs and water — water being one of the most enduring cosmological symbols among Southeast Asian cultures — though these links have yet to be fully explored.

Since ancient times, it has been widely believed that prolonged playing of gongs can summon rain. In actual practice, it is known that after many hours of continuous striking, moisture sometimes accumulates in the crevices of the gong’s body. Musicians interpret this as “Heaven’s dew” and reverently moisten their lips with it.

It is thus unsurprising that the process of forging gongs — like that of crafting krises (traditional Javanese daggers)—has long been surrounded by taboos and ritual offerings, intended to protect the blacksmiths from the malice of evil spirits. It even became customary for gong-makers to change their names during the forging process to avoid attracting misfortune; these temporary names were often borrowed from epic tales, such as the legends of the hero Panji.

A gong created for a ruler was regarded as the principal pusaka (sacred heirloom) of the realm and was kept in a designated chamber, hidden from the gaze of outsiders. Jaap Kunst recounts an incident in which a colonial official violated this prohibition by touching the sacred gong of Lodaya; not long after, the man reportedly died [2].

The making of a gong was traditionally regarded as the “birth” of an ensouled being. Its “parents” — the blacksmiths — were accorded a special courtly status due to the sacral nature of their craft, and their labor was highly compensated. Upon creation, the gong was given a personal name by its makers, a name that could continue to be used even after the gong became part of a gamelan ensemble.

To this day, blacksmiths often take part in naming not only individual gongs but entire gamelan sets, taking into account the character of the sound, the state of the cosmos at the time of the instrument’s “birth,” the intended function of the ensemble, and the wishes of its future owner. These names are rich in metaphor and layered meaning — for example: Sarya Swara (*Sounds of Prosperity*), Guntur Madhu (*Sweet Rushing Torrent*), Semar Ngigel (*Dancing Semar*), Ardjanagara (*Well-Being of the Nation*), Mendung (*Dark Cloud*), Udan Asih (*Kind Rain*), Kodok Ngorek (*Croaking Frog*), and others.

The latter, Kodok Ngorek, is one of the oldest known gamelans and is particularly remarkable for its imitation of frog croaks. This distinctive effect was achieved

through the simultaneous combination of two instrumental groups tuned to different modal systems: pelog and slendro.

Thus, the set of gongs within a gamelan ensemble is conceived as a kind of “family”, whose members are bound by “blood” ties — meaning they are crafted from the same alloy and by the same “parent”, the master artisan (*empu gending*). This principle is strictly observed. The “voice” of each such “family set” is unique, just as the voices of all living beings are unique. This is the fundamental reason behind the distinct tuning of every gamelan, which often confounds Western researchers.

Given the well-documented fact that casting technology in Indonesia had reached an advanced level by the turn of the Common Era, it is clear that artisans would have been fully capable of standardizing the tuning of all gamelans — had there been any intention to do so. However, when an exact replica of a particular gamelan was made, its set was designated as *mutrani*, which means “to produce a son”. (The same conceptual system applies to royal palaces — *kratons*: each new *kraton* was considered a “son” of the previous one and was constructed according to its layout.)

This terminology emphasizes, on the one hand, the deliberate act of reproducing an identical set, and on the other, the perception of the gamelan as a living entity capable of giving life to another. It is important to note that only the most venerable gamelans are ever reproduced — an act that represents a form of lineage preservation and an attempt to continue the legacy of an esteemed “family line”.

According to custom, the names of the most revered gamelans were traditionally preceded by the honorific *Kyai* (*Khjai*)—a respectful form of address used for elders [10]. These gamelans could also be granted titles typically reserved for people, such as *Kandjeng*, a rank second only to the ruler in the court hierarchy.

In this context, M. Hatch even suggests an additional meaning for the term gamelan, derived from *gamel* — meaning a personal [6], trusted servant or court attendant — thus emphasizing the obligatory presence of a gamelan at the royal court. For the ruler, the gamelan was a *pusaka*: a sacred heirloom once belonging to the ancestors and founders of the royal lineage and the state itself.

Gamelan and the Traditional Cosmology of Indonesian Culture

The older a gamelan was, the more cosmic energy — *sekti* (from Sanskrit *śakti*)—it was believed to possess. According to traditional beliefs, it is possible to “regulate” the concentration of *sekti* in different areas of space [11]. To achieve this, one must lead an ascetic life (*tapa*), visit sacred sites (such as sacralized mountains, tombs of saints, and the like), interact with individuals said to be “possessed by *sekti*”, among other practices.

Among these methods, the sound of the gamelan is considered one of the most effective. It is no coincidence that rulers, from ancient times, actively encouraged the creation of as many gamelans as possible — both within the *kraton* (royal palace) and beyond, including in rural areas. This was believed to attract the maximum amount of *sekti* to the territory of the state.

The mystical union of the two opposing principles — feminine and masculine — within the cosmic energy of *sekti* is reflected in the symbolic associations between the construction and sound of gamelan instruments. For instance, the largest gong, the gong *ageng* (from *ageng* in the high Javanese register *krama*, or *gede* in the

low register ngoko — meaning heavy, powerful (in voice), deep (in sound, wind, or wave), full of strength (in heart)), almost always exists in pairs: a “female” and a “male” gong, which alternate in marking the structural divisions of a composition known as gongan.

The “female” gong — larger in size and producing a deeper, more resonant tone — is considered the principal instrument in the ensemble. It is believed to house the spirit of the gamelan, and it is with its stroke that a composition — *gending* — both begins and ends.

The bonang metallophone consists of two parallel rows of horizontally placed kettle gongs on a wooden frame: the lower row, with larger gongs, is designated as “female”, while the upper row, with smaller gongs, is “male” [12].

In the act of performance, the Javanese musician does not perceive themselves as a creator, for they believe in the divine origin of music. The musician experiences their role as secondary to the instrument — as one who follows the “will” of the instrument, awakening its “voice”. This subordinate position of the musician in relation to the sound-producing apparatus is clearly reflected in the terminology used to denote performer ranks.

For example, a rebab player is referred to as *miji rebab*, where *miji* (or *pidji*) means “to be beneath someone or something”, or “to carry out another’s will”. A bonang player is called *sosoran*, derived from *sosor*, which also connotes “subordination” or “being under the authority of something or someone” [13].

A musician’s status was traditionally determined not by their technical skill, but by the degree of sacrality of the instrument they played. Thus, the rebabist, despite the complexity of their musical line and the soloistic nature of the instrument, is assigned a lower rank than the bonang player, since the rebab — being a foreign instrument from another cultural system — cannot compete with the gong, which is believed to possess magical power.

The performer on the gong *ageng* holds the highest status — *panevu* — a title derived from *sewu*, a term equated with a courtly title or high official rank. This is because the gong *ageng* is believed to be the dwelling place of the gamelan’s spirit. Although playing the gong does not require virtuosic technique, the musician assigned to it receives the highest material compensation within the ensemble.

At the core of any culture lies its worldview. The Javanese conception of the world resembled a “giant tree filling the space of the universe... The crown, roots, and the trunk that connected them into a single living organism corresponded to the binary or ternary vertical structure of the cosmos, expressing the idea of movement and struggle. The branches extending from the crown and the roots reflected the dual classification generated by this structure. The four main branches reaching outward, and a fifth one directed upward... corresponded to the five-part horizontal structure of the cosmos, expressing the idea of stasis and harmony. The roots (or the trunk) held the water of life — the bearer of cosmic energy, *sekti*...” [7].

At one time, Claire Holt compared *wayang kulit* — the Javanese shadow puppet theatre — to a “ghostly cultural double of Javanese reality... like the shimmering reflection of nature in a pond...” [7]. This observation could equally well be applied to the gamelan, a kind of Javanese microcosm in itself.

Dualistic oppositions are embedded in the very structure of the gamelan: in its two sound groupings — loud and soft ensembles — which are ultimately merged

into one as a symbol of the unity of opposites; in the distinction between court gamelans (*alus*, refined, upper) and rural gamelans (*kasar*, coarse, lower); in the tuning systems – *pelog* (symbolizing the Sky) and *slendro* (symbolizing the Earth); in the *gong*, which embodies the union of fire and water, mountain and sea; in the northern and southern pavilions of the *kraton* (representing auspicious/inauspicious, elder/younger dichotomies); and in the “male” and “female” variants of instruments, among others.

The overall tonal meeting point – *tumbuk* – between two gamelan ensembles tuned in *pelog* and *slendro* serves as a symbolic center, reconciling opposites, much like the figure of the ruler or the palace complex (*kraton*) itself. This tripartite classification also underpins the division of instrument families according to pitch registers, which are symbolically represented in the sound of the three types of gongs used in the *Gamelan Munggang*, each “regulating” one level of the cosmos:

- *Bonang panembung* (a set of large kettle gongs laid out in two horizontal rows, representing the upper and lower octaves);
- *Bonang barung* (its lower row mirrors the upper octave of the *panembung*, while its upper row sounds one octave higher);
- *Bonang panerus* (its lower row doubles the upper octave of the *barung*, and its upper row sounds yet another octave higher).

This principle extends to metallophones as well:

- *Gender panembung*, *gender barung*, *gender panerus*, and to the *saron* family of instruments;
- *Saron demung*, *saron barung*, and *saron peking*.

The term *saron* may share a linguistic root with Indian instruments such as the *sarangi* and *sarod*, possibly deriving from Sanskrit.

The fivefold system – like the binary and ternary systems – could encompass a wide range of phenomena in the surrounding world: five colors, metals, animals, birds, personality traits, and so forth. In the gamelan tradition, this structure is reflected, for example, in the five primary categories of instruments:

- Solo suspended gongs;
- Horizontal gongs (*kenong*, *ketuk*, *kempyang*);
- Gong sets on frames (*bonang*);
- Metallophones (*gender* and *saron*).

Other melodic and percussive instruments such as the xylophone (*gambang*), drums (*kendang* and *ketipung*), the human voice, and melodic instruments like the *rebab* (bowed lute) and *suling* (bamboo flute).

The fivefold structure is also evident in the preferred use of five-tone scales (even within the seven-tone *pelog* system), and in the concept of *keketeg* – a term associated with the felt balance and coordinated performance of at least five instruments during changes in tempo. This serves as a cue for the *kendang* (drum) to verify the correctness of the chosen *virama* (structural cadence or rhythmic resolution) [14].

Gamelan Performance Practice: Seni Karawitan

Returning to the etymology of the term *karawitan*, it is worth noting that the first of the semantic layers we identified – derived from *ngrawit*, meaning “refined, perfect, subtle” – indicates a much later development of this term in comparison to *tabuh-tabuhan* and *gamelan*. It is evident that during the period of the Central Javanese courts (17th–19th centuries), *karawitan* came to designate one of the key

aspects of the refined and increasingly codified priyayi subculture. The priyayi represented a sociocultural stratum situated just below the court aristocracy, composed primarily of the Javanese administrative elite.

The lifestyle of the priyayi was based on the ethical-aesthetic dichotomy of *alus* and *kasar*. *Alus* (often translated as “refined” in terms of manners, behavior, appearance, etc.) stood in opposition to *kasar* (“coarse, impulsive, unrefined”), which conveyed rawness of expression — compare, for instance, the Arabic *kasr*, meaning “to break” or “to cut off”.

The notion of *alus* is expansive: it refers to a person who speaks in high Javanese (*krama*), wears fabric with elegant patterns, makes clever jokes, employs refined poetic metaphors, or lives in divine presence and mystical awareness.

The Javanese language itself is structured across three primary speech levels — *ngoko*, *madya*, and *krama* — each suited to different social contexts. *Ngoko* is the everyday, informal register, used by children, close friends, or when addressing someone of lower social status. It is direct, often marked by humor or sarcasm, and is typically associated with the *kasar* mode.

Krama, on the other hand, belongs to the *alus* sphere. It signifies politeness, respect, and formality, and presupposes a social distance between interlocutors — such as when addressing someone of higher rank. It is ornate, emotionally restrained, and ceremonious in tone. Moreover, within *krama* itself, there are nine distinct vocabularies or speech registers, mastery of which is now rare even among native Javanese speakers [7].

The three principal domains of priyayi life — etiquette, the arts, and mystical practice — were vividly expressed in the sphere of gamelan performance. Alongside literature and dance, gamelan music formed part of the formal education and upbringing of young men from high-ranking families.

The fact that only men were permitted to play gamelan instruments was likely rooted in ideas developed during the era of Indo-Javanese cultural synthesis, particularly those concerning the cosmic energy *sekti*, which was conceived as a feminine force. This feminine *sekti* was believed to be “attracted” to its opposite — the masculine principle — embodied in the gamelan itself.

As previously noted, the internal hierarchy of instruments within a gamelan ensemble symbolizes the unity of these dual principles.

The art of *karawitan* — *seni karawitan* (from Indonesian *seni*, derived from Malay, meaning “graceful”, “refined”, “elegant”) — embodied a certain balance between the inner spiritual world of the individual (*batin*) and their outward behavior (*lair*). Over time, like the playing of the Chinese *Ch’in* (a long zither), *karawitan* evolved into a form of mystical practice. However, while playing the *Ch’in* in China was a solitary and silent form of regular self-cultivation, *karawitan* took the form of a collective spiritual action performed by a group of people within the framework of *saraseyan* — evening gatherings of friends, neighbors, and relatives from the priyayi circle.

Modeled after Chinese *Ch’in-tan* (“pure conversations”), these gatherings featured the recitation and singing of classical poetic works, discussions of emerging literary trends, or explorations of philosophical and mystical themes. Gamelan performance, typically held on the *pendapa* (a veranda used for receiving guests in large houses, or an open-pillared gallery in smaller homes), served as a medium for

grasping the deeper essence and meaning of the universe through the experience of *rasa* — an objectified complex of psycho-emotional states that gives inner unity to all forms of human expression.

A sense of deep fulfillment — *kepenak* — was experienced not by passive listening but directly through participation in the act of music-making. It was, in essence, a form of *cocog* — harmonizing one’s inner movements and emotional impulses with cosmic order.

The active, experiential nature of *karawitan* is further underscored by one of the meanings of the term *gamelan* itself: “to do something”, “to strike” — a sonorous human activity. The emphasis on human action is also reflected in the Balinese term for *gamelan*, *megambel*, which means “to strike”, referring more to the group of performers than to the set of instruments (compare this with another etymology of *gamelan*, from *gangsa* — “metal used for gongs”). Thus, *gamelan* becomes a form of sacred play between humans and the world of the gods — through organized, collective sound aimed at achieving universal harmony.

Contemporary *gamelan* performance practice is increasingly losing the unique sense of magic and sacral ritual that *karawitan* originally embodied. It is therefore not surprising that the recently emerged term *klenengan*, used to describe concert-style *gamelan* performance — as opposed to traditional *karawitan* — derives from the purely onomatopoeic and semantically meaningless root *klen-klan*, evoking the sound of jingling or clanging.

This term implicitly suggests that in this modern form of music-making, the inner essence is diminished, giving way instead to external sonic expression.

Research procedures in the field of *gamelan* terminology are complicated by a number of factors:

1. The highly developed nature of the musical text itself and the detailed body of technical and practical terminology that has formed around it, including even specific terms to denote the character of emphasized points within the metrical framework of a composition, and so forth.
2. The fundamental lack of standardization in *gamelan* traditions, both at the practical and theoretical levels. A multitude of local variants has always existed, each distinguished by its own unique features — even at the level of individual *kratons* (royal courts) and their surrounding regions. This diversity was believed by the Javanese to enhance the ruler’s magical power (*sekti*) [7]. Such a condition is likely rooted in the understanding that cosmic energy is unevenly distributed across time and space, with its concentrations in a state of continual flux.
3. The multilayered development of the *gamelan* tradition, which is due both to the diverse functions *gamelan* ensembles have served in Javanese culture, and to the successive influences exerted upon the tradition by ideas originating from other civilizations throughout its historical evolution. This sequence of influences may be schematically outlined as follows:
 - The indigenous sacred gong ensemble of ancient origin, which embodied local mythological ideas of “sonic localization” and the control of the three cosmic realms. The interweaving of three pitch levels in performance was interpreted as a conversation — a form of communication among the three worlds.
 - The influence of Indian musical traditions, particularly those associated with dance and theater, which led to a significant increase in the complexity of *gamelan* music. This complexity manifested primarily in the organization of metric and rhythmic structures (*gending*) — as a result of the need to coordinate

with choreographic movements — as well as in the development of modal-melodic models that accentuated the individual character of voices within wayang puppet theater.

- Some prominent Indian musicologists, such as Prem Lata Sharma and R. Satyanarayana, continue to uphold the established view in Indian music scholarship that gamelan is a borrowed phenomenon originating in Indian culture. This perspective refers to the very idea of an ensemble composed of homogeneous instruments — *tar ang* (lit. “set of instruments”)—and to the system of scale organization, which, according to this theory, also explains the etymology of the term gamelan: from the Sanskrit *mela* (scale) and *ga* (the third note of the scale). (This interpretation is based on the author’s personal conversation with the scholars mentioned, Delhi, April 1988.) Possible etymological links may also exist between the Javanese term *gangsa* (the alloy used for making gongs) and the Sanskrit *ganta*, denoting a flat gong used in Indian temple practice [15].
- With the spread of Arab-Islamic cultural elements, increasing importance was given to the human voice in gamelan performances — through the inclusion of the female soloist (*pesinden*) and male vocal ensemble (*gerong*). Alongside these, “singing” instruments were also introduced, such as the bowed *rebab* and the bamboo flute *suling*. This development marked a form of compromise, as gamelan had traditionally embodied an instrumental ideal, whereas Islamic musical aesthetics prioritized the human voice as the primary expressive medium. For this reason, it was once unthinkable for gamelan to be played during Ramadan or on Fridays. However, gamelan was so deeply embedded in Javanese social life that the new religion had to come to terms with its presence.

Special exemptions were granted to rulers (within the *dewa-raja* cult, which elevated the monarch to the status of divine representative on earth — an idea deeply rooted in the Indianized states of Southeast Asia), allowing them to suspend restrictions on gamelan performance during Ramadan when important *kraton* commemorative dates coincided with the fast. Over time, gamelan was eventually permitted during official Muslim festivals such as *Garebeg* and *Sekaten*. (*Garebeg* is celebrated three times a year: on the Prophet’s birthday, at the end of Ramadan, and on *Eid al-Adha*; *Sekaten* commemorates the Prophet Muhammad’s birth.) One example of this type of ensemble is *Gamelan Munggang* (first mentioned in 347 CE), which includes three *bonang*, one *kenong*, two *penontong* (small vertically suspended gongs), *kendang* and *ketipung* drums, and a large gong *ageng*. A key requirement for gamelan performance at these events was that it not accompany dance.

- With the advent of sustained Western musical influence in the 20th century, gamelan music found a permanent place in modern concert practice. Unfortunately, this shift introduced a number of negative developments: the artificial separation of participants into “performers” and “audience” — concept foreign to traditional practice; the modernization of instrument construction; and disruptions to the overall sonic balance due to the use of microphones in concert halls, recording studios, and other modern venues.

Results and Discussion

Thus, over time, gamelan music-making has come to be present in nearly all forms of sonic and musical expression and is utilized across all sociocultural strata — from refined bronze ensembles in royal *kratons* to simple iron or bamboo instruments in rural villages.

Accordingly, the term gamelan itself has undergone a semantic evolution: from originally referring to a basic set of three gongs (*genta keleng*) to designating a large, multi-component ensemble, such as the so-called “full” gamelan *seprengkat*.

Today, gamelan is a broad concept — comparable in scope of generalization to *karawitan* — which allows these two terms to be used almost interchangeably.

Classification of Gamelans: Traditions, Types, Forms, and Variants

Historically, several well-developed gamelan traditions have emerged in Indonesia, each distinguished by geographical origin: Sundanese gamelan (West Java), Central Javanese and East Javanese, Balinese, Sumatran, Madurese, as well as more localized traditions from North Kalimantan, Sulawesi, Eastern Irian (Papua), and other smaller islands. (Listing all would take considerable time, as Indonesia comprises over 10,000 islands.)

The typological classification of gamelan generally relies on a dichotomous principle: loud and soft ensembles (based on sound character), and *pelog* and *slendro* gamelans (based on the tuning system). The renowned Surakarta court musician Raden Tumenggung Warsodiningrat noted an early distinction — dating back to approximately the 2nd century BCE — between two major types of gamelan.

“Loud” gamelans, such as gamelan *bonangan*, are characterized by bright, impulsive sound qualities. This category includes ensembles like Gamelan Munggang (first mentioned in 347 CE), consisting of three *bonang*, a *kenong*, two *penontong* (small vertically suspended gongs), *kendang* and *ketipung* drums, and a large gong *agung*. These ensembles traditionally accompanied military campaigns, public festivities, and were used to mark time at royal courts.

“Soft” gamelans, which began to emerge around the 6th–7th centuries CE, were associated with vocal and dance performance. They incorporated more delicate-sounding instruments such as the *gambang* and *gender* metallophones, the *suling* flute, and the bowed *rebab*.

Eventually, during the 15th–16th centuries, both types were combined within a single ensemble, structured as two distinct, non-integrated sections that performed alternately — symbolizing a synthesis of sonic oppositions.

From our perspective, the classification of gamelan ensembles by type appears more logical when based on their sociocultural functions. On the one hand, this includes the distinction between elite and grassroots traditions — for example, gamelan *alus* (refined gamelan) and gamelan *kasar* (coarse gamelan) in East Java. (It is worth noting that the term *kasar* in this context may also derive from the name of a type of ritual gong used in Indian temple traditions.) Similarly, gamelan *Jogja* and gamelan *Solo*, named after the two Central Javanese court centers of Jogjakarta and Surakarta (since the 18th century), represent the high royal tradition. This is contrasted with *lagu-lagu daerah* (lit. “regional melodies”) — a term used for local musical forms in Central Java.

In West Java, the gamelan *degung* reflects the courtly style, while gamelan *renteng* represents a communal or village-based tradition.

On the other hand, classification can also be made based on the specific function of the ensemble, the size of its instrumentation, the choice of dominant instrument, and so forth. This has led to a number of functionally specific terms:

Gamelan *carabalen* — an ensemble used to accompany the return of soldiers,

Gamelan bonang and gamelan angklung — named after their leading instruments: the bonang (a set of kettle gongs) and the angklung (a bamboo “harp”),
 Gamelan lengkap — a full gamelan ensemble,
 Gamelan gadhon — a “partial” or chamber gamelan.

Another distinct type is gamelan gandrung, literally meaning “love-struck” or “enchanted.” This term refers to a specific performance tradition, as well as to the female singer-dancer (gandrung), the vocal style, the dance itself, the structure of the performance as a whole, and the gamelan ensemble that accompanies it.

The typical gandrung performance involves a young woman dressed in ornate batik who sings love-themed songs, followed by a solo dance that transitions into an improvised duet dance called ngibing (lit. “to accompany”), in which a man chosen from the audience humorously mimics the dancer’s refined movements. In the 20th century, gandrung melodies were adapted into patriotic songs with anti-colonial messages.

Gamelan gandrung, which traces its roots to the 15th—16th centuries, has become a hallmark of contemporary urban culture in East Java. It blends musical traditions associated with wedding rituals with the aesthetics of colorful popular stage performances. In modern practice, the traditional rebab is often replaced by two Western violins.

The introduction of the term gamelan as a kind of generalizing component in ensemble classification is a relatively recent development. Earlier practice typically involved using only the second, defining part of the ensemble’s name. The specific type of gamelan was further “specified” by means of personal names, as previously noted. These names were given to every ensemble without exception and were chosen based on a variety of considerations.

Various cultural contexts underlie the origins of the names of most gamelan compositions — gending, especially those associated with theatrical performance. For example, a poetic metaphor spoken by the dalang (puppeteer), such as “like a flower”, is immediately followed by the performance of the gending “Puspawarna” (puspa — flower, warna — color), reinforcing the imagery.

Particular attention should be paid to the realm of metaphor and imagery found in gending titles. Like the names of gamelan ensembles, they reflect the mythological and religious beliefs of the peoples of Indonesia. A recurring symbolic motif is the dichotomy between mountains and the sea or water, which is understood as a connecting substance between heaven and earth — clouds, rain, and so forth. Examples include:

“Ricik-Ricik” — the delicate sound of flowing water;
 “Redi Guntur” (redi — mountain, guntur — thunder);
 “Hudan Sore” (hudan — rain, sore — evening), and others.

Some gending titles, such as “Kalunta” (lunta — one who suffers or experiences great pain), are associated with entire legends. According to oral tradition, this particular composition inspired Prince Pakubuwono II during his resistance against the conquest of the Kartasura Kingdom in the 18th century [16]. As a result, “Kalunta” is considered a pusaka (sacred heirloom), believed to possess supernatural power, and is rarely performed out of fear that its magical force might be misdirected.

The term gending entered gamelan practice quite some time ago, and there is little doubt that it originated in the realm of literature. One of its earliest meanings was

“song” or “melody.” Its connection to vocal performance is further supported by another early usage of the term — as an old name for the rebab, the bowed string instrument that traditionally accompanies the voice.

Once absorbed into the sphere of karawitan, the term *gending* came to refer primarily to instrumental compositions. (It is also occasionally used to refer to a gamelan maker.) In contrast, for vocal music accompanied by gamelan, a separate term — *tetembangan* (from *tembang*, “song”) — was introduced. This distinction indicates that gamelan compositions may originate either from purely instrumental ideas or from adaptations of vocal repertoire.

Gending can also be interpreted as “art” (*seni*), though with a stronger emphasis on the aspect of process or intentional action — it connotes “the art of achieving something”, or “a method for attaining a goal through deliberate practice”. This nuance is evident in the title of the second volume of the 19th-century Javanese divinatory manual *Primbon: Adhamakna Sastra Gending* (*sastra* from Sanskrit, meaning “learning”, “science”, or “treatise”). In this context, *gending* refers to “the art of finding the correct numerical correspondence”.

The term also carries a faint echo of one of the meanings of karawitan — “refinement” or “skillful technique” — thus affirming its association with the *alus* (refined) aesthetic. This is underscored by the fact that the word *gending* is not used to refer to compositions of a more casual or overtly expressive nature; such pieces are called *gecul* (playful, humorous).

The phrase “the art of performing a *gending*” is formalized as *gegendingan*, which denotes a codified practice of ensemble performance built around nine progressive stages of instruction in group coordination and technique. Mastery of these stages allows performers to attain the maximum expressive potential embedded in a given *gending*. This learning path begins with short compositions featuring simple metric structures — such as *gending ladrang* (a common introductory form, also used for dance training) — and continues through stages of performing with “loud” ensembles, then “soft” ensembles, ultimately culminating in the execution of complex *gending* compositions that accompany dance and *wayang* performances. These are considered the most technically and expressively demanding pieces in the repertoire.

The Concept of Musical Tone: Sound/Sonority and the Structure of Gending Composition

Turning to an analysis of the terminology related to the sonic and musical texture of gamelan, as well as the general mode of musical development, we must once again emphasize the striking absence of adequate theoretical foundations within such a highly developed musical tradition — foundations that would reflect its centuries-long evolution.

Attempts to fill this gap at all costs, undertaken primarily by Western scholars over the past fifty years, have unfortunately often resulted in the construction of conceptual frameworks that are, in many cases, speculative in nature. Without questioning the scholarly competence of many outstanding researchers, we must point out that most of their conclusions are based on the observation of contemporary gamelan performance practices.

The diversity of their proposed models becomes particularly evident in the area of pitch-acoustic justification for tuning systems and scalar structures. The traditional

tuning of gamelans — especially older ensembles — has always extended beyond the familiar frameworks of Western music theory. In our view, this reflects not a deficiency in the tuning system, but rather a fundamentally different principle of relating to sound and musical expressivity, one that is deeply rooted in the cultural matrix of the Southeast Asian region.

To begin with, the concept of “musical tone” has not developed in either Indonesian music theory or in the realm of practical performance. In the Javanese language, there is the term *suara* or *swara* (in ngoko), and its synonym *swanten* (in krama), both referring to an abstract notion of “sound” in general. For instance, *suara ombak* means “the sound of waves”, and *suara orang* refers to “the sound of a human voice”.

As previously mentioned, the term *suara* derives from the Sanskrit *swara*, which, although conceptually closer to the notion of “musical tone” in Indian music theory, still maintains a rather abstract meaning — even in that context. Etymologically, *swara* originates from *swa* (self) and *raj* (shining), and can be interpreted as “self-luminous” or “self-radiating”, much like a gem or precious stone.

In modern Indonesian, the expression *seni suara* is typically translated as “the art of singing,” whereas instrumental performance is designated as *seni gamelan*. Thus, as a musical term, *suara* remains more closely associated with the human voice, while the sound produced by musical instruments is not terminologically distinguished in common usage. A possible approximation might be found in the onomatopoeic and semantically neutral syllable *kleng* — as in *genta keleng* (the mythical “primordial gong”) or *klenengan* (a term used today for concert-style gamelan performance).

It is worth noting that the tradition of vocal imitation of gamelan sounds — originally used as an educational exercise — occasionally gave rise to original forms of polyphonic singing, a practice that is generally uncharacteristic of Indonesian music (and indeed, of most Southeast Asian musical cultures). A striking example is the *kecak* performance still practiced in Bali today, where a large group of men (sometimes numbering up to two hundred) collectively imitate gamelan sounds, including gongs, using a vocalized interlocking pattern based on rhythmic syllables such as *cak*.

The phenomenon of a musical tone can arise only within a scale system (pitch set) that has been formed through the application of some principle of temperament. Only under such conditions does a tone acquire a fixed pitch position and enter into a structured system of relationships with other tones in the scale. This is what occurred, for example, in the high tradition of Chinese music, where the doctrine of temperament constitutes a coherent system — acoustically, mathematically, and ethically grounded.

In contrast, the tunings of gamelan ensembles, which are based on non-standardized temperaments, present us each time with a unique set of pitches — or more precisely, pitch zones — which manifest differently with each performance, especially at the level of overtones and resonant partials.

Similarly, in Indian classical music we also encounter, first, the absence of fixed pitch in the Western sense, and second, the fluidity of pitch values — regulated through the system of *śruti* (microtonal intervals). Yet every concrete sonic realization of a composition based on a specific *rāga* is always grounded in a clearly defined tonal center, the *sa* (tonic). This sense of tonic grounding — both physical

and psychological — is supported by the continuous drone of the *tampura*, which serves as a sonic foundation.

In gamelan music, however, the sound of the *gong ageng*, which marks the boundaries of the largest formal sections of a *gending* (*gongan*), is far more ambiguous in terms of pitch and cannot serve as a tonal anchor in the same way. Its “tone” is better understood as a resonance containing the richest possible spectrum of partials and overtones, generated by the totality of the other instruments in the ensemble.

The two pitch–scale systems historically established in gamelan music — *slendro* and *pelog* — also exhibit a certain instability, both grammatically and conceptually. The term *slendro*, according to a number of Western scholars (such as Jaap Kunst and M. Hood), may derive from *Sailendro*, the name of the *Sailendra* dynasty — a Buddhist ruling house of an early medieval Indonesian kingdom — whose name literally means “Lord of the Mountains”.

The Javanese themselves, however, attribute the origin of *slendro* to a poetic legend: this tuning system was given to humanity by the mythical *Batara Indra* at the command of the god *Shiva*. From this, the etymology *Sura* (“god”) + *Endra* = *Surendra* = *slendro* is proposed. According to *Rangga Warsita* (1802–1873), the official court chronicler and custodian of *adat* (customary law) at the *Surakarta kraton*, this occurred in the year 404.

The formalization of *pelog* — a different method of dividing the octave (compare this to the Javanese calendrical system, which is organized into both seven-day and five-day weeks within a 35-day cycle)—is thought to have taken place somewhat later, around the 11th–12th centuries. Its creation is traditionally ascribed to the legendary Prince *Panji Hino Kerpati*. However, this does not necessarily imply that *pelog* represents a later evolutionary stage than *slendro*.

The tuning of archaic gamelans suggests that both systems emerged and were used in parallel, functioning as distinct modes of “sonic-spatial optics”. At times, it is difficult to draw a clear line between them, due to the wide circulation of non-standardized tuning variants — such as three-, five-, or six-tone versions of *pelog*, and two-, three-, or four-tone versions of *slendro*.

As a result, it is possible to translate a particular *gending* (composition) from *slendro* to *pelog* and vice versa. This transposition imparts a different “coloration” to the piece, often altering it so significantly that an uninitiated listener may perceive it as an entirely different work.

This is because the principles of octave division differ substantially between the two systems: unlike the Western 12-tone equal temperament, *slendro* divides the octave into five roughly equal intervals, whereas *pelog* divides it into seven unequal ones. A schematic comparison of *slendro*, *pelog*, and Western diatonic scales can be represented as follows:

The *pelog* scale can be schematically represented as follows:

ji-150-ro-150-lu-225-pat-150-ma-150-nem-150-pi-225-ji;

The *slendro* scale:

ji-240-ro-240-lu-240-ma-240-nem-240-ji;

Western diatonic scale:

do-200-re-200-mi-100-fa-200-sol-200-la-200-si-100-do.

(The octave comprises 1200 cents, with 100 cents equaling a semitone in the Western chromatic system.)

Despite the roughly equal status of *slendro* and *pelog* in performance practice, their use is functionally differentiated. *Pelog* often symbolizes the sound of an “otherworldly” realm, associated more with divine than human spheres. This is why *gending* compositions in *pelog* are traditionally performed at night. It is also possible that the term *pelog* resonates with *pelo*, meaning “strange,” “mysterious,” or “difficult to comprehend” — an appropriate connotation, considering that the most sacralized, mystically potent ancient gamelans are frequently tuned in *pelog* (including the legendary *Gamelan Munggang*).

What, then, is the mechanism by which the universe is regulated through sound — understood here as a kind of tuning fork that determines the saturation of cosmic energy in the ether, its influx and outflow?

As noted earlier, in ancient Chinese tradition, cosmic harmony was believed to be maintained through precise correspondences of pitch and timbre to the fundamental elements of the cosmos [17]. For instance, the tone *gong* symbolically corresponded to Saturn, the Earth, the color yellow, wind, midsummer, the human heart, sincerity, rulership, and the cardinal direction of the center.

In contrast, pitch in Indonesian musical tradition is far more fluid and unfixed, while the distinctive timbres of the instruments often struggle to emerge clearly from the resonant “sonic haze” produced by the gongs. Thus, the “state” of the cosmos is realized through a specific organization of the sonic process, structured around the key concepts of *patet* and *virama*.

Patet means “to tune a musical instrument”, but also “to restrain”, “to tame”, or “to control”. It is the central mechanism by which the flexible, non-standardized pitch structures of *pelog* and *slendro* are systematized — through the use of three modal categories: *lima*, *nem*, and *barang* in *pelog*; and *nem*, *sanga*, and *manyura* in *slendro*. Each *patet* defines a specific tonal hierarchy, a kind of micro-chromatic aura (comparable to the *alankar* system in Indian classical music), as well as a particular pitch range and characteristic modal-melodic formulas.

As in *raga*-based musical systems, *patet* imbues a *gending* with a certain psycho-emotional coloring (*rasa*). It represents a way to “domesticate”, to regulate a kind of sonic force, bringing it into a state in which it can enter into communication with other realms.

Whereas in ancient and medieval Chinese ceremonial orchestras a “message” to Heaven was conveyed through successions of single tones — each considered self-sufficient and a microcosm in itself — in Javanese belief, the gamelan functions as a vessel that concentrates cosmic energy by merging multiple layers of sound into a unified whole, regulating and playing with it to establish harmonic order.

Conclusions

We compare the Chinese ceremonial orchestra and the gamelan because they represent fundamentally different approaches to the regulation of the universe. The Chinese ceremonial orchestra was tuned to reflect the specific cosmological condition of the universe at a given moment — through the establishment of a principal pitch known as *Huang zhong*, which corresponded to the time of day, season of the year, planetary alignments, and so forth.

In gamelan, however, what matters far more is the energetic release of sound and the subsequent unfolding of its life in space — a kind of probing of cosmic energy clusters, their accumulation and regulation through sound.

It would be particularly interesting to compare various civilizations' views on the degree of sound's influence — its sonic and musical impact — on the cosmos. In Chinese musical-theoretical systems, the precisely calculated pitch and timbral correspondences between Heaven and Earth are likened to “communicating vessels,” whose interaction ensures the universe's harmonious state. The result of a sonic process is not necessarily anticipated — indeed, a direct and immediate cosmic reaction to a musical message is often interpreted as a sign of misalignment, which might manifest as a natural disaster, illness, or other disruptions. From this stems the traditional Chinese indifference to temporal progression in musical development, and the deliberate pursuit of spatiality and endlessness in sound — unbound by fixed metric constraints.

By contrast, gamelan's sonic energy is oriented toward result — a transformation that begins already during the performance of a *gending*. The *balungan* (the “skeleton” or core melodic framework) travels along a tiered spiral path, symbolizing the breathing of the universe — a process of continual destruction and rebirth through cyclical motion.

The unfolding of musical material in time is of paramount importance in gamelan and is reflected in the elaborately developed colotomic structure of *gending* compositions, which is regulated by the concept of *wirama*. *Wirama* (meaning tempo, rhythm, or motion) ensures the temporal organization of a composition and defines its type — regular (with an even number of *gongan* cycles) or irregular (with an odd number).

The rich terminology used to designate temporal divisions within a *gending*, types of metric structures, technical playing methods for gongs and drums, and so forth, in some respects even surpasses that of the Indian classical tradition, with its intricate system of metric-rhythmic cycles known as *tāla*. In Indian music, the *tāla* functions as an underlying metric grid superimposed on the sonic flow — it governs pulse rather than formally segmenting the music (at least, not in a terminologically explicit way).

In contrast, *gending* compositions treat metric segmentation as a primary formal and structural feature, which is explicitly encoded in a range of specialized terms, such as:

- *Gongan* (from *gong*) — the longest structural unit of a composition, marked by strokes of the *gong ageng*;
- *Kenongan* (from *kenong*) — a subdivision of the *gongan* into two or four sections (occasionally three or five), marked by the *kenong gong*;
- *Balungan* (“skeleton” or “framework”) — typically, one-quarter of a *kenongan*, serving as the melodic core;

Ten types of so-called regular forms are designated by specific terms, such as:

- *Ladrang* — 16 *balungan* in one *gongan*; a full composition may consist of one or several *gongan*;
- *Ketawang* — 8 *balungan* per *gongan*;
- *Ageng* — an extended form that includes an introductory section (*buka*), 8 or 4 strokes of the *ketuk gong* within one *kenongan*, or 128–64 *keteg* (the smallest metric unit of subdivision), and so on.

In irregular compositions, the length of each gongan can vary, regulated by the drummer's cues. In such cases, wirama becomes unstable — reflecting another of its meanings: “unpredictable” or “capricious”.

Overall, the development of a gending unfolds through permutations of tone combinations and the continuous expansion and compression of the balungan structure — achieved via successive rhythmic subdivisions. Each metric cycle is marked by a unique timbral profile produced by specific types of drums and gongs, as well as by distinctive pitch placement.

Two additional meanings of wirama — “a place to take a breath in a song” and “levels of language” — highlight its close connection, and possibly origin, in vocal prosody. The “high” and “low” levels of the Javanese language reflect different tempo-rhythmic speech patterns, while in krama, intonation plays a vital communicative role.

In general, the human voice (which, in traditional Javanese belief, reveals a person's spiritual and physical vitality, particularly their ability to attract *sekti*) and long-sustaining, melodic instruments like the rebab and suling hold a special function in the tuning organization of gamelan. These are tuned to fall “between” the tones of pelog and slendro, adding two microtonal degrees to the former and five to the latter.

While this may seem to introduce even greater temperamental vagueness, in fact, the more pitch-stable and consciously controlled voice, rebab, and suling acoustically serve to “focus” the shimmering sounds of gongs and metallophones — gathering them into coherent bundles. This mechanism is reflected in the concepts of *blero* and *embat*: *blero* (or *balero*) refers to looser alignment of voice or instrument with the ensemble's tuning, while *embat* refers to a higher degree of alignment and concordance.

Thus, the process of tuning convergence in karawitan reveals a unique kind of intonational integration between voice and instrument. In this respect, *seni suara* (vocal art) proves temperamentally more stable than *seni gamelan* (instrumental music). The principle of discursivity in musical unfolding — introduced into karawitan under the influence of Near Eastern linear, extended melodic traditions — has led to a “loosening” of the eternally cycling gongan structure, drawing it out along a temporal line shaped by the voice, rebab, and suling.

As a result, the texture of the main instrumental ensemble has evolved toward linearity — an evolution facilitated by cultural borrowings, especially from non-kraton gamelan traditions, in which gongs and metallophones are more commonly combined with wind instruments.

All of the above inevitably prompts reflection on the fundamentally fluid and unstable nature of the musical and cultural tradition we are examining. It resists unification and is difficult to describe or analyze using fixed definitions and absolute values. The ghostly, shimmering sounds of the gamelan at night, the wavering shadows of wayang puppets on the screen — these phenomena, which form the emblematic image of Javanese culture, are aptly compared to “moonlight reflected in a pond...”

As Jaap Kunst poetically writes, “The Javanese gamelan can be compared only with two things in the world — moonlight and flowing water... It is a unique reflection of being — just as moonlight embraces the entire earth: it is as eternal as water, and as changeable as water”.

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Феномен индонезийского оркестра гамелан в мировой музыкальной культуре

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Аннотация. В сложных и многоуровневых музыкальных культурах различных регионов мира не так просто выделить явления, которые на протяжении длительного периода представляли бы собой наиболее полный депозитарий их характерных черт. Традицию оркестрового музицирования, получившего название «гамелан», можно отнести к подобного рода феноменам. Это одно из ключевых, кодовых явлений не только Индонезии, региона Юго-Восточной Азии, но и мировой музыкальной культуры в целом. В данной статье предпринята попытка выявить существенные основы яванской музыки посредством анализа терминологии, сложившейся в рамках традиции гамелана, который рассматривается в системно-типологическом сопоставлении как внутри индонезийской музыкальной культуры, так и в сравнительной перспективе с другими регионами. Анализ начинается с наиболее важного и обобщающего для любой музыкальной культуры понятия «музыка» (по крайней мере в том значении, в котором оно применяется в пределах западной цивилизации), включающего все явления, касающиеся области звука, звучания, звукотворчества в целом. Ни в индонезийском, ни в яванском языках такой обобщающий термин не сложился. Появившийся на рубеже XIX–XX вв. термин *musik* (от голландского *musiek*) используется исключительно по отношению к западной музыке, причем только для музыки академической, в то время как для обозначения популярных форм употребляется термин *pop*. Подобное терминологическое разграничение, с одной стороны, отражает момент влияния современной западной поп-культуры на популярные формы музицирования, распространенные в городах Индонезии (особо ошутимого с начала 1960-х), а с другой – подчеркивает черты их явной самобытности, позволяющие без труда отделить эту музыку от западной.

Ключевые слова: оркестр, гамелан, гонг, гэндинг, вирама, каравитан, слендро, пелог

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Research article / Научная статья

Positivism in Brazil in the 19th Century: Philosophy, Politics, Culture

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Abstract. The paper is devoted to the cultural and historical prerequisites for the origin and main stages of the history of positivist philosophy in 19th century Brazil. Based on a review of both the philosophical and literary prehistory of the early 19th century and the positivist tradition in Brazilian thought of the century before last, it is shown by what factors Brazil turned out to be the country in Latin America, on whose cultural, political and religious life the philosophy of positivism had the greatest influence in this historical period.

Keywords: Latin America; Brazil; philosophy; positivism; literature; science; politics; culture; religion

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Introduction

It is difficult to find another philosophical movement that had such a strong influence on the political, cultural, and even religious life of Brazil during the first century of its independence (1822–1922) as the ideas of Auguste Comte’s “early positivism”. While in neighboring Spanish American countries, and above all in Argentina, they did not become widespread until the last quarter of the 19th century, undergoing significant transformation and ultimately having very little in common with the original, the situation with their reception in the Brazilian philosophical and political culture of the early Empire (1822–1860) was completely different, and a number of historical and cultural factors influenced this development.

Two historical circumstances that significantly distinguished Brazil from its neighboring Spanish American states largely determined the characteristics of the development of its philosophical and political thought in the early 19th century: its relatively late attainment of independence compared to its neighbors, in particular Argentina (1822), and its monarchical state structure (until 1889), coupled with the widespread use of slave labor in the country’s economy (until 1888). That is why one can fully agree with the opinion of the contemporary Brazilian historian of philosophy L.A. Cerqueira that in Brazil, unlike Spanish America, institutionally formalized philosophical discourse, as well as the very concept of “Brazilian philosophy” as an independent part of the world and Latin American historical and philosophical process, only appeared in the first quarter of the 19th century [1]. During the reign of Emperor Pedro I (1822–1831), here, as in neighboring Argentina, the influence of French Enlightenment ideas on the cultural and political life of the young monarchy became clearly noticeable. This was most clearly manifested in the text of the first constitution of independent Brazil, drafted in 1824 under the strong influence of the ideas of the Franco-Swiss publicist, classic of French Romanticism, and public figure Henri-Benjamin Constant (1767–1830). During this period, socio-philosophical issues were usually addressed primarily

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in the works of major theorists of Brazilian political thought, such as José da Silva Lisboa (1756–1835), Paulino José Soares de Souza (1807–1866), José Antônio Pimenta Bueno (1803–1878), Zacarias de Góis (1815–1877), and Bernardo Pereira de Vasconcelos (1795–1850). The revolutionary motifs of the socio-political teachings of the Enlightenment are also evident in the journalism of some radical critics of Portuguese colonial rule, such as Freire Caneca (real name Joaquim da Silva Rabelo, 1779–1825), one of the leaders of the so-called “Pernambuco Revolution” of 1817, one of the first attempts to create a Brazilian government completely independent of the Portuguese administration. At the same time, there was a continuation of a trend that had become clearly apparent in the middle of the previous century, namely the significant influence of the Masonic movement on the political and social life of the country, which was particularly evident in the events surrounding the army’s suppression of the so-called “Equatorial Confederation” (Confederação do Equador), an unrecognized state based on a separatist movement of wealthy landowners in the northeast of the country, in June–November 1824.

Materials and Methods

In the early years after Brazil’s independence, the geography of philosophy teaching as an academic discipline expanded significantly, both in existing and newly established educational institutions throughout the country. A number of new educational institutions emerged, including, in particular, the Provincial Lyceum of Pernambuco in Recife (1825), the Ateneu Norte-Rio-Grandense College in Natal (1834), the Provincial Lyceum of Bahia in Salvador (1836), and the Pedro II College in Rio de Janeiro (1837). In all of these institutions, philosophy has been included in the curriculum as a compulsory subject since their inception. During this period, philosophical issues (primarily ethical and socio-philosophical) were mainly addressed in the works of writers, as well as in the works of prominent lawyers and legal scholars. In 1845, during the reign of Emperor Pedro II (1831–1889), a group of writers and poets strongly influenced by Romanticism — Alvares de Azevedo (1831–1852), Aureliano Lessa (1828–1861), and Bernardo Guimarães (1825–1884)—formed a secret union of writers called the Epicurean Society (“Sociedade Epicureia”), which, among other things, organized discussions on moral and ethical topics that were not particularly approved of by society and the church, such as the problem of death and euthanasia, the sexual aspects of marriage, Satanist movements, etc. At the same time, the influence of modern philosophical ideas, notably Descartes’ rationalism and Locke’s empiricism, became noticeable in the works of major Brazilian medical theorists such as Domingos José Gonçalves de Magalhães (1811–1882) and Eduardo Ferreira França (1809–1857). In general, however, it should be noted that the processes of institutionalization of philosophy, and, as a consequence, the development of philosophical thought as a whole, in Brazil in the first half of the 19th century lagged significantly behind neighboring countries in southern Spanish America — Chile and Argentina. In addition to the socio-political factors mentioned above, this was also due to the lack of a developed system of university higher education in the country (while the first universities in Brazil appeared only with the attainment of independence, i.e., in the first half of the 19th century, in Argentina they appeared in the first quarter of the 17th century, and in Mexico and Peru as early as the 16th century [2]).

Results and Discussion

In essence, by the time Emperor Pedro I abdicated the throne (1831), elements of philosophical discourse existed in the young Brazilian monarchy only as part of

journalism, literature, and political and legal thought. However, in the mid-19th century, during the reign of Emperor Pedro II (1831–1889), the situation changed dramatically. These changes were primarily associated with the penetration into the country of the ideas of “early positivism” by Auguste Comte, which, due to a number of factors, proved to be extremely popular with the political elites, first in Brazil and then in a number of Spanish American states. Comte’s teachings, which vividly expressed the interaction between philosophy and concrete scientific knowledge, were in many ways a continuation of the ideas of New European empiricism, which had already found a large number of supporters on the South American continent. The idea of the practical orientation of philosophical knowledge, whose method is now identical to that of natural scientific research, as well as healthy evolutionism, which sharply contrasted with the revolutionary ideas of the Enlightenment and Marxist philosophy, were seen by many Latin American thinkers and politicians as a means of overcoming the social anarchy in which their societies found themselves, as well as a way to eradicate poverty and backwardness and move their peoples toward cultural and political progress.

It was precisely the evolutionism of Comte’s philosophical and political views that became the main feature of positivist philosophy, ensuring its incredible popularity in Brazilian intellectual circles in the second half of the 19th century. Unlike neighboring Spanish American states, which were forced to fight for their independence from the Spanish crown with weapons and revolutionary methods, Brazil gained independence in 1822 in a much more peaceful way, separating from the former metropolis with virtually no bloodshed and preserving not only the monarchical form of government, but also the former royal dynasty in the person of its new emperor, Pedro I — a case unique in the history of Latin America. Naturally, many representatives of the political and intellectual elite of the young monarchy preferred the evolutionary development of social and political institutions in the future, seeking to avoid anarchy and unnecessary upheavals. The “law of three stages” in the development of human knowledge (theological, metaphysical, and positive), formulated by Auguste Comte and underlying the doctrine of “first positivism”, seemed to many of them to be an extremely convenient principle for describing and classifying political, social, and cultural phenomena in their natural and sequential evolution. In the Brazilian intellectual milieu of the second half of the 19th century, it was equally sought after by the political elite of the empire (supporters of the monarchy) and by supporters of political reform — Republicans and abolitionists (supporters of the abolition of slavery). Another important social factor that determined the widespread popularity of positivist ideas in Brazilian society during the late Empire was the significantly higher percentage of Freemasons among the political and intellectual elite compared to Spanish America. Unlike the much more conservative adherents of Catholicism, immediately became active propagandists of positivist socio-political philosophy. As João Camilo de Oliveira Torres (1915–1973), a classic Brazilian historian and philosopher of the mid-20th century, rightly notes in his seminal monograph *Positivism in Brazil* (“O positivismo no Brasil”, 1957), “positivism appeared in Brazil to fill the gap that had opened up in our culture due to the absence of a philosophy developed rationally and in accordance with sound criteria. It was a concept of the universe and values, constructed systematically and rigorously, which over time became irrefutable” [3, p. 37].

The active penetration of Comte’s ideas into Brazilian intellectual circles began as early as the 1850s. One of the first steps in this direction was the publication in 1856 of a book by Benjamin Constant Botelho de Magalhães (1836–1891), a professor at the Higher Military School in Rio de Janeiro, military engineer, and staunch

abolitionist, entitled *Slavery in Brazil (A Escravatura no Brasil)*. In it, he drew on the evolutionary principles of Comte's epistemology and political philosophy to argue for the inevitability of the gradual disappearance of slavery in Brazil through peaceful and consistent reforms. However, the first truly positivist work of Brazilian philosophical thought in the second half of the 19th century should be considered the two-volume work by the prominent medical theorist Luis Pereira Barreto (1840–1923), who worked in São Paulo titled *The Three Philosophies ("As Três Filosofias"*, 1874–76). By "three philosophies", Barreto means the three stages of development of human knowledge in Comte's teachings, attempting to interpret the main events of world history in their light. According to Barreto, Brazil had now practically overcome the metaphysical stage in its intellectual and social development and stood on the threshold of the third and final stage of development – the positive stage, when both the political and cultural content of social life is entirely determined by the progress of science and, above all, the development of natural science.

In the imperial capital, Rio de Janeiro, the most prominent adherents of positivism (primarily its socio-philosophical and religious doctrine) were Miguel Lemos (1854–1917) and Raimundo Teixeira Mendes (1855–1927), founders in 1876 of the religious Brazilian Society of Positivists, which was reorganized in 1881 into the Positivist Church of Brazil (*Igreja Positivista do Brasil*) in 1876. In their interpretation, the epistemological component of Comte's teachings recedes into the background, giving way to the theory of creating a "universal religion of humanity" developed by him in the last years of his life, the practical implementation of whose principles was the main goal of the newly created organization. Lemos and Mendes' religious-dogmatic interpretation of the principles of positivism was fully embodied in two of their joint works: "Annual Circulars of the Positivist Apostolate of Brazil" (*Circulares anuais do Apostolado Positivista do Brasil*, 1881) and "Our Initiation into Positivism" (*A nossa iniciação no Positivismo*, 1889).

Another major center of the positivist movement in the period from 1860 to 1880 was the northeast of the country, where the famous "Recife School" emerged, centered at the Faculty of Law of the University of Pernambuco in the provincial capital of Recife, founded in 1827 by decree of Emperor Pedro I. The core of this group of philosophers and legal scholars consisted of Tobias Barreto (1839–1889), Sílvio Romero (1851–1914), who later also taught philosophy at the Pedro II College in Rio de Janeiro, and Clóvis Beviláqua (1859–1944). The views of the thinkers of the Recife School differed from those of the Positivist Society of M. Lemos and R.T. Mendes primarily in that they practically ignored the religious component of Comte's teachings, focusing instead on its epistemological and political aspects. In addition to Comte's philosophy of "early positivism", T. Barreto was also significantly influenced by the ideas of Romanticism, as well as by the German biologist and evolutionist Ernst Haeckel (1834–1919) and the founder of European "philosophy of life" Arthur Schopenhauer (1788–1860), which later reinforced the evolutionary and natural philosophical features of his worldview, embodied in such works as "Essays and Studies in Philosophy and Criticism" (*Ensaio e estudos de filosofia e crítica*, 1875) and *Brazil as it is (Brasilien, wie es ist*, in German, 1876).

In the late period of the Empire (1860–1889), the ideas of positivism were widely used by Brazilian intellectuals and public figures to explain and resolve a wide variety of socio-political issues, not limited to the problems of slavery and reforming the existing political system. In the extreme south of the country, in Rio Grande do Sul, the principles of "positive philosophy" and "positive politics"

were actively used by Nisia Floresta (real name Dionisia Gonçalves Pinto, 1810–1885), a women’s rights activist, one of the first theorists of feminism in South America, and a prominent intellectual of her time. After becoming acquainted with Comte’s teachings by attending his public lectures in Paris in 1849–50, she returned to Brazil in 1852, where she began to actively publish articles in various socio-political periodicals, combining feminist ideas with the principles of Comte’s “positive philosophy”. She later expounded her teachings in a number of fundamental works, such as “Woman” (“A Mulher”, 1859), Brazil (Le Brésil, in French, 1871), and Fragments of an Unpublished Work: Biographical Notes (Fragments d’un ouvrage inédit: notes biographiques, in French, 1878).

Conclusions

The influence of the ideas of “early positivism” in Brazilian society in the second half of the 19th century was so great that in 1889, when the Republic was established following the abolition of slavery by the so-called “Golden Law” in 1888 and the voluntary abdication of Emperor Pedro II, it was decided that the new national flag of the Brazilian Republic would bear the main motto of Auguste Comte’s political philosophy: “Order and Progress” (“Ordem e progresso”). This influence continued throughout the 20th century, leading to a much stronger tradition of philosophy of science, philosophical epistemology, and logic in Brazilian thought during this period compared to the Spanish American countries of Argentina, Chile, Peru, and Mexico.

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Позитивизм в Бразилии XIX в.: философия, политика, культура

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Аннотация. В статье анализируются культурно-исторические предпосылки зарождения и основные этапы истории философии позитивизма в Бразилии XIX в. На основании обзора как философско-литературной предыстории начала XIX в., так и непосредственно позитивистской традиции в бразильской мысли позапрошлого века показано, в силу каких факторов Бразилия оказалась тем государством Латинской Америки, на культурную, политическую и религиозную жизнь которой философия позитивизма оказала наибольшее влияние в этот исторический период.
Ключевые слова: Латинская Америка, Бразилия, философия, позитивизм, литература, наука, политика, культура, религия

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Research article / Научная статья

The Problem of the Chinese Concept *Tianxia* and Education

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Abstract. In the context of contemporary ideological explorations concerning the transitional nature of the post-globalization era and the shift from a unipolar to a multipolar world order, a number of Chinese thinkers are “re-developing” the concept of *Tianxia* (“All Under Heaven”), drawing on the historical and cultural roots of the nation. This concept, rooted in ancient Chinese philosophies such as Confucianism, is intended not only to guide the strategic development of modern China, but also to serve as a framework for international communication. Prominent among these thinkers are Zhao Tingyang, Xu Jilin, Zhang Weiwei, as well as the anthropologist Fei Xiaotong. The central challenges they address include the tension between the universal and the particular, especially the relationship between China and other global powers (i.e., the national versus the universal), as well as the dynamics between the state, society, and the individual within the PRC. This study identifies the unresolved issues that arise within the framework of *Tianxia* as articulated by these authors. It also draws a parallel with the Russian intellectual tradition, where similar tensions between the national and the universal were debated by the Westernizers and Slavophiles, and reflected in the works of F.M. Dostoevsky, V.S. Solovyov, L. Tolstoy, and L. Trotsky. The paper observes how global processes influence the development of education, particularly in China, where efforts are being made to resist the homogenizing effects of globalization. It is argued that a depoliticized interpretation of *Tianxia* may offer productive insights for the development of a national education system in the PRC. Drawing on the principles of *Tianxia*, several Chinese scholars propose that global higher education should not be treated as a domain of competition, but rather as a space for mutually beneficial cooperation.

Keywords: national and universal; modern education; Chinese political philosophy; Axial Age; *Tianxia*

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Introduction

The Chinese concept of *Tianxia* (“All Under Heaven” as a sphere of social life) has become the subject of active discussion in recent decades, primarily as a model for an alternative world order [1]. Rooted in ancient Chinese thought, the modern interpretation of *Tianxia* envisions the creation of a new global order based on cooperation and benevolence (see [2–4], etc.). While critiquing Western approaches and contemporary international practices, proponents of *Tianxia* assert that only friendly relations between countries can bring about peace and mutual benefit. However, attempts to justify this abstract universality through the categories of national discourse, particularly in the works of one of the leading advocates of *Tianxia*-ism, Xu Jilin (b. 1957), give rise to methodological ambiguities. In our view, this structural paradox has provoked critical responses that fail to address the essential issues, contributing not only to a distorted perception of the concept itself, but also — somewhat paradoxically — to its growing presence in global political-philosophical discourse.

Within the framework of *Tianxia*, the problem of the relationship between the universal and the particular, between society and the individual, comes to the fore. In developing a theory of international politics, *Tianxia* theorists also reflect on the individual, viewing *Tianxia* as an ideal context for human existence [5]. In particular, Xu sees the individual as the core and origin of traditional Chinese values, which he characterizes as a continuum of “family–state–*Tianxia*.” He describes this as a “social continuum centered on the ‘self’ (自我).” However, as Xu points out, the “self” in this context does not possess the

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authenticity or autonomy associated with modern understandings: each person is embedded in a hierarchical network of relationships — from the family and the state to Tianxia. Only within this system does the individual acquire a kind of homogeneity. Thus, the “self”, as conceived by Xu, is not understood as a discrete, autonomous unit, but as a relational entity shaped by its connection to Tianxia. In this context, the family functions as the foundational unit of society, culturally defined and distinct from the state, which is understood as a political entity.

In contrast to Xu, the prominent Chinese anthropologist Fei Xiaotong (1910–2005) identifies the foundation of Chinese social culture as “subjectivism” (自我主义), which is self-oriented but differs from Western individualism in its “relativity and flexibility” [6, p. 54]. Flexibility here refers to a specific feature of Chinese social culture: all values emanate from the “self”, and the boundary between the individual and society is considered relative. According to Fei, the outer limit of such a society is the “ambiguous *Tianxia*”. He emphasizes that in this context, *Tianxia* should be interpreted through the lens of specific ethical relationships — those between father and son, friends, and so on. Moreover, moral and legal norms may be flexibly applied depending on the distance between the acting subject and the perceiving “self”.

Another key issue within the *Tianxia* framework is the tension between the national and the universal, a theme also characteristic of Russian culture — most notably in the debates between Westernizers and Slavophiles, and one that has become even more pressing in the era of globalization and post-globalization. As early as the second half of the 19th century, Russian intellectuals such as Vladimir Solovyov and Nikolay Danilevsky engaged in polemics on this very issue. Fyodor Dostoevsky, who fundamentally disagreed with Solovyov, maintained that universal values can only emerge from the flourishing of national cultures. Konstantin Leontiev also emphasized that diversity enriches truth, and that humanity’s wealth lies in the vivid diversity of national traditions. These thinkers opposed the erasure of identity inherent in Western globalist ideologies [7; 8].

As Fei’s account suggests, the root of Chinese social and ethical culture lies in the “soil” (in the sense of the agrarian traditions, similar to the Russian *pochvennichestvo* of the late 19th century), which is fundamentally incompatible with the notion of universal values as such. This sharply diverges from the perspective of *Tianxia* advocates, who underscore not only the universality of the concept itself but also that of generalized “Chinese” values. This raises important questions about how *Tianxia* theorists construct and argue for this universality, and how the individual is positioned within this system, particularly when their orientation toward *Tianxia* is grounded in self-referentiality.

Universalism is inextricably linked with religious traditions, while national narratives are associated with particularism. These two methodological paradigms are characterized by distinct modes of legitimation. In this article, we aim to examine the internal contradictions of the *Tianxia* system through an analysis of the argumentative strategies employed by its proponents. We suggest that the conflation of universalist and nationalist discursive tools contributes to the politicization of the *Tianxia* concept, hindering its discussion in philosophical and other non-political contexts. Nevertheless, we contend that *Tianxia* as an intellectual system can and should be discussed in apolitical circles, as evidenced by the emerging discourse on its potential application in the sphere of higher education.

Materials and Methods

In Xu Jilin's conception, the relationship between the individual and *Tianxia* requires the presence of the state as an intermediary link. According to Xu, the legitimacy of the patriarchal order and the legality of the state system cannot be self-evident; their sources must be found in the transcendent *Tianxia* and the natural order. For Xu, *Tianxia* represents a "supreme value" encompassing truth, beauty, and goodness – values that can only be realized on Earth through a material "body". He argues that this body is constituted by the patriarchal family and the dynastic state, which together embody both ethical and political structures.

Thus, as Xu emphasizes, the values of *Tianxia* are reflected in ethical and legal orders as well as in everyday life. In this context, the strengthening of the state's role, according to the philosopher, was the primary cause of the rupture in the traditional continuum and the transformation of the individual's relationship to both family and *Tianxia*. Xu points out that the sources of political legitimacy in the modern state have ceased to be transcendent, and that the legal system, having become detached from the traditional order of rituals and patriarchal relations, has acquired an autonomous character.

Xu concludes that the modern Chinese notion of the "self" is marked by a fundamental duality. On the one hand, the individual cannot transcend the ethical order of the family-state or "communicate directly with *Tianxia*", making the self-dependent on these traditional structures. On the other hand, all individuals are conceived as equal and independent "subjects of the world" (天民), capable of connecting directly to the transcendent "natural order" (天理) through their inner conscience, bypassing the established hierarchies of family and state. According to Xu, this duality has led to the "self-destruction and disintegration" of the continuum linking family, state, and world, and has laid the groundwork for the emergence of a "genuine self" (本真性自我) in contemporary Chinese culture.

In Xu's view, the rupture between the family, the state, and *Tianxia* has placed the individual, now understood in its modern sense, within a different system of identity, one in which they are linked directly to the state. The individual, once embedded in relational roles (father-son, siblings, friends, etc.), now possesses a uniform and equal identity: that of the citizen. Xu argues that the loss of the family's status as a "social intermediary" has transformed the "warm and personal" ethical relationship between individual and state into an impersonal one, governed by law and politics.

It becomes evident that Xu, in his reinterpretation of *Tianxia*, envisions the individual as autonomous from the family, the state, and *Tianxia* itself. On this basis, he sees one of the negative consequences of modernization as the emergence of an "atomized individual", detached from any relational structure and stripped of existential meaning. This, according to Xu, necessitates the reconstruction of a new order encompassing family, state, and *Tianxia*.

Drawing on the terminology of Jürgen Habermas, Xu refers to the family as the "lifeworld" and the state as the "system". He sees the crisis of the modern world in the "colonization of the lifeworld by the system" (i. e., the application of market and bureaucratic logic to lived experience), as well as in the "intrusion" of ethical principles from the lifeworld into the political domain. Therefore, the new order of family, state, and *Tianxia* must, in his view, overcome precisely these shortcomings.

It is important to note that Xu's interpretation of the state remains relatively abstract: it should not possess ultimate authority (which, for him, constitutes a core problem of modernity), yet at the same time it is a "community of fate" with intrinsic value shared by all citizens — a "part of each person's destiny." As he describes it, the modern state functions simultaneously as a political and national-cultural community. Its historical, religious, linguistic, and cultural traditions are inherited by the people who live within it and form a collective self-identity that marks each nation as a "unique 'us'" [4, p. 58].

According to Xu himself, the modern state functions as a community with a cultural dimension — one whose development should be the responsibility of each of its members. He further clarifies that both the "self" and the continuum of family-state-*Tianxia* are "variable and actively interacting elements that shape and embed one another." Therefore, the individual, in the process of "self-realization", also participates in the construction of a new and improved continuum-order, and is "obliged to contribute to the creation of their own ideal version of the nation-state" [4, p. 58].

While Xu describes an ideal world governed by seemingly logical principles ("to improve the world, one must begin with oneself"), he offers neither precise definitions of the terms he employs nor concrete guidance — such as what is meant by "self-realization" and what it actually requires. As a result, this thesis, too, ultimately takes the form of a representation — similar to the term used by Zhao Tingyang in defense of his theory in response to critiques regarding its lack of realism.

The philosophical analysis of Tianxia-ism as a whole is further complicated by the abstract and highly fluid nature of the vocabulary employed by its proponents. Concepts such as "family", "state", and "self-realization" can carry significantly different meanings and connotations depending on the context in which they appear.

Let us now revise the specific problems and key concepts within Xu Jilin's *Tianxia* theory.

1. The Role of the State.

Xu's attitude toward the modern state appears ambiguous and shifts over the course of his reflections, seemingly depending on the argument he wishes to advance. In this regard, we can distinguish three stages in his thinking.

Stage 1: The Cause of the Collapse of Traditional Tianxia.

Analyzing the crisis of modernity, Xu argues that the strengthening of the state, as a product of Western liberalism, is the primary reason for the collapse of traditional *Tianxia* and the social continuum that once existed in ancient China. In this context, he characterizes the nation-state as a rationalized structure that "overrides universal values". One of the major negative consequences of this phenomenon, according to Xu, is "the supremacy of state power" [6, p. 89].

Stage 2: A Dual-Aspect Community.

As previously discussed, Xu proposes a distinction between society and the state, viewing their merger as a form of "colonization". He emphasizes the dual nature of the nation-state: while the state represents the political and legal system, the nation encompasses culturally specific and ethical traditions. From this, it follows that for Xu, the modern nation-state is simultaneously a political and a cultural entity, an assertion that appears to contradict his earlier critiques in a different context.

Stage 3: The “Supra-Moral Leviathan”.

Addressing the relationship between the state and *Tianxia* in the present day, Xu refers to the modern state as a “supra-moral Leviathan” and a “necessary evil”, whose sole purpose is the exercise of power. He contends that the legitimacy of the state no longer derives from a “transcendent religious or moral metaphysics”, but rather from the so-called unity of the state and the nation [4, p. 134]. Moreover, he views the powerful state as a dangerous entity. As he writes: “The more powerful the state becomes, the more self-satisfied its rationality, and the greater the danger that it will plunge over the cliff” [4, pp. 137–138]. Yet it remains unclear what, in Xu’s view, is inherently harmful about state power and how such dangers can be avoided, especially when every individual is expected to contribute to their own “ideal version” of the state.

2. The Place of the Individual (“Self”).

Xu conceptualizes the family-state-*Tianxia* continuum primarily as a social continuum, with the “self” at its center. However, the precise position of the “self” within this framework remains unclear.

On the one hand, *Tianxia*, for Xu, has a universal character, and only within this framework can the individual realize their “authentic self”. For Xu, the atomized individual is a “lost being”, and he envisions the way out of this condition through a newly imagined “continuum”, within which the “self” is redefined, and which is itself simultaneously reconstructed. Xu remarks: “Who am I? Who are we? Where is the nation? Where is the world? In the end, these are all one and the same question”.

In the context of contemporary China, Xu calls for the strengthening of cosmopolitanism, so that the individual may discover their authentic “self” within a “universal civilization” — that is, within *Tianxia*. He argues that the modern self is composed of three layers: (1) universal human nature; (2) shaped by particular political and cultural contexts; and (3) the concrete individual capable of making choices within the first two layers. Among these, the first layer, in Xu’s view, reflects the relationship between the individual and *Tianxia*, with *Tianxia* representing “universal humanity” and the “universal civilization” built upon it [4, p. 198].

Notably, Xu attributes to the individual self a political quality: legitimacy. He asserts that the legitimacy of self-realization “cannot be proven in and of itself or through any specific cultural-political community”, but is possible only “within the framework of universal human nature and universal values” [6, p. 67]. This, according to Xu, is the “modern way through which the ‘self’ and *Tianxia* may communicate directly, without mediation by the family or the state” [4, p. 67].

Thus, according to Xu’s concept, the modern “self” finds no place within the traditional continuum of family–state–*Tianxia*, functioning only as a component of a hierarchical structure. In modernity, the “self” exists as an “atomized individual” devoid of relational grounding or existential meaning. It follows that the self can achieve authentic self-realization only within the newly imagined continuum proposed by Xu, though he never specifies what this notion precisely entails.

Results and Discussion

The concept of *Tianxia* may be characterized as a form of universalism in which certain notions acquire both normative and universal significance. This feature is reflected in the modes and strategies of argumentation employed by *Tianxia*

theorists to legitimize their framework. A particular note is the recurrent use of “China”, albeit in a generalized and sometimes symbolic sense, as an attribute of these universal values. In Xu Jilin’s discourse on *Tianxia*, we observe structural similarities with theological forms of universalism. At the same time, he regularly invokes “Chinese values”, replacing the general concept of the state with the specific historical and cultural referent of China itself.

Addressing this issue, the present article examines two ideal-typical models of argumentation through a comparative lens: a religious model (illustrated through the thought of Leo Tolstoy) and an ideological one (exemplified by Leon Trotsky). By comparing the ideas of these two major figures of Russian philosophy with the argumentative strategies of *Tianxia* theorists, we aim to demonstrate how universalism and group identity shape the structure and trajectory of argumentation, and how these two approaches intersect in the writings of *Tianxia* proponents.

Tolstoy’s philosophy is known for its anti-clericalism as well as its deeply religious orientation. His writings frequently address topics of existential and moral urgency, such as God, ethics, and the nature of goodness. The same logic underpins his aesthetic theory. In his essay *What Is Art?*, Tolstoy repeatedly elaborates and refines previously stated theses, using such reiteration as a method of affirming their truth. Ultimately, the proof of his key claims lies in the declared universality of certain values and the ideal of the common good.

Critiquing institutional Christianity, Tolstoy argues that the rejection of “true Christianity” by the upper classes led to a rupture between “aristocratic” and popular art. Christianity itself and its derivatives (Christian art, the Christian ideal, Christian consciousness, etc.) are used by Tolstoy as synonyms for goodness and morality, yet he does not consider it necessary to provide a formal justification for this equivalence. On the basis of this association, he concludes that “Christian art is only that which unites all people without exception — either by evoking in them a consciousness of their equal position before God and one another, or by arousing in them the same feeling, even the simplest one, as long as it is not contrary to Christianity and is common to all people without exception” [9].

Leon Trotsky, by contrast, rarely appeals to universal values or the common good — indeed, he frequently critiques such notions outright [10]. Trotsky’s model of argumentation, which may be described as ideological, expresses disagreement with opponents in a distinct manner: whereas Tolstoy critiques his irreligious contemporaries from a moral high ground, Trotsky positions himself on an equal but oppositional footing vis-à-vis representatives of other social classes. This rhetorical strategy, employing sharp, binary distinctions, finds expression in his essay *Their Morals and Ours*, where he writes: “Jakob Walcher, under a knowingly false pretext, refused to provide testimony to the Dewey Commission that would have been unfavorable to Stalin. The rotten morality of these people is merely the product of their rotten politics” [11].

Thus, in both models of argumentation, the distinction between the “in-group” and the “out-group” plays a central, if not the defining, role as a rhetorical device for reinforcing one’s own position. These “non-logical” strategies are characteristic not only of theological or ideological schools of thought. When it comes to complex and difficult-to-prove subjects such as the existence of God, even representatives of neopositivist rationalism, like Bertrand Russell, occasionally depart from their proclaimed analytic rigor and resort to rhetorical techniques aimed at undermining

the credibility of their opponents' theses. Depending on the context, such techniques often result in logical fallacies.

For example, in the well-known philosophical debate with Catholic priest Frederick Copleston (1948) on the existence of God, Russell repeatedly employs argumentative strategies that, from the perspective of informal logic, are typically classified as fallacious. Consider the following statement:

"Well, of course, the question 'Is there a cause of the world?' is a meaningful question... Suppose, for example, that you take as your subject 'a round square that exists'. Then the statement 'a round square exists' would be something like an analytic proposition. But there is no such thing as a round square" [12, pp. 288–289].

Here, Russell appears to attempt to demonstrate the non-existence of God by equating Him with the logically contradictory notion of a "round square". At least two fallacies are present in this argument: *petitio principii* (begging the question) and false analogy. If the argument is directed not at the thesis itself but rather at the opponent, one might also detect elements of *ad hominem*, although this would depend on the intent of the speaker.

In summary, the primary characteristic of both the theological and ideological models of argumentation lies in the invocation of unverifiable universality as a means of establishing one's own superiority. As shown in previously conducted analysis, the concept of *Tianxia* exhibits features of both models.

In the context of the intense political debate surrounding the concept of *Tianxia*, its philosophical significance has also found expression in other domains. One of the earliest such applications can be seen in scholarly discussions of higher education. Research suggests that the *Tianxia* framework offers an alternative to methodological nationalism, which continues to dominate the Western academic tradition.

For instance, Lin Yang and Lin Tian [13], in their critique of the dominance of Western paradigms in global higher education, argue that principles such as neoliberalism, market logic, competition, and performance indicators hinder a more pluralistic understanding of globality. In contrast, four core components of *Tianxia* — "one world", "harmony in diversity", an ethic of global governance, and an ecological worldview — provide a framework for reimagining globality in the context of higher education. According to the authors, this framework enables educational development independent of national interests, and instead grounded in universal human values.

A number of researchers, based on interviews with Chinese experts and an analysis of Chinese academic literature on universities' international influence, demonstrate how Chinese universities articulate their global ambitions through the concept of international influence (国际影响力), which is closely aligned with the principles of *Tianxia* [14]. It is observed that *Tianxia*, as a worldview emphasizing interdependence and diversity, distinguishes the developmental model of Chinese universities from Western models grounded in competition and nationalism. Instead, it advocates mutual benefit and cultural sensitivity over rivalry and expansionism. Guided by *Tianxia* principles, these authors suggest that global higher education should not be seen as a competitive arena, but rather as a space for mutually beneficial cooperation and the pursuit of the common good.

In another study, Lili Yang, Simon Marginson, and Xin Xu propose the use of *Tianxia* as a “heuristic model” for rethinking global higher education [15]. According to the authors, *Tianxia* is beneficial for educational development in that it offers an ethical foundation for international cooperation in education, and a values-based alternative to Western-centric models, oriented toward the common good rather than nationalistic interests. Emphasis is placed on the idea that a global educational system grounded in *Tianxia* is inherently inclusive, culturally sensitive, and ethically driven.

Although the scope of literature on this subject remains relatively limited, such depoliticized interpretations of *Tianxia* reveal its potential as a coherent philosophical system. In a context where both proponents and critics often frame *Tianxia* in terms of the Chinese nation-state and its association with China’s political regime, the discussion of *Tianxia* in non-political domains contributes to the “reframing” of the concept as a genuinely philosophical idea.

According to the French philosopher René Guénon, the opposition between East and West is one of the defining features of the modern world [16, p. 43]. The contemporary development of the *Tianxia* concept, as well as the criticism it has provoked, is to some extent grounded in this very dichotomy. Although *Tianxia* originally emerged in Chinese history as a political term designating “the world”, it was long used to describe the sphere of influence of Chinese culture. In the modern era, this limited interpretation has come to be perceived as a form of nationalism, which has contributed to the politicization of the concept, a process characteristic of modernity. Numerous critics have addressed the national coloring of the allegedly universal *Tianxia* [17–19].

Conclusion

At the same time, *Tianxia* theorists frequently defend the universalist aspirations of the concept by referring to Confucian universalism as one of the intellectual products of the “Axial Age” (K. Jaspers). Indeed, Confucius’ idea of “moral governance” and Mencius’ concept of “benevolent politics” can legitimately be interpreted in universalist terms. In this context, moral cultivation and the development of a corresponding educational system play a central role. It is worth recalling that Chinese civilization is the most ancient surviving culture in the modern world, and it was within its framework that both the “Golden Rule of Morality” (“Do unto others as you would have them do unto you”) and the system of meritocratic civil service examinations were first formulated.

This reveals a profound connection between education and morality, a connection that has been severed in the contemporary education system, with destructive consequences for society as a whole. Character formation and moral development became even more crucial than professional training. Education cannot be separated from ethical cultivation, a principle now being rediscovered through renewed attention to “traditional values”, many of which originated during the Axial Age but are, in essence, timeless and shared across all advanced human civilizations. These values are preserved in the great religious and philosophical traditions of the world, among which Confucianism and its concept of *Tianxia* may be included.

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Проблематика китайской концепции Тянься и образование

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Финансирование. Настоящее исследование не получало внешнего финансирования.

Заявление об информированном согласии: информированное согласие было получено от всех участников исследования. Письменное информированное согласие на публикацию данной статьи было получено от пациентов.

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Аннотация. В ситуации современных идеологических исканий, связанных с переходным характером постглобализационной эпохи – переходом от однополярного к многополярному миру, – ряд китайских мыслителей, опираясь на историко-культурные корни своей нации, разрабатывают концепцию Тянься («Поднебесная»). Предлагая данную концепцию, уходящую к истокам конфуцианства и другим древнекитайским учениям, они стремятся решить проблемы целеполагания развития не только КНР, но и выдвинуть ее в качестве проекта для международной коммуникации. Ключевыми сторонниками данного подхода выступают такие мыслители, как Чжао Тингян (Zhao Tingyang), Сюй Цзилинь (Xu Jilin) и Фэй Сяотун (Fei Xiaotong). Основные проблемы, стоящие перед авторами концепции: соотношение общего

Вклад авторов. Все авторы внесли равный вклад в подготовку публикации. Все авторы прочли и одобрили окончательную версию рукописи.

Конфликт интересов. Авторы заявляют об отсутствии конфликта интересов.

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и частного; соотношение Китая и других мировых держав (национального и общечеловеческого), а внутри государства – общества и индивида. В данной статье выявляются те проблемы, которые оказываются трудноразрешимыми в рамках концепции *Тянься*, как она представлена в творчестве упомянутых мыслителей. Проводится некоторая аналогия решения проблем соотношения национального и всечеловеческого (общечеловеческого) в русской культуре, что выразилось в споре западников и славянофилов, творчестве Ф.М. Достоевского и Вл. Соловьева, Л. Толстого и Л. Троцкого. Анализируется, как международные процессы влияют на развитие образования, прежде всего в КНР, где разрабатываются меры, противостоящие глобализационным и нивелирующим тенденциям. Показано, что деполитизированная концепция *Тянься* может быть продуктивной для развития системы национального образования. Руководствуясь принципами *Тянься* ряд китайских авторов предлагает рассматривать высшее образование в мире не как арену соперничества, а как пространство для взаимовыгодного сотрудничества.

Ключевые слова: национальное и общечеловеческое, современное образование, китайская политическая философия, осевое время, Тянься

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